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407992

COMPLETION REPORT

U. S. ATOMIC ENERGY COMMISSION
CONTRACT AT-(29-2)-20

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ENIWETOK PROVING GROUND FACILITIES OPERATION IVY

VOL. II
BOOKS 4, 5 & 6

HOLMES & NARVER, INC.
LOS ANGELES, CALIFORNIA

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INDEX

This document consists of 391 pages
No. 3 of 25 copies. Series A

VOLUME I

BOOK 1. GENERAL

Abstract, Contract History, Participating Agencies, Final Scope of Work

BOOK 2. ENGINEERING, DESIGN, INSPECTION AND CONSTRUCTION

Engineering and Construction History, Survey - Atoll Control, Jobsite Tests and Inspection, Test and Base Facilities Structures History, Scientific Station Structures History, Causeways, Inter-Island Cables

BOOK 3. CAMP OPERATION AND MANAGEMENT

Administration and Management, Camp Operation and Management

VOLUME II

BOOK 4. MAINTENANCE SERVICES

Maintenance History, Unusual Maintenance

BOOK 5. SUPPORT SERVICES

General, Coaxial Cable, Installation of Equipment - CMR Area, Instrumentation Support

BOOK 6. TEST OPERATIONS AND ROLL UP

Preparations for First Test, Base Protection, Evacuation, Preparations for Second Test, Roll Up

APPENDIX

Completion Report for Contract AT-(29-2)-20, Drawing Number Explanation, Engineering Drawing List, Field Sketch List, Summary - Cost Report of Work in Progress(4), Joint Task Force 132 Cost Report(3), Balance Sheet

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COMPLETION REPORT
OPERATION IVY

VOLUME II
BOOK 4
MAINTENANCE SERVICES

BOOK 4
TABLE OF CONTENTS

	Page
CHAPTER I. MAINTENANCE HISTORY	4-1
Section 1. General	4-1
Section 2. Buildings and Structures	4-2
Section 3. Fresh Water Distillation and Distribution	4-3
Section 4. Marine	4-5
Section 5. General Transportation Vehicles and Heavy Equipment	4-11
Section 6. Electrical Generation and Equipment	4-12
Section 7. Miscellaneous Equipment	4-13
Section 8. Scientific Stations	4-13
CHAPTER II. UNUSUAL MAINTENANCE	4-15

LIST OF ILLUSTRATIONS

Figure No.		
4-1.	Gilhoist in Operation	4-5
4-2.	Diver Prepared to Descend	4-8

CHAPTER I
MAINTENANCE HISTORY

SECTION 1. GENERAL

Maintenance is defined in the Contract in the following manner: "The Contractor shall furnish all labor, equipment, materials, and supplies to preserve properly and maintain all facilities and structures either existing or contemplated herein, at the site, including but not limited to buildings, utilities, roads and airstrips, docks, equipment, materials, and supplies, and technical structures not expended during tests."

The maintenance of the Marine, Power and Water Distillation Plant equipment was a function of the Service Operations Division. The maintenance of all other equipment, buildings, grounds and utilities was a function of the Construction-Maintenance Division.

Continuous preventive maintenance programs were established. These required that maintenance crews make periodic inspections of all buildings, equipment and utilities to provide routine maintenance services. Greasing, lubrication and tire services were on a schedule basis. Maintenance crews checked buildings for leaks, paint condition, utility connections and similar items and rectified deficiencies when discovered. Operating periods for vehicle, power plant and marine craft engines and water distillation units were established at the end of which the units were taken out of operation for routine overhaul. Crews of trouble shooters were available in cases of breakdowns of equipment.

Rapid corrosion and deterioration of substantially all materials, except that of the aluminum buildings, occurred in the tropical atmosphere and salt spray prevalent at the Atoll. The "battle" against corrosion was a continuing one and led to high maintenance costs. Frequent chipping and/or sandblasting and painting of metal surfaces was necessary. Equipment and spare parts in warehouses required special anti-corrosive measures. Insulators on the overhead electrical systems became coated with salt deposits requiring frequent washings and the disconnects were frequently reconditioned or replaced. At the POL facilities on Fred, corrosive action reached the stage where it was difficult to maintain the tanks in tight condition. New tanks will be required in the near future. It is essential that materials for use on the Atoll be selected so as to withstand the corrosive effects due to the salt water laden atmosphere.

No unusual difficulties in maintenance work were experienced except that occasioned by the presence of "sea moss" in the water taken directly from

the lagoon for cooling purposes, as discussed in Section 8, Chapter III of Book 3.

At the commencement of this operation, the Roll-Up phase of OPERATION GREENHOUSE had been practically completed. Accordingly all equipment then not needed had been "mothballed" and placed in storage. Heavy equipment and vehicles had been shipped and stored in the hanger on Fred. Camp equipment had been stored in barracks, in the unused wings of the Mess Hall, JTF Headquarters Building and in other areas. Light marine craft had been beached and the electrical equipment of these boats had been removed and placed in dehumidified storage. The removal from storage and placing the equipment in condition for use was progressively accomplished as parts and man power were made available.

Accumulated Maintenance Costs under Job 3 were as follows:

Aluminum Buildings	$290,281.52
Tents	88,814.65
Piers	7,344.14
Military Buildings, Fred	45,036.13
Scientific Structures	10,670.80
Other AEC Buildings and Structures	152,941.04
Communication Systems	320,719.69
Electrical Generation Equipment	502,432.06
Electrical Distribution Equipment	93,557.81
Distillation Units	457,771.13
Water Systems	76,551.50
Sewer Lines	23,761.12
Refrigeration Equipment	394,095.23
Airstrips	8,915.17
Roads	81,527.33
Parking, Storage and Recreation Areas	46,716.56
Miscellaneous	484,835.12
TOTAL	$3,085,971.00

Succeeding Sections of this Chapter will show in general terms the particular problems of maintenance encountered.

SECTION 2. BUILDING AND STRUCTURES

Periodic checks were made of all buildings and structures by organized maintenance crews and corrective measures were taken as required. In addition to these checks, the janitors of all barracks and office structures were required to report defects they noted while in the performance of their routine duties. These checks and reports, combined with reports of defects from

various occupants or users of buildings, provided fairly complete information as to the need of preventive or corrective maintenance measures. In general, such items as leaky faucets, improper functioning of toilets, cleaning, scraping and painting of shower stalls, leaks in bolt holes or at the base lines of the buildings were corrected as soon as discovered.

The aluminum buildings originally selected by Holmes & Narver are practically unaffected by corrosion. These buildings are well suited from a maintenance viewpoint for use on the Atoll. On the other hand, the Quonset-type buildings remaining from military occupation have, in general, deteriorated badly, primarily because of corrosion. Due to the age of these buildings and resultant accumulative effect of corrosion in general, they are in poor condition; extensive overhaul would not be warranted. Maintenance on these buildings was undertaken to insure safety of personnel and weather-proofing where this was essential.

Water tanks, towers and other structures were periodically inspected and when necessary they were cleaned, scraped or sandblasted and painted. Maintenance of tents was principally confined to patching of canvas which deteriorates rapidly in the prevailing climate at the Atoll.

SECTION 3. FRESH WATER DISTILLATION AND DISTRIBUTION

During this operation the maintenance work for the distillation units was exceptionally heavy due primarily to the units having reached an operating age where replacement of various parts became necessary. Distillation units required constant observation for signs of steam and water leaks or malfunctioning of equipment. The evaporators were acid cleaned on periodic cycles, generally on 300 hours of operation. Mechanical cleaning, involving many hours of work, was generally required after one year of operation.

Experiments were conducted with highly successful results in the incorporation of phosphoric acid with muriatic acid for scale removal. These acids were mixed in the ratio of four parts of 33% muriatic acid to two parts of 75% phosphoric acid, and the mixture removed all salt deposits. This method of acid cleaning entirely eliminated the need for mechanical cleaning and thereby reduced the man power used for cyclic cleaning. The acid method can be accomplished in much shorter time, and therefore its general use increased the production level as units were placed back into operation more quickly. This method of cleaning was first started in August 1952 and its use should reflect reduced salt removal costs.

In early March 1952, Unit 8 at Fred developed leaks in the evaporator tubing. The steam dome and bottom pan were removed and the tubes were replaced. Inspection of all tubes disclosed heavy salt deposit which was not removed by acid cleaning. After mechanical cleaning, a hydrostatic test disclosed an

additional sixteen tubes leaking. These were replaced, but after one week of operation this unit again developed serious tube leakage. The leaks all occurred in a pronounced encircling indentation of the tubes at a location immediately above the bottom tube sheet. In view of the conditions found, all units at Fred were opened and inspected. The condition found was fairly widespread and 1,716 defective tubes were replaced. As the stock of new tubing on hand was not sufficient to meet this situation and due to the urgency of placing these stills in good operating condition prior to the large influx of personnel for the operational phase, the Jobsite undertook to manufacture approximately five good tubes from six defective ones. The faulty end of the tube was cut off and a stub end was silver-soldered in its place. A jig was made at the Jobsite to insure proper alignment of the two parts of the tube. After this soldering, stress and acid tests were made on all soldered joints and all proved satisfactory.

The raw feed on Site Fred was taken directly from the lagoon. At certain seasonal periods sea moss accumulation was heavy. A dual strainer was installed in the supply line to the power and distillation plant on this site to prevent this moss from entering the plant salt water systems. However, some moss and sand did enter the system which was particularly harmful to the Climax Raw Feed Control Valves of the stills and required continual repair.

The heat exchangers of the Cleaver Brooks 60E distillation units were constructed with soft-soldered joints where the 2-1/8-inch tubes entered the tube headers. These joints developed leaks after approximately six months' operation. The Jobsite maintenance crews repaired these joints with silver solder as the leaks developed and thereby considerably prolonged their operating life. Difficulties were also experienced with the 5/8-inch tubes of these heat exchangers due to development of holes opposite the raw feed inlet. The Admiralty metal tubes originally installed in this assembly were replaced with Cupro-Nickel tubes with little appreciable gain in tube life. In order that distillation units would not be kept out of operation due to failure of the heat exchangers, spare heat exchangers were maintained in readiness at all times.

Heavy maintenance costs were incurred with the pumps used for the brine blow down. These pumps were manufactured principally from copper alloy materials, which did not withstand the corrosive action of the hot brine. A test was conducted in the use of a stainless steel pump, which was available at the Jobsite. This was highly successful, for after six months' operation no repairs to this pump were required. The costs of maintenance of the original pumps were analyzed and compared with the cost of their replacement with the stainless steel pump. The savings in maintenance costs by the use of the stainless steel pumps will amortize the investment in new pumps in approximately one year, and therefore a program of replacement of these pumps was initiated.

The use of "old age" Badger type 150 gph stills added to the maintenance work load considerably. Admiralty metal components, particularly the steam domes, had deteriorated badly through dezincification and these required continual repair. Spare units were kept in good operating condition for use as replacement.

Continued vigilance for indications of leaks in the underground water systems was essential. Leaks in these systems ordinarily did not show on the surface due to the permeability of the coral formation of the Atoll. A study of the water consumption during the hours of midnight to 0400 generally disclosed whether a leak had developed. Leaks were located by isolating various sections of the system and testing hydrostatically. In addition to leaks in the underground piping, the west half of the concrete reservoir on Elmer developed leaks and had to be emptied and repaired twice during this operation.

SECTION 4. MARINE

With the acquisition of a floating dry dock in August 1951 and a Gilhoist in August 1952, the maintenance of bottoms, propellers and shafting of marine craft had been greatly facilitated. The all year round presence of the dry dock permitted docking of the heavier craft in a routine and orderly manner rather

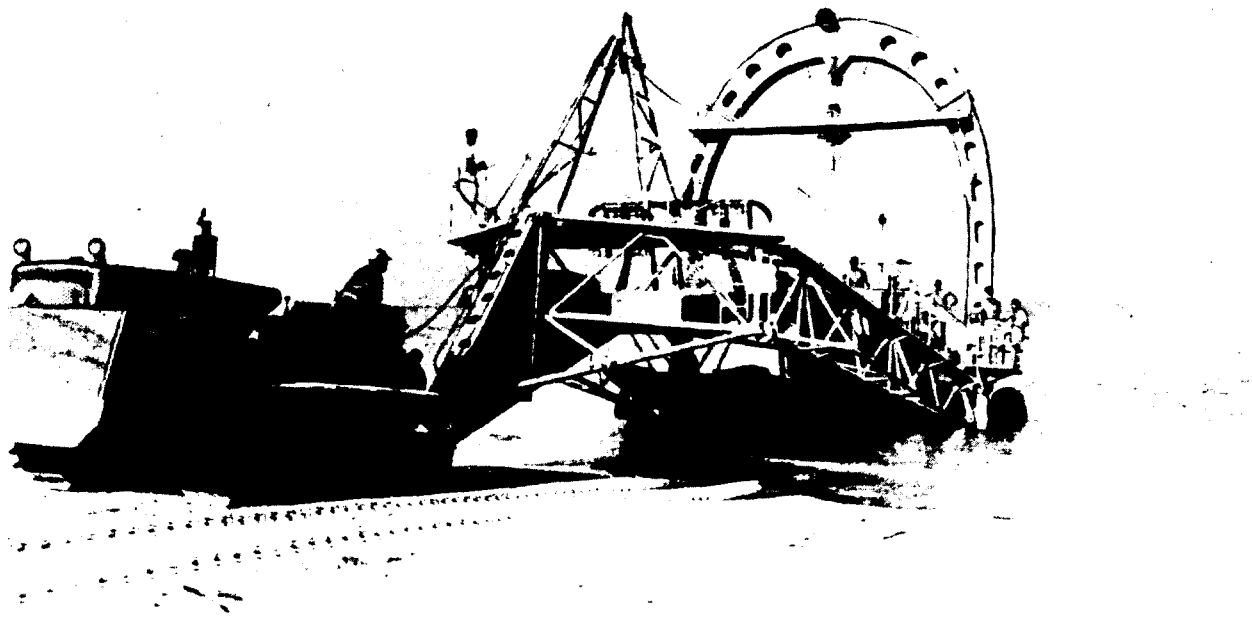

Figure 4-1. Gilhoist in Operation

than the rush job formerly required when a Navy dock with a limited available time at the Jobsite was used. It also provided ready equipment for emergency repairs. With the Gilhoist, Figure 4-1, the lighter craft was picked up and lifted out of the water thus eliminating the need for dragging the craft over the concrete ramps.

A complete maintenance history of each craft was kept in which all items of routine maintenance and repairs were recorded. A dry dock record was also maintained, in which were recorded dates of docking and undocking and each item of work performed on the craft while in dock. Maintenance of the marine craft is summarized in general by craft type in the succeeding paragraphs.

WATER TAXIS. Three taxis were used in this operation and it was necessary to beach these craft approximately every three months for scraping and painting the hull to offset the action of marine borers. In March 1952, Taxi M-122 was given a complete overhaul including replacement of the engines, fuel tanks and exhaust lines. In May 1952, Taxi M-35 underwent a similar overhaul. In March 1952, the port engine of Taxi M-142 was replaced and the starboard engine was replaced in September 1952.

LCM CRAFT. These boats were required to be beached approximately every three months for cleaning, scraping and/or sandblasting and repainting of the hulls. Conditions under which these craft operated were hazardous with respect to propellers, shafting, underwater cutlass bearings and bottoms. In addition to these conditions, the continual movement of heavy equipment over the ramps and well decks subjected them to heavy wear and tear. Continued trouble shooting was necessary in maintenance of these craft over and above routine overhaul. There were 19 of these craft at the Jobsite for this operation. Twelve of these were received from the NAVY after completion of OPERATION GREENHOUSE. After the receipt of these boats they were beached, minor repairs were effected. and they were mothballed. In connection with the mothballing the electric equipment was removed and placed in dehumidified storage. The first of these 12 boats was reactivated for this operation on 17 December 1951, and the remainder at various intervals depending upon requirements. Of these reactivated boats, six required engine changes within one and one-half months' service, and others required cylinder head changes. These craft as received were equipped with 90 mm. injectors which were replaced with 60 mm. injectors as the use of the smaller size injectors materially reduced maintenance costs.

DUKWS. These amphibious trucks were used extensively during this operation, especially in the outer islands. Maintenance was very high due to the terrain and shore conditions on which they had to operate. Work on sharp, rough reefs was rather extensive in this operation. Tire and spring replacements were the most frequent maintenance work items. The corrosive action of salt water on the moving parts located outside the hull, such as wheel bearings, universal

joints, and steering mechanisms made daily inspection and lubrication necessary.

LCU. The general discussion of the hazards and difficulties of maintenance of the LCM craft is applicable to these boats. These boats, however, required dry docking for underwater work. Before the start of the operation, all of these were docked and placed in good operating condition. They were all again docked in September 1952 to insure tight bottoms in anticipation of their being towed to sea for the Evacuation Period.

YTL (HARBOR TUGS). There were two of these, one with a wooden hull, and one with a steel hull. The wooden hull craft had to be docked approximately every six months to insure against damage by marine borers. No major items of maintenance were required other than the renewal of the propeller shafting of the steel tug which was damaged in service.

The following docking record shows the type of craft serviced in the dry dock for the period 1 January through 5 November 1952.

BOAT NO.	TYPE	DATE DOCKED	DATE UNDOCKED
M-192	Steel Tug	9 January	7 February
YC-49	Wooden Barge	9 February	27 February
AVR-79	(Navy)	29 February	2 March
YTL-139	Wooden Tug	8 March	26 March
M-138	T-Boat	14 April	17 April
M-38	Wooden Barge	19 April	12 May
M-61	Sea Mule	27 June	3 July
M-125	Steel Barge	11 July	31 July
YC-1354	Steel Barge	31 July	5 August
AVR-20987	(Navy)	12 August	1 September
M-216	T-Boat	4 September	10 September
M-214	T-Boat	10 September	18 September
M-215	T-Boat	18 September	30 September
M-143	T-Boat	30 September	11 October
M-138	T-Boat	11 October	16 October
M-139	Wooden Tug	26 October	28 October
M-192	Steel Tug	26 October	5 November

DIVING OPERATIONS. All deep sea diving operations, Figure 4-2, were performed by crews from the maintenance organization of the Marine Department. Deep sea diving equipment for Holmes & Narver use was obtained early in this operation. The acquisition of this equipment obviated any further need of assistance from the U. S. Navy divers for depths down to 130 feet. This limit of 130 feet was necessarily established due to the lack of a decompression chamber. Divers were required to volunteer for this work and only those who

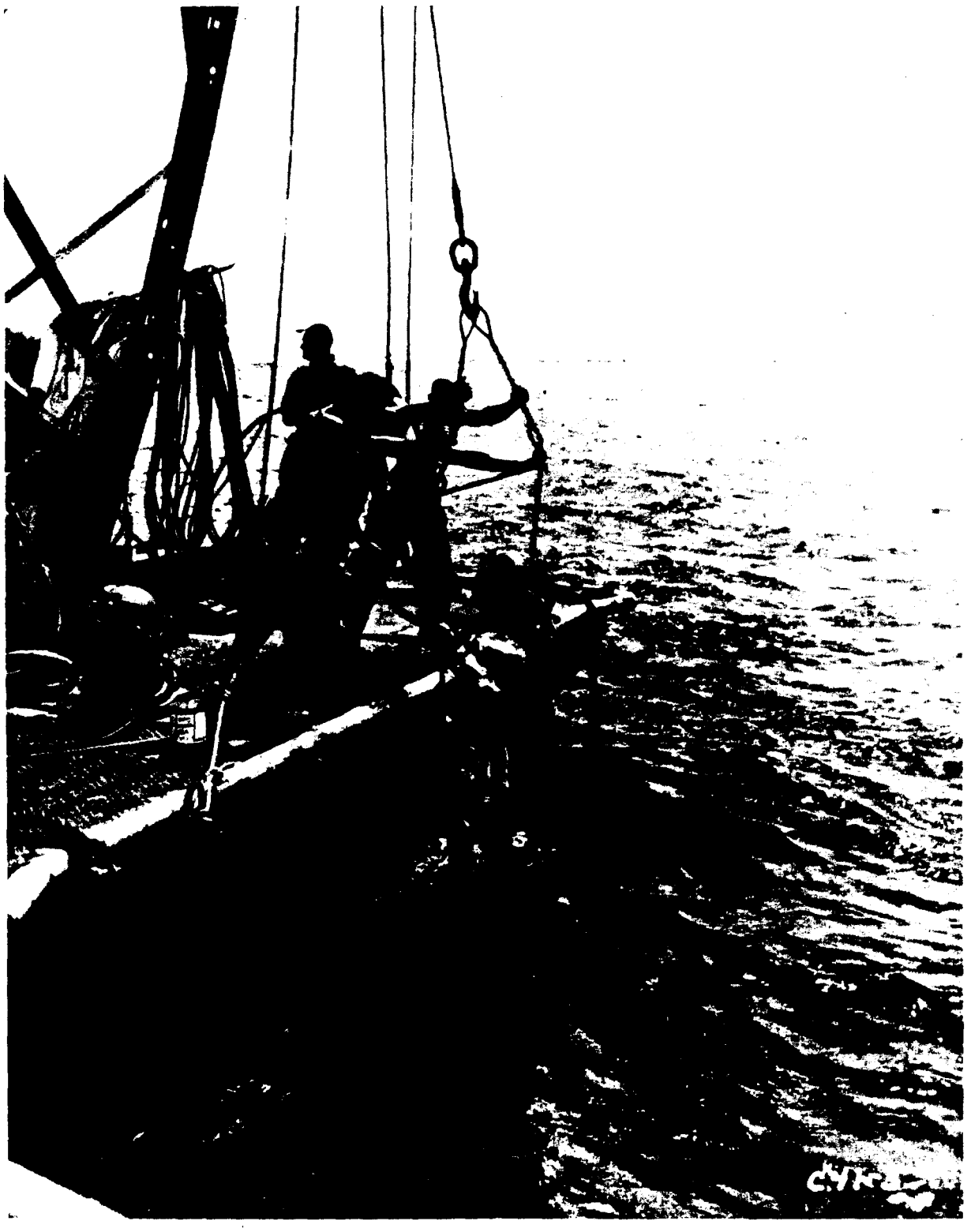

Figure 4-2. Diver Prepared to Descend

could definitely prove previous schooling and experience were selected. These men were given a thorough physical examination by the Jobsite doctor prior to being qualified as divers and were re-examined quarterly. The diving operations undertaken during this operation were in connection with repair of the underwater POL lines, submarine cables and post-shot recovery of scientific instruments.

Considerable difficulty was experienced in maintaining the POL submarine lines, both at Fred and Elmer. The flexible hose at Fred had to be disconnected from the steel hose and brought to the surface for inspection and testing after which 240 feet was renewed. At Elmer, four 30-foot sections were renewed. In order to reduce the possibility of damage to these hoses during fueling operations, Holmes & Narver initiated the procedure that, whenever fueling was to be undertaken, the hose would be picked up by Jobsite personnel and passed to the tanker, and on completion the Jobsite personnel would receive the hose from the tanker and lay it out on the bottom. In this connection divers reported that the bottom of the lagoon, both at Elmer and Fred over which the fuel hose must pass, was considerably cluttered with scrap left from military action during World War II. If fueling operations continue to be performed from tankers at buoys, the obstructions on the floor of the lagoon will constitute a continuing hazard to the fuel lines.

The following table indicates deep sea diving activities for this operation.

DATE	REASON	DEPTH OF DIVE (Feet)	TIME SUBMERGED (Minutes)
March 27	Recovery of POL line - Fred	105	41
April 1	Recovery of POL line - Fred	115	110
3	Repair POL line - Fred	110 - 120	46
11	Test diving Compressor off Elmer (Two dives)	110 - 120	30 30
15	Repair POL line - Fred (Two dives)	110 - 120	64 74
16	Repair POL line - Fred (Four dives)	110 - 120	59 44 36 38

DATE	REASON	DEPTH OF DIVE (Feet)	TIME SUB-MERGED (Minutes)
(Cont.)			
April 17	Repair POL line - Fred (Two dives)	110 - 120	50 47
18	Repair POL line - Fred (Three dives)	110 - 120	67 101 66
19	Repair POL line - Fred (Three dives)	110 - 120	58 68 34
25	Repair POL line - Fred (Two dives)	110 - 120	88 66
26	Repair POL line - Fred (Four dives)	110 - 120	108 98 135 40
28	Repair POL line - Fred (Three dives)	110 - 120	122 120 114
29	Repair POL line - Fred (Three dives)	110 - 120	47 96 59
30	Repair POL line - Fred (Two dives)	110 - 120	47 63
May 29	Recovery buoy saddle - Elmer	108	58
June 6	Recovery telephone cable - Elmer	112	80
November 6	Recovery underwater guage - Sally	110	54

DATE	REASON	DEPTH OF DIVE (Feet)	TIME SUBMERGED (Minutes)
(Cont.)			
November 8	Recovery underwater gauge - Sally (Two dives)	112	61 25
8	Recovery underwater gauge - Gene	113	47

SECTION 5. GENERAL TRANSPORTATION VEHICLES AND HEAVY EQUIPMENT

Maintenance of mobile equipment was a major problem at the Jobsite due to the high relative humidity and salt content of the atmosphere. Corrosive action and the accumulation of deposits on equipment not in use, caused rapid "freezing" of moving parts.

During the construction of reef stations, it was necessary to operate equipment in shallow salt water over extended periods of time. The deleterious action of these elements on the equipment was accelerated by prolonged exposure which necessitated frequent maintenance work. Practically every 45 days caterpillars required new rollers. Water seeped into gear chambers causing damage to funnels, drives, seals, and bearings which had to be replaced frequently.

All vehicles, including those of TF 132 and TG 132.1 except those assigned to Site Fred, were lubricated and serviced in accordance with a pre-established schedule. Makeshift service stations were installed at Sites Gene and Yvonne. No facilities for major repair were maintained on these sites and only first echelon work, such as minor trouble shooting and field lubrication, was undertaken. Many pieces of equipment were thus kept in service until major repairs were needed. All vehicles requiring major overhaul were sent to the heavy equipment repair shop on Elmer.

The lack of an adequate supply of standard parts was a major deterrent to efficient operation of the heavy equipment repair shop. Many parts required machining after arrival at the Jobsite, and some parts which were received were not suited to the climatic condition encountered.

In future operations, high priority should be attached to providing a dehumidified storage space for parts. Without this storage, equipment or parts which have been stationary for six months generally must be surveyed; equipment or parts not in use for two months usually require major maintenance or rehabilitation.

SECTION 6. ELECTRICAL GENERATION AND DISTRIBUTION

In general, preventive and corrective maintenance of diesel engines was accomplished after 300 hours of operation. At this time the units were secured and opened for the removal of carbon accumulation on the ports and in the exhaust system. During the period of shut down all operating parts were checked and adjusted, and repaired or replaced as found necessary. The windings of the alternators were cleaned; brushes were checked and properly adjusted.

During operating periods these units were under constant observation by the operators for unusual mechanical noises, overheating, scorching odors and smoking exhaust. Supervisory personnel checked the operating logs for signs of malfunctioning of equipment. All of the foregoing measures, combined with continuous checking of the fuel and lubricating oil consumption records, afforded data for the determination of the need of adjustments, replacement or repair. A maintenance history of each unit was maintained in which all items of maintenance work performed were entered.

Oil stoves were installed in the off-island inactive plants. These stoves were kept in continuous operation and thereby kept the windings dry. In addition, the units of these plants were operated once a week and drying was further accomplished by passing a current at low voltage through the windings. Before reactivating these plants, the units were operated in this manner for approximately 72 hours, at the end of which insulation resistance measurements were sufficiently high for full operation.

The following non-routine items of maintenance work were required:

(1) Relining of engines where piston clearances exceeded allowable tolerances resulting from normal wear. This was generally required after approximately 8,000 operating hours.

(2) Rewinding of Generator 1 on Fred due to having grounded out because of excessive dampness of the windings. The grounding out occurred when the unit was first started after return to the site after the Evacuation Period, during which all doors and windows of the plant had been left opened, as a measure of security of the building against excessive blast pressure.

(3) Extensive repairs to the diesel engine of No. 2 Engine on Yvonne. The apparent failure of one main bearing and the stoppage of the lubricating system was the cause of considerable damage to this engine.

The major problem of maintaining the electrical distribution system was that occasioned by corrosion. All lines, switches, insulators and transformers were checked on a regular schedule and corrective measures taken as required. A high pressure washing machine was acquired for use in washing insulators without the necessity for an outage of power.

SECTION 7. MISCELLANEOUS EQUIPMENT

There were maintained 46 type SCR-508 radio sets, 43 type SCR-300 radio sets, 3 type TCS-12 radio sets, a six-station RCA intercom system, a six-station Stromberg-Carlson interphone system and a public address system. These required routine maintenance and the only problem encountered was the lack of parts. To keep these units operative, considerable cannibalizing of old sets was required.

Over 1,000 pieces of refrigeration equipment were in use at the Jobsite. A regular maintenance crew provided the necessary service to keep these in good operating condition.

Portable generators, electrical motors, galley, laundry and shop equipment were periodically checked and serviced.

All painting was performed under the direction of the paint foreman. Sandblasting, spray or brush painting were used as appropriate.

SECTION 8. SCIENTIFIC STATIONS

Maintenance work required on Scientific Stations under this Contract was confined to the "mothballing" and preservation of GREENHOUSE Stations. The maintenance work required was completed early in 1952 and covered such work as the sandblasting of exposed metal of castings to remove rust. All exposed metal was then covered with a protective coating of bitumastic or cosmoline. Holes leading into the interior of the base castings were plugged.

A total of 1045 man hours were expended on this maintenance work, and the total cost, including labor and material, was $10,670.

CHAPTER II
UNUSUAL MAINTENANCE

The first incident requiring unusual maintenance was a fire which occurred in Bldg. 309 on 26 February 1952. The fire was caused by a failure of the thermostat in a drying oven. In combatting the fire it became necessary to cut away some sections of the building in order to gain access. The drying oven was destroyed and this, plus the cost of damaged sections of the building, was estimated to total $1,978.23.

Resurfacing of the airfield runways and parking areas on Site Fred was accomplished in June and July of 1952 at a total cost of $152,153.00, of which $125,153.34 was classed as a maintenance charge.

On 29 December 1952, the Jobsite was subjected to the rigors of typhoon "Hester". At 0700 on this date it was noted that the velocity of the prevailing high winds was increasing. By 0915 a storm warning forecast was received from the Site Fred Weather Bureau; all division heads were immediately notified, and the Emergency and Disaster Plan was ordered into effect. All buildings were secured, supplies and equipment were covered with tarpaulins where possible, and personnel who were housed in the tent area were removed to barracks. By 1100 the winds, accompanied by torrential rain, were estimated to be 55 knots.

The most severe damage was sustained during the mid-afternoon; wind accompanied by rain at times developed an intensity of 70 knots. The high winds of the storm combined with high tides drove ocean waves inland from 100 to 300 feet beyond normal tide line. Throughout the afternoon, all available means were employed to protect personnel and property. Some minor personnel injuries were incurred, but none of a serious nature.

Emergency precautions were continued throughout the night and during the period from 1700 to 0200 communication between Fred and Elmer was severed due to breaks in the telephone cables at the south end of Elmer. Communications were re-established at about 0200 on 30 December by a switchover to the Army spare cable. At this time, approximately 0200 hours, the winds began to subside and advice was received from the Fred Weather Bureau that the storm center had passed.

On 30 December 1952, a personnel check was made and all personnel were accounted for. A preliminary survey of the area affected by the typhoon was also conducted to ascertain property damage. This survey revealed that damage within the CMR Area was limited to roof ventilators only. Damage on Site

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Elmer was not excessive; tents were damaged, a rock crusher was capsized, roof ventilators were blown away, and debris was washed ashore. However, there was considerable damage on Site Fred where seas had washed across the island from the motor pool to the east end. All roads on the south side were obliterated, and most of the tents were damaged or destroyed. Bldgs. 26, 27 and 500 were partially collapsed, the freight pier was badly damaged, and the weather station and salt water pumping station had been made inoperative. The mess hall and other buildings on the ocean side had been seriously damaged by waves and debris.

In order to proceed immediately with emergency repairs, Repair Maintenance Work Orders, numbers 7383, 7384, 7385 and 7386 were issued. The Maintenance Work Orders were assigned these numbers primarily for accounting purposes to cover the maintenance work required during the storm, and the work needed to put Sites Elmer and Fred back into normal operation condition.

The first necessary step of the maintenance repair at both these sites was to inspect all buildings, structures, and the water and power facilities. Work was then immediately started to reactivate the damaged utilities, clean up the debris, and make all buildings and structures safe. Such maintenance work did not include any proposed major reconstruction or repair; the scope of any major undertaking was not at that time determined.

Separate accounting of all labor and materials for the repair and reconstruction of damaged areas is being maintained and estimates of needed major repairs are in process. Eventual costs in time and materials chargeable to typhoon "Hester" will be submitted upon final determination. The results of this storm have confirmed the adequacy of the basic aluminum building design for this area.

COMPLETION REPORT
OPERATION IVY

VOLUME II
BOOK 5
SUPPORT SERVICES

BOOK 5
TABLE OF CONTENTS

	Page
CHAPTER I. GENERAL	5-1
CHAPTER II. COAXIAL CABLE	5-3
CHAPTER III. INSTALLATION OF EQUIPMENT - CMR AREA	5-5
CHAPTER IV. INSTRUMENTATION SUPPORT	5-7
Section 1. Task Group 132.1 - Scientific Units	5-7
Section 2. Task Group 132.3	5-8
Section 3. Task Unit 1	5-8
Section 4. Task Unit 2	5-8
Section 5. Task Unit 3	5-8
Section 6. Task Unit 4	5-9
Section 7. Task Unit 6	5-10
Section 8. Task Unit 7	5-10
Section 9. Task Unit 8	5-11
Section 10. Task Unit 9	5-11
Section 11. Task Unit 10	5-1
Section 12. Task Unit 11	5-12
Section 13. Program 1	5-12
Section 14. Program 2	5-12
Section 15. Program 3	5-14
Section 16. Program 4	5-17
Section 17. Program 5	5-17
Section 18. Program 6	5-19
Section 19. Program 8	5-22
Section 20. Program 9	5-24
Section 21. Program 10	5-25
Section 22. Program 11	5-26

CHAPTER I
GENERAL

The support of scientific operations by Holmes & Narver personnel during OPERATION IVY was authorized pursuant to the contractual provision which defined these services as follows:

JOB NO. 4. SUPPORT SERVICES

> "The Contractor shall provide a labor pool of skilled and unskilled labor to assist the Commission's technical and scientific agents in instrumentation, equipment installation or erection, field engineering and construction, machining, and other related work connected with actual test operations. He shall also furnish unpacking and packing services and such equipment, operators, materials, and supplies as may be required in connection with these services."

PROCEDURES. Through Holmes & Narver's experience with similar requirements under OPERATION GREENHOUSE and in cooperation with the AEC Resident Engineer, the following procedures were established for allocation of support services:

1. Work Orders were initiated by the scientific group requiring labor and materials.

2. Prior to the execution of the work, all Work Orders required the approval of either the AEC Resident Engineer or Field Manager at Eniwetok regardless of the scope or value of the service requested.

3. Approved Work Orders were then forwarded to the Holmes & Narver Resident Manager's office for assignment to the proper division in the Holmes & Narver organization with authorization to proceed; with copies to other interested departments or divisions, including the Accounting Division.

These Work Orders covered all the services necessary to fulfill the requirements of the Scientific Using Agencies or elements of Task Force 132.

It had been originally anticipated that Support Services under Job IV Work Orders would not reach substantial magnitude until the latter part of 1952, or for a period of possibly ninety days prior to shot time. Experience indicated,

however, that Support Services were required to a considerable extent throughout the Construction and Operation Phases. The following tabulation indicates the number of orders issued and approved by the AEC Resident Engineer, the man hours of direct labor required at the Jobsite and the total cost, by months, for Support Services.

JOB IV WORK ORDER SUMMARY - 1 JANUARY THRU 31 DECEMBER 1952

Month 1952	No. of Orders	Man Hours	Total Cost
January	7	1,314	12,766.27
February	20	2,979	28,948.92
March	8	2,309	22,438.09
April	6	1,349	13,109.12
May	3	9,810	95,330.32
June	3	12,355	120,061.81
July	11	9,612	93,406.21
August	48	10,757	104,532.96
September	164	12,282	119,352.39
October	193	16,178	157,212.45
November	80	12,232	118,866.50
December	10	440	4,275.77
TOTAL	553	91,617	890,300.81

A compilation of the variety of requirements in terms of materials, supplies, equipment and classifications of labor reflected in the 553 Job IV Work Orders issued for assistance to the Scientific Using Agencies, is included in Chapters II, III and IV of this Book.

CHAPTER II
COAXIAL CABLE

LAYING COAXIAL CABLE

Laying of the coaxial cable at the Gene chain was a feature of Project 2.1a; at Yvonne it was a feature of Project 2.1 b. These projects were supported by furnishing material, equipment, and personnel to NRLK. The AEC Work Orders covering these two features requested winches, power to pull the cable, working platforms, the construction of acid tanks for cleaning the cable, including a two-inch water line to the acid tank, and the stabilization of a parking area for trailers. A D-4 caterpillar tractor was provided for pulling the coaxial cable.

The supporting labor furnished by Holmes & Narver in addition to equipment operators, included three electricians, one telephone cable splicer, four laborers and one carpenter. A total of 5638.5 man hours were required for this support.

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CHAPTER III
INSTALLATION OF EQUIPMENT - CMR AREA

At the Cryogenics Plant, Bldg. 344, Holmes & Narver provided Task Unit 2 with materials and labor for the installation of a safety shower near the caustic tank. A forklift operator, two riggers, crane operators, two welders, and the necessary tools, materials and heavy equipment were supplied for a period of 13 days. Two plumbers connected a second compressor to the water system on 6 September 1952 when the plant was inoperative. Materials and labor were furnished for the fabrication of two top plates for the ortho-para converters; a fresh water line and a drain were installed for the low pressure converter in Room 8.

For Bldg. 330 special machined parts, electrical equipment, hardware and labor for sandblasting and heating gas holders were furnished. Red lead paint was provided for preservation.

Three crates containing scientific equipment were marked and shipped to the Zone of the Interior. One hydrogen trailer was backloaded on the USNS LT. ROBERT CRAIG on 1 February 1952. Personnel as follows were made available to Dr. H. L. Johnston and Mr. Wright: One assistant superintendent, three riggers, five electricians, five pipe fitters, one welder, two millwrights, two sheet metal workers, two carpenters, one cement finisher, four laborers and clean-up crew, one forklift operator with forklift, and one truck driver with lowboy. Labor and materials were furnished to vapor-seal a column as requested.

The equipment in Bldg. 342 was cleaned, installed, and connected as requested, and included the following machines:

1 Milling Machine
1 Do-all Saw
1 Johnson Saw
1 Shaper
1 Bench Lathe
1 Grinder (Pedestal)
2 Drills

Four laborers and one truck with operator were furnished LASL for moving equipment. A total of 36,785.5 man hours were expended for this service.

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CHAPTER IV
INSTRUMENTATION SUPPORT

SECTION 1. TASK GROUP 132.1 - SCIENTIFIC UNITS

Support services rendered to TG 132.1 were either of a general nature, or those not chargeable to a particular Task Unit or Program. In the discussion that follows those Task Units or Projects for which no support was provided are omitted.

Early in the operation, certain work authorized under Contract AT-(29-1)-507 was transferred to Contract AT-(29-2)-20 for completion. A part of this was the completion of crater surveys, in accordance with Rad-Safe requirements.

At various times during the Program, signs for use in identification of offices, Scientific Stations, and radiological warning or "No Smoking" signs were painted on request. Boxes, filing cabinets, and shelves were built, and miscellaneous supplies and small tools were furnished to the TG 132.1 stock room. Desks and offices were re-furnished, prior to arrival of the Group, and new locks installed on doors and cabinets. Safes were reconditioned and transported where requested. Refrigerators were put in operating condition, and labor was provided for numerous minor jobs. Front and back protecting frames were built for five tube banks shipped to the Zone of the Interior; one LCM and a DUKW with one diver and apparatus were furnished to obtain samples of the lagoon bottom adjacent to Site Flora; two electric beacons were installed on two rubber float buoys furnished by TG 132.1, and the buoys located as designated; facilities to operate an AN/ARC-3 radio were installed at the Air Dispatcher's office on Elmer; NRLK photo trailers on Noah and Yvonne were each furnished with 200 gallons of water per day; badge racks at the Zero Area on Flora were removed on M -2 Day and stored at Elmer. An 8-man tent with a wooden floor was erected near AEC Warehouse #4 for use while packaging and crating material for shipment; landing floats were constructed for use in evacuating personnel aboard transports; a tent with wooden floor and bunks was erected in Station 1, Flora; inter-communication sets previously installed were moved and reinstalled in the Timing Room, Control Room (Bldg. 311), the Pogo Room (NRLK), and the War Room at JTF Headquarters; a 10-watt radio with antenna was installed in the Control Room, and a radio technician was provided for stand-by duty on KING-Day.

Subsequent to the operation, support was rendered in providing boxes of various sizes and design as requested by the Users for shipping material and equipment. Water transportation was also provided during the operation as

requested for individual groups. Man hours expended for the services to TG 132.1 and not chargeable to a project were 12,293.5.

SECTION 2. TASK GROUP 132.3

Support services were rendered to Task Group 132.2, consisting of the construction of a one-person outdoor toilet which was placed near Telemetering Bldg. 229 on the north end of Elmer, and the providing of a motor patrol, with operator, to bury an underground cable running from Bldg. 229 to the lagoon. Charges for this work were absorbed in base maintenance.

SECTION 3. TASK UNIT 1

Services as requested were rendered for clearing away debris after the first test. These called for the use of tractor equipment for removal or covering up and leveling of the debris, as directed by the Users. Similarly, the disposal of Scientific Stations during the post-shot period called for limited heavy equipment, rigging, shoring and demolition operations provided by Holmes & Narver. Protective maintenance was furnished as requested, consisting of painting, greasing and other preservative measures applied to Scientific Stations only.

Additional services to Task Unit 1 included the fabrication of a wooden mounting board and other equipment for use in mounting a special camera on a tripod; men and equipment were furnished to remove scientific equipment from Station 200, Site Noah, to AEC Warehouse #4 on Site Elmer; a line was laid off on the floor of a platform over Bldg. 212A on Site Elmer, pointing to within plus or minus three minutes of the working point of Station 50 on the Site Yvonne Reef (KING Shot Zero); also furnished by surveyors was the vertical elevation of the platform. The total man hours expended were 403.

SECTION 4. TASK UNIT 2

In addition to extensive installation of equipment in the CMR Area, Holmes & Narver provided Task Unit 2 with miscellaneous machine shop services, and the services of a painter; three wooden packing boxes were fabricated. The man hours expended were 1,587.

SECTION 5. TASK UNIT 3

Support rendered Task Unit 3 was primarily that of providing careful land and water passage for the Cambridge Corporation's Dewar Assemblies, from Site Elmer to Site Flora on several occassions. This movement was effected under extreme safety precautionary conditions. Land routes over which the Dewars traveled were smoothly graded and leveled. Prior to and during movement, all non-related Holmes & Narver activity in the line of traffic was diverted,

and operations in the vicinity of loading or unloading ramps stopped. No smoking or fire within a radius of 50 feet was permitted, and exceptional caution was used to prevent possibility of electric sparks in the ramp areas.

The Holmes & Narver Marine Department was required to provide four LCU craft of special mechanical fitness and seaworthiness for this operation. Special attention was given to the facilities for fire prevention. Galley and smoking privileges were suspended during the transport period. Crews were given additional instructions on the use of all fire fighting equipment on board, and informed as to the hazardous nature of the cargo.

Padeyes capable of withstanding a horizontal pull of five tons were installed on the decks of the LCUs assigned to transport the Dewars. Brackets were welded on one LCU to position a set of ramps. At the ramps on Sites Elmer and Gene, three "dead man" type anchors were installed to insure stability of the craft while loading and unloading. Two sets of wooden ramps were supplied to ease the Dewars on and off the LCU ramp. An LCM was made available to escort LCU craft on all runs. Tractors and operators were supplied as required.

Delivery of diesel fuel and gasoline for motor generator sets for the Dewar trailers was a continuous service supplied by Holmes & Narver. In addition, miscellaneous support services required by Task Unit 3 were supplied, including the servicing of vehicles and heavy equipment and minor repairs and adjustments to machinery.

A tent, 16 feet by 32 feet, with light and power outlets, was furnished and erected near Bldg. 340-H to serve as an office for the Task Unit 3 group leader. Also, shelves, bins, racks, hangers, and protective coverings for equipment were constructed in Bldg. 340-H. Total of all items amounted to 1,999.5 man hours.

SECTION 6. TASK UNIT 4

Miscellaneous support services supplied to Task Unit 4 included furnishing of two forklifts with operators, for the movement of warehouse material. An M-Boat was provided to transport passengers and scientific samples from Site Elmer to Site Fred. Other miscellaneous services included packing box repairs and the painting of signs.

Instances of support services provided to Task Unit 4 in specific areas were as follows:

In the Zero Area janitor service was required beginning 15 September, and erection of two 4-man tents, complete with light and power outlets and wooden floors, was furnished.

At Station 1 a platform capable of holding two 55-gallon drums was designed, fabricated, and installed outside of the building. This platform was elevated to a height of approximately 20 feet above the finished floor. Also at Station 1 the following requirements were supplied: 35 feet of 1" conduit was furnished and installed; a ground was installed on two electrical outlets; materials were furnished and electrical connections made for a heat exchanger; a vent pipe was furnished and installed; the services of an electrician were supplied on a continuing basis to assist in installation and maintenance of instrumentation; five holes were cut to accommodate pipe from the large portable Dewars; a sink and drain with water supply was installed; the use of a crane, trailer and tractor was provided on a continuing basis for the purpose of transporting materials from the yard into Station 1; a bridge crane operating within the station was maintained and serviced; two warning sirens were installed, replacing a single siren previously mounted and using the same controls as the earlier installation; on 26 October, a stand-by electrician was furnished on a 24-hour basis until the evacuation; and a wooden walkway was built between Stations 1 and 4 to facilitate the wheeling of hand trucks bearing instrumentation equipment.

A roof vent was furnished and installed in Station 4, and at Station 6 supports for the coaxial cable to that station were designed, furnished and installed.

At Station 7, the services of two electricians were required to install a header; the platform structure was strengthened to support the necessary instrumentation; a support was fabricated and installed for transfer tubing from the reflex cooling system at Station 7 to a point outside Station 1; and the location of a vertical support was changed.

At Station 252, two hot plates and an air compressor were disconnected and transported to the AEC warehouse on Site Elmer. In all, 2,124.5 man hours were expended by Holmes & Narver in support services provided to Task Unit 4.

SECTION 7. TASK UNIT 6

Support services required by Task Unit 6 were very minor, involving only three man hours.

SECTION 8. TASK UNIT 7

Holmes & Narver provided LCM transportation throughout the Atoll as required by the radiological activities of Task Unit 7. Also at the request of this unit, materials and labor were furnished for the fabrication and painting of Rad-Safe signs; a safe-file in Bldg. 323 on Site Elmer was opened and repaired; and two small portable suction and discharge pumps to serve as stand-by equipment for decontamination purposes, were furnished, placed on skid mounts and wired. Man hours 102.5.

SECTION 9. TASK UNIT 8

Support provided to Task Unit 8 consisted of the services of an electrician and a plumber to connect the air compressor in the Photo Laboratory of Bldg. 210 on Site Elmer; the installation of two shelves, one of which was fabricated by Holmes & Narver; the transfer prior to M-Day of photographic equipment from the Photo Laboratory to certain ships lying out in the lagoon, and on MR-Day, the re-transfer of the equipment back to the Photo Laboratory; and the furnishing of an improved film drier, with a greater continuous supply of compressed air than was originally available from the compressor. Man hours, 17.5.

SECTION 10. TASK UNIT 9

Support furnished to this group included miscellaneous carpentry, installation of a mounting bracket and antennae for a radio station, water and land transportation of men and equipment, repairs to generators, installation of a compressed air line to the laboratory, connection of reefer trailers to power sources, changing of batteries, and filling of 75 bags of sand. Man hours 166.

SECTION 11. TASK UNIT 10

Support services furnished this unit were as follows: a machinist was supplied on a continuing basis for work in the Administration Compound Laboratory; a blackboard was fabricated and installed in the conference room; sundry electrical connections were made on equipment in the laboratory; a "hot plastic" dip tank was disconnected from the power panel in Bldg. 342.

The assistance of Holmes & Narver Jobsite Engineering in conducting a corrosion experiment was requested by J-6, Los Alamos. Services provided in this experiment included fabrication of a rack approximately 2" x 12" x 10'-0" with legs about two feet long; photographing of the initial test setup and at various times during the test; furnishing of a tarpaulin to cover a portion of the test rack; and assignment of one engineering staff member to follow the test through to its completion. The test procedure involved handling of 14 aluminum boxes 12" x 8" x 4" which were mailed to the LASL in amounts of from one to four at a time at definite periods within a total period of ten weeks. Date and time of pickup was noted on each box before air mailing. Each box was wrapped in a moisture-proof sealing container, and a silica gel dessicant was placed in a small bag inside the sealing wrapper with the box. A daily weather report for each period was included with each box, containing readings taken at ground level that provided data relative to wind velocity, temperature, relative humidity, and precipitation. A total of 197 man hours was applied to the above services.

SECTION 12. TASK UNIT 11

Support rendered Task Unit 11 by Holmes & Narver consisted solely of the installation of a drinking fountain with fresh water supply at Station 1 on Site Flora. Four man hours were involved.

SECTION 13. PROGRAM 1

PROJECT 1.3. The placing of a steel box atop Station 300 at Site Alice, as directed by LASL-J-11, was the extent of services provided to this Program. Total man hours were 18.

SECTION 14. PROGRAM 2

PROJECT 2.1a. Miscellaneous services supplied to this program included installation of cables required to deliver three timing signals to NRL's location in Bldg. 232 on Elmer, and installation of a seven-quad cable furnished by NRL, between the Site Elmer telephone switchboard and Bldg. 232. In addition, a "30° Hot Mounting Plate" was fabricated according to NRL specifications; men and equipment for handling the User's material were furnished; a motor was rewound and a room cooler compressor checked; power was provided and connections made to two NRLK trailers in the Site Elmer AEC Compound (a three-phase four-wire circuit of 60 amps and 208 volts was required for each trailer); a forklift and operator were furnished to NRLK to load pallets of lead bricks into trailers at Site Elmer, for three working days; a fresh-water line was furnished to an NRLK trailer at Site Elmer; material and equipment were provided for the purpose of cocooning the doors of five NRLK trailers.

Other Holmes & Narver services were provided to Program 2 Users at specified stations, listed below:

STATION 1 - SITE FLORA. A shelter was constructed over the compressor for an NRLK dehumidifying unit.

STATION 200 - SITE ALICE. Three blowers were installed to ventilate Station 200 pending the arrival of scheduled dehumidification units (this step was required to expedite installation of copper shielding); an extension to the sump pump discharge line was installed to carry discharged material into the ocean; a decrease to one-third of the existing rate of air delivered to the coax room was effected at the User's request; six electricians were furnished to make a rapid cut-in of electromagnetic filters; two laborers were furnished to load equipment into an NRLK trailer on M -3 Day and M -4 Day; and one electrician and one refrigeration man were requested to stand-by until 2400 hours on M -1 Day.

STATION 201 - SITE FLORA. A painter and spray equipment were furnished to cocoon corregated collimator pipes in this station. Extensions were made to three 3-inch conduits running from Station 201 to the outside of Station 1.

STATION 202 - SITE ALICE. Four cinch bolts capable of bearing two tons were installed in concrete footing for mounting calibration equipment. In order to prevent spill of the earth fill and to provide shielding, pipes extending through the wall of Station 202 were grouted to a minimum depth of 1-1/2 feet along the pipes.

STATION 203.01 THRU .09 - SITE FLORA TO SITE ALICE. Horizontal and vertical control was established for the alignment of these stations as requested by the User. (See also this report, Scientific Stations, Volume I, Book 2, Chapter V.)

STATION 204 - SITE FLORA TO SITE ALICE. At the User's request, the interior of this station was papered; approximately 244 holes were cut in the station; one thousand wooden blocks 1" x 4" x 10" were fabricated for use in handling helium bottles; a cable splicer was furnished to assist in replacing a section of seven-quad cable found inoperable between Sites Flora and Gene; and a 3-phase, 4-wire (50 KW, 208 volts) power system was furnished from Sub Station 1 to Station 205 on Site Flora.

STATION 206. A 3-phase, 4-wire (100 amps, 208 volts) power system was also furnished from Sub Station 200 to Station 206. A canvas shade was erected over Station 206 (transportainer at Site Alice), and labor was furnished to insulate 100 square feet of adjacent air duct.

STATIONS 1000.06, 200, 5, 205. Four pairs of timing cable were installed from Station 1000.06 to Station 200, and seven pairs were installed from Station 5 to Station 205. For Project 2.1 b, a 220 volt Mercoid switch, pressure 0-100 lbs., was furnished.

STATION 250 - SITE YVONNE. The NRLK compressor at this station was supplied with emergency 8.6 amps power at 220 volts to enable the compressor to function after the power house was closed through H-hour; fill and grouting was required for a distance of three inches on each end of the pipes between Stations 250 and 252; and two electricians were furnished for approximately six man days to assist in completing the technical wiring in NRLK stations on Site Yvonne.

STATION 251 - SITE YVONNE. An addition to the fill was required at this station, extending the base an additional 10 feet.

STATION 252 - SITE YVONNE. A light switch on the outside rear wall was moved to the wing wall, to provide for the User's installation of a lead shield

against the rear wall. Also, at this station, ventilation was provided for the transformer pad; a sandbag wall having a minimum thickness of three feet was erected, allowing holes for the doors which were filled in on K -1 Day; and four laborers and one electrician were furnished to NRLK for several days' work on Site Yvonne.

PROJECT 2.4. A skidded container was constructed for handling a lead slab, 8'-0" x 8'-0" x 3", weighing 6-1/2 tons. The services of two cranes with operators and riggers were supplied to NRL at Site Gene for three days; also, two welders and a welding rig were furnished for several weeks' use. Total man hours applied by Holmes & Narver in support of Program 2 requirements were 3229.0

SECTION 15. PROGRAM 3

Support services provided to Program 3 by Holmes & Narver were numerous and are listed below by project and station number.

PROJECT 3. The erection of a 30-foot telephone pole with spike steps was required, on which pole two steel plates were later mounted. Small hand tools were made available from the Holmes & Narver Tool Crib; also, small amounts of lumber and electrical material were issued. Six lights on Bldg. 1 at Site Fred were raised and set at wider distances apart, as requested.

PROJECT 3.1. Miscellaneous services to Users on Project 3.1 included the moving of a work bench from the north side of Bldg. 211 to the EGG tent near Station 301 on Site Elmer; the providing of continuous fueling and servicing to a gasoline engine on the EGG trailer in the AEC Compound; and repair of the refrigeration unit on the EGG trailer.

A tube 13-1/2 inches in diameter and six feet long was fabricated of sheet galvanized steel, in accordance with the User's specifications. Another tube 10 inches in diameter and five feet long was painted flat black, and EGG was furnished with one quart of flat black paint.

Four plywood cases, 12" x 12" x 4", for carrying camera magazines, were fabricated.

On 26 October, an LCM with crew was provided for the transporting of one jeep, equipment, and scientific personnel from Site Elmer to Sites Janet, Ursula and Yvonne.

Prior to M-Day, the EGG trailer was moved from the AEC Compound, placed aboard a T-Boat and evacuated. Immediately following MR-Day, Holmes & Narver supported Project 3.1 activities at "Oscar" by fabricating and securing to the site a 4'-0" x 4'-0" wooden platform made of 2-inch thick planks

secured to 6" x 6" wooden members. Shortly thereafter, transportation was provided by LCM boat for User personnel to recover films from the "Oscar" Site.

STATION 300 - PROJECT 3.1. In accordance with detailed instructions, Holmes & Narver furnished material and installed shelf brackets for mounting a teletronic camera at this station.

STATION 301 - PROJECT 3.1. Materials and electricians were furnished to reactivate light and power outlets, and to assist EGG in installing instrumentation in this station.

STATION 302 - PROJECT 3.1. Holmes & Narver installed lights and duplex outlets in Station 302 and provided 1 KW of 100 volt single-phase power to the station. Light and power outlets were reactivated and assistance was provided to EGG in installing instrumentation in the station. The services of a crane and operator were supplied as required by the User. Aiming points were installed about 20 yards in front of each of the six cameras used at this station. At each aiming station a light socket was installed and wired-in to an outlet at Station 302. Following M-Day, the camera shelter was removed and stored.

STATIONS 303 - 305. PROJECT 3.1. Materials were furnished and electricians provided to reactivate light and power outlets, and assistance was rendered EGG in the installation of instrumentation at these stations. The services of a crane and operator were supplied as required. The camera shelter at Station 303 was removed and stored after K-Day.

STATION 306 - PROJECT 3.1. The services of a crane and operator were furnished to place instrumentation at this station. Following K-Day, the camera shelter was removed and stored.

STATIONS 307 - 308. PROJECT 3.1. Materials were furnished and electricians provided for the reactivation of light and power outlets. A crane and operator were furnished for the User's requirements. Following M-Day, and in preparation for K-Day, the two outer camera shelters at Station 307 - weighing 1-1/2 tons each - were interchanged and eight mounting holes were drilled and tapped in each shelter base to accommodate 3/8 inch bolts. Joints of the camera stand at Station 308 were welded and the stand was secured to the concrete pad on which it rested. Prior to K-Day, the frame of Station 308 was shifted on its base and re-secured, in accordance with the User's directions.

STATION 309 - PROJECT 3.1. Following M-Day, wiring was installed at this station to furnish 1.5 KW of 110 volt, single-phase power.

STATIONS 1001.01, 1001.02, 1001.03, 1002 - PROJECT 3.1. Wooden work benches were fabricated and installed in these stations. These benches, approximately 26 inches wide and 40 inches high, were located inside the main

entrance to each station, and had two 110 volt duplex outlets installed for power convenience. After K-Day, men and equipment were furnished to remove the instrument racks from Stations 1001.02 and 1001.03. This equipment, together with the camera shelters from Stations 302, 303, 306, and 307, was transported to the yard opposite the AEC Warehouse on Site Elmer. Total man hours expended by Holmes & Narver in support of Project 3.1 was 648.5.

PROJECT 3.3. At Station 1, Holmes & Narver was requested to furnish materials for, fabricate and install temporary covers over the sighting holes in the south end of the station.

At Station 300, Holmes & Narver designed, fabricated, and installed a movable guard rail around the hole in the floor of the upper room. Further, in order to communicate with Task Unit 1 and the Holmes & Narver boat pool, an SCR-508 radio set was installed in this station; material and labor were furnished to connect a water tank to the dark room; two laborers were furnished to assist in the installation of scientific equipment and later to load boxes on a trailer; and after MR-Day, men and equipment were furnished to remove approximately five tons of uncrated equipment from the station and transport it to Site Elmer.

The services of a welder and welding rig were required at Station 331 to secure mirror mounts. It was further requested that a dull black paint be applied to the sides and doors of mirror tower shelters 331.08 and 331.09 facing Site Alice.

Carpenters and equipment were provided at Station 334 to saw off the top of the station to a designated height.

Miscellaneous support to Project 3.3 consisted of bending four steel brackets to the User's specifications, from material provided by the User. Holmes & Narver applied man hours in support of Project 3.3 totaled 115.5.

PROJECT 3.3 - 3.4. Additional support was supplied to Project 3.3, together with Project 3.4, in the continuous assignment of an average of four laborers to Site Alice. Also, it was necessary to provide a portable field galley at this site, transported, installed and operated by Holmes & Narver. An 8-man tent, with wooden floor and frames, having benches and 110 volt outlets on each side, and provided with lights, eight beds and a telephone, was furnished and erected about 25 feet behind Station 300. Man hours contributed by Holmes & Narver in support of this phase of operations totaled 1,035.5.

PROJECT 3.7. Required support was provided this project only in applying white paint on one side of 24 boards.

SECTION 16. PROGRAM 4

PROJECT 4.1. The services of two riggers were required for eight days to help install samples at the Station 411 series on the reef from Site Clara to Site Flora. The riggers remained with Project 4.1 and continued to install equipment and secure stations until M -1 Day. Lumber was furnished and cut to dimensions specified by the User for the construction of thermal shields on these 47 reef stations. After M-Day, four riggers were furnished to aid in the recovery of samples from the Station 411 reef series.

On the Site Yvonne reef, two riggers were furnished for four man days to help install samples at the Station 412 series. Here, too, the installing of equipment and securing of stations, with Holmes & Narver-supplied assistance, continued until M -1 Day.

Miscellaneous support was rendered Project 4.1 in post-shot recovery services. An LCM with crew was provided for the transportation to Site Fred of samples recovered from the shot area. This recovery from the Stations 411 and 412 series continued well into January of 1953. Holmes & Narver also furnished six cubic feet of roofing asphalt, which was melted and poured near Bldg. 212c on Site Elmer for the purpose of potting equipment. Total Holmes & Narver man hours applied, 817.

PROJECT 4.4. Labor and equipment were provided to place instrumentation at Stations 440 and 441. A 4-man floorless tent was furnished and erected over each station. Immediately prior to M-Day, 400 filled sandbags were supplied by Holmes & Narver, 250 being delivered to Station 440 and 150 to Station 441. These were placed by the User to protect the stations. Following K-Day, a bulldozer and operator were provided Project 4.4. Man hours furnished to Project 4.4 totaled 201.

SECTION 17. PROGRAM 5

PROJECT 5.1. One hundred bags of sand were furnished Project 5.1 in connection with the installation of instruments in the Station 510 series. The User specifically requested screened fine sand, free of cement particles.

A mound of earth was removed because it obstructed the field of view of Stations 57, 58, 59 and 60 of the Station 510 series on Site Janet. Man hours expended by Holmes & Narver in services to Project 5.1 were 71.5.

PROJECT 5.2. Labor and equipment were furnished this project on M -2 Day to complete preparations of Station 520 at Site Clara. At 1400 hours on M -2 Day the outside portion of the dehumidifier unit was removed and the pipes leading into the station were sealed. At 1500 hours, the Holmes & Narver crew sandbagged the door of the station. Following M-Day, four laborers

were furnished to aid in the removal of the User's equipment from this station.

At Station 521, material and labor were provided by Holmes & Narver for the fabrication and installation of two support rings in each 2-foot pipe of the six stations of this series. The rings were fabricated of either mild steel or reinforcing rod. Labor was also provided the Station 521 series for cleaning and greasing the threads of the cover mounting studs of the six stations.

Miscellaneous services provided Project 5.2 included fabrication and placement of a wooden floor 16'-0" x 24'-0" between the transportainer and the photo trailer at Station 520, to provide a sand-free area for the assembly of scientific equipment; and the digging of a 6-foot post hole near Bldg. 232 in the AEC Compound on Site Elmer.

Additional miscellaneous support was provided in connection with the photo trailer on Site Clara. Approximately 50 gallons of fresh water were supplied to the trailer every two or three days. The air conditioning unit was removed, repaired at Site Elmer and then replaced. On M -3 Day, a Holmes & Narver crew removed the trailer from Site Clara at low tide. Holmes & Narver man hours in support of Project 5.2 totaled 383.5.

PROJECT 5.3. Station .01 of the 530 series, on Site Irene, was relocated, as directed by the User, and Station .02 of the 531 series was relocated from Site Tilda to a point 50 feet north of CREENHOUSE Station 18 on Site Yvonne. The GREENHOUSE structure was subsequently furnished with a duplex outlet and wired for 110 volt, single-phase, 100 watts power. Station .04 of the 531 series was relocated 80 feet north of its previous location on Site Yvonne.

Post-shot support of Project 5.3 was required on K +7 Day and consisted of the services of three laborers to aid in the recovery of equipment from the project's stations at Sites Alice, Irene, Janet, Tilda, Yvonne, Bruce, and Fred. Shortly thereafter, an M-Boat and a DUKW with A-frame were provided to recover a 200-lb. instrument from each of Sites Alice and Leroy. Total Holmes & Narver man hours provided Project 5.3 were 282.5.

PROJECT 5.4a. On arrival at Site Elmer of the Project 5.4a scientists, the services of two laborers were furnished to assist in uncrating the project's equipment at the AEC Warehouse. A crane operator and crane capable of lifting a maximum load of two tons were furnished to handle the large life rafts of Station 540 series. On MR-Day, Holmes & Narver crews and equipment were provided for the recovery of life rafts which survived the shot. Man hours expended, 401.0.

PROJECT 5.4b. Two 8-man tents with wooden floors were furnished and erected by Holmes & Narver in the AEC Compound adjacent to Bldg. 211. A bench was

placed in one tent and provided with 110 volts of single-phase power and a convenience outlet. Lights were furnished and installed in both tents. Two laborers were furnished to assist in uncrating the project's equipment, and a forklift and operator were provided to move material in the AEC Compound. Material was furnished for the making of 140 wooden stakes measuring 2" x 2" x 18" long, for mounting the "blue boxes". One laborer was provided for three days to assist in installing Project 5.4b instruments off-island.

A Holmes & Narver crew with equipment placed a Project 5.4b instrument weighing 300 lbs. in the base of Station 541.33, located at Site Mack. Following K-Day, this instrument was removed. Beginning on K +2 Day, four Holmes & Narver laborers recovered test equipment from the Station 541 series for four days. Two M-Boats and crews were provided to Project 5.4b for the purpose of moving its equipment from Site Nancy, Pearl, Olive, Ruby, Sally, Ursula, Vera, Wilma, Yvonne, Bruce and David.

At Sites Alice, Belle, Clara, and Irene, Holmes & Narver assistance was also required to help remove the scientific equipment, and an M-Boat and crew were provided to assist in recovering scientific equipment from Sites Janet, Kate, Lucy, and Mary. Man hours expended, 834.

SECTION 18. PROGRAM 6

PROJECT 6.1. Sundry services supplied to this project included erection on Sites Gene and Yvonne of two 8-man tents with wooden floors, overhead lights and power outlets on each side and at the back, and work benches and hot lockers. Support labor for the splicing and laying of Sandia's cable was furnished from late July to late October. A wooden rack, measured to fit on a 6 × 6 truck, was constructed to hold reels of cable for laying. Lengths of 1-1/4" pipe were fitted in the rack to support the cable reels. Two similar stands were provided at Site Gene.

Two carpenters were supplied during the greater part of the operation to assist the project in assembling and installing shock mounts, recording cabinets, shelves, and benches in the Sandia recording shelters.

An 8-man tent with wooden floor, overhead lights and two 110 volt duplex outlets on each side and along the rear wall of the tent, was erected in the AEC Compound adjacent to the south side of Bldg. 231. In Bldg. 231, plywood inserts were installed in the racks over the benches. The services of a forklift and operator were required at the AEC Compound on several occasions during the operation.

Seventeen generators were repaired by welding; 12 scaffold hangers were constructed from one-inch steel bars and boards for the scaffolds were furnished, measuring 12" x 2" x 12'; 30 cable run brackets were constructed from

1/4" x 1/4" steel stock; and an LCM with crew was furnished to transport one 6 × 6 truck with load from Site Elmer to off-islands and return.

Holmes & Narver furnished labor and supplies for the laying of Sandia's underwater cable, including sandbag protection for cable, at locations as required. On 15 September, the Sandia working party was provided an LCM and crew for transporting a loaded 6 × 6 truck from Site Gene to Site Elmer, with in-between stops at Sites Janet, Kate, Mary, and Yvonne. During the entire operation, Holmes & Narver provided the services of LCMs and crews to transport the Sandia party to the many points of Project 6.1 activity at the Jobsite.

Holmes & Narver fabricated 24 4-1/2-inch long nipples from 3-inch water pipe with standard iron pipe thread. Discrepancies were found between the motor schematic and the actual wiring of the motor generator set, and Holmes & Narver was required to check the set, determine the errors and make a report to the User.

Beginning 23 October, two electrical cable splicers were furnished to the Sandia unit on K-Day; during November, two carpenters were provided to Project 6.1 at Bldg. 231; and in mid-October an LCM and DUKW, with crews, were provided to assist the cabling program.

At Station 600, men, material, and equipment were provided by Holmes & Narver to open this station after M-Day, and at Station 612 Holmes & Narver removed the tower following MR-Day, replacing it with another tower. Holmes & Narver man hours applied to the above-mentioned services to Project 6.1 totaled 5,221.

PROJECT 6.2. A DUKW and operator were provided Project 6.2 to assist in final servicing of the northern reef Station 620 series in preparation for M-Day rehearsal, and again just prior to M-Day to load these stations on the reef.

This project required that one of the Station 621 series rafts be moored temporarily to an unused buoy off Site Elmer, and that it be brought ashore on 22 October in preparation for final planting. On Stations .03, .04, .05, .06, .14, and .15, mounting holes were drilled and tapped in the steel plate to provide for an additional mortar on each.

Three shackles were provided for each of the Station 621 rafts. Bridles were attached to the rafts, using two of the shackles; the remaining shackle was used for securing the raft to the mooring buoy. The buoy and anchor assembly for Station 621.06 was moved from its original location to a new location, as specified by the User. On M -5 Day, Holmes & Narver furnished labor and equipment to moor the 621 series raft stations in the lagoon. On M -3 Day,

the rafts were recovered, and on M -1 Day, re-moored. On K -1 Day, raft Stations 621.10 through 621.15 were moored off Site Yvonne.

Approximately on M +7 Day, the sign for Station 622 on Site Elmer was moved to a point above the high tide line. On Site Janet, Holmes & Narver provided for the transportation of Project 6.2 equipment to the ten stations of the Station 623 series; mounting stud threads were cleaned and greased; labor and equipment were furnished to place gun mounts on the mounting studs, and gun barrels in the mounts; and a caterpillar tractor and operator were required to help check the recoil mechanisms on the guns.

Other miscellaneous services to Project 6.2 consisted of cleaning up the entry and interior of GREENHOUSE Station 55 on Site Janet for use as an ammunition locker, and furnishing operators and equipment to blade a small area near Station 307 on Site Yvonne and clean up one asphalt and one concrete slab near the station. Man hour expenditure totaled 379.

PROJECT 6.3. Support of this project included smoothing off a 40-foot wide strip extending from Station 630.02 on Site Lucy to the ocean shore. This strip was centered on the .02 Station and extended along a line 108°-08'-07.5" directly away from Station 1 on Site Flora. On Site Mary, four trees were removed between Station 630.03 and the shore. The pipe threads on all four of the 630 series stations were cleaned and greased. Man hours furnished this project totaled 73.

PROJECT 6.4a. An M-Boat and crew, and a rigger, were furnished this project to help install the moorings of the four raft stations of the 640 series; a pile of sand was removed from between Station 305 on Site Ursula and Station 641.02 in the lagoon; on Site Elmer, discarded material was removed on the north end of the island to make possible a clear line of sight between Station 302 and lagoon Stations 640.04, 641.04, 642.16, 642.17, 642.18, 642.19 and 642.20.

Prior to K-Day, materials and labor were furnished for painting and erecting signs. Labor applied to these services totaled 54 man hours.

PROJECT 6.4b. Holmes & Narver provided labor and equipment to open and close a shallow ditch across a road on Site Yvonne, in which Project 6.4b personnel laid an armoured cable. Labor totaled 252 man hours.

PROJECT 6.7a. Prior to M-Day, three 3-foot cube concrete blocks were removed from the Site Elmer batch plant area and delivered to the USS ELDER (AN20) to be used by Project 6.7a as anchor clamps. After M-Day, labor and equipment were furnished to recover the project's underwater gauges at Stations 670.01 through 670.04. No effort was made, however, to salvage the cable to these stations. Man hours totaled 718.

PROJECT 6.9. At all four stations of the 690 series, the 2-inch pipe caps were removed, threads were greased and the caps replaced without screwing them down tightly. On 690.04, located at Site Sally, mounting stud threads were cleaned and greased. Six "Danger Radiation" signs were constructed and painted, letters four-inches high, magenta on a white background 24" x 18", signs attached to 36-inch long stakes. 46 man hours were involved in Project 6.9 support services.

PROJECT 6.13. Holmes & Narver support of this project was in connection with preparation of Station 6140 on Site Yvonne. Labor and equipment were furnished to move equipment from the landing area to the vicinity of the station, and two laborers were assigned to help uncrate equipment, also to drive location stakes at designated points. Aggregate was spread and bladed smooth on an area 50'-0" x 100'-0" surrounding Station 6140. Two hundred and fifty bags of sand were furnished the station. Beginning 6 November until K-Day, labor as required was furnished Station 6140 to aid with test equipment. Total man hours supplied Project 6.13, was 293.

SECTION 19. PROGRAM 8

PROJECT 8.1. Holmes & Narver furnished laborers and riggers to this project until the date of evacuation. Based at Site Gene, these workers were available on a continuous basis to assist in installing equipment in the project's various stations.

Support of specific stations included furnishing materials for, fabricating and installing, eight tables in Stations 800, 802, 805, and 840; providing of a laborer at Stations 800 and 801, and another at Stations 802 and 803, from 24 October until data was recovered from the stations; furnishing of an electrician, a rigger, and four laborers to assist in uncrating and installing instrumentation in Stations 800, 801, 802, and 803; removal of the earth cover and clearing of debris from the roofs of stations just mentioned; servicing and maintaining generators in operable condition at Stations 800 and 802, and furnishing water to the darkroom trailer at each of these stations; and furnishing labor and equipment necessary to remove four 1200-lb. spectroscopes from Stations 800 and 802, two from each station, and deliver them to the AEC Warehouse on Site Elmer.

In addition, an electrician was required on two occasions to assist in the installation of scientific power equipment in Station 801, and concrete pads were placed on the roofs of both Stations 801 and 803.

At Station 804, an electrician was furnished to start and check the generator; also, at this station, a carpenter and laborer were furnished as required.

At Station 805, two 60-inch searchlights were installed by Holmes & Narver at elevation 112.5' of the Site Elmer photo tower. One Baird spectrograph was placed at the 100-foot level, followed by another a short while later. From 3/16-inch steel plate, a Holmes & Narver welder cut a shelf and welded it to the railing at 112.5' elevation. Men and equipment were furnished to shift the spectrograph to final position, and a carpenter with tools was made available to cut instrumentation holes through the side of Station 805. Following K-Day, the spectrographs and spotlights were removed from the station and taken to the AEC Warehouse for crating and shipping.

The frame shelter for Station 806 on the Mack coral head was temporarily erected on Site Elmer, then dismantled and re-assembled on the coral head.

A davit capable of bearing a 400-lb. load was fabricated and placed in use at Station 810.03 on Site Noah. From 20 October to M -5 Day a laborer was provided Project 8.1 to assist in installing instruments in the Station 810 series. Labor and equipment were required to clear the line of sight to Station 1 from Stations 810.05 and 810.07. Prior to K-Day, Station 810.09 was removed and relocated, and Station 810.10 was tilted.

Additional support provided to Project 8.1 included splicing of five slings of varying lengths from 1/2-inch wire rope; providing an LCM to transport a 1-3/4 ton truck to Sites Tilda and Janet and return to Site Elmer; installing a hasp on the door of Room "J" in Bldg. 211 and furnishing of a padlock and keys; furnishing and installation of one piece of 1/2-inch plywood 3'-0" x 7'-0" in Room "J"; checking storage batteries at various times for electrolyte level and discharged cells; and the furnishing of two laborers for one day to aid in the delivery of equipment to the project's offices. Holmes & Narver also furnished material and labor to cut out ten 30-3/4-inch-diameter circles from 1/2-inch plywood and delivered the circles to Project 8.1 personnel on Site Gene. One rigger was furnished at Site Gene to perform services for this project until evacuation.

LCMs and crews were furnished for night calibration of scientific equipment. On 26 October an LCU with crew, transported four NRLK trailers from Site Gene to Site Elmer.

An electrical check was run on a timber unit and converter assembly to correct an excessive voltage drop when lead was placed on the equipment. A sheet metal tube was fabricated, 14 inches in diameter and 12 inches long, also two sheet metal discs 14 inches in diameter and each having a 6-inch aperture in its upper half.

Following K-Day, Project 8.1 required the services of three laborers and two carpenters until 25 November, to aid in the recovery and crating of scientific equipment. A transportainer was moved from Site Bruce to Site Elmer and

placed near Bldg. 212c. Another transportainer was moved from the foot of the photo tower on Site Elmer and placed near the first one. An additional laborer was furnished from 14 November to 29 November to assist in the recovery and roll-up activities of Project 8.1. Services to this project in Holmes & Narver man hours totaled 2,943.

PROJECT 8.2. Only labor was required for this project, totaling 51 man hours.

PROJECT 8.3. Activities of this project at Station 805 on Site Elmer were supported by Holmes & Narver in the fabrication and installation of a weather-tight roof over the enclosed room at the 100-foot level of the photo tower. A spectrograph was moved to this room prior to K-Day.

Other miscellaneous services included providing night transportation from Site Elmer to Site Yvonne, to enable the project to perform night calibration of their instruments; also the fabrication of an instrument support 1'-0" x 1'-0" x 2'-0" of plywood. Man hours totaling 166 were involved in Holmes & Narver services to Project 8.3.

PROJECT 8.4. Holmes & Narver furnished materials and installed two pairs of #18 wires between the top platform of Station 841 and Station 5. Two coax lines, furnished by the User, were also run between these stations.

After M-Day a wooden table was fabricated to mount the receiver in an H-19 helicopter. 12 man hours were involved in the above services.

PROJECT 8.5. Holmes & Narver support of this project involved the moving of a flat-bed trailer, loaded with project equipment, from the landing area on Site Janet to the vicinity of Station 850. In addition, two laborers were supplied to uncrate project material, and an electrician was detailed to connect a User-furnished generator to lights and outlets in Station 850. On M -2 Day, approximately 100 gallons of gasoline were delivered to fill the generator's supply tank. A total of 113 man hours was involved.

SECTION 20. PROGRAM 9

PROJECT 9.1. A 1/2-inch pulley was installed at the top of the pole at Station 910, and a manila line twice the length of the pole was run through the pulley. A cleat capable of withstanding a 200-lb. pull was attached to the pole for securing the manila line. 16 man hours were incurred.

PROJECT 9.3. Holmes & Narver support of this project consisted of assistance rendered in the preparation of Station 930 on Site Elmer. White gasoline was furnished weekly in 55-gallon drums with spigots. A stand was provided on which to lay the drums, high enough to provide for filling of 5-gallon safety

cans. An antenna array was surveyed and staked in accordance with the User's sketch. Timing signals as indicated in Task Unit 10's Instrument Chart were delivered to the working point of the station. A pole for a light-weight antenna was furnished and erected unguyed, 50 feet above grade. A pulley and halyard were attached to the pole. Five hundred lead bricks on pallets were moved from the vicinity of Warehouse 4 to the vicinity of Station 930. An ammonia leak in the station's refrigeration system was located and repaired. These services incurred 156 man hours.

SECTION 21. PROGRAM 10

PROJECT 10.1. A 4-man tent with wooden floor was erected adjacent to each of Stations 1001.01, 1001.02, and 1001.03. A work bench was installed in each tent, 6 feet long, 40 inches high and 26 inches wide, to which two duplex outlets with 110 volt, single-phase power were wired.

Holmes & Narver provided electrical and water utilities to the EGG photo trailer in the Site Elmer Administration Compound. This trailer required water in the amount of 800 gallons per 24-hour period, at a rate not exceeding 120 gallons per hour. The electrical load was 10 KW at 208 volts. An 8-man tent with wooden floor and lighting outlets was erected beside the trailer.

Communication antennae were furnished by the User and installed on three existing poles on Site Elmer. Holmes & Narver materials and technicians were required for the fabrication of a pyramid type aluminum radar reflector with a 5-foot square base. The material furnished was required to be of sufficient thickness to allow the reflector to be moved without distortion. Two 1-inch holes were drilled in each corner of one side of the base.

A 40-foot pole with antenna was erected in the AEC Compound. A second antenna was placed on an existing pole near Bldg. 311. Both antennae were furnished by the User, Holmes & Narver supplying the hardware and the pole first mentioned.

The No. 14 one-pair cable between Stations 1001.02 and 305 was changed to a No. 8 one-pair cable to admit more power. In preparation for KING, four overhead lights and a siren control were installed in Bldg. 311. Labor, material and equipment were furnished to repair a drain pipe leak at the EGG trailer between Bldgs. 210 and 211 on Site Elmer.

Instrumentation cables were pulled through conduits from Station 1 to Station 5 on Site Flora, and a terminal and fittings were installed. Lights were moved in Station 5 to a position in front of the relay racks. All telephone pairs in the submarine 6-pair cables Nos. 5-127 and 5-128 were transferred to a new submarine cable, No. 0-110. The pairs in 5-127 and 5-128 were cross-

connected to a new 51-pair telephone cable to Site Flora, terminating in Station 5 for use by EGG.

Four coax lines furnished by EGG were installed from Stations 5 up the television tower, Station 6 on Site Flora. Television and radio antennae and mounts were installed on Station 6 under User supervision. Until M -1 Day, a hoist and operator were furnished in Station 6 by Holmes & Narver.

Air conditioning was re-installed in Station 1002 on Site Elmer. Fans were furnished prior to re-installation. In addition to existing wire installation, two pairs of timing wires were furnished and installed between Station 1002 and the photo tower, and four pairs were furnished and installed between Stations 1002 and 302.

In the old control tower compound on Site Elmer, an antenna pole was erected, 50 feet from Station 1020 and at a bearing of 345° from this station. A light-weight antenna, furnished by EGG, was strung between the new pole and Station 1020, hardware and labor being furnished by Holmes & Narver. Man hours totaling 1114.5 were charged to Project 10.1 support.

PROJECT 10.2. Labor and material were furnished to install and connect the radio in Bldg. 311 and to install an antenna. The antenna was removed after KR-Day. A 2-foot wide platform was constructed and installed on Station 1020. The platform had a safety railing around it and was capable of bearing a load of 400 lbs. Involved man hours in support of this project totaled 53.

SECTION 22. PROGRAM 11

PROJECT 11.1. To perform work outlined by the Home Office on 8 May 1952, 14 location targets were constructed in accordance with Field Sketch 735. One Type I target was erected on the water tower at Site Gene; another on the "Multi-story Building" on Site Janet; a third on the photo tower at Site Mary; two Type II targets on the reef south of Site Alice; and one Type III on each of Sites Alice, Belle, Clara, Daisy, Flora, Irene, Kate, Lucy, and Olive - or a total of nine Type III targets. Exact locations and orientation were staked by the Survey Department of the Holmes & Narver Engineering Division. All 14 targets were later decorated with bunting for easier location from seaward.

A general open work order provided for equipment, supplies and personnel to be furnished as required for the support of the Project 11.1 hydrographic surveys. A total of 447 man hours was involved.

PROJECT 11.2. Location targets were installed off the southeast corner of Site Flora, in accordance with User's sketches. On Stations 69, 132b, 11, and 13, simple ventilating systems were installed, consisting of 6-inch-diameter sheet metal pipe with scoop pointing into the wind, and extending several feet into

the building. A joint was provided to disconnect the pipe for closing the door. On Stations 11 and 13, a small ventilating louver 12" x 18" was added in the back wall, centered approximately two feet from the top of the wall.

An M-Boat was furnished the project for transportation to Sites Yvonne, Janet, Gene, and Flora. In addition, a DUKW was furnished at Site Gene.

An open work order covered required materials, equipment and labor for completion of Project 11.2 support activities. A total of 968.5 man hours were required.

PROJECT 11.3. Materials, equipment, and operators were furnished to support this project for the drilling of the 5,000-foot hole on Site Flora known as Station 1130, and for general miscellaneous support of the deep drilling project as a whole. A winch brake was repaired at a Holmes & Narver shop.

Following this project's departure from the Atoll, a tent and "A" frame were removed from the drill hole (Station 1131) on Site Elmer, and an empty reel was taken to the storage area. A winch and engine were separated, coated, and shipped to the Zone of Interior. A shack was installed over the drill hole with the door padlocked. A sign reading "Do Not Disturb - Test In Progress" was painted and placed over the door of the shack to warn against tampering with the wires. A member of the Holmes & Narver Engineering Division recorded bi-weekly readings of the electrical resistance of the three cables located at the drill hole for determination of temperature changes. Seventeen readings were required for each cable. Data from these readings were and are being sent to the U. S. Geological Survey in Washington, D. C. periodically. Various project items were prepared for shipment by water freight to the Zone of Interior. Vulcanizing equipment, miscellaneous supplies and winch parts were repacked carefully in a copper case prior to shipment. Total Holmes & Narver man hours directed to Project 11.3 support was 6,805.5.

PROJECT 11.4. Two laborers and tools were provided this project to uncrate material at Station 1130, the drill hole on Site Flora. Two 30-foot antenna poles were furnished and erected 115 feet from each side of this station on bearings 60° - 240° from the station. A pulley and halyard were installed on each pole for raising the antenna. A 4-man tent with wooden floor was erected adjacent to the station, with two duplex outlets.

Following M-Day, antenna poles and a tent, similar to those described in the preceding paragraph, were erected at Station 1131, the drill hole on Site Elmer.

An LCM with crew was provided to transport a 2-1/2-ton truck from the ramp on Site Gene to the Coast and Geodetic Ship, HORIZON, for critical

pre-MIKE preparations. Prior to K-Day, labor and equipment were furnished to transport the project's temperature measuring gear to deep water for checking.

Following the test period, men and equipment were furnished to take the temperature measuring gear out to deep water for checking purposes. A vulcanizing unit for repairing cable was constructed, and two heating elements with thermostat control were furnished for the vulcanizer. Numerous electrical warehouse supplies were furnished. Man hours applied by Holmes & Narver to Project 11.4 support totaled 309.5.

COMPLETION REPORT
OPERATION IVY

VOLUME II
BOOK 6

TEST OPERATIONS
AND ROLL-UP

BOOK 6
TABLE OF CONTENTS

	Page
CHAPTER I. PREPARATIONS FOR FIRST TEST	6-1
Section 1. General	6-1
CHAPTER II. BASE PROTECTION	6-23
Section 1. General	6-23
Section 2. Buildings	6-23
Section 3. Facilities - Fred and Elmer	6-45
Section 4. Marine Equipment	6-47
CHAPTER III. EVACUATION	6-49
CHAPTER IV. PREPARATIONS FOR SECOND TEST	6-53
CHAPTER V. ROLL-UP	6-61

LIST OF ILLUSTRATIONS

Figure No.		
6-1.	Additional Anchorage of Building Base Angles to Concrete Slab	6-24
6-2.	Guy Bracing on Exterior of Building	6-26
6-3.	Typical Guy Anchorage in Building	6-26
6-4.	Typical Exterior Building Bracing	6-28
6-5.	Guy Bracing on Power Plant, Elmer	6-30
6-6.	Interior Roof Shoring in Power Plant, Elmer	6-32
6-7.	Interior Roof Shoring in Mess Hall, Elmer	6-33
6-8.	X-Bracing to Roof Support in Cryogenics Building	6-35
6-9.	Guy Bracing on Water Tower, Elmer	6-37
6-10.	Guy Bracing on Building 341, Elmer	6-38
6-11.	Cribbing Around Power House Generators, Elmer	6-46

CHAPTER I
PREPARATIONS FOR FIRST TEST

SECTION 1. GENERAL

In order to insure adequate support to the various Military and Scientific Agencies in preparation for the tests, to provide continuing housekeeping facilities, and to provide security for personnel and base facilities, Holmes & Narver was responsible for the performance of the following functions during this period.

1. Provide support personnel, material, and equipment to Using Agencies as required.

2. Dismantle temporary camp sites and dispose of equipment and material.

3. Operate marine craft on a close schedule in accordance with the requirements of all agencies concerned.

4. Adjust housing and messing facilities and schedules as the population of the Atoll shifted from one site to another.

5. Complete measures to minimize blast damage to buildings and to protect equipment and supplies from radioactive contamination.

6. Roll-Up, mothball and provide safekeeping for equipment and materials as required by Job 5 Work Orders.

7. Evacuate own personnel at times specified and allocate groups to various evacuation ships.

8. Assist in evacuation of other personnel.

9. Provide for unattended operation of certain utilities as designated. The satisfactory performance of these functions required detailed advance planning in close coordination with all participating agencies; these plans were approved and promulgated by the Commander of Task Group 132.1.

M-Day was designated as the date of the first test, and K-Day was designated as the date for the second test. .

The following schedule of events indicates the degree of precision required in these last minute preparations. With few exceptions, this schedule was followed in detail.

SCHEDULE OF EVENTS

M -7 Day

Last laundry pickup on Gene

M -6 Day

0730 All lockers on off-islands to be evacuated to Elmer.

1930 Money orders will not be sold after this time.

M -5 Day

1200 Last laundry delivery to all off-islands. Muster officers for MSTS SHANKS and USS COLLINS embark.

1930 PX, beer hall, barber shop, post office and movie closes at Gene and Yvonne.

M -4 Day

Gene camp to be reduced to 300 or less persons. PX, beer hall, barber shop, and movie on Elmer will secure at normal closing hours.

M -3 Day

0730 Gene camp closes. Last hot meal is breakfast. Personnel transfers to MSTS SHANKS and USS CURTISS. Alice mess closes after breakfast, and the portable galley will then be set up on Gene, prepared to feed a maximum of 50 men. Persons working at Alice subsequently will be provided with food from Gene. Five of Program 3 men stay on Alice the nights of M -3 Day and M -2 Day. One six-man tent and a 50-gallon drum for fresh water will be left there. Holmes & Narver maintenance and power house crews on Fred are placed under control of CTG 132.2 for evacuation.

1500 Two telephone repairmen remove telephones from Gene campsite and the public address system from Station 1. Equipment is to be shipped to Elmer and stored. After this date Yvonne personnel will be based on Elmer. Yvonne camp closes after breakfast.

M -2 Day

0730 H-19 (Helicopter) carrying three men plus 200 pounds of cargo leaves Elmer for several round trips to photo stations. T-Boat from Gene

transports the following to Elmer: mess hall equipment, reefers and ice machines (two trailers), distillation units and boiler (two trailers), beds and mattresses (one trailer). M-Boat with one fuel truck, one mechanic and one electrician leaves for servicing of generators on islands from Elmer to Janet inclusive. A DUKW with one mechanic and electrician leaves to service generators from Alice to Irene inclusive.

0800 T-Boat, Yvonne to Elmer, for removal of fresh and salt water tanks, one crane and one lowboy.

1200 CTG 132.1 assumes security responsibility for all islands in Atoll other than Fred. CJTF 132 and CTG 132.1 open Command Post aboard the USS ESTES.

1300 T-Boat departs Yvonne for Elmer with vehicles and NRLK transportainer. Last "dry run" of timing signals to be completed.

1500 One Dewar to be loaded on USNS PENDLETON from Elmer. Janet telephone operator to be evacuated. EE-8 telephone to be installed in Station 850 and connected to Elmer. Switchboard to be removed.

1600 LCM Elmer to Yvonne, Gene, and MSTS SHANKS (Evacuation Boat). LCM Elmer to MSTS COLLINS (Evacuation Boat). LCM Elmer to USS RENDOVA and MSTS COLLINS (Evacuation Boat). LCVP Elmer to USS ESTES (Evacuation Boat).

1800 Task Group Commanders report status of evacuation to CJTF with details of elements still to be evacuated.

1900 Yvonne telephone switchboard closes. Switchboard to be left in place. Yvonne telephone operator to be evacuated, required pairs are cross-connected on switchboard. Power plant to be secured.

1930 Post office on Elmer closes this date at regular closing time. Last distribution of mail. All undistributed mail will be transferred aboard ship for delivery.

2130 Detailed command conference: MIKE execute order confirmed.

M -1 Day

User	Hour	Item
6.2	0600	LCM and LSU with crane depart Elmer for raft Stations 621.01 - 621.06 with two men and five tons cargo. One man

		will disembark on Janet at approximately 1300 hours. Boats are to return to Elmer with other passenger and no cargo at approximately 1600 hours. Carry lunches from Elmer Mess Hall.
*	0700	Mr. Sugden and four telephone repairmen depart Elmer via plane for Gene.
	0700	Kwajalein Air Operations Command begins operations.
5.2	0700	H-19 (Helicopter) with four men to depart Elmer for general Atoll check of Program 5 Stations. Helicopter must be released on Elmer by 1030, in order to accomplish essential items.
	0730	Mess hall on Elmer closes after breakfast. Lunches will be prepared the night before and issued during breakfast for all personnel remaining on shore through the noon meal. Evening meal will be brought ashore from ships.
EGG	0730	H-19 (Helicopter) to carry three men plus 200 pounds of cargo for loading film at photo stations. Lunches carried from the Elmer Mess Hall. This mission includes required switch check out at shot island. Two jeeps and one 3/4-ton truck for this mission to be drawn from Elmer Motor Pool. One of these jeeps will be parked by Station 301 (Elmer Photo Tower) prior to final evacuation. This jeep will be used by initial recovery team.
H&N (EGG)	0730	Helicopter with one mechanic and one electrician to depart Elmer for generator servicing. Mechanic will instruct pilot where to stop for each generator. Helicopter to be released at 1200 hours on Elmer.
*	0730	Two telephone repairmen depart Gene via DUKW (with "A" frame) for Alice. DUKW to be equipped with SCR 300 radio for communications with telephone exchange, Gene. Pickup SCR 508 radio at Station 300 Alice and telephones not located in blast-proof structures on Islands Alice through Edna. Return to Gene about 1015.
11.5	0730	LCM, for dredging operation by Marine Survey Group based on USS OAKHILL. To return to USS OAKHILL for final evacuation of the LCM and Project 11.5 personnel on or before 1300 hours.

*Communications

H&N	0800	Two T-Boats and two M-Boats - Transport from Gene to Elmer the following: 2 Truck Cranes 1 Heavy Crane 1 Pull/Caterpillar 1 Lowboy 2 Jeeps 1 Galley Equipment All telephone and switchboard equipment and dehumidification unit No. 4 Generator, unless otherwise directed
TU 4	0800	LCM (Navy #37) with TX-5 truck depart from USS CURTISS for Gene, under Holmes & Narver marine escort.
TU 9	0800	H-19 (Helicopter) to carry three men to remote camera stations as follows: two on Janet, one on Yvonne, and David. Helicopter will be released at Elmer on or before 1500 hours. Lunches are to be carried from Elmer Mess Hall. Approximately one hour will be required to service each station. Helicopter to stand by during this period.
*	0800	Mr. Sugden and two repairmen commence pickup of telephone instruments Flora to Irene. Install EE-8 telephones as follows: 1. Gene Airfield connected to Elmer switchboard. 2. Gene Marine Dispatcher connected to Elmer switchboard and Gene telephone buoy cable. 3. Station 5 Flora (booth) connected to Elmer switchboard. 4. Station 5 Flora (booth) connected to Gene telephone buoy cable (present Gene line 29). Test out EE-8 phones prior to removal of installed telephones. Remove airfield TCS 12 radio and rectifier. Surface radex forecast for H-Hour to H +3. (CJTF message to all Task Group Commanders.)

*Communications

	0830	USS LEO underway for Gene to load last Dewar.
NRLK	0900	T-Boat, Gene to Elmer, with 24 pallets helium cylinders, caterpillar, three trailers and three hoisters.
	1000	MSTS SHANKS completes loading of personnel off Gene and moves from Gene to Elmer for loading of additional TG 132.1 personnel.
Hq. TG 132.1	1000	LCM, Elmer to Yvonne to Gene to USS CURTISS (Evacuation Boat).
TG 132.3	1000	Tug with barges in tow departs lagoon, weather permitting.
3.3, 3.4	1000	DUKW proceeds to Gene from Alice for final release to Marine Dispatcher and subsequent evacuation to Elmer via LSU.
*	1030	On completion of radio and telephone pickups, commence removal of Gene switchboard installation, then remove SCR 508 radio from Marine Dispatcher's Office.
TU 4	1100	CURTISS boat departs USS CURTISS for Gene with W-1 personnel and TX-5 capsule (Navy LCM No. 37).
** Hq. TG 132.1	1100	LCPL, Elmer to USS ESTES, Dr. Graves party for evacuation (20-man maximum).
TG 132.3	1100	Tug with AFDL with two docked tugs departs lagoon.
TU 4	1200	Navy LCM No. 37 departs Gene for Elmer with personnel carrier and jeep.
H&N	1200	Fresh water cutoff on Elmer.
	1200	Final release on Fred of all H-13 type helicopters to 132. 4.1.1.
TU 4	1200	Release LSU and TX-5 (4-ton truck, two N_2 trailers) 7-1/2-ton forklift for return to Elmer. One weapons carrier to be expended for Firing Party use.
**Hq. TG 132.1	1100	LCVP, Elmer to USS ESTES (Evacuation Boat).

*Communications

Hq. TG 132.1	1200	After this time no personnel will be allowed to leave ships unless their names are on appropriate access lists to be issued by CTG 132.1.
*	1230	Removal completed and all equipment loaded in DUKW. Mr. Sugden and four telephone repairmen return to Elmer with DUKW via LSU, then proceed aboard ship for evacuation as soon as possible.
Hq. TG 132.1	1230	LSU, Gene to Elmer, carrying last portion of Motor Pool.
H&N	1230	Two LCM's, Elmer to USS COLLINS (Evacuation Boat).
Hq. TG 132.1	1230	LCM, Elmer to MSTS SHANKS (Evacuation Boat).
H&N	1230	LSU, Elmer to MSTS SHANKS (Evacuation Boat).
J-1, TG 132.1	1230	Each TG 132.1 muster and sub-muster officer will muster (by sight) those persons for whom he is responsible and report to the J-1 representative at his location no later than 1300 hours. This report will consist of a signed muster list with those personnel mustered indicated thereon.
Hq. TG 132.1	1230	LCM, Elmer to MSTS SHANKS (Evacuation Boat).
H&N	1300	LCM, Yvonne to Elmer, carrying airport jeep and 1-1/4-ton trailer.
NRLS	1300	LCM, Janet to Tilda to Elmer, transport jeep from each station to Elmer, total of two jeeps.
J-1, TG 132.1	1300	Each local J-1 representative of TG 132.1 will report to the Task Group muster officer aboard the MSTS SHANKS, utilizing the most expedient method of communications available.
Hq. TG 132.1	1300	LCM, Elmer to USS RENDOVA (Evacuation Boat).
	1300	TG132.1 personnel scheduled for evacuation to USS RENDOVA commence embarkation. (Loading must be completed and all personnel must be on board ship by 1700, M -1 Day.)

*Communications

3.3, 3.4	1330	H-19 (Helicopter), five men, Alice to Flora. Evacuation of Alice to be completed. Col. Lunger to occupy co-pilot's seat and check all islands from Alice to Flora visually as required to insure that complete evacuation has been effected.
TU 3	1330	LSU departs Gene for USS LEO with one Dewar for deck loading. Six Camco personnel remain on USS LEO for evacuation.
TU 3	1330	One Weapons Carrier, one jeep and one F-1 tractor available for evacuation Gene to Elmer, to remain on LSU after Dewar is hoisted to deck of USS LEO.
TU 3	1330	After last Dewar is loaded on USS LEO at Gene, USS LEO underway for sea.
TU 2	1400	Secure CMR Plant.
TG 132.1	1400	H-19 (Helicopter) with two men to depart Elmer and proceed to the USS ESTES landing platform. The men are to remain there until Dr. Graves completes required shipboard checkout of instrumentation. At approximately 1500 hours helicopter will proceed to Flora with Dr. Graves and one officer on board, and will stand by at Flora while Dr. Graves confers with Firing Party Commander. Upon departure from Flora, it will return to the USS ESTES by way of all islands from Alice to Elmer. 132.1 officer aboard will conduct final safety check of all islands. The return trip will be utilized to evacuate three men to the USS ESTES from Flora. Helicopter released to USS RENDOVA for evacuation upon the completion of this mission.
TG 132.1	1400	Fred Airstrip closed. B-17 and C-47 depart for Kwajelein; helicopters continue operation.
	1400	Evacuation of Janet will be completed.
NRLS & H&N	1430	L-13 with two men, Gene to Elmer. This is last plane to leave the Gene Airstrip.
Hq. TG 132.1	1430	LCM, Elmer to MSTS SHANKS (Evacuation Boat).

TU 1, 3.3, 3.4, NRLS	1430	H-19 (Helicopter) with five men, Flora to Elmer to USS RENDOVA. Helicopter released to USS RENDOVA for evacuation upon completion of this mission.
Hq. TG 132.1	1500	LCVP, Elmer to MSTS SHANKS and USS ESTES (Evacuation Boat).
	1500	Telephone exchange on Fred closes.
3.3, 3.4	1500	H-19 (Helicopter) with five men, Flora to Elmer to USS RENDOVA. Helicopter released to USS RENDOVA for evacuation upon the completio n of this mission.
	1530	Fred cleared of personnel except for special upper air weather detachment.
**	1530	Last plane (L-13) released to 132.4.1.1 on Fred prior to this time.
Hq. TG 132.1	1600	LCVP, Elmer to USS ESTES (Evacuation Boat).
	1600	All TG 132.1 and 132.2 personnel except essential technicians to be on board MSTS SHANKS or USS COLLINS by 1600.
Hq. TG 132.1	1630	LCPL (CURTISS), Elmer to USS RENDOVA (Evacuation Boat).
Hq. TG 132.1	1630	LCM, Elmer to MSTS SHANKS (Evacuation Boat). (Will tow pontoon barge back to buoy on return to Elmer.)
*	1630	Elmer telephone switchboard closes. Elmer phone No. 56 connected through to Flora Station No. 5.
TG 132.3	1700	Tug with Navy LSU's departs lagoon.
	1700	Air dispatcher to be released for evacuation.
TG 132.3	1700	USS COLLINS underway for sea via the wide passage.

*Communications
**132.4.1.1

TG 132.3	1700	LST 836 on station at Bikini for evacuation if necessary.
	1730	All large helicopters landed on USS RENDOVA prior to this time.
TU 6	1730	All personnel are evacuated from shot island group except for Firing Party, and a sweep of island group will be made by MP's.
TG 132.3	1740	MSTS SHANKS underway for sea via the wide passage.
TG 132.3	1800	USS RENDOVA underway for sea via the wide passage.
	1800	Headquarters Commandant, JTF, CTG 132.1 and CTG 132.2 report results of final muster to CJTF with list of individuals still ashore.
TG 132.3	2000	CTG 132.3 reports results of final muster to CJTF, with list of individuals still ashore.
	2130	Command conference, MIKE execute order confirmed.
	2230	Power plant, reefers, switchboards and dehumidification units to be left unattended.
TU 6	2230	All personnel, except for Firing Party to be evacuated at 0045, will have departed for the USS CURTISS.
***	2300	USS CURTISS underway from Gene.
TG 132.1	2300	Sub-muster officer has completed final sweep of Elmer and conducts muster at the Miramar Beach Club of the teletype operator, power plant and reefer men, and scientific personnel. Upon completion of the final muster, all personnel remain at the Miramar Beach Club until evacuated by the USS CURTISS LCPL's (Personnel Pier).

M-Day

TU 6	0030	Firing Party completes check list and prepares to depart for dock.

***USS CURTISS

TU 6	0045	Firing Party conducts final muster on dock at Gene, boards AVR, and departs for USS ESTES off Elmer.
***	0100	USS CURTISS arrives Elmer and takes off remaining technical personnel of TG 132.1 and special air weather detachment from Fred. Lagoon pickup of two LCPL's.
****	0145	Firing Party transfers from AVR to LCPL (ESTES) in general vicinity of USS OAKHILL.
***	0200	USS CURTISS stands out for sea via the wide passage.
	0245	LSD stands out for sea via the wide passage with AVR on board.

SMALL BOAT OPERATIONS. The following pages indicate the small boat operating schedules from 0730 on M -5 Day to 1630 on M -1 Day.

***USS CURTISS
****USS ESTES

SMALL BOAT SCHEDULE

TIME	TYPE BOAT	GROUP	FROM	TO	CARGO	HOW LONG
M -5	NOTE: All Dewar movements are noted as departure time. Have 0730 water taxi stop by LEO for 2 men.					
0730	DUKW	3.3	Gene	Alice		Turn in M -1
0730	DUKW	5.2	Gene	Alice	Equipment	All day
0730	LCM	11.5	OAKHILL	Gene Area		All day
0730	LCM	5.4b	Elmer	Fred-Yvonne-Coral Head		All day
0730	LCM	6.1	Elmer	Yvonne-Olive-Mary	2-1/2-ton truck	All day
0800	LCM	6.3	Elmer	Janet	6 x 6 truck	1700
0800	LCM, LCU	6.2	Elmer	621.00 Sta.	Crane & life rafts	All day
0800	LCM	8.1	Gene	Acc. DUKW to Olive, Tilda, Mary		All day
0800	"A"	8.1	Gene	Olive, Tilda, Mary		All day
0800	LCU	NRLK	Gene	Elmer	3 NRLK trailers (unload) #851	
0800	LCM	TU 4	CURTISS	Gene	TX-5 truck, etc.	30 Min.
0830	LCU	NRLK	Gene	Elmer	24 pallets of helium, shop truck, and stock trailer	
0830	LCU, LCM	TU 3	Elmer	Gene	2 Dewars	

SMALL BOAT SCHEDULE (Continued)

TIME	TYPE BOAT	GROUP	FROM	TO	CARGO	HOW LONG
0830	DUKW	6.1	Yvonne	Olive, Mary		All day
1100	LCU	H&N	Bruce	Elmer	3 generators	Tide conditions make this time imperative.
1100	CURTISS	TU 4	CURTISS	Gene	Dummy capsule	Navy #37
1430	LCU		Yvonne	Elmer	8 assist vehicles	
1600	DUKW	4.1	Gene	Edna		Turn in 1100 M -4
1900	LCM	8.5	Gene	Janet	2 men	
M -4						
0600	LCM	8.2 & 8.3	Gene	Janet	Jeep	
0600	LCM	8.2 & 8.3	Yvonne	Tilda	Jeep (4 men)	
0730	LCU, LCM		Gene	Elmer	2 Dewars, 1 F-1	(Guarded loading)
0730	LCM	H&N	Yvonne	Elmer	1 trailer, galley equipment	
0730	LCM	11.5	OAKHILL	Gene		All day
0730	3 LCU	H&N	Gene	Elmer	13 trailer	
0730	DUKW	5.2	Gene	Alice		All day
0800	LCM	6.3	Elmer	Janet	6 x 6 truck	All day
0800	LCU	H&N	Yvonne	Elmer	1 crane, 1 pull caterpillar, portable generator	

SMALL BOAT SCHEDULE (Continued)

TIME	TYPE BOAT	GROUP	FROM	TO	CARGO	HOW LONG
0800	DUKW w/ "A" frame	8.1	Gene	Lucy, Janet, Irene		All day
0800	3 DUKW	H&N	Yvonne		Drums on Station 50	
0800	2 LCM	H&N	Leroy	Elmer	1 dozer, 1 crane, Station 52	All day
0800	LCU	NRLK	Gene	Elmer	2 NRLK trailers	
0830	LCU	NRLK	Gene	Elmer	4 MG sets, 1 trailer	
0900	LCU	NRLK	Gene	Elmer	100 pallets of helium	
1130	LCU	H&N	Elmer	Mary, Sally	Boat equipment with crane, pull caterpillar & 2 trailers	
1400	LCM	J-1	Elmer	SHANKS	3 safe files & miscellaneous	
1400	LCM	TU 4	Gene	CURTISS	Dummy TX-5, etc.	(Navy #37)
1400	2 LCU	H&N	Yvonne	Elmer	Remove radar fins and secure Station 51 crane	
M -3						
0630	Caterpillar & Flatbed	5.2	Gene	Clara	Equipment	0730 Note: Low Tide 0657
0630	2 LCU	H&N	Gene	Elmer	10 trailers	

SMALL BOAT SCHEDULE (Continued)

TIME	TYPE BOAT	GROUP	FROM	TO	CARGO	HOW LONG
0630	2 LCM	5.4a	Elmer	540 Service Station	Small tools	
0730	Water Taxi		Elmer	Yvonne, Gene SHANKS	50 people	
0730	DUKW "A" frame	8.1	Gene	Noah, Alice	6 x 6 truck	All day
0730	LCM	11.5	OAKHILL	Gene		
0800	3 LCM	H&N	Alice	Gene	1 caterpillar, 1 trailer, galley equipment	
0800	DUKW	5.3	Gene	Alice		
0800	LCM	H&N	Yvonne	Elmer	Galley equipment on 1 trailer	
0800	LCU, LCM	6.2	Elmer	620 Service Station	Crane & associated equipment	All day
0800	LCU	NRLK	Gene	Elmer	3 NRLK trailers	
0800	LCM	6.3, 6.9	Elmer	Janet	6 x 6 truck	All day
0900	LCU	8.5, 8.2	Gene	Janet, Tilda, Elmer	2 trailers, caterpillar, big dolly	
1000	Water Taxi		Elmer	Yvonne, Gene SHANKS, COLLINS	45 people	

SMALL BOAT SCHEDULE (Continued)

TIME	TYPE BOAT	GROUP	FROM	TO	CARGO	HOW LONG
1300	LCU	NRLK & 5.2	Gene	Elmer	2 NRLK trailers, 1 5.2 trailer	
1300	LCU, LCM	TU	Gene	Elmer	1 Dewar	
1400	LCM	J-1	Elmer	ESTES	5 safes	
1400	LCU	H&N	Yvonne	Elmer	Galley equipment on 5 trailers	
1400	2 LCU	NRLK	Gene	Elmer	2 2-1/2-ton trucks 2 jeeps, 150 pallets Helium bottles	
1500	LCU	H&N	Gene	Elmer	5 trailers	
1600	Water Taxi	H&N	Elmer	Yvonne, Gene, SHANKS	50 people	This is over and above regular schedule
1600	LCM	H&N	Gene	SHANKS	50 people	Over & above commuter run
1600	LCM		Elmer	RENDOVA, OAKHILL & COLLINS	46 people	
1600	LCM	H&N	Elmer	COLLINS	80 people	
1600	LCM	8.1	Gene	Elmer	1 transportainer #011 on trailer	
1800	LCU	132.2	Yvonne	Elmer	3 DUKWS (Army)	
1900	LCU	TU 3	Elmer	PENDLETON	2 Dewars	

SMALL BOAT SCHEDULE (Continued)

TIME	TYPE BOAT	GROUP	FROM	TO	CARGO	HOW LONG
M -2						
0630	2 LCM	5.4a	Elmer	540 Service Sta.	Small tools	All day
0730	LCU, LCM	TU 3	Gene	Elmer	1 Dewar, van, F-1 tractor, jeep	
0730	Water Taxi	H&N	Elmer	Yvonne, Gene, SHANKS, CURTISS	50 people	
0730	LCM	11.5	OAKHILL	Gene		
0730	DUKW	5.2	Gene	Alice		All day
0730	LCU, LCM	H&N	Gene	Elmer	5 trailers & equipment	
0730	LCM	H&N	Elmer	David, Janet	Fuel truck to service generators	All day
0730	DUKW	H&N	Gene	Alice, Irene	Men service generators	
0730	DUKW	8.1	Gene	Blackball Station		1000
0800	LCM	NRLK	Gene	Fred	Source on truck	
0800	LCU	NRLK	Gene	Elmer	13 Vehicles	
0800	LCU	H&N	Yvonne	Elmer	Water tanks, crane, lowboy	
0800	LCU	NRLK	Gene	Yvonne	Trailer or dolly, NRLK	
0800	2 LCM	H&N	Yvonne	Elmer	1 trailer - 1 caterpillar	

SMALL BOAT SCHEDULE (Continued)

TIME	TYPE BOAT	GROUP	FROM	TO	CARGO	HOW LONG
0800	LCU	NRLK	Yvonne	Gene	2 NRLK trailers & dolly	
0800	LCM	6.3	Elmer	Janet	6 x 6 truck	All day
0800	LCM	6.4a	Elmer	640 Service Rafts		1600
0815	DUKW	4.1	Gene	Edna		1530
0830	DUKW	5.1	Gene	Alice		All day
1000	LCU	EG&G	Elmer	CURTISS	EG&G trailer	
1000	DUKW	5.3	Elmer	Fred		1500
1130	LCM	H&N	Elmer	Janet	Phone removal	All day
1300	LCU	NRLK	Gene	Elmer	5 jeeps, 1 trailer, 15 nitrogen cylinders	
1300	LCM (3)	NRLK	Yvonne	Elmer	4 3/4-ton trucks & 2 jeeps	
1300	LCU	NRLK	Yvonne	Elmer	2 jeeps, 1 3/4-ton truck	
1330	DUKW	6.2	Gene	620 Reef Station		1530
1430	Water Taxi		Elmer	Yvonne, Gene, SHANKS, CURTISS	49 people	
1430	DUKW	5.2	Gene	Clara	Refrigeration unit	
1500	LCU	NRLK	Gene	Yvonne	50 helium pallets	

SMALL BOAT SCHEDULE (Continued)

TIME	TYPE BOAT	GROUP	FROM	TO	CARGO	HOW LONG
1500	LCU	TU 3	Elmer	PENDLETON	1 Dewar	
1600	LCM	H&N	Elmer	Yvonne, Gene, SHANKS	61 people	
1600	LCM		Elmer	RENDOVA, COLLINS	50 people	
1600	LCM	H&N	Elmer	COLLINS	80 people	
1600	LCVP	TG . 1	Elmer	ESTES	20 people	
1745	DUKW	5.2	Released for shipment			
1800	LCU	NRLK	Yvonne	Elmer	Trailer plus above equipment	
1800	LCU	NRLK	Gene	Elmer	3 NRLK trailers, 5 dollies	
1800	LCU	132.2	Gene	Elmer	5 DUKWS, 5 drivers	
M -1						
0600	LCM, LCU	6.2	Elmer	621 Service Station	Crane for laying rafts	All day
0730	DUKW "A" frame	H&N	Gene	Alice	Phone equipment	1230 (Have DUKW at Airport)
0730	LCM	11.5	OAKHILL	Gene		
0800	LCM	TU 4	CURTISS	Gene	TX-5 truck, (Navy #37)	

SMALL BOAT SCHEDULE (Continued)

TIME	TYPE BOAT	GROUP	FROM	TO	CARGO	HOW LONG
0800	2 LCU	H&N	Gene	Elmer	3 cranes, 1 lowboy, 1 full caterpillar, 2 jeeps, 1 galley	
0800	LCU	6.3	Elmer	Janet	6 x 6 truck	1500
0800	2 LCM	H&N	Gene	Elmer	w/2 trailers	
0900	LCU	NRLK	Gene	Elmer	52 pallets of helium on 3 trailers	
1000	CURTISS		CURTISS	Gene	TX-5 capsule (Navy #37)	
1000	LCM	TG .1	Elmer	Yvonne, Gene, CURTISS	15 people	
1100	LCVP	TG .1	Elmer	ESTES	30 people	
1100	LCPL		Elmer	ESTES	Graves party	
1200	LCU	NRLK	Gene	Elmer	2 jeeps, 1 4 x 4, 2 nitrogen trailers, TX-5 - 4-ton truck, 7-1/2-ton fork lift	
1200	LCM	8.1	Janet	Tilda-Elmer	2 Jeeps	
1200	LCM	NRLK	Yvonne	Elmer	30 nitrogen cylinders and 2 jeeps	
1230	LCU	H&N	Elmer	SHANKS	302 people	
1230	LCU		Gene	Elmer	Sugden and Felt DUKWS & motor pool	

SMALL BOAT SCHEDULE (Continued)

TIME	TYPE BOAT	GROUP	FROM	TO	CARGO	HOW LONG
1230	2 LCM	H&N	Elmer	COLLINS	90 people	
1230	LCM	TG .1	Elmer	SHANKS	50 people	
1230	LCM		Elmer	SHANKS	80 people	
1300	LCM		Yvonne	Elmer	Airport jeep & 1 1/4-ton trailer	
1300	LCM		Elmer	RENDOVA	26 people (Navy boat)	
1330	LCU	TU.3	Gene	LEO	Dewar (Departure no later than 1330)	
1400	LCU		Gene	Elmer	2 DUKWS, 4 jeeps, 5 3/4-ton trucks	
1430	LCM		Elmer	SHANKS	80 people	
1500	LCVP	TG. 1	Elmer	ESTES-SHANKS	40 people (ESTES)	
1600	LCVP		Elmer	ESTES	35 people (ESTES)	
1600	LCPL		Elmer	RENDOVA	10 people	
1630	LCM		Elmer	SHANKS	80 people (LCM to tow pontoon barge to buoys)	

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CHAPTER II
BASE PROTECTION

SECTION 1. GENERAL

In designing the protection for the Base and Test Facilities from anticipated shock pressures considerable thought was given to the selection of methods of protection that would permit installation at any time prior to the experiment without undue interference with the operations of the facilities. Some test data was available for the aluminum buildings. This was obtained from a test of one of these buildings at the time of purchase and from information obtained during OPERATION GREENHOUSE on a building of this type which had been subjected to static over-pressures having approximately the same intensity as that expected at Elmer and Fred for this operation. A "Report on the Base Protection and Evacuation for OPERATION IVY", dated 1 August 1952 recommending the protective measures to be taken, was submitted to the Field Manager, Eniwetok Field Office. After a review of this report by the Eniwetok Field Office, Holmes & Narver was provided a detailed outline of the blast protective measures which were authorized for accomplishment.

The action taken for protection of supplies, materials and equipment against radiological "fall out" consisted primarily of covering with canvas or salvaged balloon plastic material those items which could not be washed with water for decontamination. In general, all provisions and supplies stored in buildings were regrouped in the center of the floor area, away from the open sides and doors.

For protection against sea wave action all light marine craft with the exception of one LCM, which was required for final evacuation, were beached with bows toward "Zero". Two harbor tugs were docked in the floating dry dock and prepared for ocean tow. The U. S. Navy prepared three steel barges for ocean tow. All other marine craft that remained at the test site during MIKE were moored to buoys located in 10 fathoms or more of water. The following protective measures were accomplished.

SECTION 2. BUILDINGS

ELMER

Bldgs. 100 - 112, 113 - 114, 119, 121, 123, 125, 127, 129 - Barracks:

1. All doors were removed

2. All shutters were locked in open position

3. Lockers were laid flat

All mattresses in barracks were moved to the inside walls. In the tent area, tents were rolled up on the sides, lockers laid flat, mattresses and linen picked up and stored.

Bldg. 117 - Infirmary:

1. All doors were removed

2. All shutters were locked in open position

3. Removed plywood portion of partition around X-ray room

4. Removed center panel and one panel from each end of solid cross wall

5. All equipment, where possible, was laid flat

6. Additional securing studs were driven in wall sill plate angles. See Figure 6-1.

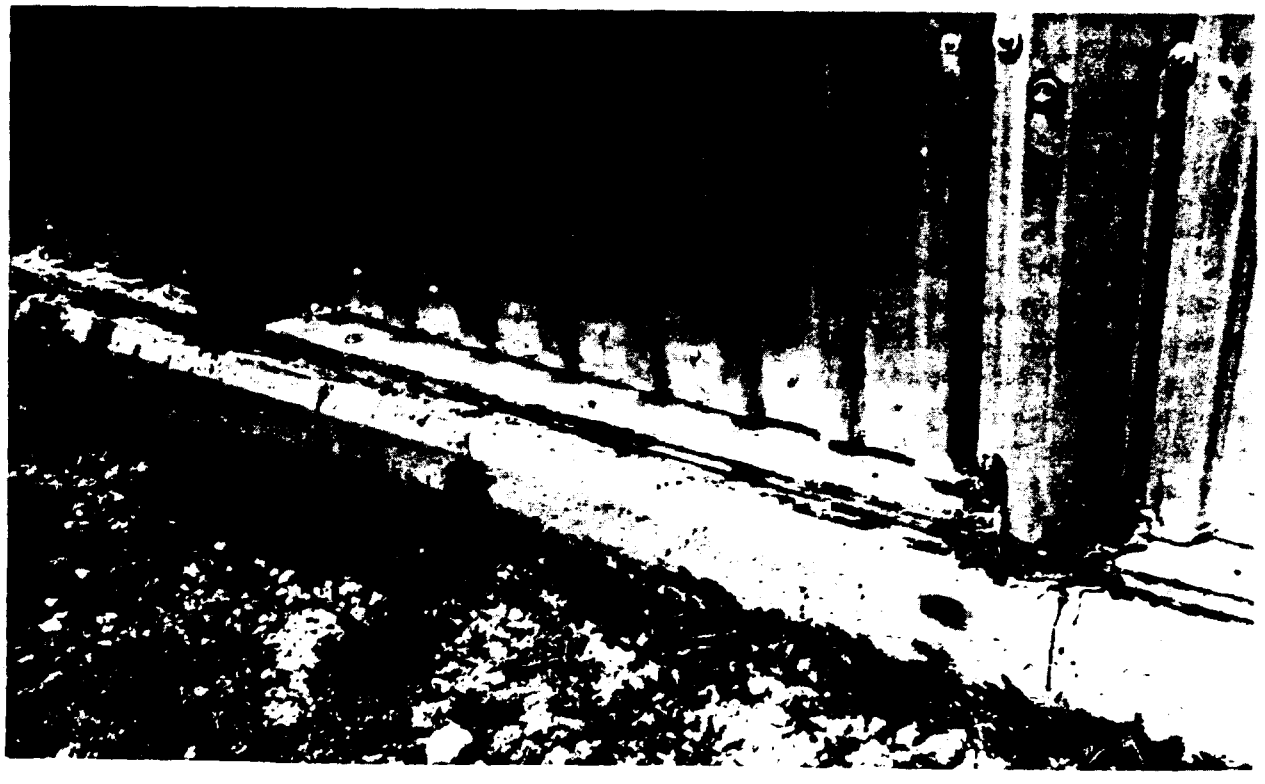

Figure 6-1. Additional Anchorage of Building Base Angles to Concrete Slab

BLDG. 118 - Infirmary:

1. All windows were locked open
2. Additional securing studs were driven in wall sill plate angles

Bldg. 120 - Barracks:

1. Wood section was opened up
2. Supports for rafters at center line were installed
3. All doors were removed
4. All shutters were locked in open position
5. Lockers were laid flat
6. Upper shutters were removed on end wall facing blast

Bldg. 122 - Barracks:

1. All doors were removed
2. All shutters were locked in open position
3. Upper shutters were removed on end walls

Bldgs. 124, 126, 128, 129 - Barracks

1. All doors were removed
2. All shutters were locked in open position
3. Lockers were laid flat
4. Upper shutters were removed on end wall facing blast

Bldg. 194 - New Machine Shop:

1. Door was locked in open position
2. Cable stays were installed in wall facing blast. See Figures 6-2 and 6-3 for method
3. Vertical supports were installed for roof

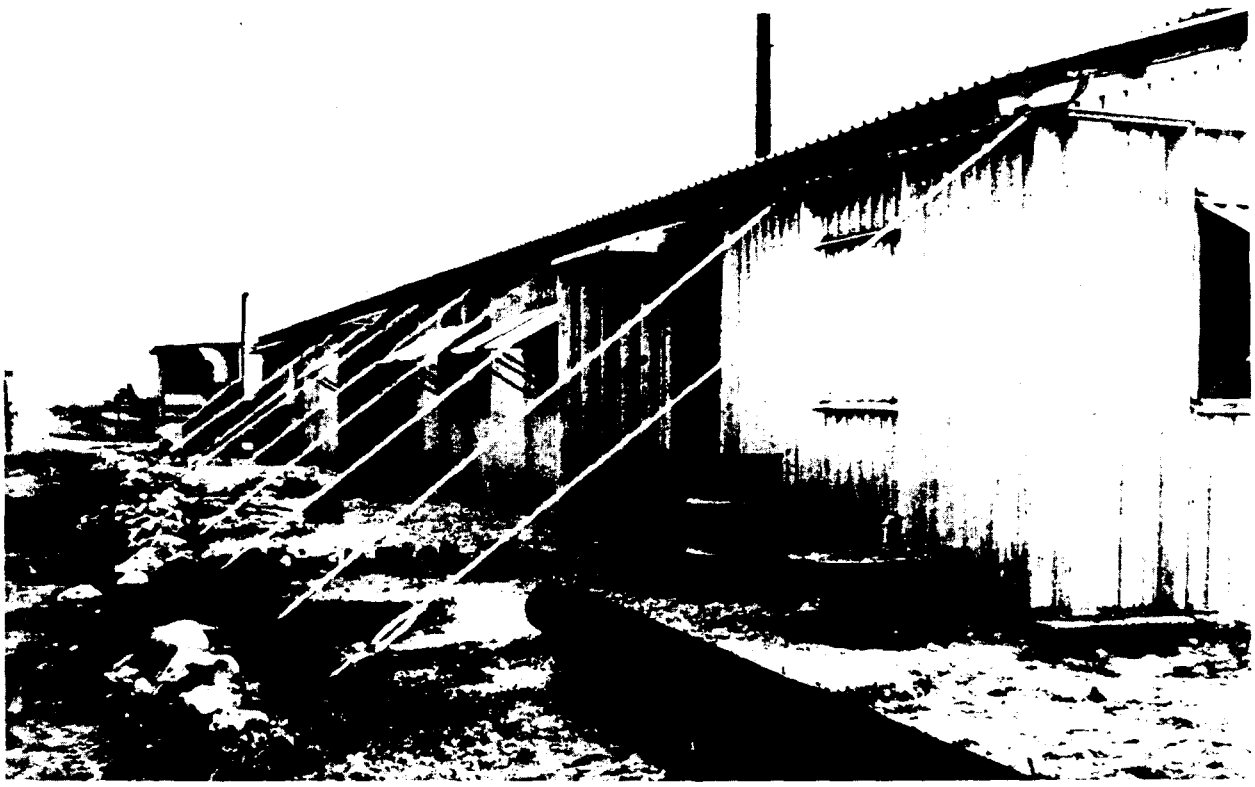

Figure 6-2. Guy Bracing on Exterior of Building

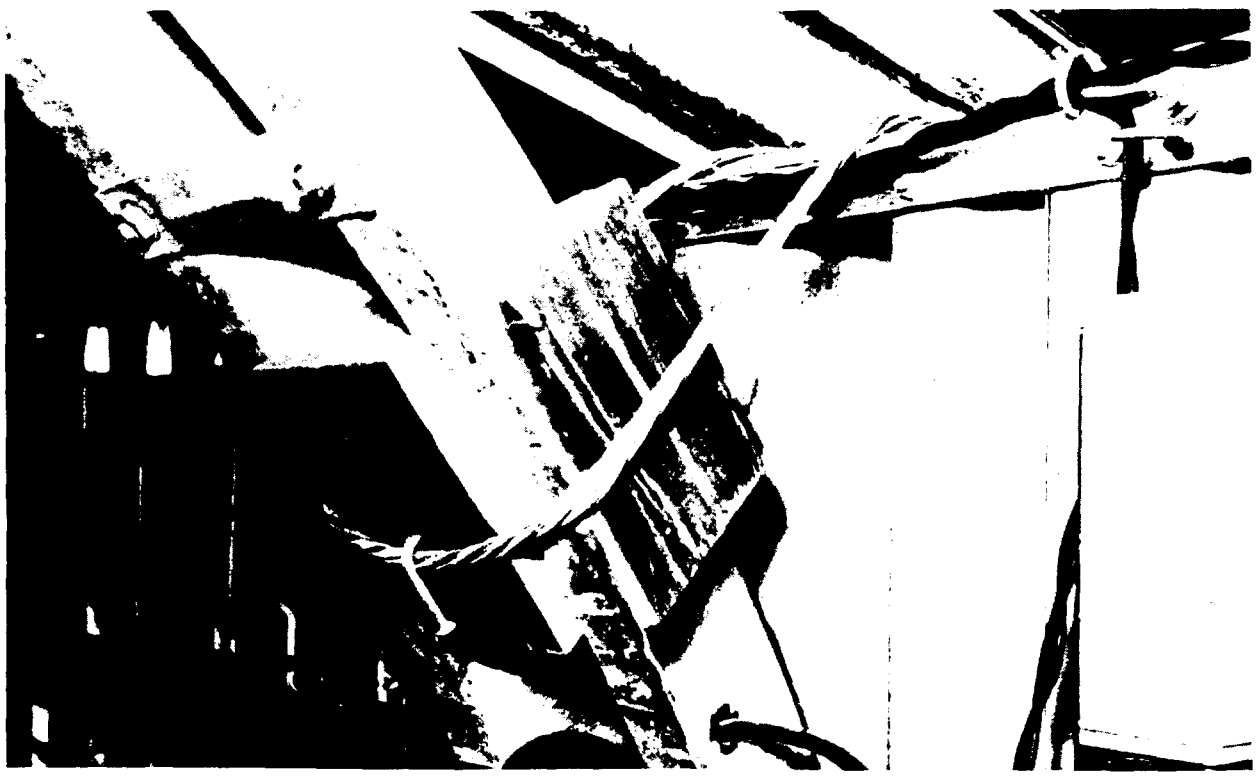

Figure 6-3. Typical Guy Anchorage in Building

4. End wall facing blast was braced

5. Bracing for lean-to was installed

6. Additional securing studs were driven in wall sill plate angles

Bldg. 195 - Cobbler Shop:

1. All supplies were stored in a locked hot locker

Bldg. 204 - Post Office, Post Exchange, Snack Bar and Barber Shop:

1. All shutters locked open and doors removed

All loose and breakable items in the post office, post exchange, snack bar and barber shop were placed on the floor and covered with canvas. All stock of the post exchange was removed from the store and placed in unused locked reefers and in the locked liquor warehouse. All display cases and shelves were laid flat on the floor.

Bldg. 205 - Fire Station:

1. All shutters were locked in open position

Bldg. 206 - Guard Quarters and Fire Station Supply:

1. All doors were removed

2. All shutters were locked in open position

3. Lockers were laid flat

Bldgs. 208 and 209 - Administration Buildings:

1. All doors were removed

2. All shutters were locked in open position

3. Lockers were laid flat

4. All files were laid flat

Bldg. 210 - Photo Lab:

1. Windows and doors were locked in closed position

2. End wall facing blast was braced

3. Side walls were braced. See Figure 6-4 for method used.

4. Additional securing studs were driven in wall sill plate angles

Bldg. 211 - Instrument Laboratory:

1. All doors were locked closed

2. Cable bracing was installed

3. Vertical support for roof was installed

4. End wall facing blast was braced

5. Additional securing studs were driven in wall sill plate angles

Bldg. 212A, 212B and 231 - Laboratories:

1. All doors were locked closed

2. End wall facing blast was braced

Figure 6-4. Typical Exterior Building Bracing

3. Vertical supports for roof were installed

4. Additional securing studs were driven in wall sill plate angles

Bldg. 216 - Library and Day Room:

1. All doors were removed

2. The shutters of end wall facing blast were removed and all others were locked in open position

Bldg. 221 - Task Force Building:

1. All doors were removed

2. All shutters were locked in open position

Bldg. 222 - Security:

1. All doors were removed

2. All shutters were locked in open position

Bldgs. 227, 228, 233, 234, 235, 236 - 6 Buildings:

1. All shutters were locked open and doors were removed

2. Support for roof in shower room was installed

3. Additional securing studs were driven in wall sill plate angles

Bldg. 232 - Scientific Users Shop Building:

1. All doors were locked closed

2. Braced end wall facing blast

3. Supports for roof were installed

4. Cable bracing for middle 24 feet of wall facing blast was installed

5. Additional securing studs were driven in wall sill plate angles

Bldg. 237 - Recreation Building, Bldg. 409 - Beer Hall:

1. All doors were removed

2. All shutters were locked in open position

All liquor supplies on hand were stored, braced up, and locked in the two reefers. All glasses and loose equipment were packed in boxes and placed on the floor.

Bldg. 300 - Pump House:

1. All shutters were locked in open position and the doors removed

2. Tanks were filled

Bldg. 301 - Power House:

1. All doors were removed

2. All shutters were locked in open position

3. Wall panel below shutters were removed intact

4. End walls were braced

5. Cable stays and roof supports were provided. See Figure 6-5.

Figure 6-5. Guy Bracing on Power Plant, Elmer

6. Posts were installed under frames where columns were omitted. See Figure 6-6 on the following page.

7. Additional securing studs were driven in wall sill plate angles

Bldg. 313 - Warehouse and Supply Office:

1. Sliding doors were locked in open position

2. All shutters were locked in open position

3. All filing cabinets were laid flat

4. Pins were driven at wall sill plate angles

5. Materials were stacked against outside walls and a center support for roof provided

Bldgs. 314, 315, 316 - Shops:

1. Hinge-type doors were removed and sliding door was locked in open position

2. All shutters were locked in open position

Bldg. 317 - Carpenter Shop:

1. All windows were locked open

2. All equipment was covered with tarpaulins

Bldg. 322 - Marine Motor Repair:

1. All shutters were locked open

2. All equipment covered with tarpaulins

Bldg. 410 - Salt Water Pump Station:

1. All doors were removed

2. All shutters were locked in open position

3. Instrument panels were braced

Figure 6-6. Interior Roof Shoring in Power Plant, Elmer

Bldg. 201 and 202 - Mess Hall and Bakery:

1. Removed all doors
2. All shutters were locked in open position
3. Vertical support was provided for roof bays (2). See Figure 6-7. This was the general type of vertical support provided where necessary
4. All windows were locked open
5. Swing doors were removed and sliding doors were locked in open position

Bldg. 230 - Commissary:

1. All sliding doors were locked in open position
2. All shutters were locked in open position
3. Additional securing studs were driven in wall sill plate angles
4. Added two shutter panels in south wall. All material was stacked so that it was below window level

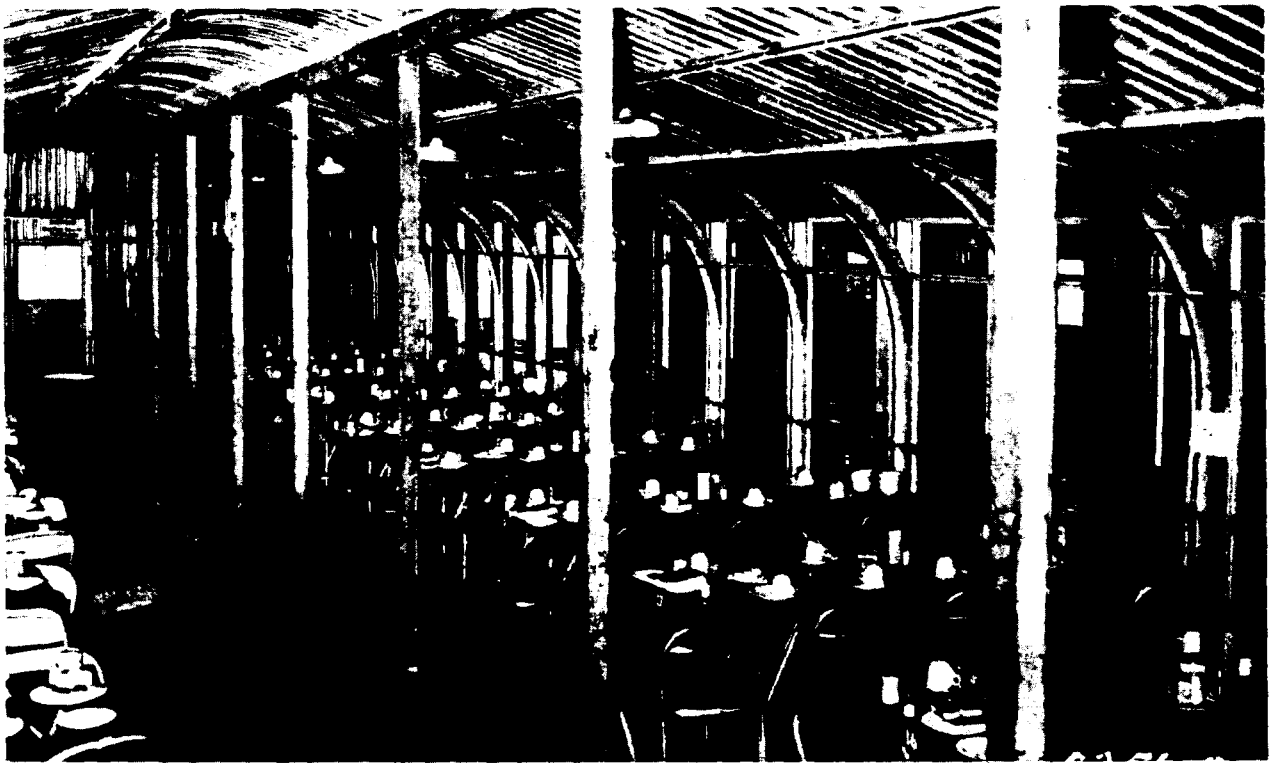

Figure 6-7. Interior Roof Shoring in Mess Hall, Elmer

Bldg. 302 - Laundry, and Bldg. 303 - Boiler House:

1. Doors were removed

2. All shutters locked in open position

3. Roof supports provided for wing to Bldg. 302

All loose items on shelves and any breakable items in the laundry were put in boxes, placed on the floor and covered with canvas. All installed equipment was covered with canvas.

Bldg. 308 - Food Warehouse:

1. Locked sliding doors in open postion

2. Locked all shutters in open position

3. Stored supplies below level of windows

4. Additional securing studs were driven in wall sill plate angles

Bldg. 309 - Materials Testing Laboratory:

1. Locked all shutters in open position and removed doors

Bldg. 311 - Control Building:

1. All doors were locked in a closed position

2. End walls were braced

3. Building was braced

4. Additional securing studs were driven in wall sill plate angles

Bldg. 329 - Laboratory:

1. Exterior doors were locked in closed position

2. North wall was braced

3. Roof support was provided. See Figure 6-8.

4. Pins were driven at wall sill plate angles

Figure 6-8. X-Bracing to Roof Support in Cryogenics Building

5. 4' x 4' posts were placed at double doors

6. Exterior struts were provided

Bldg. 323 - Rad-Safe:

1. Doors were locked in closed position

2. End walls were braced

3. Roof support was provided

4. Cable bracing was provided

5. Additional securing studs were driven in wall sill plate angles

Bldg. 342 - Shop:

1. End walls were braced

2. Roof support was provided

3. A post was provided under the frame under the sliding door

4. Additional securing studs were driven in wall sill plate angles

5. Building was braced on the blast side only

Bldg. 406 - Boat Repair-Storage:

1. All doors and shutters were locked in open position

2. Posts were provided under frames of sliding doors

Bldgs. 330 and 344 - Laboratories:

1. Cable bracing was provided

2. The Using Agency braced instrument panels and covered equipment with tarpaulins

Bldg. 339 - CMR Power Plant:

1. Additional Butler frame was put in each bay

2. Vertical support for roof was provided

3. Cable bracing was supplied

4. Equipment requiring weatherproofing was covered with tarpaulins

Bldg. 200 - Theatre:

1. Canvas and door at back of theatre were removed

2. Projection booth was opened up

3. Screen was taken down

Bldg. 220 - Water Tower:

1. Bracing anchors were guyed. See Figure 6-9

Bldg. 349 - Water Tower:

1. Bracing anchors were guyed

Bldg. 310 - Control Tower:

1. Removed wall panels

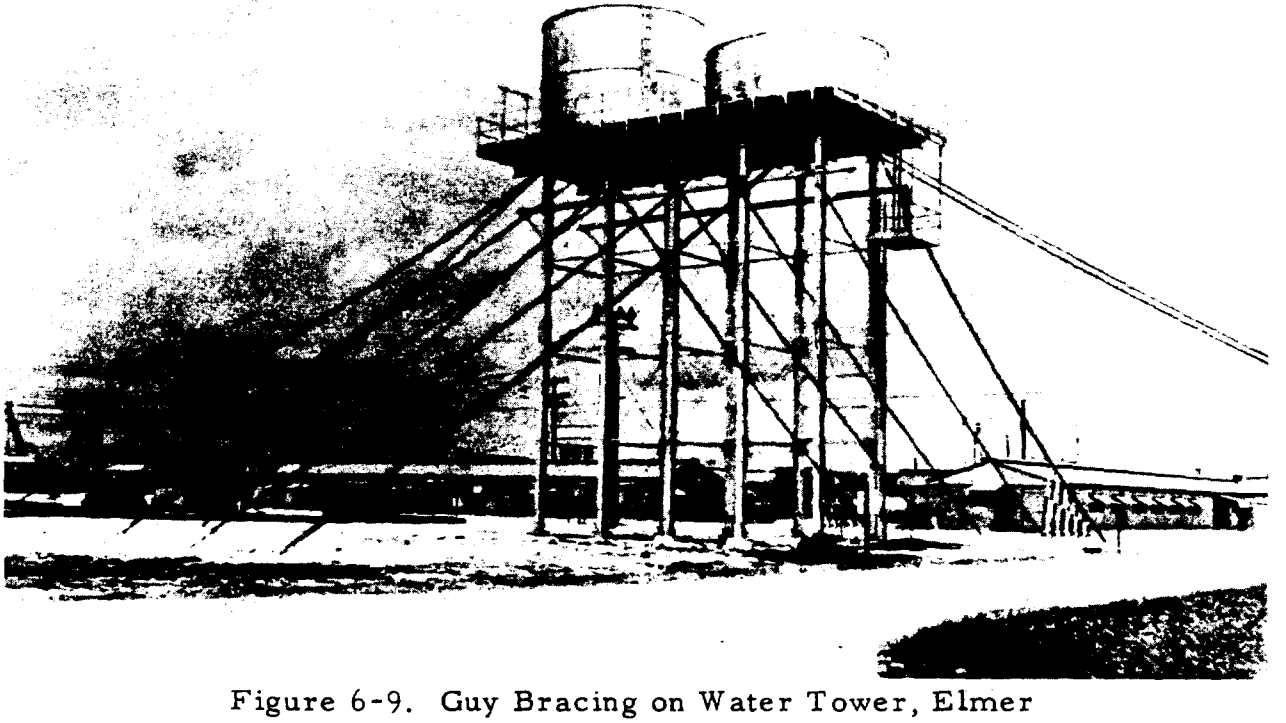

Figure 6-9. Guy Bracing on Water Tower, Elmer

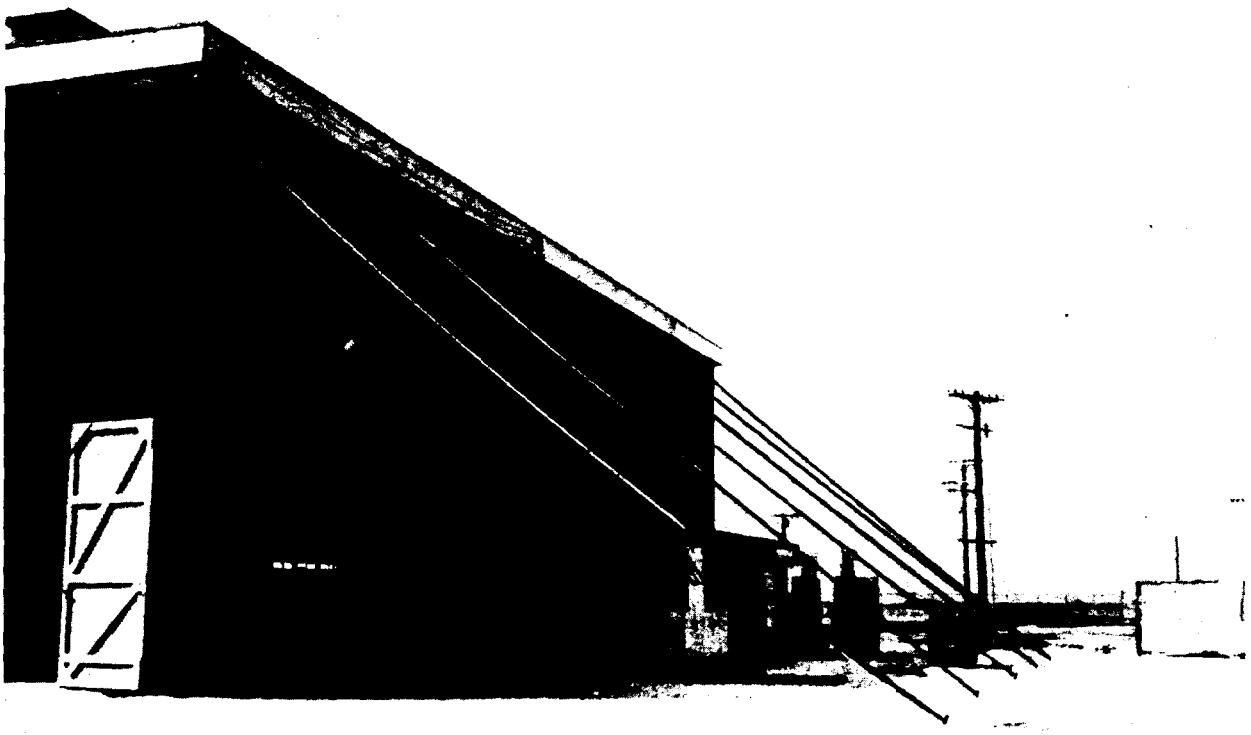

Figure 6-10. Guy Bracing on Bldg. 341, Elmer

Bldg. 341 - Shop and Storage:

1. Guy bracing was provided. See Figure 6-10

Bldg. 405 - Heavy Equipment Repair Shop:

1. Shoring for structural roof members was provided
2. Frame protection for machines was supplied
3. Machines were covered with tarpaulin

BUILDINGS - FRED

Bldg. 3 - Power Transmitter:

1. All doors were removed
2. All shutters were locked in an open position

Bldgs. 4 and 116 - Receiver, Loran:

1. Doors were locked in closed position

2. Cable bracing was provided

3. Vertical roof support was provided

4. End wall facing blast was braced

5. Additional securing studs were driven in sill plate angles

Bldgs. 5, 6, 7, 8, 17, 109, 110, 111, 112 - 9 Buildings:

1. All shutters and doors were locked in an open position

2. Support for roof in shower room was provided

3. Additional securing studs were driven in sill plate angles

Bldgs. 10, 11, 12, 13, 18, 19, 20, 21 - 8 Buildings:

1. All doors were removed

2. All shutters were locked in an open position

3. Lockers were laid flat

Bldg. 15 - Group Headquarters:

1. All doors were removed

2. All shutters were locked in an open position

3. Two full height panels were removed from the wall between the south and the central sections

Bldg. 16 - Post Office and Post Exchange, with 3 Wings:

1. All doors were removed

2. All shutters were locked in open position

3. Sliding door was locked in open position

Bldg. 23 - Hospital Ward:

1. All doors were removed

2. All shutters of the east and west walls were locked open

Bldg. 24 - Dispensary:

1. All doors removed
2. All shutters of the east and west walls of the north wing were locked in open position
3. All shutters were locked in open position
4. All lockers were laid flat

Bldg. 34 - Boiler House:

1. Sliding doors were locked in the open position
2. All shutters were locked in open position

Bldg. 124 - Salt Water Pump Station:

1. All doors were removed
2. All shutters were locked in open position

Bldg. 14 - Dispatcher Shack:

1. All doors were removed
2. All shutters were locked in open position

Bldg. 29 - Fire Station:

1. Removed all doors
2. All shutters were locked in open position

Bldg. 31 - Laundry:

1. All doors were removed
2. All shutter were locked in open position
3. All wood shelving was laid flat

Bldg. 33 - Reefer:

1. All shutters and doors were locked in open position

Bldg. 35 - Bakery:

1. All hinge-type doors were removed and all sliding doors were locked in open position
2. All shutters were locked in open position
3. All equipment and shelving was laid flat

Bldg. 36 - Mess Hall:

1. All doors were removed
2. All shutters were locked in open position
3. Support for roof was provided
4. Sliding door was locked in open position
5. Every third panel full height was removed
6. Shelving was laid flat

Bldg. 37 - Commissary:

1. All doors were removed
2. Every shutter was opened
3. Stores were placed at a level below bottom of windows

Bldgs. 38 - 42 inclusive - 18-man Officers' Quarters:

1. All doors were removed
2. All shutters were locked in open position
3. Lockers were laid flat

Bldgs. 46 - 50 inclusive - 72-man Quarters:

1. Removed all doors
2. All shutters were locked in open position
3. Lockers were laid flat

Bldgs. 43, 44, 51 - 55 inclusive, 115, 122, 123, 125, 127, 130 - Latrine and Showers

1. Locked all shutters and doors in open position
2. Roof in shower room was supported
3. Additional securing studs were driven in sill plate angles

Bldg. 56 - Power and Distillation Plant:

1. All doors were removed
2. Alternate shutters were removed and all others were locked in open position
3. Wall panel below shutters was removed intact
4. End walls were braced
5. Cable stays and roof support were provided
6. Posts under frames with columns omitted
7. Additional securing studs were driven in sill plate angles

Bldg. 77 - Drone Headquarters:

1. All doors were removed
2. All shutters were locked in open position
3. All bookcases and files were laid flat

Bldg. 85 - Receiver:

1. All shutters were locked and doors were closed
2. Building frames were braced
3. End wall facing blast was braced

Bldg. 89 - Base Operations - and Control Tower:

1. All doors were removed

2. All shutters were locked in open position

Bldg. 90 - Air Task Force Group Headquarters:

1. All doors were removed

2. All shutters were locked in open position

Bldg. 91 - Alert Crew - Crash Truck:

1. All shutters were locked in open position

Bldg. 92 - L-13 Operations:

1. All doors were removed

2. All shutters were locked in open position

Bldg. 94 - POL Pump House:

1. All doors were removed

2. All shutters were locked in open position

Bldg. 117 - Five NRDL Buildings:

1. All doors were removed

2. All shutters were locked in open position

Bldg. 84 - Power Transmitter:

1. All doors were removed

2. All shutters were locked in open position

Bldgs. 72, 135, 507, 508 - Supply Office; Drone Crew, briefing and Operation; Hobby Shop; Library, respectively:

1. Buildings were opened up

2. Longitudinal walls were braced

3. Line of supports was provided for 2nd floor beams

Bldg. 82 - Warehouse:

1. Removed all sliding doors at end walls

Bldg. 93 - L-13 Maintenance:

1. Sliding doors were removed

2. Cable bracing was provided

3. All glass windows were removed

Bldg. 1 - E. M. Recreation; Bldg. 26 - ATCOM Residence; Bldg. 27 - Officers' Club; Bldg. 500 - General Officer Quarters; Bldg. 504 - Swimmers' Tavern:

1. Equipment protected by Task Group 132.2

Bldg. 88 - Weather Station:

1. This building was braced. This building was required to H -6 Hours

Bldg. 118 - B-50 Hangar:

1. Sliding doors were blocked at both ends

2. Top of door pockets were guyed

Bldg. 121 - Elevated Water Storage:

1. Bracing guyed

Control Tower:

1. Glass panels in the tower were removed

2. Door was locked, radio room was closed in and walls were braced

3. Guy bracing for the tower was provided

Miscellaneous Free Standing Structures:

1. Theatre screens were laid flat

SECTION 3. FACILITIES - FRED AND ELMER

The following measures were taken to protect facilities at Fred and Elmer:

ELMER

Bldg. 339 - Elmer CMR Area Power Plant:

The CMR Area Power Plant, Bldg. 339 on Elmer, was reinforced with steel columns and I-beam girders. Concrete anchors were poured on blast side of building and guy wires attached. Engine exhaust mufflers were guyed to anchors. Switchboard, station service panel and engine control panels were braced and covered. Generators were cribbed over with planking - see Figure 6-11. At 1200 hours M -1 Day, the plant was secured and all engines, generators, switch gear, pumps, motors and machinery were covered with plastic balloon material.

Bldgs. 3 and 4, Power Transmitter and Receiver, respectively, on Fred:

1. Equipment was covered with tarpaulins

Bldgs. 56 and 301 - Power and Distillation Plant,
Fred and Elmer, respectively:

1. The main and secondary switchboards were braced and covered with tarpaulin

2. Generators were covered with tarpaulin

The Power and Distillation Plants, both at Fred and Elmer, were reinforced by the erection of wood shoring from floor to roof. Concrete anchors were poured on blast side of building and guy wires were secured from anchors to building. Switchboard was braced and covered. All engines, generators, except No. 3 at Elmer, and machinery were covered with plastic balloon material and secured prior to evacuation. All fresh and salt water storage tanks were filled to capacity and secured.

No. 3 Generating Unit at Elmer, including the prime mover, generator, regulators and switch gear, were thoroughly checked and finely adjusted to insure continued unattended operation after the evacuation and during the period specified in MIKE Shot Evacuation Procedure; this required the provision of power from Elmer Plant for 72 hours after evacuation. Work done to provide unattended operation consisted of inter-connecting the six diesel fuel day tanks and leaving them full and manifolded together. Also a steel tower was erected outside the plant, on which a pontoon containing approximately 1,100 gallons fresh water was placed and connected

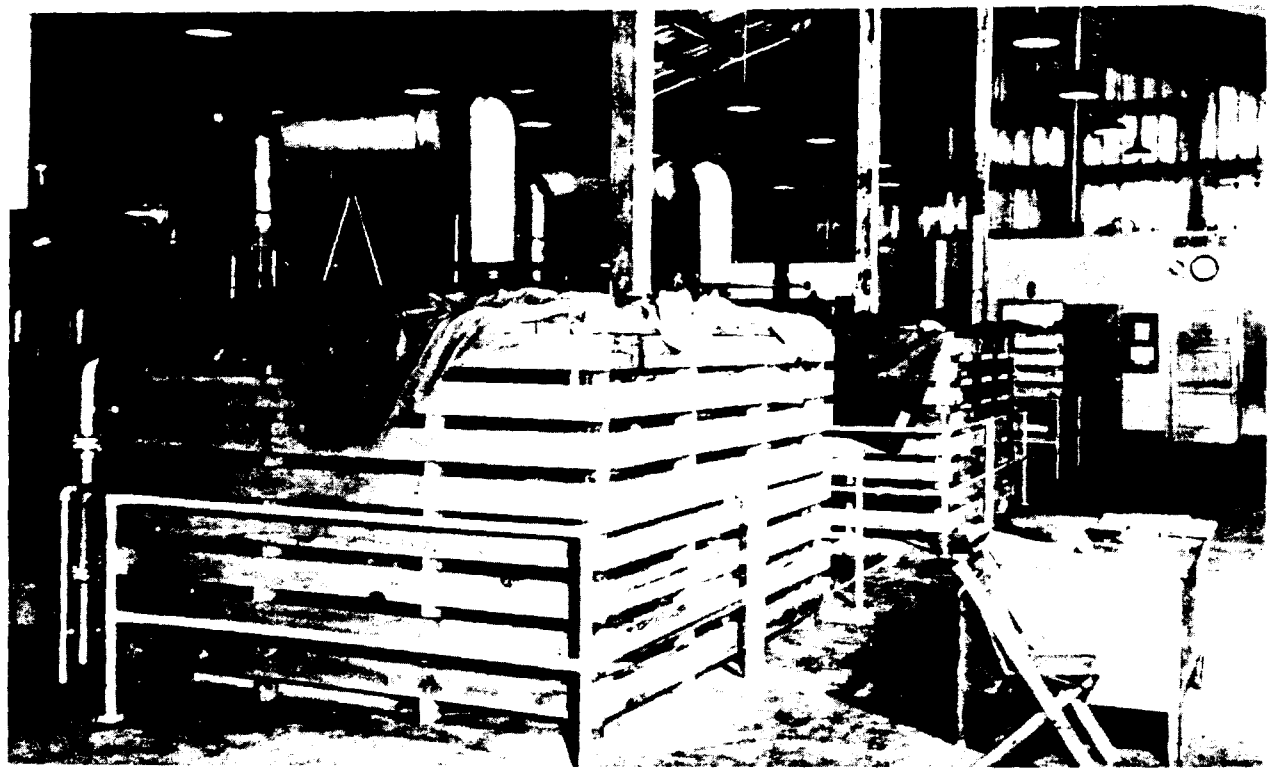

Figure 6-11. Cribbing Around Power House Generators, Elmer

to the engine fresh water cooling system. A solenoid fuel cutoff switch was installed on No. 3 Engine which was to be actuated by a timer in the plant, set to stop the engine one hour after the Shot. This timer was wired to receive its signal from an actuating cell at the control station. On M-3 Day, plant operating personnel was reduced to a skeleton crew with evacuees placed aboard transport SHANKS and plant operated on 12 hour shifts. At 1500 hours M -1 Day, all plant personnel but evacuation crew embarked to the SHANKS. Evacuation crew left plant for USS CURTISS at 2030 hours, M -1 Day, leaving No. 3 Generator operating unattended.

Water, Oil and Gas Storage Tanks:

Water tanks, boilers, condensation receivers, and distillation tanks were filled with water. Canvas covering was placed over the concrete fresh water reservoirs.

Refrigerators:

1. Doors were locked in a closed position

2. Portable Generators and special fuel and lube oil tanks were installed to provide power during the Evacuation Period

Laundry:

1. The starch cooker was filled with water

2. All equipment was covered with canvas

Dehumidification Equipment:

1. Panels enclosing dehumidification equipment were removed, laid flat and covered with tarpaulin

Bldg. 330 and 344 - Elmer:

1. Equipment was covered with tarpaulins

CONSTRUCTION AND AUTOMOTIVE EQUIPMENT. All construction materials, equipment and rolling stock were transferred from the Northern Islands to Elmer and were stored there during the evacuation. Vehicles and equipment were stored in the vehicle and equipment yard, with all vehicles facing away from Zero, and with the heavier equipment on the outside. All radiator and fuel tanks were filled as required.

SECTION 4. MARINE EQUIPMENT

Marine craft were secured prior to MIKE Shot as follows:

1. Four LCUs and three barges were moored to buoys in 10 fathoms of water. They were secured to buoys with a 7/8-inch wire bridle of 55-foot legs to a 7/8-inch wire pendant (25 feet long) which was attached to the buoys. As an additional precautionary measure for the barges two parts of seven-inch circumference manila line was made fast to the LCU from an independent shackle on the mooring buoy, with slack beyond the length of the wire pendant and bridle. This same measure was taken for LSUs except that 6-inch manila was used.

2. Sixteen Holmes & Narver and five Army-Navy LCMs were beached on high ground east of Trinity Avenue.

3. Seven Holmes & Narver and five Army DUKWs were beached east of Trinity Avenue on Elmer, in six wheel drive and in low gear range, with their emergency brakes set.

4. Three water taxis were beached and placed in cradles east of Trinity Avenue on Elmer, one prior to M -5 Day, one at 0730 on M -2 Day, and one at 1800 on M -2 Day.

5. Two tugs were placed aboard the dry dock prior to 1715 on M -2 Day and prepared for ocean tow.

6. The Sea Mule was moored off Elmer in 60 feet of water. It was secured to buoy with regular 7/8-inch diameter wire bridle of 55-foot legs to 7/8-inch diameter wire pendant (20 feet long) attached to mooring buoy, plus two parts of 5-inch circumference manila line made fast to an independent shackle on the mooring buoy with slack beyond the length of the wire bridle and pendant.

7. One LCM was secured to a buoy with a regular 7/8-inch diameter wire bridle of 20-foot legs to a 7/8-inch diameter wire pendant 20 feet long attached to mooring buoy.

CHAPTER III
EVACUATION

Planning for the evacuation of the Proving Grounds for the MIKE Shot contemplated first the reduction of Holmes & Narver man power as early as possible. The Holmes & Narver man power requirement after the MIKE Shot would be influenced by the number of Task Force personnel who would re-enter the Atoll and thus require support. Conferences were held with the AEC management and Headquarters personnel of the Joint Task Force, at which a man power strength for Holmes & Narver, as of 1 November, was established at 800 for Eniwetok Atoll and 200 for Bikini Atoll. A corollary to this decision was that the maximum land-based personnel to be supported by Holmes & Narver would not exceed 1100 for Eniwetok Atoll. Arrangements for transfers to Bikini and the release of personnel who would be surplus to the Eniwetok Jobsite needs were programed to comply with this decision.

The criteria used in the determination of Holmes & Narver personnel who were to be released were as follows. Those on extended contracts and those whose contracts expired between 1 November and 15 November, were considered as having completed their contracts. A general policy was established for surplussing men in order of priority commencing with those with the shortest time remaining on their current contract, with some exceptions in the cases of men holding key positions. Schedules for departure of these men from the Atoll were meshed with those of the Task Force and were so arranged as to take advantage of the available sea and air transport. On 30 October, this first phase of evacuation was realized, for on that date there were on Eniwetok Atoll 800 and on Bikini Atoll 200 of the Holmes & Narver personnel.

Evacuation of the 800 remaining personnel was accomplished by vessels of Task Group 132.3. The muster and final accounting of all personnel on board the evacuation ships was the responsibility of the Director of Industrial Relations for Holmes & Narver personnel and the Headquarters Commandants of the Joint Task Force and Task Group 132.1 for their respective organizations. The Task Group Commanders of all other Task Groups were responsible for the embarkation of the personnel of their organizations.

One week prior to the final embarkation for the evacuation, conferences were held on board the MSTS COLLINS and MSTS SHANKS to discuss messing, berthing, facilities available on board, and additional help required by the vessels. Holmes & Narver was assigned 99 cabin spaces and 373 troop spaces on the COLLINS and 60 cabin spaces and 408 troop spaces on the SHANKS. Assignments of cabin spaces were made to those designated as "officer class"

which included all personnel in Classification Group XI or above. Arrangements were completed for the policing of the troop spaces and the furnishing of 45 men daily to the COLLINS and 25 men daily to the SHANKS to assist in the galleys.

Instructions issued to cover all phases of the evacuation included the following:

EVACUATION - General information concerning the anticipated duration of absence from the area, movement of employees according to schedule, personal effects to be taken aboard, prohibition against taking alcohol in any form on board, assignment of berthing spaces, evacuation of pets and closing down of camp facilities ashore.

EVACUATION MUSTER PLAN - A muster roll of all employees, arranged by muster groups consisting of a group leader and men from same department who were scheduled to embark at same time on same ship.

EVACUATION SCHEDULE - Schedule for embarkation by muster groups, indicating number of personnel in group, name of group leader, department, embarkation time and date.

SIGHT CHECK - A sight check of all personnel was required between 1200 and 1300 of M -1 Day.

H&N SHIPBOARD REPRESENTATIVES - A Senior Representative was designated for Holmes & Narver in each ship.

TROOP SPACE COMMANDER - Holmes & Narver supervisors were designated as Troop Space Commanders to supervise policing of each troop space.

EVACUATION OF PETS - Methods and procedure for evacuation of pets were outlined in detail.

PERSONAL EMBARKATION CARDS - Each Holmes & Narver man was furnished a personal card on which was indicated his name, the muster group leader, embarkation date and time, and his berth assignment.

Embarkation of Holmes & Narver personnel was completed as follows:

COLLINS	M -3	48 men
	M -2	51 men
	M -1	206 men
SHANKS	M -3	57 men
	M -2	51 men
	M -1	362 men

CURTISS	M -1	14 men
ESTES	M -1	5 men
RENDOVA	M -1	6 men

At Elmer the staging area for departure was the freight pier for those scheduled for the SHANKS, and the marine ramp for all others. As the muster groups arrived at the staging areas, they were lined up and checked off alphabetically as they boarded the boats to be transported to the ships. A similar check was made when boarding the ships. The evacuation was in general accomplished according to schedule. The embarkation on board the COLLINS was completed by 1630, M -1 Day, and on board the SHANKS by 1700, M -1 Day. Six men boarded the CURTISS at Gene at 2200, M -1 Day with the Firing Party, and eight men boarded the CURTISS at Elmer at 2230, on M -1 Day. These 14 last departure men were those designated for power plant, air conditioning, telephone and refrigerator operations that were required until the above specified times.

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CHAPTER IV
PREPARATIONS FOR SECOND TEST

Re-entry into Elmer and Fred was ordered by CJTF 132 after aerial and ground surveys indicated radioactive contamination on these islands was negligible. Debarkation of Holmes & Narver personnel commenced approximately twenty four hours after the MIKE Shot and was completed by 1200 of M +2 Day. Priority for debarkation was established as follows:

1. Division Heads
2. Boat crews
3. Personnel necessary to reactivate all utilities
4. Camp personnel and
5. All others

The work of restoring all camp activities progressed rapidly and by the evening of M +1 Day boats, utilities, and mess facilities were prepared to meet all needs.

Upon return of all personnel, a determination of priorities for the work to be accomplished prior to the Second Test was made. The following governed the work assignments:

1. Damage on Fred and Elmer from the MIKE detonation was negligible.
2. The Atoll would not be evacuated for the KING detonation.
3. Preparations for the KING Shot and support for the recovery of MIKE Shot data and instruments had priority over all other activities.
4. There would be 1100 men, including Holmes & Narver personnel, to be supported ashore.
5. Tents and barracks would be used for housing.
6. Blast protection measures for the MIKE Shot would be left in place for the KING Shot.

The following was accordingly accomplished in the order of priority as listed:

A. EXECUTIVE OFFICE

1. Resumed normal functions.

2. Manned Elmer telephone switchboard.

3. Manned Yvonne telephone switchboard as required by Scientific Agencies.

B. CONSTRUCTION-MAINTENANCE DIVISION

1. Supported Scientific Agencies in recovery of data and instruments from Stations 200, 600, 300, 520 and others. The work period had to be limited in certain cases as prescribed by Rad-Safe officials who stipulated the limits of radio-active exposure. Deep sea diving operations were necessary for the recovery of certain gauges.

2. Station 50. Reset drums and reflectors and completed the station

3. Station 51. Checked location of radar reflectors and completed station for use.

4. Station 309. Re-erected a Bilby Tower.

5. Station 52. Re-erected the radar reflector.

6. Station 806. Moved and erected a prefabricated building.

7. Station 304. Erected one platform.

8. Station 612. Removed existing pipe standard and replaced with a new one.

9. Stations 621.10 thru 621.15. Replaced rafts.

10. Stations 802 and 803. Checked and serviced generators..

11. Station 804. Reset and serviced four generators.

C. SERVICE OPERATIONS

1. Reactivated boats as needed.

2. Reactivated CMR, Elmer, Fred and Yvonne Power Plants.

3. Reactivated Fred and Elmer Water Distillation Plants.

4. Re-opened all camp facilities on Elmer.

5. Operated a portable galley at Yvonne through K -1 Day to provide hot mid-day meals to all personnel required on that island.

D. SUPPLY DIVISION.

1. Checked chill and frozen foods.

2. Re-opened warehouses.

3. Commenced survey of all destroyed property and equipment

E. ACCOUNTING DIVISION

1. Resumed normal operations

F. INDUSTRIAL RELATIONS

1. Re-opened hospital

2. Re-opened Fire Station on Elmer.

3. Resumed all normal operations.

G. ENGINEERING

1. Prepared plans for damage repair

The reduction of Holmes & Narver personnel prior to M -1 Day to 800 on Eniwetok Atoll was accomplished on the premise that a total of 1,100 men (800 Holmes & Narver and 300 Task Force) would re-enter the Atoll after the MIKE Shot. However, after re-entry was completed a peak population of 1,325 men was reached. It was therefore necessary to resort to overtime work hours for camp personnel to properly support this increased population.

Normal intra-atoll aircraft service was established and continued until the end of the working day of K -4 Day. From that date through K -1 Day, all air lift requirements were scheduled by the J-3 Section of Task Group 132.1 and only essential air travel was authorized. Marine craft schedules were established to meet the need of the various agencies involved in this phase of

the operation, and the requirements were generally satisfied by specific assignment of boats to Using Agencies.

all equipment and personnel except two power plant operators on Yvonne were evacuated from all islands north of Elmer by 1600 of K -1 Day. A final security sweep by Task Group 132.1 officials was made of all islands on the morning of KING-Day, and the two power plant operators were evacuated by the plane making this sweep.

Due to weather conditions, KING-Day was advanced three days. The sequence of events leading to the detonation remained the same and were as indicated in the following Safety Precautions and Schedule of Events.

"SAFETY INSTRUCTIONS"

"a. An atomic explosion will take place in the vicinity of Yvonne during the late morning of 16 November 1952. It is possible that the Shot may be delayed for a short time (30 minutes to one hour) or be re-scheduled for another day. The safety instructions will apply, regardless of the exact firing time. The siren signals indicated below will be used on Elmer."

"b. Before the Shot:

Shot minus 30 minutes	All persons will be awake until after the Shot. All vehicle ignitions will be turned off.
Shot minus 5 minutes 5 SIREN BLASTS	(In the event of siren failure, fire-engine whistle will be blown from 5 minutes to 1 minute before the Shot). All personnel not engaged in indoor work essential to the test will be outdoors where signals are easily heard. Personnel will not climb buildings or other structures to observe the Shot. Gusts of wind are expected at Elmer and Fred. Exercise normal precautions to secure light objects nearby.
Shot minus 1 minute 3 BLASTS	All personnel turn away from the Shot site or put on special density goggles. Do not remove goggles or face Shot site until 5 seconds after the burst. DO NOT VIEW BURST WITH BINOCULARS, WITH NAKED EYE, OR WITH ORDINARY SUNGLASSES. The shock wave will arrive at Elmer about 45 seconds after the first flash of light, and at Fred about 60 seconds after the first flash of light.
Shot delayed 1 LONG BLAST	One continuous blast indicates the Shot has been delayed a short time (30 minutes to one hour).

If there is such a delay, warning blasts will be repeated at Shot minus 5 minutes and Shot minus 1 minute before the new Shot time. If there is no Shot after one hour, the Shot will be re-scheduled and re-announced."

"c. After the Shot

5 BLASTS — If 5 consecutive blasts are heard anytime after the Shot, take cover in the nearest building and close all doors and windows.

3 BLASTS — If 3 consecutive blasts are heard anytime after the Shot, prepare to go aboard ship for a temporary evacuation and report to your muster officer or supervisor for further instructions."

"d. Personnel will be cautioned against discussing operations activities at Eniwetok Atoll in letters home. It is imperative that information connected with the detonations occurring here not be released or transmitted until so authorized by the Atomic Energy Commission and the Department of Defense."

"SCHEDULE OF EVENTS"

K -2

1200 CTG 132.1 assumes security responsibility for all islands of Atoll other than Fred

1700 Official observers arrive Fred

2130 Detailed command conference, KING execute order confirmed

K -1

0600 LST prepares for departure to Bikini (Tide conditions to dictate exact departure time).

0800 Official observers start tour

Sample return aircraft at Kwajalein

1000 Last timing signal run completed

1300 All islands Glen thru Leroy and Alice to Sally evacuated of personnel. Make security sweep by H-13 Helicopter of above islands

1600	Bruce evacuated of all personnel
1700	Coral Head "Mack" evacuated of all personnel
1700	Tilda evacuated of all personnel
1700	All islands north of Elmer, except Yvonne, evacuated of all personnel
1830	Yvonne evacuated of all personnel except for power plant
1900	Muster officers report result of muster to TG 132.1 Muster Officer
2130	Command conference. KING execute order confirmed
2230	Surface Radex forecast
2300	CTG 132.1 reports result of muster to CJTF 132
K Day	
0200	Final confirmation of weather forecast
0400	Kwajelein and Fred air bases closed to all transient traffic
0600	All TG 132.3 ships except USS ESTES sortie from lagoon
0630	TG 132.4 aircraft commence take off from Kwajelein
0700	H-19 (Helicopter) departs Elmer for Yvonne to make safety sweep as far north as Sally and then return to Yvonne
0730	CTG 132.1 Command Post on Elmer, Bldg. 311, opens
0800	H-19 (Helicopter) departs Yvonne for Elmer with two power plant personnel and Colonel Lunger
0830	Begin Timing Station check out
0830	Drop aircraft arrives in Fred Area
0830	OAKHILL on Station for Project 6.11
0930	Voice time signals begin

Beginning with H -2 Hours (0930) voice time signals were broadcasted over the public address system each half hour until H -30 Minutes, thereafter at H -15 Minutes, H -10 Minutes, H -5 Minutes and then each minute until "BOMB AWAY" at H -1 Minute and then to detonation at H-Hour.

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CHAPTER V
ROLL-UP

The concept of the Roll-Up Services as detailed in Job 5 of the Contract was the rehabilitation and preservation of buildings and structures, and the repair, cleaning and mothballing of equipment which would not be required after the test operations. With the exception of the roll-up of the camp on Site David these services were not required until late in October. As the preparations for MIKE Test approached completion, the need for Roll-Up Services increased in tempo, particularly in connection with the dismantling of the Gene and Yvonne camps and the requirements for the evacuation of the Atoll.

The services provided under this phase of OPERATION IVY are listed below in accordance with the features of Job 5 as detailed in the Contract.

E-1. Clean up and store Construction Equipment

1. Lathes and other machine tools were removed from Bldg. 330 and stored in the dehumidified Bldg. 342.

2. Recovered dehumidification units and blowers from Scientific Stations for reinstallation on Elmer, to provide dehumidified storage for roll-up requirements.

3. As construction equipment became surplus to the needs of the Jobsite it was collected on Elmer, overhauled, painted as required and stored in the Equipment Yard.

E-2. Clean and store Marine Equipment.

1. Roll-up of Marine Equipment commenced with the preparations of the Marine Craft for the evacuation of the Atoll for MIKE Test. Two tugs were placed in drydock for towing to sea. Prior to undocking after reentry of the Atoll, bottom repairs were effected, and the hulls were cleaned and painted. Eighteen LCMs and three seacraft (water taxis) were beached and only those boats required after the MIKE Shot were replaced in the water. The work on the boats remaining on the beach consisted primarily of cleaning and painting hulls, removal of radios, batteries and starting generators for storage in a dehumidified space. A program of overhaul of the LSUs was started. These boats, as they cannot be beached, will be kept in an operable condition and those not needed, will be operated once weekly. Six LCMs, two YCs (wooden barges) and one LSU were returned to the U.S. Navy and six LCMs

and one LSU were acquired in exchange. Joint inspections by representatives of the U. S. Navy and Holmes & Narver were made of all exchanged craft in compliance with existing instructions. A copy of the report of the joint inspection was furnished the AEC Resident Engineer.

E-3. Warehouse Construction Materials

1. The work of dismantling the camp on Site David and the removal of all equipment and materials to Elmer was accomplished under this feature.

2. All construction materials from the Camps on Gene and Yvonne were returned to Elmer and checked, recorded and stored in appropriate warehouse or storage yard.

E-4. Clean up Generators - Stills - and Pumps

1. All portable generators, Badger-type distillation units and surplus pumps on Gene were moved to Elmer, where they were cleaned, repaired and stored.

2. Oil stoves were placed in operation in the idle power plants on Yvonne and Janet for the purpose of keeping these plants dry. The generating units of these plants are now operated weekly with low voltage and normal current for drying out of the generator windings.

E-5. General Clean up

1. As of 31 December there were no changes to this feature.

E-6. Protective Maintenance-Buildings and Structures

1. Men, material and equipment were provided to gain access to Station 200 on Site Irene and Station 520 on Site Clara after the MIKE detonation. The door of Station 200 was jammed and an access hole had to be cut in order to recover instruments and data. At Station 520 work involved was clearing the fill-in and debris from around the access door.

2. Bldgs. 329, 330, 342 and 344 on Elmer were closed and cocooned. Seventeen dehumidification units were installed.

3. Bldg. 194 was closed and placed in stand-by condition.

4. Services provided for roll-up of EASY Program (Blast Protection Measures) were as follows: All guy bracing was removed, greased, tagged and stored. All lumber 4" x 4" or over in size cut to length for a specific use was bundled and tagged as to the building and location and stored.

This included nearly all vertical posts. Lumber less than 4" x 4" in size was returned to stock. In those cases where structural steel framing or bracing was added which did not interfere with the full use of the building, the steel was left in place and painted. In all other cases the steel was removed, painted, piece marked and stored. All vapor seals in buildings damaged by the foregoing work were repaired.

5. A Bilby Tower was recovered from Site Leroy and moved to Elmer. Three Bilby Towers on Site Elmer were reconditioned, match marked and bundled to facilitate future assembly.

6. The air conditioner in the Conference Room of Bldg. 221 was disconnected, removed, preserved and stored. The air conditioner in the Transmitter Room of the building was disconnected, and the unit sealed in place to prevent loss of dehumidified air.

7. Protective maintenance measures which were provided for the electrical equipment in the CMR Area, consisted primarily of greasing moving parts and painting as necessary.

8. The gas detection alarm system in the Hydrogen Room of Bldg. 330 was connected to a light and horn signal in the Fire Station on Elmer. Weekly inspection of this system is being made.

E-7. Clean up and Store Camp Equipment

1. As camp equipment became surplus to the need of the operation it was collected on Elmer. All kitchen, bakery and butcher shop equipment was overhauled, cleaned and stored in Warehouses No. 5 and No. 3. Surplus supplies were checked and cleaned, and if necessary were stored in Bldg. 206. All bunks and mattresses were bundled and stored in Bldg. 342. At the close of OPERATION IVY all camp equipment required for a 250-man camp was being segregated into a camp component and prepared for issue.

The foregoing report covers the services provided as of 31 December 1952. Safety considerations due to radiological contamination in certain areas has delayed some work. However, in view of the short period of time between OPERATION IVY and the build-up for OPERATION CASTLE extensive roll-up will not be necessary.

Any residual roll-up activity remaining after 31 December 1952 will be performed in conjunction with preparations for OPERATION CASTLE.

COMPLETION REPORT
OPERATION IVY

VOLUME II
APPENDIX

COMPLETION REPORT
for
CONTRACT NO. AT-(29-2)-20
OPERATION IVY

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ALICE			
AIR STRIP EXTENSION			
E.C.O. 267 authorizes the clearing, grading and shaping of a soil base, and the addition of a steel mat runway and turn around area, comprising 2225 square yards of steel matting, increasing the runway length from 800 feet to 1000 feet. (No installed equipment.)	1	Each	
Construction Contract Cost 4,399.46			4,399.46

COMPLETION REPORT
for
CONTRACT NO. AT-(29-2)-20
OPERATION IVY

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE BUILDING NO. 1 - POWER PLANT One-story wood frame, hip roof building with corrugated aluminum siding and roofing; outside dimensions 64'-0" long x 30'-0" wide x 16'-0" mean height. Building rests on a 6" reinforced concrete slab with foundations 12" below grade. Special reinforced concrete foundations were constructed for equipment. Floor area is 1920 square feet and volume is 30,720 cubic feet. Building contains all necessary fresh water lines, fuel and lubricating oil lines, compressed air lines, and all the required mechanical and electrical fixtures, conduits, and utilities.	1	Each	
Installed equipment: 3-175 H.P., 118 K.W. "Fairbanks-Morse" generating units, serial Nos. 928914, 928917, 929627, H & N Nos. G-36, G-37, G-42; 1-280 H.P. "Fairbanks-Morse" generating unit, serial No. 937431, H & N No. G-108; 4-20" "Master" power roof exhausters, serial Nos. 5224, 5225, 5226, 5230, H & N Nos. F-370, F-374, F-375, F-376; 1 - 3-1/4" x 4", 3 H.P. "Fairbanks-Morse" compressor, (no serial No.), H & N No. CO-53; 1 - 3-1/4" x 4" "Fairbanks-Morse" gas engine compressor, (no serial No.), H & N No. CO-54; 1 "Snap-on" tool cabinet with chest, (no serial No.), H & N No. TM-535 (A and B), 1 "Athol" machinist bench vice, (no serial No.), H & N No. TM-444. (The above list does not contain any user-furnished or user-installed equipment.)			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
BUILDING NO. 104 - DEISEL FUEL TANK			
Welded steel deisel fuel oil tank, resting on two reinforced concrete saddles. (No installed equipment.)	1	Each	
Construction Contract Cost 256,343.83 Engineering Cost 8,551.53			264,895.36
BUILDING NO. 103 - SUB-STATION			
Reinforced concrete pad, 10'-0" x 8'-0" x 8" thick, containing two transformers, oil fuse cutouts, safety switches, and a mounting rack, all surrounded by gravel fill and enclosed by a 8'-0" high chain link fence with a 3'-0" wide entrance gate and 3 strands of barbed wire on top.	1	Each	
Installed equipment: 1-37.5 KVA, 2400 - 120/240 volt single phase, 60 cycle, oil filled transformer; 1 - 50 KVA, 2400 - 120/240 volt single phase, 60 cycle, oil filled transformer. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 1,827.76			1,827.76
BUILDING NO. 5 - WATER DISTILLATION PLANT			
A one-story, wood frame structure with corrugated aluminum siding (on both ends and one side only - one side is open) and roofing. Outside dimensions are 85'-0" long and 31'-0" wide x 8'7-1/2" mean height, and it rests on a reinforced concrete floor slab 6" thick,			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued) BUILDING NO. 5 - WATER DISTILLATION PLANT (Continued) with foundations 12" below grade. Floor area is 2635 square feet and volume is 22,727 cubic feet. Building 5 contains all necessary salt water lines, fresh water lines, steam lines, gasoline lines, fuel oil lines, acid lines, and all the required mechanical and electrical fixtures and conduits.	1	Each	
Installed equipment: 6 - 150 G.P.H. "Badger" water distillation units, serial Nos. 7296, 7351, 7147, 7202, 7220, 7046, H & N Nos. DI-154 thru DI-159, respectively; 1 - 150 G.P.H. "Badger" "Universal" water distillation unit, (no serial No.), H & N No. DI-94; 5-30 gallon "Proportioneer" rubber-lined drums, (no serial Nos.), H & N Nos. DI-27, DI-28, DI-29, DI-41, DI-44; 1 "Worthington" turbine pump, serial No. 1174090, H & N No. CA-47; 1 - 1-1/2", 1/2 H.P. "Worthington" centrifugal pump, serial No. 1355042, H & N No. CA-296; 1-2" x 3", 5 H.P. "Fairbanks-Morse" centrifugal pump, serial No. 734540, H & N No. CA-331; 1 - 3" x 4" "Fairbanks-Morse" centrifugal pump (with "International-Harvey" auxiliary gas engine) serial No. 734467, H & N No. CA-335, 1 - 3" x 4", 10 H.P. "Fairbanks-Morse" centrifugal pump, serial No. 734000, H & N No. CA-359; 1 - 1" x 1/2" x 7", 1/2 H.P. "Gould" centrifugal pump, serial No. 609A183.6, H & N No. DI-124; 1 - 2" x 3" "Fairbanks-Morse" centrifugal pump (with "International-Harvey" auxiliary gas engine), serial No. 737104, H & N No. DI-138; 1 - 20 H.P. "Amesteam" Steam generator unit, serial No. 56561, H & N No. G-58; 1 automatic "Proportioneer" chemical feeder, serial No. RCE-29171, H & N No. DI-58; 1 - 10 Gallon "Larco" water cooler, serial No. 8J27613, H & N No. CA-159; 1 "Curtiss" compressor and "Briggs-Stratton" gas engine combination (no serial No.), H & N No. GA-44; 1 - 7" "Blue-Point" bench grinder, serial No. 312I1A0-7803, H & N No. TM-75; 1 "Snap-on" tool cabinet with chest, (no serial No.), H & N No. TM-533 (A and B). (The above list does not contain any user-furnished or user-installed equipment.)			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
BUILDINGS 105 AND 109 - DEISEL FUEL TANKS			
Bolted steel, navy pontoons, resting on 8'-0" high wood frame platforms. (No installed equipment.)	2	Each	
Construction Contract Cost 78,954.69			78,954.69
BUILDING NO. 6 - REPAIR SHOP			
One-story wood frame construction, rectangular shape, size O.D. 28'-0" x 40'-4" x 12'-8" mean height set on stabilized coral floor. Corrugated aluminum gable roof. Structure is enclosed on one side and one half of one end only, corrugated aluminum siding. A six foot high partition divides shop into two sections. Complete with electric wiring and fixtures. Five build-in work benches are installed. Floor area O.D. 1129 square feet, volume 14,300 cubic feet.	1	Each	
BUILDING NO. 113 - OFFICE			
One-story wood frame construction, rectangular shape, size O.D. 6'9-1/4" x 10'9-1/4" x 9'2-1/2" mean height, set on timber skids. Composition shed roof, wood floor and plywood siding. Complete with electric wiring and fixtures. Floor area O.D. 73 square feet, volume 672 cubic feet.			
1 - 10" and 2 - 7" "Blue-Point" bench grinders, (no serial Nos.), H & N Nos. TM-64, TM-75, TM-77; 1 - 1/2" "Thor" bench drill, serial No. 323649, H & N No. TM-139; 1 - 1/2" "Skilsaw" bench drill, serial No. 645316, H & N No. TM-282; 2 - 300 amp. and 2 - 400 amp. "Lincoln" welders, serial Nos. A-232714, (None), A-237563, A-237562, H & N Nos. W-12, W-25, W-19, W-20; 1 - 75 KW "Onan" generator, serial No. 94-187587, H & N No. G-8; 1 - 50 KW "International" generator, serial			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
BUILDING NO. 113 - OFFICE (Continued)			
No. WDR-22999, H & N No. G-68; 1 - 5 KW "Palmer" generator, (no serial No.), H & N No. G-71; 1 "Famco" bench press arbor, (no serial No.), H & N No. GA-35; 1 - "Marquette" battery charges, serial No. M-11159, H & N No. GA-42; 1 - "Blackhawk" hydraulic jack, (no serial No.), H & N No. GA-69. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 2,866.57 Engineering Cost 33.01			2,899.58
BUILDINGS 36, 37, 82, AND 83 - SHOWERS AND LATRINES - 100-MAN CAPACITY			
One-story wood frame construction, gable roof, rectangular shape, size O.D. 25'-0" x 36'-0" x 10'-9" mean height, set on concrete floor slab. Corrugated aluminum roofing and 3/8" plywood siding. Complete with electric wiring and fixtures fresh and salt water plumbing. Total floor area 900 square feet, volume 9675 cubic feet. The equipment in each unit includes eight toilets, eight toilet enclosures, six urinals, eight lavatories, ten shower heads, eight mirrors and one water cooler with drinking fountain mounted on a concrete pad adjacent to building.	4	Each	
Installed equipment: 4 - 10 gallon "Larco" water coolers, (no serial Nos.), H & N No. CA-243, CA-739, CA-133, CA-134, one in each building. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 53,781.42 Engineering Cost 281.08			54,062.50

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued) BUILDING NO. 40 - MESS HALL One-story wood frame construction, "F" shape, size O.D. (Mess Hall) 24'-0" x 96'-0", (Galley, Meat Room and Bakery) 24'-0" x 66'-0", (Scullery) 16'-0" x 18'-0"; all heights are 10'-6" mean height. Set on concrete floor slab. Corrugated roofing and 3/8" plywood siding with plywood awning-type ventilators. Complete with electric wiring and fixtures, plumbing and piping and various types of Mess Hall, Bakery and Butcher Shop equipment. Floor area O.D. 4176 square feet, volume 43,848 cubic feet.	1	Each	
Installed equipment: 2 "Elkington" electric dishwashing machines, serial Nos. 17130, 17070, H & N Nos. K-221, K-296; 2 twin, 10 gallon "McKie" coffee urns, (no serial Nos.), H & N Nos. K-292, K-352; 1 - 60" x 30" x 34" "Barker" steel table, (no serial No.), H & N No. K-290; 1 - 25 gallon "Larco" water cooler, serial No. 420-13733, H & N No. CA-301; 1 - 65 gallon "Frigidaire" ice cream cabinet, (no serial No.), H & N No. K-8; 1 - 54" x 30" x 34" "Barker" cold pan, (no serial No.), H & N No. K-323; 1 - 96" x 30" x 34" "Barker" steam table, (no serial No.), H & N No. K-329; 1 - 84" x 30" x 34" "Barker" galvanized steel table with bins, (no serial No.), H & N No. K-213; 1 - "Cleveland" steam cooker, serial No. 101-3B, H & N No. K-151; 1 - 86" x 40" "Montague" oil range, serial No. 8260, H & N No. K-327; 2 - 40 gallon "Groen" steam kettles, serial No. 15140, (None), H & N No. K-127, K-128; 1 - 60 gallon "Hubbert" steam kettle, (no serial No.), H & N No. K-206; 1 - "Montague" oil range, serial No. 8166, H & N No. K-261; 1 - 98" x 27" x 34" "N.A." 2 - compartment, stainless steel sink, (no serial No.), H & N No. K-64; 1 - 30" x 72" "Barker" vegetable work table with shelf, (no serial No.), H & N No. K-318; 1 - "Buffalo" pedestal food cutter, serial No. 2026, H & N No. K-363; 1 - 84" x 30" x 34" "Barker" work table, (no serial No.), H & N No. K-197; 1 - 30" x 30" x 16" "Barker" maple meat block, (no serial No.), H & N No. ME-9; 1 - 72" x 30" x 34" "Barker" butchers'			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued) BUILDING NO. 40 - MESS HALL (Continued) work table, (no serial No.), H & N No. K-282; 1 - 30" x 30" "N.A." meat block, (no serial No.), H & N No. ME-12; 1 "Butcher Boy" meat saw, serial No. 4-839-49, H & N No. ME-1; 1 - 120" x 30" x 28" "Barker" galvanized steel pot washing sink, (no serial No.), H & N No. K-193; 1 - 90 lb. "Griswold" deep fat fryer, serial No. 104519, H & N No. K-92; 3 - 3 deck "Montague" oil ovens, serial Nos. 3293, 8171, 8289, H & N Nos. K-385, K-164, K-341; 1 - 40 cubic feet, 4 compartment, "Vering" reach-in refrigerator, (no serial No.), H & N No. R-39; 1 - 20" "Gillman" bread slicer, serial No. 5135, H & N No. K-22; 1 - 80 cubic feet "Servel" reach-in refrigerator, serial No. 02963, H & N No. R-71; 1 - 20 quart "Taylor" ice cream freezer, serial No. 46912, H & N No. K-205; 2 "Wells" friers, serial Nos. 53648, 53665, H & N Nos. K-326, K-327; 2 - 38" x 23" x 25" "N.A." griddle stands, (no serial Nos.), H & N Nos. K-338, K-391; 2 - 230 v., 6 K.W. "Griswold" griddles, (no serial Nos.), H & N Nos. K-145, K-143, 1 - 10 gallon "Larco" water cooler, (no serial No.), H & N Nos. CA-183; 1 - 20 to 25 lb. "Toledo" meat slicer, serial No. 12267, H & N No. ME-8; 1 - 40" x 30" x 34" "Barker" coffee urn stand, (no serial No.), H & N No. K-189; 1 - 30" x 30" x 30" "Barker" coffee urn stand, (no serial No.), H & N No. K-289; 1 - 36 gallon, 6 - hole "Utility" ice cream cabinet, (no serial No.), H & N No. K-173; 1 - 70" x 71", 10 - shelf "Union Steel" wire bread rack, (no serial No.), H & N No. K-105; 1 - 36 part "Duchess" bun divider, (no serial No.), H & N No. K-128; 1 - 50 lb. "M.J.M." potato peeler, (no serial No.), H & N No. K-14; 2 - 12" and 1 - 16" "Master" roof exhaust fans, (no serial No.), H & N Nos. F-404, K-367, K-132; 1 "U.S." slicing machine, serial No. 3266, H & N No. K-138; 1 "Toledo" steak tenderizer, serial No. 5250, H & N No. K-45; 1 - 36" "Sterilaire" germicidal lamp, serial No. 7A-122, H & N No. R-89; 1 - 1/4 H.P. "Wulff" knife sharpener, (no serial No.), H & N No. K-406.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
BUILDING NO. 40 - MESS HALL (Continued)			
(The previous list does not contain any user-furnished or user-installed equipment.)			
BUILDINGS 38 AND 38A - REEFERS			
Building 38: Consists of three (3) 675 cubic feet, prefabricated, walk-in type refrigerators set in a row on timber skids. A wood frame structure, rectangular shape, O.D. 8'-0" x 9'-0" x 8'-0" is adjacent to rear central portion of reefer bank. A 5' x 5' x 7' steel cube defrosting water tank is located on top of center reefer. Complete with electric wiring and fixtures. Concrete walk connecting to Mess Hall.	1	Each	
Building 38A: A 675 cubic foot prefabricated, walk-in type, refrigerator, set on timber skids. Complete with electric wiring and fixtures. Concrete walk connecting to Mess Hall.	1	Each	
Installed equipment (description of reefers): 3 - 675 cubic foot "Carrier" walk-in reefers, serial Nos. WR7-10411, WR7-101125, H & N Nos. R-115, R-80, R-114; 1 - 675 cubic foot "Amana" walk-in reefer, serial No. WR7-9652, H & N No. R-77. (The above list does not contain any user-furnished or user-installed equipment.)			
BUILDING NO. 41 - CAN WASHING ROOM			
One-story wood frame construction, rectangular shape, O.D. 8'-0" x 10'-0" set on concrete slab, corrugated aluminum roof and plastic insect screen on sides. Complete with electric wiring, fixtures, and plumbing. Floor area 80 square feet. Volume 547 cubic feet. A flake ice machine is installed adjacent to building.	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
BUILDING NO. 41 - CAN WASHING ROOM (Continued)			
Installed equipment: 1 - 1 ton "Vilter" "Pack-Icer" flake ice machine, serial No. A-47735-4, H & N No. CA-670. (The above list does not contain any user-furnished or user-installed equipment.)			
BUILDING NO. 42 - BOILER HOUSE			
One-story wood frame construction, rectangular shape, O.D. 10'-0" x 12'-10" x 10'-6" mean height, set on concrete floor slab. Corrugated aluminum roof and 3/8" plywood siding. Complete with electric wiring and fixtures, plumbing and piping, boiler, hot water generator and condensate unit. Floor area, O.D. 128 square feet; volume 1344 cubic feet.	1	Each	
Installed equipment: 1 - 24" x 72" "Advance" vertical water heater, (no serial No.), H & N No. G-57; 1 - 20 H.P. "Ames" steam generator, serial No. 56505, H & N No. G-47; 1 - 1" x 1-1/4" "Sta-Rite" pump, serial No. SA-4701, H & N No. CA-94. (The above list does not contain any user-furnished or user-installed equipment.)			
BUILDING NO. 101 - STORAGE			
Tent, 15'-10" x 31'-10" on wood floor. Floor area 504 square feet. Complete with electric wiring and fixtures. (No installed equipment.)	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
BUILDING 102 AND 109 - FUEL OIL TANK			
Welded steel tank on elevated wood platform, capacity 1200 gallons. Complete with piping. (No installed equipment.)	1	Each	
Construction Contract Cost 138,951.58 Engineering Cost 536.60			139,488.18
AIRSTRIP			
Construction of the airstrip consists of grading and stabilizing approximately 19,120 square yards; and filling, compacting, and stabilizing approximately 3000 cubic yards of aggregate. (No installed equipment.)	19,120	Sq. Yds.	
Construction Contract Cost 55,706.03			55,706.03
BARBER SHOP			
One-story wood and pipe frame construction, rectangular shape, O.D. 8'-0" x 10'-0" x 9'-0" mean height, set on 6" x 6" wood skids. Gable roof covered with canvas, canvas and plywood sides. Complete with electrical wiring and fixtures. Floor area O.D. 80 square feet; volume 720 cubic feet.	1	Each	
Installed equipment: 1 "Kock" barber chair, (no serial No.), H & N No. CA-199.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
BARBER SHOP (Continued)			
(The previous list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 279.92 Engineering Cost 4.14			284.06
CARPENTER SHOP			
One-story wood frame construction, rectangular shape, O.D. 28'-0" x 32'-0" x 11'-2" mean height; supporting wood columns setting in stabilized coral floor. Gable roof has corrugated galvanized iron roofing; no siding. Complete with electrical wiring and fixtures. Floor area O.D. 896 square feet; volume 10,005 cubic feet.	1	Each	
Installed equipment: 1 - 16" "DeWalt" table-mounted radial saw, serial No. 75671, H & N No. C-7; 1 - 7-1/4" "Skilsaw" portable saw, serial No. A-208413, H & N No. TM-214; 1 - 1/2" "Independent" portable drill, serial No. 401858, H & N No. TM-544. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 2,136.82 Engineering Cost 24.61			2,161.43
CHAPEL			
Wood frame structure, with wood floor, supporting a 16'-0" x 32'-0"			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
CHAPEL (Continued)			
canvas tent; area 512 square feet, complete with electrical wiring and fixtures, and wood benches, altar. (No installed equipment.)	1	Each	
Construction Contract Cost 1,791.49 Engineering Cost 26.52			1,818.01
ELECTRICAL FACILITIES			
The overhead distribution system consists of eleven 25' foot poles, five 30' foot, eleven 40' foot, four 45' foot and one 50' foot pole; primary lines include approximately 5000 lineal feet of #6 bare copper wire. Secondary system includes approximately 3500 lineal feet of #8 weather proof wire.			
The lighting system for the pier consists of twelve 50' foot poles; primary distribution includes 2000 lineal feet of #6 bare copper wire; secondary system includes 2400 lineal feet of #8 weatherproof and 7000 lineal feet of #6 weatherproof wire.			
Navigation lights are installed on a pole at the end of the pier and on a 50 foot pole on the causeway between Gene and Helen; this system includes 600 lineal feet of 3/c #8 direct burial cable.			
E.C.O. 287, causeway and pier lighting, consists of the new construction of eleven 50 foot poles with five flood light fixtures attached to the five poles at the cargo and personnel piers, and lighting fixtures at the other six poles along the causeway.	1	System	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
ELECTRICAL FACILITIES (Continued)			
Installed equipment: 6 - 5 KVA pole transformers; 10 - 10 KVA pole transformers; 2 - 15 KVA pole transformers; 2 - 37-1/2 pad transformers; 1 - 50 KVA pad transformer; 1 - 10 KVA pier transformer. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 58,663.44 Engineering Cost 476.98			59,140.42
ELECTRICAL SHOP			
Wood frame structure, 26'-0" x 12'-0" x 10'-0" mean height, plywood sides and floor, plywood roof with one layer composition roofing, mounted on concrete piers; area 312 square feet, volume 3120 cubic feet, complete with electrical wiring and fixtures. (No installed equipment.)	1	Each	
Construction Contract Cost 744.07 Engineering Cost 8.57			752.64
FIRE STATION			
A one-story wood structure, rectangular shape, O.D. 14'-0" x 32'-0" x 9'-6" mean height, set on 4" x 4" mud sill with 4" x 4" posts buried 2' in ground. Floor of 6" thick stabilized coral. Corrugated aluminum roofing, plywood siding on one end and two sides only. Complete with electric wiring and fixtures and fresh water service. Floor area O.D. 448 square feet, volume 4256 cubic feet. Building			

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
GENE (Continued)				
FIRE STATION (Continued)				
contains wood storage shelves 6'-6-5/8" high, 6'-3" wide, and 260" deep. A concrete gear washing pad, 4'-3" x 4'-6" is installed adjacent to the building. (No installed equipment.)		1	Each	
Construction Contract Cost	1,532.85			
Engineering Cost	59.29			1,592.14
FUEL DUMP				
Compacted and stabilized area, covered with 4" x 4" wood sleepers, allocated for the storage of lubricating and fuel oil. Area approximately 224 square feet. (No installed equipment.)		1	Each	
Construction Contract Cost	534.20			
Engineering Cost	6.15			540.35
GYMNASIUM				
Wood frame structure, 16'-0" x 32'-0" x 10'-0" mean height, plywood sides and floor plywood roof with one layer composition roofing; area 512 square feet, volume 5120 cubic feet, complete with electrical wiring and fixtures. (No installed equipment.)		1	Each	
Construction Contract Cost	1,791.49			
Engineering Cost	26.51			1,818.00

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
INFIRMARY			
One-story wood frame construction, rectangular shape, O.D. 12'-0" x 27'-10" x 8'-10" mean height set on wood sills. Gable roof on one end and hip roof on the other end, with corrugated aluminum roofing, wood and screen siding. Complete with electrical wiring and fixtures and plumbing. Floor area O.D. 334 square feet. Volume O.D. 2950 cubic feet. This is a rehabilitated structure moved from David.	1	Each	
Installed equipment: 1 - 16" x 16" x 14" "Castle" sterilizer, serial No. C-416, H & N No. D-50; 1 "Bowser" biological refrigerator, serial No. 10221, H & N No. D-5; 1 "Stephenson" portable resuscitator, serial No. 845; H & N No. D-105; 1 - "Aloe" instrument cabinet, (no serial No.), H & N No. D-110; 1 "Spencer" laboratory lamp, (no serial No.), H & N No. D-120. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 1,329.79 Engineering Cost 51.44			1,381.23
LIVING QUARTERS - GUARDS			
Wood frame structure, 32'-0" x 16'-0", with wood floor, supporting a canvas tent; area 512 square feet; complete with electrical wiring and fixtures. (No installed equipment.)	1	Each	
Construction Contract Cost 1,791.49 Engineering Cost 26.51			1,818.00

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
MARINE FACILITIES			
Marine Facilities on Gene consist of a coral fill jetty with a stabilized coral surface, which is approximately 7' above low tide, 944' long x 50' wide. 210' at the end of the jetty is 100' wide and contains a personnel pier, a cargo pier, and a concrete ramp. The personnel pier is of wood and 12" diameter wood pile construction, and is 72'-2" long x 10' wide and contains a stairway leading to a landing ramp 34'-6" long x 3'-9" wide. The cargo pier is of similar construction and is approximately 30' long x 24' wide, and contains a wing on each side perpendicular to the long axis; each wing is 30' long x 3' wide and contains a 3' high wood handrail along one side. The ramp is of reinforced concrete construction, 110' long x 85' wide x 8" thick, and slopes towards sea level at a 10% grade. Marine facilities include a 250' wide turning basin and a 150' wide channel to the lagoon, both of which are dredged to minus 7'.	1	Each	
E.C.O. 294 authorizes the fabrication and installation of three deadman anchors, required to assist in the landing of heavy loads. (Note: F.S.-778, Station No. 671 - a deadman anchor - was used as a reference drawing.) (No installed equipment.)			
Construction Contract Cost 175,339.50 Engineering Cost 2,600.79			177,940.29
OFFICE - AEC SECURITY			
Wood frame structure, 12'-0" x 10'-0" x 10'-0" mean height, with plywood sides and floor, and plywood roof with one layer of composition roofing, set on wood skids; area 120 square feet, volume 1200 cubic feet, complete with electrical wiring and fixtures	1	Each	

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
GENE (Continued)				
OFFICE - AEC SECURITY (Continued)				
(No installed equipment.)				
Construction Contract Cost	214.33			
Engineering Cost	5.00			219.33
OFFICE - AIR DISPATCH				
Wood frame structure with wood floor, supporting a 16'-0" x 16'-0" canvas tent; area 256 square feet, complete with electrical wiring and fixtures. (No installed equipment.)		1	Each	
Construction Contract Cost	457.24			
Engineering Cost	10.68			467.92
OFFICE - CONTRACTORS AND SURVEYORS				
One-story wood frame construction; gable roof; rectangular shape, O.D. 14'-0" x 17'-5" x 9'-1" mean height set on 6" x 6" wood skids. Plywood and screen siding, composition roofing. Complete with electrical wiring and fixtures. Floor area 244 square feet, volume 2217 cubic feet.		2	Each	
These are rehabilitated structures removed from David. (No installed equipment.)				
Construction Contract Cost	253.98			
Engineering Cost	5.93			259.91

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
GENE (Continued)				
OFFICE - INSPECTOR'S				
Wood frame structure, 10'-0" x 12'-0" x 8'-0" mean height, plywood sides and floor, plywood roof with one layer composition roofing, mounted on wood skids; area 120 square feet, volume 960 cubic feet, complete with electrical wiring and fixtures. (No installed equipment.)		1	Each	
	Construction Contract Cost 171.46			
	Engineering Cost 4.01			175.47
OFFICE - H & N GUARD				
Wood frame structure, 12'-0" x 12'-0" x 8'-0" mean height, plywood sides and floors, plywood roof with one layer composition roofing, set on wood skids; area 144 square feet, volume 1152 cubic feet, complete with electrical wiring and fixtures. (No installed equipment.)		1	Each	
	Construction Contract Cost 205.76			
	Engineering Cost 4.80			210.56
OFFICE - MARINE DISPATCHER'S				
Wood frame structure, 16'-0" x 16'-0" x 10'-0" mean height, plywood sides and floor, plywood roof with one layer composition roofing, set on wood skids; area 256 square feet, volume 2560 cubic feet, complete with electrical wiring and fixtures. (No installed equipment.)		1	Each	
	Construction Contract Cost 457.24			
	Engineering Cost 10.68			467.92

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
GENE (Continued)				
OFFICE - MILITARY POLICE GUARD				
Wood frame structure, 12'-0" x 12'-0" x 10'-0" mean height, with plywood sides and floor, and plywood roof with one layer composition roofing, set on wood skids; area 144 square feet, volume 1440 cubic feet, complete with electrical wiring and fixtures. (No installed equipment.)		1	Each	
Construction Contract Cost	257.20			
Engineering Cost	6.00			263.20
OFFICE - WAREHOUSE				
Wood frame structure, 30'-0" x 12'-0" x 10'-0" mean height, plywood sides and floor, plywood roof with one layer composition roofing, mounted on concrete footings; area 375 square feet, volume 3750 cubic feet, complete with electrical wiring and fixtures. (No installed equipment.)		1	Each	
Construction Contract Cost	1,077.92			
Engineering Cost	101.66			1,179.58
OFFICE - TIMEKEEPER'S				
Wood frame structure, 10'-0" x 12'-0" x 8'-0" mean height, plywood sides and floor, plywood roof with one layer of composition roofing, mounted on wood skids; area 120 square feet, volume 960 cubic feet, complete with electrical wiring and fixtures. (No installed equipment.)		1	Each	
Construction Contract Cost	171.46			
Engineering Cost	4.00			175.46

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
PIPE SHOP			
Wood frame structure, 26'-0" x 16'-0" x 10'-0" mean height, plywood sides and floor, plywood roof with one layer composition roofing, mounted on concrete footings; area 416 square feet, volume 4160 cubic feet, complete with electrical wiring and fixtures.	1	Each	
Construction Contract Cost 992.09 Engineering Cost 11.42			1,003.51
P.O., P.X., AND REFRESHMENTS			
One-story wood construction, rectangular shape, O.D. 16'-0" x 56'-10" x 8'-10" mean height, set on concrete slab. Gable roof covered with corrugated aluminum roofing; wood and screen siding. A 625 cubic foot prefabricated walk-in refrigerator is built into one end of building. Complete with electrical wiring and fixtures, plumbing and bar fixtures. Floor area O.D. 909 square feet. Volume 8029 cubic feet. Flake ice machine adjacent to building. This is a rehabilitated structure removed from David.	1	Each	
Installed equipment: 1 - 675 cubic foot "Carrier" walk-in refrigerator, serial No. WR7-4716, H & N No. R-113; 1 flake ice machine. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 3,180.60 Engineering Cost 47.08			3,227.68

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
RECREATION HALL			
One-story wood frame construction, rectangular shape, O.D. 15'-0" x 44'-6" x 10'-3" mean height, set on concrete. Shed roof, corrugated aluminum roofing and siding. Complete with electrical wiring and fixtures. Floor area O.D. 667 square feet, volume 6835 cubic feet.	1	Each	
Installed equipment: 1 - 1 ton "Vilter" ice machine, serial No. 84285-1244, H & N No. CA-75. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 2,099.40 Engineering Cost 31.07			2,130.47
ROADS AND AREAS - STABILIZED			
Stabilized roads and areas for Camp Gene consist of grading and stabilizing approximately 10,400 square yards. (No installed equipment.)	10,400	Sq. Yds.	
Construction Contract Cost 58,657.70 Engineering Cost 264.03			58,921.73
SHEET METAL SHOP			
Wood frame structure, 20'-0" x 20'-0" x 10'-0" mean height, plywood sides and floor, plywood roof with one layer composition roofing, mounted concrete footings; area 400 square feet, volume 4000 cubic			

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
GENE (Continued)				
SHEET METAL SHOP (Continued)				
feet, complete with electrical wiring and fixtures.		1	Each	
Construction Contract Cost	953.93			
Engineering Cost	10.99			964.92
SEWER FACILITIES				
The sewer facilities on Gene include 230 lineal feet of 2" cast iron pipe; 125 lineal feet of 4" cast iron pipe; 200 lineal feet of 6" vitrified clay pipe; 435 lineal feet of 8" vitrified clay pipe; an outfall of approximately 300 lineal feet of 8" galvanized pipe with victaulic couplings; two manholes 3'-6" deep and one manhole 6'-0" deep. (No installed equipment.)		1	System	
Construction Contract Cost	16,124.33			
Engineering Cost	255.52			16,379.85
TANKS - FUEL OIL STORAGE				
Three Navy pontoons used as tanks, mounted on an 8'-0" high wood frame platform resting on concrete piers. (No installed equipment.)		2	Each	
Construction Contract Cost	166.94			
Engineering Cost	1.92			168.86

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
GENE (Continued)				
TELEPHONE FACILITIES				
Telephone facilities for camp services on Gene include approximately 3400 lineal feet of two conductor overhead wire, 14 telephones and service drops. (No installed equipment.)		1	System	
Construction Contract Cost	19,809.73			
Engineering Cost	238.49			20,048.22
TENTS - 4-MAN				
Wood frame and canvas construction; O.D. 14'-2" x 14'-4" x 11'-6"; anchor bolted to a concrete slab; canvas fly separated from tent roof by spacer blocks and fly ridge; complete with electrical wiring and fixtures; floor area O.D. 208 square feet. (No installed equipment.)		3	Each	
Construction Contract Cost	1,616.59			
Engineering Cost	27.86			1,644.45
TENTS - 8-MAN				
Wood frame and canvas construction; O.D. 15'-10" x 31'-10" x 11'-6"; anchor bolted to a concrete slab; canvas fly separated from tent roof by spacer blocks and fly ridge; complete with electrical wiring and fixtures; floor area 504 square feet. (No installed equipment.)		65	Each	
Construction Contract Cost	84,870.84			
Engineering Cost	1,462.70			86,333.54

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
TENTS - STORAGE			
Wood frame structure, with wood floor, supporting a 32'-0" x 16'-0" canvas tent; area 512 square feet, complete with electrical wiring and fixtures. (No installed equipment.)	2	Each	
Construction Contract Cost 1,221.03 Engineering Cost 14.06			1,235.09
THEATER - OPEN AIR MOTION PICTURE			
The projection room is a one-story, wood frame structure, rectangular in shape, 8'-0" x 11'-6" x 8'-6" mean height set on 5" thick concrete slab. Shed roof, corrugated aluminum roofing and siding. Complete with electrical wiring and fixtures, sound and movie equipment. Floor area O.D. 92 square feet, volume 782 cubic feet.			
A canopy, wood frame covered with corrugated galvanized steel, extends from the projection booth a distance of 17'-0"; it is 23'-6" wide at forward edge and shelters 5 rows of seats.			
A 13'-0" x 16'-3-1/2" wood screen structure is mounted on and braced from concrete piers and elevated 4'-0" above grade. The screen is plywood 13'-0" x 16'-0", painted white with a 2'-0" black border around four sides. Its distance from the front of projection booth is 69'-0".			
A total of 22 wood benches with back rests provide seating capacity for 239 persons.	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
THEATER - OPEN AIR MOTION PICTURE (Continued)			
Installed equipment: 2 - 16 mm. "RCA" sound projectors, (no serial Nos.), H & N Nos. CA-53 and CA-522. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 1,134.52			1,134.52
WAREHOUSE			
One-story wood frame construction, rectangular shape, O.D. 28'-0" x 50'-0" x 17'-0" mean height, set on concrete slab. Gable roof with corrugated aluminum roofing; 3/8" plywood siding. Complete with electric wiring and fixtures. Floor area O.D. 1400 square feet, volume 23,800 cubic feet. (No installed equipment.)	1	Each	
Construction Contract Cost 5,424.64 Engineering Cost 511.60			5,936.24
WATER FACILITIES - SALT WATER DISTRIBUTION SYSTEM			
The salt water distribution system consists of approximately 1055 lineal feet of 4" transite pressure pipe and 154 lineal feet of 1-1/4" copper service lines, laid a minimum of 2'-6" underground. Included in the salt water distribution system is one 4'-6" x 22'-0" deep (outside dimensions) concrete salt water well, complete with a 4" suction line to the distillation plant. (No installed equipment.)	1	System	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
GENE (Continued)			
WATER FACILITIES - FRESH WATER DISTRIBUTION SYSTEM			
The fresh water distribution system consists of approximately 1055 lineal feet of 3" transite pressure pipe, 172 lineal feet of 1-1/4" copper service lines, and 220 lineal feet of 1/2" service lines, laid a minimum of 2'-6" underground. (No installed equipment.)	1	System	
WATER FACILITIES - FRESH AND SALT WATER STORAGE TANKS: BUILDING NO. 7			
Building 7 consists of one 4200 gallon fresh water storage tank, and one 4200 gallon salt water storage tank, both mounted on a common 30'-0" high timber tower resting on six reinforced concrete footings.	1	Each	
WATER FACILITIES - FRESH WATER STORAGE TANKS: BUILDING 106, 107 AND 123			
Buildings 106, 107, and 123 are ground level, bolted steel, navy pontoons, resting on wood platforms, used for storing fresh water.	3	Each	
Construction Contract Cost 19,535.55 Engineering Cost 451.43			19,986.98

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE **BUILDING NO. 102 - 100-MAN MESS HALL** This is a one-story, double roofed, prefabricated aluminum building, I.D. 24'-0" x 100'-8-1/2" x 10'-0" mean height, with an attached wood frame gable roofed addition with exterior plywood siding and corrugated aluminum roof I.D. 32'-0" x 34'-0" x 11'-0" mean height, combined floor area of 3505 square feet, interior volume 36,138 cubic feet, all erected on an existing concrete slab; complete with electric wiring and fixtures, telephone installation, plumbing and piping systems. All windows are screened and there are four screened door enclosures; three metal exhaust hood and duct assemblies extend thru the roof.	1	Each	
Installed equipment: 2 - 150 cubic feet walk-in refrigerators, (no serial Nos.), H & N Nos. R-34, R-104; 2 - 675 cubic feet walk-in refrigerators, (no serial Nos.), H & N Nos. R-66, R-110; 1 - 40 cubic feet reach-in refrigerators, (no serial No.), H & N No. R-123; 1 - Electric ice machine, Flake, (no serial No.), H & N No. CA-4; 1 - 1 Ton ice machine, Bar, (no serial No.), H & N No. 292; 1 - Food slicing machine, (no serial No.), H & N No. K-55; 1 - Galvanized metal work table, (no serial No.), H & N No. K-167; 1 - 56" x 30" x 34" work table, (no serial No.), H & N No. K-66; 1 - Cooks work table, (no serial No.), H & N No. K-248; 1 - Butchers work table, (no serial No), H & N No. K-249; 1 - work table, (no serial No.), H & N No. K-257; 1 - Electric dishwashing machine, (no serial No.), H & N No. K-148; 1 - Electric potato peeler, (no serial No.), H & N No. K-154; 1 Battery coffee urn, (no serial No.), H & N No. K-174; 1 - Oil burner kitchen range, (no serial No.), H & N No. K-176; 1 - Steam cooker, (no serial No.), H & N No. K-188; 1 - Ice cream cabinet, (no serial No.)			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued) BUILDING NO. 102 - 100-MAN MESS HALL (Continued) H & N No. K-207; 1 - Bain Marie steam table, (no serial No.), H & N No. K-212; 1 - Steam table, (no serial No.), H & N No. K-243; 1 - Hood range, (no serial No.), H & N No. K-230; 1 - Grease arrester, (no serial No.), H & N No. K-241; 1 - Dish storage counter pick-up, (no serial No.), H & N No. K-244; 1 - Soiled and clean dish table, (no serial No.), H & N No. K-246; 1 - 36" Fan roof exhauster, (no serial No.), H & N No. K-276; 2 - Deep-fat fryers, (no serial No.), H & N Nos. K-294, K-295; 1 - Electric griddle, (no serial No., H & N No. K-358; 1 - 20 quart ice cream freezer, (no serial No.), H & N No. K-384; 1 - Baking and roasting oven, (no serial No.), H & N No. K-440. (The above list does not contain any user-furnished or user-installed equipment.)			
BUILDING NO. 102 - BOILER HOUSE A one-story wood frame structure with shed roof corrugated aluminum siding and roofing, O.D. 10'-0" x 12'-0" x 10'-3" high; volume 1230 cubic feet, area 120 square feet, erected on an existing concrete slab, complete with electrical wiring and fixtures, piping system and an exterior steel storage tank 6'-0" diameter x 10'-0" long mounted on existing concrete saddles.	1	Each	
Installed equipment: 1 - 1-1/2" pump, (no serial No.), H & N No. CA-294; 1 - 20 H.P. Steam unit generator, (no serial No.), H & N No. G-38; 1 - Hot water generator, (no serial No.), H & N No. G-43. (The above list does not contain any user-furnished or user-installed equipment.)			
BUILDING No. 122 - GARBAGE STORAGE SHED A one-story wood frame structure, with shed roof, plywood and plastic			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
BUILDING NO. 122 - GARBAGE STORAGE SHED (Continued)			
screen siding and corrugated aluminum roofing, erected on an existing concrete slab; I.D. 7'-4" x 7'4" x 7'-9" high, area 156 square feet, volume 444 cubic feet; complete with plumbing, salt water piping and steam piping. (No installed equipment.)	1	Each	
BUILDING NO. 125 - REEFER			
A one-story, wood frame, trussed building 34'-0" long x 33'-0" wide x 11'-6" mean height, with plywood siding and wood louvers on three sides, connected to Mess Hall, Building 102, on the fourth side, erected on a 34'-0" x 33'-0" x 5" thick concrete slab with continuous footing 1'-6" deep. Building contains three 12'-10" x 9'-0" walk-in reefers, each with a compressor unit mounted on the exterior of the building, one 8'-0" x 5'-10" walk-in reefer, 5 - 12'-0" long x 7'-10-1/2" high shelf racks, and all necessary electrical conduits, wiring, and fixtures. Area 1122 square feet, volume 12,903 cubic feet.	1	Each	
Installed equipment. 3 - 12'-10" x 9'-0" walk-in reefers, 1 - 8'-0" x 5'-10" walk-in reefer. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 95,006.19 Engineering Cost 588.96			95,595.15
ADMINISTRATION BUILDING			
A reconstructed one-story prefabricated aluminum building; size I.D. 24'-0" x 44'-8-1/2" x 12'-0" high, erected on a previously existing			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
ADMINISTRATION BUILDING (Continued)			
concrete slab; vented window panels, aluminum partition; complete with electrical wiring and fixtures; existing fresh water services; area O.D. 1072 square feet; volume 12864 cubic feet.	1	Each	
Installed equipment: 1 - 10 gallon "Larco" water cooler, serial No. 50D017790, H & N No. CA-164. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 3,050.97 Engineering Cost 114.73			3,165.70
CARPENTER SHOP			
Wood frame structure, 28'-0" x 20'-0" supporting canvas tarpaulin top, constructed on existing concrete slab, area 560 square feet; complete with electrical wiring and fixtures.	1	Each	
Installed equipment: 1 - 16" "Dewalt" table saw, serial No. 71869, H & N No. C-13; 1 - 30" "Jones Superior" band saw, serial No. 4926, H & N No. C-10.			
(The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 1,211.78 Engineering Cost 7.64			1,219.42

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
ELECTRICAL FACILITIES			
Construction of electrical distribution system for camp services include 360 lineal feet of overhead #4 bare copper primary line; 1215 lineal feet of overhead #6 bare copper secondary line; 1340 lineal feet of underground 3/c #6 tirex secondary line; seven 40-foot poles, ten 30-foot poles, 5 transformers and service drops.	1	System	
Construction Contract Cost 18,123.56 Engineering Cost 206.52			18,330.08
FIRE AND FIRST AID BUILDING			
One-story aluminum structure, 24'-0" x 20'-8-1/2" x 10'-10" mean height, erected on previously existing concrete slab, double roof separated by 2" x 4" redwood purlins; contains vented window panels, aluminum partitions; complete with electrical wiring and fixtures and plumbing, counter and shelving; area 597 square feet, volume 6634 cubic feet.	1	Each	
Installed equipment: 1 sterilizer, H & N No. D-1; 1 - 24" x 30" x 13" aluminum wall cabinet, H & N No. D-63; 1 - 31" "Simmons" adjustable hospital bed, H & N No. D-153: 1 - 18" x 34-1/2" x 24-1/2" aluminum cabinet, H & N No. D-90; 1 - Adjustable mechanical chair, H & N No. D-156; 1 - "Sturgis" utility chair, H & N No. 0-698. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 2,971.13 Engineering Cost 53.54			3,024.67

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
GENERATOR SHED - AUXILIARY			
Wood frame structure, 10'-0" x 5'-0" x 8'-0" high, plywood on 3 sides and plywood roof covered with one layer of composition roofing, mounted on existing concrete slab, complete with electrical wiring and fixtures.	1	Each	
Installed equipment: 2 auxiliary generators. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 108.19 Engineering Cost .68			108.87
LANDING PIER - CARGO AND PERSONNEL - REACTIVATION OF			
Reactivation of Cargo and Personnel Pier consists of the replacement of approximately 1800 square feet of 3" timber decking. (No installed equipment.)	1	Each	
Construction Contract Cost 11,155.49 Engineering Cost 267.71			11,423.20
POWER AND DISTILLATION PLANT - REHABILITATION OF			
Rehabilitation of Power and Distillation Plant includes overhaul and repairs or replacements of parts for three diesel engine driven generators with cubicles and panel boards, three distillation units, pumps, diesel engine piping, distillation piping, ventilation equipment and ducts, fans, compressors and incidental equipment.	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
POWER AND DISTILLATION PLANT - REHABILITATION OF (Continued)			
Installed equipment: 1 - 1" x 1-1/2" x 7", 20 g.p.m. "Gould" centrifugal pump, serial No. 609A183.4, H & N No. D1-123; 1 - 25 g.p.m. "Worthington" feed pump, serial No. 1409918, H & N No. D1-178. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 15,170.79 Engineering Cost 2,057.54			17,228.33
SHOWERS AND LATRINES			
One-story aluminum structure, rectangular shape, size O.D. 24'-0" x 36'-8-1/2" x 12'-0" high, erected on previously existing concrete slab; double roof separated by 2" x 4" redwood; vented window panels; aluminum partitions; with electrical services and fixtures; area O.D. 981 square feet; volume 10772 cubic feet; plumbing fixtures connected to existing services include 16 lavatories, 6 water closets and 6 urinals.	2	Each	
Installed equipment - Building 101: 1 - 10 gallon "Larco" water cooler, (no serial No.), H & N No. CA-836.			
Installed equipment - Building 108: 1 - 10 gallon "Larco" water cooler, serial No. 9J-06916, H & N No. CA-176. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 23,537.76 Engineering Cost 275.36			23,813.12

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
SEWER SYSTEM - REHABILITATION OF			
Rehabilitation of sewer system which consists of 1182 linear feet of 8" vitrified clay pipe, 5 corrugated metal manholes, 500 linear feet of corrugated metal out-fall and 318 linear feet of 6" V.C. service branches. (No installed equipment.)	1	System	
Construction Contract Cost 682.11			682.11
TENT - 4-MAN			
Wood frame and canvas construction; size O.D. 14'-2" x 14'-4" x 11'-6"; anchor bolted to previously existing concrete slab; canvas fly separated from tent roof by spacer blocks and fly ridge; complete with electrical wiring and fixtures; area 208 square feet. (No installed equipment.)	37	Each	
Construction Contract Cost 25,028.11 Engineering Cost 344.20			25,372.31
TENT - REFRESHMENT SHELTER AND PX			
The shelter is a wood and canvas structure, size O.D. 20'-6" x 46'-0" x 10'-0" high; canvas roof over timber frame supported by 4" x 6" posts on previously existing concrete piers, earth floor; area 943 square feet the volume, 9430 cubic feet. The tent is a canvas on wood frame structure, size O.D. 14'-2" x 14'-4" x 11'-6" erected on previously existing concrete slab; canvas fly separated from tent roof by spacer blocks and fly ridge, complete with electrical services and fixtures; area O.D. 203 square feet.	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
TENT - REFRESHMENT SHELTER AND PX (Continued)			
Installed equipment: 2 - 150 cubic foot "Hussmann-Ligonier" walk-in refrigerators, serial Nos. 6501-3477, 6501-3475, H & N Nos. R-104, R-34; 1 - 1 ton "York" flake ice machine, serial No. 269136, H & N No. CA-4; 1 - 24" x 30" x 42" ice bin, (no serial No.), H & N No. K-247; 1 - 37" x 28" x 8" jobsite fabricated, sheet metal sink, H & N No. CA-970; 1 - 4500 cubic inch, "Meilink" fireproof safe, serial No. 8068, H & N No. O-416. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 20,305.21			20,305.21
THEATER - OPEN AIR MOTION PICTURE			
Theater has seating capacity of 202 seats, 14 wood benches with back rests. Screen structure 21'-0" wide x 17'-0" high anchored to previously existing concrete piers; wood stairway and platform with canopy at one side of screen. The 16'-0" x 12'-0" transite screen is 59'-6" from the projection booth which is a one-story wood and aluminum construction 8'-0" x 11'-6" x 8'-0" erected on a previously existing concrete slab; floor area O.D. 92 square feet, volume 736 cubic feet; complete with electrical services and fixtures.	1	Each	
Installed equipment: 2 - 16 MM "RCA Victor" sound motion picture projectors, serial Nos. 05289, 15805, H & N Nos. CA-54, CA-317; 1 "General Electric" voltmeter, serial No. 99X33, H & N No. TM-299. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 1,294.53			1,294.53

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
WAREHOUSES - GENERAL AND ELECTRICAL			
Wood frame construction, 16'-0" x 32'-0", supporting a 16 - man canvas tent, mounted on existing concrete slab; area 512 square feet. The General Warehouse is located approximately 10 feet north of the Latrine, Building 108, and the Electrical Warehouse is located approximately 25 feet south of the Reefer Building 105; contains the required electrical wiring and fixtures. (No installed equipment.)	2	Each	
Construction Contract Cost 1,107.91 Engineering Cost 6.98			1,114.89
WATER DISTRIBUTION SYSTEM - SALT - REHABILITATION OF			
Consists of the complete rehabilitation of the salt water distribution system which consists of 1070 linear feet of 4", and 283 linear feet of 3" transite pressure pipe, six service connections, and a previously existing concrete salt water well. (No installed equipment.)	1	System	
WATER DISTRIBUTION SYSTEM - FRESH - REHABILITATION OF			
Consists of the rehabilitation of the fresh water distribution system which consists of 380 linear feet of 4", and 973 linear feet of 3" transite pressure pipe, and five service connections. (No installed equipment.)	1	System	
TANKS - ELEVATED - SALT AND FRESH WATER			
Two steel, bolted 4200 gallon capacity tanks, one each for salt water and fresh water, elevated on a timber tower, 30'-0" high, constructed on previously existing concrete piers. Contains all necessary fresh			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
TANKS - ELEVATED - SALT AND FRESH WATER (Continued)			
and salt water piping and valves, and an access ladder. (No installed equipment.)	1	Each	
TANK - FRESH WATER STORAGE			
Bolted steel, fresh water storage tank, capacity 7500 gallons, mounted on a ground level platform. (No installed equipment.)	1	Each	
TANK BUILDING - ACID			
One-story wood and corrugated iron building, outside dimensions 8'-0" x 12'-0" x 9'-0" mean height, floor area 96 square feet, volume 864 cubic feet; constructed on previously existing concrete slab; complete with 240 gallon capacity redwood acid tank, and all the necessary piping and valves. (Pumps and distillation equipment installed in Power and Distillation Plant, Building 106.) (No installed equipment.)	1	Each	
Construction Contract Cost 3,644.21 Engineering Cost 290.66			3,934.87

COMPLETION REPORT
for
CONTRACT NO. AT-(29-2)-20
OPERATION IVY

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER BUILDING NO. 194 This building consists of two separate one-story units. The larger unit is an aluminum "Pacific" type building, with inside dimensions of 60'-8-1/2" long x 24'-0" wide x 10'-10" mean height, set on a 6" reinforced concrete floor slab with foundations 12" below grade. The area of this unit is 1457 square feet, and the volume is 15784 cubic feet. This unit is ventilated and dehumidified and is provided with waste lines, fresh water lines, compressed air piping, a 34'-0" long wood work bench, a sink built into a wood stand, a 23'-8" long wood cabinet and shelf combination, a metal welding table, and a monorail for a 1/2 ton chain fall supported by angle sections. The smaller unit is located 3'-0" to the south of the larger unit and is constructed of 2" x 4" wood stud and 1/2" plywood siding, a cold process composition roofing over sheathing, and it rests on a 6" reinforced concrete slab with foundations 12" below grade. Its outside dimensions are 37'-0" long x 15'-2" wide x 9'-0" mean height, an area of 561 square feet, and a volume of 5049 cubic feet. This unit contains dehumidification equipment for the larger unit. Building 194 contains all the necessary aluminum duct work, and mechanical and electrical fixtures and conduits.	1	Each	
Installed equipment: 5 "Kilpatrick" condensor dehumidification units, serial Nos. 81450-8, 81450-12, 81450-1; 81450-5, 81450-6, H & N Nos. A-84-B, A-82-B, A-87-B, A-81-B, A-79-B; 5 "Kilpatrick" evaporator dehumidification units, serial Nos. 81450-5, 102750-20, 102750-16, 81450-2, 81450-6, H & N Nos. A-78-A, A-111-B, A-108-B, A-84-A, A-80-A; 1 "Mullenback" floor standing main switchboard, serial No. 16753; H & N No. E-369; 1 - 10 gallon "Larco" water cooler, serial No. 9J20693,			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
BUILDING NO. 194 (Continued)			
H & N No. CA-127; 1 - 15.6 CFM "De Vilbiss" air compressor, serial No. 169272, H & N No. CO-50; 1 - 1/2 ton "Yale" trolley hoist, (no serial No.), H & N No. TM-682. The following installed equipment was removed from existing Building 211 (Greenhouse) and installed in Building 194; 1 - 7" "Queen City" bench grinder, serial No. 247555, H & N No. TM-218; 1 - 3/4 H.P. "Excello" carbide tool grinder, serial No. 1903, H & N No. MA-27; 1 "Rivett" precision tool lathe, serial No. 141, H & N No. MA-70; 1 "Columbian" vise, (no serial No.), H & N No. TM-618. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 71,737.75 Engineering Cost 2,477.64			74,215.39
SUB-STATION 194, (T-23)			
Reinforced concrete slab, located adjacent to the south wall of the large unit of Building 194 and adjacent to the east wall of the small unit of Building 194. Its dimensions are 9'-0" long x 8'-0" wide, and includes an angle frame, 5'-4" high x 4'-0" wide to support oil fuse cutouts. It is surrounded by gravel 6" deep, and enclosed by a 6'0" high chain link fence with 3 strands of barbed wire on top and an entrance gate on the east side. Overall area is 133 square feet.	1	Each	
Installed equipment: 3 - 50 KVA "Westinghouse" oil-type transformers, serial Nos. 6325286, 6323301, 6323293, H & N Nos. TR-216, TR-217, TR-218. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 17,583.06 Engineering Cost 607.27			18,190.33

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
BUILDING NO. 211 - ALTERATIONS TO			
E.C.O. 286 authorizes modifications to Building 211 as follows:			
1. Partition between Rooms 1 and 2 was removed and relocated in Machine Shop of same building, creating two rooms of equal size in the Machine Shop.			
2. A new concrete pad, 5'-0" x 3'-6", was constructed, and an exterior door and hood was added to the west wall of Building 211.			
3. Four work benches were removed and stored outside, and one work bench was relocated.			
4. Existing electrical conduits were sheared and capped and two electrical convenience outlets were added.	1	Each	
(No installed equipment.)			
Construction Contract Cost 502.05			502.05
BUILDING NO. 212-A - ALTERATIONS AND ADDITIONS TO			
E.C.O. 285 authorizes the addition of an exterior concrete pad 5'-0" x 5'-6" with dehumidification relocated from interior of building; removal of 24 lineal feet of standard corrugated aluminum partition and replacement of exterior door with standard aluminum panels, and relocation of electrical panel, with necessary wiring and aluminum duct work. (No installed equipment.)	1	Unit	
Construction Contract Cost 1,604.25			1,604.25

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
BUILDING NO. 222 - MODIFICATIONS TO			
To Building 222, an existing aluminum "Pacific" type building, the following modifications and additions were incorporated: The building was divided into seven rooms by 2" x 4" stud and plywood partitions reaching from floor to ceiling; in one room, the Dark Room, a 3'-9" x 2'-6" x 6" deep sink built into a wood stand was provided; 2 counters, one 10'-0" long and one 8'-0" long, work tables, benches, and a blackboard were constructed. A 3" C.I. waste line was installed from the new sink to a nearby sewer; a dry well for a drinking fountain was constructed, together with a 2" C.I. waste line and a 3/4" fresh water line; lighting was provided for a photography set-up, and all the necessary lighting, conduits, wiring and fixtures were provided throughout the building.	1	Each	
Installed equipment: 1 - 48" x 30" x 6" welded seamless stainless steel sink, H & N No. PL-70; 1 - 10 gallon "Larco" water cooler, serial No. 8G65377, H & N No. CA-155; 1 - 42" x 60" x 28" "Remington Rand" vault safe, serial No. 6028-B, H & N No. 0-754; 3 - 4 drawer legal size file safes with combination locks, H & N No. 0-716, 0-718, 0-719. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 14,154.06 Engineering Cost 680.46			14,834.52
BUILDING NO. 313 - MODIFICATIONS TO			
E.C.O. 272 authorizes modifications to Building 313 as follows: Office space was made larger, and warehouse area made smaller by moving partition between the two 24'-0" south; single roof made into double roof over new office space; sliding door relocated; 2 new 2" x 4" stud			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
BUILDING NO. 313 - MODIFICATIONS TO (Continued)			
partitions with 3" x 3" wire screen, each approximately 25'-0" long, built into corner of Warehouse area; shelving added; new concrete pad added; light fixtures relocated and new light fixtures and receptacles added. (No new installed equipment.)	1	Each	
Construction Contract Cost 4,966.93			4,966.93
BLAST PROTECTION			
Blast protection to buildings and facilities was accomplished in accordance with the requirements of specific buildings, needs, and locations. In general, doors were removed and either stored or laid flat on the floor; window shutters were locked in the open position; drive pins were added to the wall sill members; posts and timber beams were installed for roof support where required; cable guys were attached to building frames and anchored to concrete deadmen where required; buildings were shored and braced, and wall panel sections were removed as deemed necessary; all water, oil, and gas storage tanks were filled to capacity; towers and other high structures were securely guyed and anchored. (No installed equipment.)	1	Locale	
Construction Contract Cost 86,740.80 Engineering Cost 4,106.94			90,847.74
BOILER HOUSE - ADDITION OF AND POWER PLANT - ALTERATIONS TO			
E.C.O. 266 authorizes the addition to Building 301 of an adjacent			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued) BOILER HOUSE - ADDITION OF AND POWER PLANT - ALTERATIONS TO (Continued) service building, assigned Building 301A; the installation of a new vertical boiler; the relocation of an existing boiler and feed water receiver from Building 301 to 301A, the installation of two additional Distillation Units with necessary foundations in Building 301; and the necessary revisions to piping and electrical services. Building 301A, is a one-story, single roofed prefabricated aluminum building erected on a concrete foundation 25'-2" x 25'-10-1/2"; interior dimensions 24'-8-1/2" x 24'-0" x 10'-10" mean height with a floor area of 593 square feet and a volume of 6424 cubic feet; complete with electrical, plumbing and piping installations and connections; two exterior sliding doors, 140 square feet of exterior concrete slab, and an interior work bench. Additions to existing Building 301, include 497 cubic feet of reinforced concrete equipment foundations; additional piping, wiring and connections, addition of transformer station with concrete base pad, and necessary wiring conduit and accessories, and two Distillation Units, complete.	1	Each	
Installed equipment: 2 - 600 G.P.H. "Cleaver-Brooks" Distillation Units, serial Nos. 49-84, 50-94, H & N Nos. DI-49, DI-60; 2 "Sutorbuilt" rotary positive pumps, serial Nos. 126RHBD, (No. missing), (no H & N Nos.); 2 - 75 H.P., 220 v. "Louis-Allis" induction motors, serial Nos. 1547519, 1547522, (no H & N Nos.); 1 - 1/6 H.P., 15 lb. working pressure "Steelmaster" automatic vertical boiler, serial No. LX-1; H & N No. DI-181; 1 - "Ames Iron Works" automatic horizontal boiler, serial No. 56421, H & N No. G-38; 1 - 1-1/4 x 1-1/2, 30 G.P.M. "Gould" boiler feed pump, serial No. 282A320, H & N No. CA-674; 1 - 100 KVA "Line Material" transformer, serial No. 949103, (no H & N No.); 2 - 75 KVA "Line Material" transformers, serial No. 1005892,			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
BOILER HOUSE - ADDITION OF AND POWER PLANT - ALTERATIONS TO (Continued)			
100582, (no H & N Nos.); 1 - 100 KVA "Westinghouse" transformer, serial No. 5394934 (no H & N No.); 2 - 75 KVA "Niagara-Erie Electric Co." transformer, serial Nos. 12670, 12856, (no H & N Nos.). (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 150,980.64			150,980.64
BUILDING - AEC ADMINISTRATION - ALTERATIONS TO			
E.C.O. 275 authorizes the addition of 70 lineal feet of standard corrugated aluminum partitions, 6'-9" high dividing the existing Conference Room into four areas; and the installation of one 3 panel wood door in an existing frame partition.	1	Each	
E.C.O. 283 authorizes the addition of a standard corrugated aluminum partition, 10'-0" long x 6'-9" high with a standard door installed in Room A-16.			
E.C.O. 296 authorizes the addition of a corrugated aluminum door in the corridor at the east end of the south wing of Building 209, and 30 lineal feet of 8" x 8" bumper guard exterior to the building. (No installed equipment.)			
Construction Contract Cost 1,474.74 Engineering Cost 68.58			1,543.32

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
BUILDING - TASK HEADQUARTERS - MODIFICATIONS TO			
E.C.O. 270, modifications to Building 221, authorizes the dehumidification and ventilation of Teletype and Code Rooms by providing a dehumidification unit, aluminum supply and return duct work, and by spraying these rooms with "Vapor-Seal". The fluorescent light fixtures in these rooms were removed and rearranged, and two additional fixtures were added to each room; existing wood partitions around the Toilet Room were removed and new ones added. New partitions were of 2" x 3" stud and 1/4" plywood construction, with 2" fiber glass insulation. Wood louvers, 10" square, were built into wall between Toilet Room and hallway.	1	Each	
Installed equipment: 1 "Kilpatrick" air conditioner, serial No. 63050-8, H & N No. A-70. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 13,056.45 Engineering Cost 1,218.95			14,275.40
CARGO UNLOADING AREA - FLOODLIGHTING			
E.C.O. 3709 authorizes the installation of three new flood lights and the relocation of one existing floodlight, on existing poles, near the cargo unloading area. (No installed equipment.)	1	Each	
Construction Contract Cost 1,152.19			1,152.19

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
COMMUNICATIONS SYSTEM - ADDITIONS TO			
E.C.O. 3710 authorizes the installation of a 26-pair telephone cable on messenger from the exchange in Building 208 to Station No. 1002, using existing poles. (No installed equipment.)	930	L.F.	
Construction Contract Cost 2,471.00			2,471.00
DUKW REPAIR SHELTER - MODIFICATIONS TO			
E.C.O. 269 authorizes the construction of a building service extension of the salt water distribution system for fire protection at Building 360. It includes two risers with 1-1/2" angle valves, and fire hose cabinets inside the building and approximately 200 lineal feet of underground 2" service. (No installed equipment.)	1	Each	
Construction Contract Cost 2,516.15			2,516.15
FIRE HYDRANT ADDITION			
E.C.O. 259 authorizes the addition of a 6" standard, cast iron fire hydrant, installed in the existing salt water distribution system between the first and second hydrants to the north of the Radsafe Building 323. Installation includes fire hydrant, one 6" bell Tee, and 6" Hub end gate valve and 9 lineal feet of 6" transite water pipe. (No installed equipment.)	1	Each	
Construction Contract Cost 917.93			917.93

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
HEAVY EQUIPMENT REPAIR SLAB			
E.C.O. 264 authorizes the construction of a reinforced concrete slab; 60'-0" long x 40'-0" wide x 6" thick, constructed adjacent to existing concrete slab. Area of slab is 2400 square feet. (No installed equipment.)	1	Each	
Construction Contract Cost 3,108.44			3,108.44
INFIRMARY - MODIFICATIONS TO			
E.C.O. 295 authorizes the removal of one prefabricated aluminum partition and the installation of plywood panels above and below two existing aluminum partitions to make floor-to-roof height walls.	1	Each	
E.C.O. 3705 authorizes the installation 1/8" (minimum thickness) lead sheet on Reception Room wall outside of X-ray Room. Area covered is 63" wide x 71-1/4" high. Lead sheet is installed with self-threading screws. (No installed equipment.)	1	Each	
Construction Contract Cost 947.46			947.46
MACHINE SHOP - ALTERATIONS AND ADDITIONS TO			
Sections of existing trusses and galvanized sheathing of Building 404 (a quonset Machine and Welding Shop), and an existing concrete slab, 20'-0" x 9'-6" were removed and a shed, 16'-0" x 60'-0" x 11'-8" mean height, with corrugated galvanized iron roof, open sides and ends, supported by steel beams and pipe columns on the inside and 4" x 4"			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
MACHINE SHOP - ALTERATIONS AND ADDITIONS TO (Continued)			
wood posts on the inside, mounted on a new 5" thick concrete slab; additional area 960 square feet, volume 11,200 cubic feet. (No installed equipment.)	1	Each	
Construction Contract Cost 9,292.84 Engineering Cost 68.58			9,361.42
"QUE" HOUSE - ADDITIONS AND ALTERATIONS TO			
E.C.O. 261 authorizes the additions and alterations to Building 120 as follows: the addition of a wood frame structure, outside dimensions 10'-4" x 20'-8" x 9'-0" mean height, plywood sheathing on roof and sides; includes a cabinet and counters, plastic screened windows with canvas drops. Floor area 214 square feet, volume 1926 cubic feet. Kitchen equipment was removed from existing location in Building 120 and relocated in the new addition, and existing kitchen was converted into bedrooms. A lavatory was installed in Room 101 of Building 120. This E.C.O. includes the relocation of an aluminum partition; electrical wiring and fixtures; hot and cold water and drain lines; and miscellaneous necessary changes in doors and patching of wood paneling. (No installed equipment.)	1	Each	
Construction Contract Cost 4,844.23 Engineering Cost 328.10			5,172.33
SECURITY FENCING AND LIGHTING			
E.C.O. 265 authorizes the revisions and additions of the restricted			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
SECURITY FENCING AND LIGHTING (Continued)			
area at the administration compound and in the Administration Building as follows: 304 lineal feet of existing chain link and pipe post fence, 7'6" high and topped with 3 strands of barbed wire, at the north-east corner of the administration compound was removed and relocated, with alterations where required; the Military Police Station was relocated by the addition of a chain link partition and gate in the corridor of Building 208.	1	Each	
E.C.O. 265 (Supplement No. 1) authorizes the installation of a security lighting system at the administration compound with the addition of twenty 35 foot No. 2 poles, No. 8 W.P. conductor, 31 wide angle flood lights, one transformer, and accessories. This work accomplished by transferring the security lighting fixtures and appurtences from Station 1, Flora.	1	System	
Construction Contract Cost 11,675.30 Engineering Cost 566.11			12,241.41
THEATRE - OUTDOOR MOTION PICTURE - MODIFICATIONS TO			
E.C.O. 3700 authorizes the enlargement of the projection booth approximately 288 cubic feet to accomodate new motion picture projectors. Includes construction of new projector pedestals, enlarged sheet metal ventilators, installation of new speaker, amplifiers and necessary electrical wiring.	1	Each	
Installed equipment: 2 - 16 MM "Eastman" model 25 arc motion picture projectors, serial Nos. 1233, 1262, (no H & N Nos.); 1 radio receiver,			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
THEATRE - OUTDOOR MOTION PICTURE - MODIFICATIONS TO (Continued)			
(army loan), Stock No. 2C4180-100. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 18,985.26			18,985.26
WAREHOUSE			
E.C.O. 262 authorizes the construction of a one-story steel, wood and aluminum structure, rectangular shape, size O.D. 50'-6" x 60'-6" x 12'-4-1/2" mean height. Set on an existing concrete slab, shed roof with corrugated aluminum roofing. Complete with electrical wiring and fixtures. Floor area 3055 square feet, volume 37,806 cubic feet. (No installed equipment.)	1	Each	
Construction Contract Cost 17,745.72			17,745.72

COMPLETION REPORT
for
CONTRACT NO. AT-(29-2)-20
OPERATION IVY

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA			
BUILDING 329 - MODIFICATIONS TO			
The following modifications and additions were made to Building 329; the washroom was rearranged and a new lavatory and water closet were added; a new 10" x 10" roof vent was installed over the washroom; a wood frame wall with wood louvers was built at the north end of the passageway between Buildings 329 and 330; and 3 reinforced concrete pads, each approximately 5'-0" square in size, was added adjacent to the east wall of Building 329; a new concrete pad was built adjacent to the north end of Building 329 and adjacent to the south and west side of Building 330; a drinking fountain was added in the passageway north of Building 329. These alterations and additions include all the necessary soil lines, fresh water lines, salt water lines, and mechanical and electrical fixtures and conduits.	1	Each	
Installed equipment: 1 - 25 watt "RCA" amplifier, serial No. 321543, H & N No. E-344; 1 - "RCA" paging console, (no serial No.), H & N No. E-345; 1 - "RCA" noise cancelling microphone, (no serial No.) H & N No. E-346; 1 "Electro-Voice" microphone, (no serial No.) H & N No. E-326; 1 - 30" x 24" x 24" "Mullenbach" surface terminal cabinet, serial No. 24304S, H & N No. E-333. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 1,682.02			1,682.02

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) BUILDING 330 - MODIFICATIONS TO Modifications and additions were made to Building 330 as follows: (1) A wood frame shed was added to the north end of Building 330, with outside dimensions of 19'-8" long x 12'-4" wide, x 10'-2" mean height, with corrugated aluminum siding and roofing, and resting on a new reinforced concrete floor. A new pit with inside dimensions 12'-0" long x 4'-0" wide x 4'-0" deep, and two reinforced concrete equipment foundations were constructed. A checker plate cover was provided for the pit. Area of new addition is 242 square feet and the volume is 2468 cubic feet. (2) A wood frame shed was added to the west of Building 330, with outside dimensions of 8'-8" long x 5'-9" wide x 10'-2" mean height and resting on a new reinforced concrete floor slab. Cooling water supply and return lines were extended from the pumps at the south end of the existing building to a new vacuum pump (not in contract) in the new addition. Area of new addition is 50 square feet and the volume is 510 cubic feet. (3) A 46'-0" long section of the west wall of Building 330 was removed and a wood frame extension was added with outside dimensions of 46'-0" long x 9'-0" wide, with an average height of 12'-10" from floor to plate line, with corrugated aluminum siding, and using the existing canopy for the roof. Area of the new space thus acquired is 414 square feet and the volume is 5382 cubic feet. A new reinforced concrete floor and compressor foundation was constructed for this addition. A new liquefier hydrogen lift well, two new doors to the existing building, a new stainless steel hood and exhaust fan, and new ventilating duct work was installed. Four vacuum pumps, a stainless steel hood, a vent and fan, and miscellaneous ventilating duct work was relocated. (4) A 120 gallon tank was relocated at the concrete pad at the south end of Building 330, and two new circulating pumps were installed. (5) Two new small concrete pads were added, one at the north end and one at the south end of Building 330. All the necessary cooling water lines, salt water lines, fresh water			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) BUILDING 330 - MODIFICATIONS TO (Continued) lines, waste lines, and all the required mechanical and electrical fixtures, conduits, and fittings are included in the modification of Building 330. Installed equipment: 2 - "Kilpatrick" evaporator dehumidification units, serial No. 81450-1, No. 81450-1, H & N No. A-86-A, A-83-A; 2 "Kilpatrick" condensor evaporator units, serial Nos. 81450-3, 122950-29, H & N Nos. A-83-B, A-129; 1 - 180 gallon storage tank, H & N No. PL-63; 2 - 110 g.p.m., 12" diameter "Preferred Equipment" heat exchangers, (no serial Nos.), H & N Nos. A-194, A-195; 1 - 2400 CFM, 20" diameter, 1/3 H.P., "Master" roof exhauster, serial No. 5239, H & N No. F-360; 1 - 1200 CFM, 16" diameter, 1/4 H.P., "Master" roof exhauster serial No. 5240, H & N No. F-361; 1 - 24", 3/4 H.P. "Master" roof exhauster, serial No. 5264, H & N No. F-433; 1 - 240 CFM, 1/8 H.P., "American-Blower" direct drive fan unit, serial No. 45-3, H & N No. F-385; 1 - 2600 CFM, 18" diameter, 1/4 H.P. "Preferred Equipment" power ventilator, (no serial No.), H & N No. F-447; 1 - 3 H.P. job-site fabricated condensor, H & N No. CO-52; 3 - 10 KVA "General Electric" transformers, (no serial Nos.), H & N No. E-289, E-290, E-291; 1 - 50 g.p.m. 1-1/2", 2 H.P. "Marlow" centrifugal pump, serial No. 52386, H & N No. POL-60; 2 - 40 g.p.m., 3 H.P. "Deming" centrifugal pumps, serial Nos. 189849, 189850, H & N No. PL-56, PL-57; 1 - 1/3 H.P. "Pacific" sump pump, (no serial No.), H & N No. PV-19; 2 - 110 g.p.m., 7 - 1/2 H.P., "Fairbanks-Morse" vertical mount centrifugal pumps, serial Nos. 769445, 769452, H & N Nos. PV-37, PV-38; 5 - "RCA" explosion proof driver and line transformers, (no serial Nos.), H & N Nos. E-357, E-359, E-362, E-363, E-364; 1 - 1/2 ton "Fairbanks-Morse" platform scale, serial No. G-150653, H & N No. TM-645; 1 - 10 gallon "Larco" water cooler, serial No. 9K-68915, H & N No. CA-173. Construction Contract Cost 84,243.27 Engineering Cost 5,096.69	1	Each	89,339.96

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued)			
SUB-STATION 330 (T-17)			
Reinforced concrete slab, located west of Building 330. Its dimensions are 16'-0" long x 8'-6" wide and is surrounded by gravel 6" deep, and enclosed by an 8'-0" high fence (the west side of which also forms a portion of the CMR Area fence), with 3 strands of barbed wire on top, and an entrance gate on the east side. Over-all area is 396 square feet. This structure also includes a 15'-0" long x 4"-0" wide x 15'-0" high pipe framework for the suspension insulators, lightning arrestors, bus bar, and bus supports.	1	Each	
Installed equipment: 1 - 150 KVA "Maloney" transformer, serial No. 32168, H & N No. TR-64; 1 - 150 KVA AND 1 - 200 KVA "General Electric" transformers, serial Nos. 6580164, 6896438, H & N No. TR-65, TR-66; 1 - 3 phase, 4 pole "General Electric" enclosed duct assembly, (no serial No.), H & N No. E-350. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 35,092.71 Engineering Cost 1,323.08			36,415.79
SUB-STATION 339 (T-28)			
Station service transformer banks located at the "reference" east side of Building 339. This structure is a reinforced concrete slab, 9'-0" long x 5'-6" wide x 6" deep, with a foundation 9" below grade around the perimeter. The slab has a perimeter of gravel 4'-0" wide x 6" deep. An 8'-0" high mesh chain link fence with 3 strands of barbed wire on top, and an entrance gate on the "reference" east side is located around the gravelled area. Over-all area is 230 square feet.	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued)			
SUB-STATION 339 (T-28) (Continued)			
Installed equipment: 3 - 37.5 KVA "General Electric" outdoor transformers, serial Nos. 5127731, 512722, 5127717, H & N Nos. TR-219, TR-220, TR-221. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 9,804.40 Engineering Cost 369.65			10,174.05
SUB-STATION 340 (T-26)			
Reinforced concrete slab, located in the vicinity of Building 340. Its dimensions are 13'-0" long x 10'-6" wide and includes an angle frame to support oil fuse cutouts. It is surrounded by gravel 6" deep, and enclosed by an 8'-0" high chain link fence the east side of which also forms a portion of the CMR Area fence, with 3 strands of barbed wire on top, and an entrance gate on the west side. Overall area is 342 square feet.	1	Each	
Installed equipment: 1 "Westinghouse" weatherproof power panel, (no serial No.), H & N No. E-368; 3 - 100 KVA "Allis Chalmers" oil immersed outdoor transformers, serial No. 2450707, No. 2450702, No. 2450680, H & N Nos. E-306, E-309, E-310. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 31,896.22 Engineering Cost 1,202.56			33,098.78

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued)			
BUILDINGS 340-A THRU 340-G			
One-story wood frame structure, 40'-0" long x 20'-0" wide x 20'-5" mean height. Floor area is 800 square feet and volume is 16,333 cubic feet. Construction is of laminated wood girders; 6" x 12" and 6" x 16" wood columns resting on reinforced concrete footings 2'-0" below grade; 1" x 6" vertical wood sheathing on one side only, (leaving the remaining side and ends open), a composition roof over wood sheathing and a stabilized coral floor. Buildings 340 (A thru G) contains all the necessary electrical outlets and condutis. (No installed equipment.)	7	Each	
Construction Contract Cost 65,908.33 Engineering Cost 353.00			66,261.33
BUILDING 340-H			
E.C.O. 273 authorizes the modification of Building 340-H as follows: Building 340-H is similar to Buildings 340-A thru 340-G as to size and construction. A mezzanine floor, however, was added, size 16'-0" x 20'-0" at a height of 10'-5" above the main floor. Also, all four sides of the building was sheathed with corrugated aluminum siding. The mezzanine increased the total floor area of the building to 1120 square feet. This building includes shelving, a pigeon-hole cabinet, a ladder to the mezzanine floor, and all the necessary electrical fixtures and conduits. (No installed equipment.)	1	Each	
Construction Contract Cost 14,867.13 Engineering Cost 50.43			14,917.56

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) BUILDING 341 A one-story structure, consisting of two wings, each wing being of different size and construction. The south wing is rectangular in shape with outside dimensions of 102'-1/2" long x 25'-1/2" wide x 34'-9" mean height. It is a rigid steel frame structure with protected metal siding. The roof consists of steel beams supported by steel columns, 2" x 12" wood ceiling joists running perpendicular to the beams, wood sheathing, and cold process composition roofing. A wood monitor runs the entire length of the roof. This wing rests on reinforced concrete footings which are 4'-8" and 3'-3" below grade, and a continuous reinforced concrete tie beam, 1'-2" below grade, around the perimeter. The floor is an 8" thick reinforced concrete slab and contains 20.4# A.S.C.E. track rails the entire length of the building. In addition, 80# A.S.C.E. track rails rest on 24" I 79.9# beams which are supported by brackets attached to the columns at 22'-6-3/4" above the finish floor. The north wing is rectangular in shape with outside dimensions of 38'-2" long x 15'-0" wide x 11'-0" mean height. This wing is of 2" x 6" wood stud and corrugated aluminum siding construction, a cold process composition roofing over sheathing, and a 6" reinforced concrete floor slab. It contains a toilet room, a dehumidified room, and a mechanical equipment room. A concrete pad, 8'-4" long x 4'-8" wide is located to the north of the building, and supports an air conditioner and a dry condenser. The entire building has an area of 3129 square feet and a volume of 95,100 cubic feet, and contains lighting, a public address system, salt water lines, fresh water lines, a sanitary sewer line, a urinal, a toilet, two lavatories, aluminum ventilating ducts in the dehumidified room, work benches, shelving, and all the necessary electrical and mechanical conduits and fixtures. Installed equipment: 1 - 1.5 KVA transformer (no serial No.), H & N No. TR-213; 1 - 20 ton "Crane Hoist Engineering Corp." overhead trolley travelling crane, (no serial No.), H & N No. HS-202; 2 - 70	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) BUILDING 341 (Continued) Watt "RCA" amplifiers, (no serial Nos.) H & N No. E-341, No. E-342; 1 - 24" x 18" x 4" "Mullenbach" surface terminal cabinet, serial No. 18244, H & N No. E-335; 1 - 208 V. main switchboard, (no serial No.), H & N No. E-372; 1 - 10 gallon "Larco" water cooler, serial No. 9J07007 H & N No. CA-140; 1 "Kilpatrick" condensor dehumidification unit, serial No. 81450-10, H & N No. A-89-B; 1 - "Kilpatrick" evaporator dehumidification unit, serial No. 81450-2, H & N No. A-79-A; 1 "RCA" control console with microphone, (no serial No.), H & N No. E-169. (The above list does not contain any user-furnished or user-installed equipment.) Construction Contract Cost 187,200.63 Engineering Cost 5,807.65			193,008.28
SUB-STATION 341 (T-27) Reinforced concrete slab located 9'-0" west of Building 341; dimensions 9'-0" long x 6'-6" wide x 6" thick, with foundations 12" below grade. The slab has a 4'-0" wide x 6" deep gravel perimeter and is enclosed by a 8'-0" high mesh chain link fence with 3 strands barbed wire on top and an entrance gate on the west side. Over-all area is 247 square feet.	1	Each	
Installed equipment: 3 - 50 KVA "Westinghouse" transformers, serial Nos. 6325287, 6323289, 6325281, H & N Nos. TR-215, TR-214, TR-209. (The above list does not contain any user-furnished or user-installed equipment.) Construction Contract Cost 16,417.01 Engineering Cost 618.96			17,035.97

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) BUILDING 342 This building consists of two separate one-story units. The larger unit is an aluminum building, with inside dimensions of 60'-8-1/2" long x 24'-0" wide x 10'-10" mean height, set on a 6" reinforced concrete floor slab with foundations 12" below grade. Floor area of this unit is 1457 square feet, and the volume is 15,784 cubic feet. Partitions constructed of 2" x 4" wood studs and 1/2" plywood siding divide the unit into five rooms of various sizes, three of which (the Shop Room, Tool Crib, and Office) are ventilated and dehumidified. This unit is provided with waste lines, acid waste lines, fresh water lines, compressed air lines, a sink built into a wood stand, three wood work benches, two cabinets, a stock rack, two shelf cabinets, and two lead lined wood acid baths over which is installed a stainless steel hood with an exhaust fan located on the roof. The smaller unit is located 3'-0" west of the larger unit and is constructed of 2" x 4" wood studs, 1/2" plywood siding, a cold process composition roof over sheathing, and rests on a 6" reinforced concrete floor slab with foundations 12" below grade. Its outside dimensions are 23'-8" long x 15'-2" wide x 9'-0" mean height. Floor area of this unit is 359 square feet, and the volume is 3231 cubic feet. This unit contains dehumidification equipment for the larger unit. Building 342 contains all the necessary mechanical and electrical fixtures and conduits. Installed equipment: 4 "Kilpatrick" condensor dehumidification units, serial Nos. 122950-31, 192750-20, 81450-7, 102750-18, H & N No. A-124, A-110-A, A-85-B, A-113-A; 4 "Kilpatrick" evaporator dehumidification units, serial Nos. 81420-2, 102750-12, 81450-6, 81450-3, H & N Nos. A-89-A, A-113-B, A-87-A, A-82-A; 1 - 208 V. "Trumbull" main switchboard serial No. 166569, H & N No. E-331; 1 - 12" diameter, 1/3 H.P., "Master Fan" exhaust fan, serial No. 12563, H & N No. F-450; 1 - 25 watt "RCA" cabinet mounted amplifier, (no serial No.), H & N No. E-340; 1 - 208 V. "Trumbull" surface mounted power panel, serial No.	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) BUILDING 342 (Continued) 166509, H & N No. E-330; 1 - 3/4" "Buffalo" bench press drill with motor, (no serial No.), H & N No. MA-28; 1 "Cannedy-Otto" bench press drill with motor, serial No. 16-23092, H & N No. MA-37; 1 - 12", 1-1/2 H.P., "Sheldon" shaper, serial No. 8-8693, H & N No. MA-16; 1 - 10-1/8" swing "Sheldon" bench lathe, serial No. TLWQ-10342, H & N No. MA-64: 1 "Bridgeport" turret milling machine with "Bridgeport" master mill head, serial No. M-15519, H & N No. MA-25; 1 - 10" to 13", 3/4 H.P., "Johnson" cut-off metal band saw, serial No. 5458, H & N No. MA-31; 1 - 10 gallon "Larco" water cooler, serial No. 9J19487, H & N No. CA-126; 1 - 3/4 H.P. "Do-All" contour machine, serial No. 5014432, H & N No. MA-59; 1 - 30" x 24" x 4" "Mullenbach" surface terminal cabinet, serial No. 24304-S, H & N No. E-332. (The above list does not contain any user-furnished or user-installed equipment.) Construction Contract Cost 87,005.37 Engineering Cost 3,203.25			90,208.62
SUB-STATION 342 (T-25) Reinforced concrete slab located adjacent to the south wall of the smaller unit of Building 342. Its dimensions are 9'8" long x 7'6" wide and contains two built-in pull boxes, one power section and one communication section. It is enclosed by a 2" mash chain link fence, 8'-0" high with 3 strands barbed wires on top and an entrance gate on the south side. Over-all area is 247 square feet. Installed equipment: 3 - 15 KVA "Gregory" transformers, serial Nos. 5026274, 5026281, 5026260, H & N Nos. TR-223, TR-224, TR-225.	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) SUB-STATION 342 (T-25) (Continued) (The previous list does not contain any user-furnished or user-installed equipment.) Construction Contract Cost 7,273.57 Engineering Cost 274.23			7,547.80
BUILDING 344 As-built Drawing Numbers and Dates: 1038-EE-2 11 September 1952 1042-EE-2 6 September 1952 3038-EE-2 11 September 1952 3040-EE-2 11 September 1952 3041-EE-2 17 September 1952 4012-EE-2 11 September 1952 4034-EE-2 11 September 1952 4035-EE-2 11 September 1952 4036-EE-2 11 September 1952 4037-EE-2 11 September 1952 6054-EE-2 11 September 1952 6055-EE-2 11 September 1952 6061-EE-2 11 September 1952 6062-EE-2 11 September 1952 6063-EE-2 11 September 1952 6064-EE-2 11 September 1952 6076-EE-2 11 September 1952 6077-EE-2 11 September 1952 6078-EE-2 11 September 1952 6081-EE-2 11 September 1952 6083-EE-2 11 September 1952 6102-EE-2 11 September 1952 6107-EE-2 11 September 1952 FS-799 17 September 1952 FS-787 FS-788 FS-789 A one-story structure, irregular in shape, with over-all outside dimensions of 90'-6" long x 83'-0" wide. The total floor area is 6586 square feet, and the volume is approximately 125,408 cubic feet. The building consists of two types of construction, the main portion of which is 80'-6" long x 54"-0" wide, with a hip roof of 16'-0" high			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) BUILDING 344 (Continued) from floor to eave, and 25'-0" high from floor to ridge. This portion of the building, rests on reinforced concrete footings which are 3'-2" below grade and 2'-7" above grade. It is of rigid steel frame "Butler"-type construction with corrugated aluminum siding and roofing, and is separated into two rooms by an 8" thick x 8'-0" high reinforced concrete wall. The remainder of the wall is of 2" x 6" wood stud and 1/2" plywood construction. The north room rests on reinforced concrete foundations which are 2'-10" below grade and 2'-7" above grade and has an 8" thick reinforced concrete floor. The south room rests on foundations which vary in depth from 2'-10" to 8'-3" below grade, and is 2'-7" above grade at the west and south walls, and 8'-8" above grade at the north and east walls. (It is the footing at the north which serves as the 8'-0" high wall which separates the two rooms.) This room has an 8" thick reinforced concrete conductive floor. The remaining portions of the building are of wood stud and corrugated aluminum over plywood siding construction, and consists of various equipment and utility rooms. Special reinforced concrete foundations, pits and trenches are provided for equipment. The building contains lighting, explosion-proof lighting, a communications system, two lavatories, two toilets, a work bench, and all the required fresh water lines, salt water lines, oil lines, sanitary sewer lines, compressed air piping, ventilating ducts, blast plates, boiler plate shields, distribution panels, and all necessary electrical and mechanical conduits and fixtures. To the south of the building a hexagonal-shaped reinforced concrete foundation, 19'-0" in diameter, an average of 28-5/16" wide, and 2'-6" deep, supports a large gas holder tank which is furnished by the User.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) AUXILIARY COMPRESSOR SHED ADDITION E.C.O. 288 authorizes the addition of this structure which was incorporated into Building 344 by removing the existing wood lean-to shed (Room 107) and substituting a shed 26'-4" long x 22'-0" wide x 10'-0" mean height. The construction is of 2" x 4" wood frame with corrugated aluminum siding and roofing, resting on a 6" reinforced concrete floor slab with footing 6" below grade. This addition contains a special reinforced concrete foundation for equipment. The area of Building 344 was thus increased to 529 square feet, and the volume to 5290 cubic feet. This addition contains all necessary fresh water lines, salt water lines, compressed air piping and all necessary mechanical and electrical fixtures and conduits. Also, a reinforced concrete pad, 12'-0" long x 11'-0" wide x 6" deep with a foundation 6" below grade was constructed at the north end of Building 344.	1	Each	
Installed equipment: 2 - 18" diameter "Air-Max" power ventilators, (no serial No.) H & N No. F-445, and F-446; 1 - 48,000 CFM "American" blower fan with 25 H.P. motor, serial No. 397-57, H & N No. F-442; 1 - 10,400 CFM, "American" blower fan with 30 H.P. (no serial No.), H & N No. F-444; 1 - 7.5 H.P. "Louis-Allis" electric motor, serial No. 1700727, H & N No. MO-17; 1 - 42,000 CFM "American" blower fan with 15 H.P. motor, serial No. 486-57, H & N No. F-443; 1 - 45 KVA, 3 phase, "Westinghouse" transformer, serial Nos. 3247583, 3250283, 3250273, H & N No. TR-198; 1 - 45 KVA, 3 phase, "Westinghouse" transformer, serial Nos. 3250260, 3250263, 3250264, H & N No. TR-199; 3 - 42" "Swartwout" powered valvents, serial Nos. 633192, 633193, 633016, H & N Nos. A-163, A-164, A-165; 3 - 42" "Swartwout" gravity valvents, (no serial Nos.), H & N Nos. A-166, A-167, A-168; 1 - 50 g.p.m. "Ingersoll-Rand" air operated centrifugal water pump, serial No. 30869, H & N No. PU-14; 2 - 24" x 26" diameter "Preferred Equipment", single pass, shell and tube heat exchangers, (no serial Nos.) H & N			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) AUXILIARY COMPRESSOR SHED ADDITON (Continued) Nos. A-161, A-162; 1 - 480 V. station, "General Electric" guts and "Trumbull" cabinet motor control center, specification 20-3-5, H & N No. E-292; 1 "General Electric" guts and "Trumbull" cabinet, pump and compressor motor control center, H & N No. E-293; 1 - "Multi-Alarm" panel alarm, (no serial No.), H & N No. E-303; 1 - 70 watt "RCA" amplifier, (no serial No.), H & N No. E-343; 2 - 4" x 4" x 3" box "RCA" noise cancelling microphones, (no serial No.), H & N Nos. E-347, E-348; 1 - "RCA" amplifier cabinet, (no serial No.), H & N No. E-349; 1 "Westinghouse" free standing, dead front, dead rear, building type switchboard, (no serial No.), H & N No. E-351; 1 - 7-1/2 H.P. "Chicago-Pneumatic" air compressor, serial No. 52922, H & N No. CO-49; 1 "Chicago-Pneumatic" after cooler with drain and trap control valve, (no serial No.), H & N No. A-171; 2 - 30 H.P. "Deming" vertical turbine pumps, serial Nos. 14116, 14117, H & N Nos. PL-58, PL-59; 2 - 37" x 25-1/2" deep "Kewaunee" swing type wall sinks with drain boards, (no serial Nos.), H & N No. PL-61, PL-62; 1 - 10 gallon "Larco" water cooler, serial No. 9K-68103, H & N No. CA-246; 3 "RCA" explosion proof driver and line transformers, (no serial Nos.) H & N Nos. E-360, E-361, E-358; 1 - 2600 CFM, 18" diameter "Preferred Equipment" power ventilator, (no serial No.) H & N No. F-447. (The above list does not contain any user-furnished or user-installed equipment.) Construction Contract Cost 511,432.33 Engineering Cost 20,460.27			531,892.60
SUB-STATION 344 (T-24) Transformer pad located at east side of Building 344. This structure is a reinforced concrete slab, 8'-0" square x 6" thick, with a 2'-0"			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued)			
SUB-STATION 344 (T-24) (Continued)			
foundation around the perimeter. Includes a 2" mesh chain link fence, 8'-0" high with 3 strands barbed wire on top, and an entrance gate on the north side. Over-all area is 142 square feet.	1	Each	
Installed equipment: 1 - 1250 KVA "Westinghouse" outdoor transformer, serial No. 3110466, H & N No. TR-226. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 28,904.25 Engineering Cost 1,089.76			29,994.01
BUILDING 345 (UNITS A AND B)			
Reinforced concrete foundations for cylinder container frames. Each unit consists of two parallel foundations, 19'-0" c.c. extending from 1'-6" below grade to 2'-0" above grade, length 90'-0"; building comprised of two units, A and B. (No installed equipment.)	1	Each	
Construction Contract Cost 12,043.65 Engineering Cost 481.43			12,525.08
COMMUNICATIONS SYSTEM			
Communications System, CMR Area, consists of speakers, amplifiers, telephone terminal cabinets, telephone outlets, pull boxes, and all the required cables, wires and conduits. Speakers are located as			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) COMMUNICATIONS SYSTEM (Continued) follows: 1 each at pole 16 2 each at poles 8, 20 and 23 1 each in Building 342 2 each in Buildings 329 and 341 8 each in Buildings 330 and 344. Amplifiers and paging consoles in the buildings are further described in the completion reports of the buildings in which they occur. (No installed equipment.) Construction Contract Cost 39,778.92 Engineering Cost 998.80	1	System	40,777.72
ELECTRICAL DISTRIBUTION SYSTEM Power Distribution in the CMR Area consists of all poles, crossarms, hardware, fixtures and pullboxes, together with overhead and underground power transmission lines and conduits. Quantities and heights of poles are as follows: 30' poles 5 each 35' poles 11 each 40' poles 13 each 45' poles 4 each Existing poles 3 each Transmission lines consist of 2400 volt overhead line, bare copper of			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued)			
ELECTRICAL DISTRIBUTION SYSTEM (Continued)			
various sizes; 2400 volt underground conductor in conduit, of various sizes; and service drop triple braid WP wire. This power distribution system also serves the baseball field, which is adjacent to the CMR Area.	1	Each	
Installed equipment: 2 - 5 KVA transformers, serial Nos. 2247610, 2247627, H & N TR-44, TR-45; 3 - 10 KVA transformers, serial Nos. 1057806, 1068589, 1057787, H & N Nos. TR-78, TR-79, TR-80. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 76,195.26 Engineering Cost 2,872.74			79,068.00
FENCING - SECURITY			
Security fencing, CMR Area, consists of 2" wire chain mesh with 2" H-section posts set in concrete at approximately 10'-0" on center. Each post has a bracket on top, which holds 3 strands of barbed wire. Typical fence is 8'-0" high excluding height of barbed wire top.			
Fencing, removed and rearranged - 1161 lineal feet Fencing, new - 1140 lineal feet Fence gates, 6'-0" wide - 2 Each Fence gates, 5'-0" wide - 2 Each			
Fencing for the sub-stations are described in the sub-stations in which they occur.	2323	Lin.Ft.	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued)			
FENCING - SECURITY (Continued)			
(No installed equipment.)			
Construction Contract Cost 15,119.81 Engineering Cost 2,229.71			17,349.52
GUARD SHACK			
A wood frame building with corrugated aluminum siding and roofing, resting on a 6" reinforced concrete slab with foundations 18" below grade. Size: 12'-0" long x 8'-0" wide x 8'-10" mean height. Floor area is 96 square feet, and volume is 848 cubic feet. Contains wall desk, pigeon-hole rack, bench, and a telephone, street light, power and public address panel.	1	Each	
Installed equipment: 1 "RCA" paging console with microphone and stand and power supply, serial No. M1-1-14801, H & N No. E-373. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 625.00			625.00
LIGHTING - SECURITY			
Security lighting, CMR Area, consists of 29 series street lighting luminaires, (manufacturer - "Revere"), mounted on the power distribution poles around the CMR Area; and miscellaneous floodlighting fixtures throughout the area. Power supplies by #8 AWG bare solid copper.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued)			
LIGHTING - SECURITY (Continued)			
E.C.O. 279 consists of providing a head guy and a guy stub at poles numbers 16 & 20. E.C.O. 284 consists of the installation of an outdoor floodlight at Building 344, CMR Area.	1	System	
Installed equipment: 1 "Westinghouse" oil switch, serial No. 343293, H & N No. E-353; 1 "Westinghouse" protective relay, serial No. 343683, H & N No. E-354; 1 2400 V. 6.6 Amp. "Westinghouse" regulator, serial No. 1590703, H & N No. E-355. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 8,039.73 Engineering Cost 1,097.26			9,136.99
POWER DISTRIBUTION			
A tie-line consisting of three #4/0 AWG bare copper wire, each 6920 feet long was installed with new crossarms on existing poles to feed power from the CMR Power Plant to the distribution panels at Building 301 (existing Power House).			
The electrical alterations to Building 301 consist of installing size 200 Amp. SPDT switches and three SPST switches to provide means to transfer power onto the distribution lines from either the CMR Power Plant or from the tie-line. The existing transformers (two 75 KVA and one 100 KVA) were relocated from the platform between poles 28E and 29E to a new sub-station enclosed with 62'-0" of chain link fence. Three additional transformers, (two 75 KVA and one 100 KVA) were also installed in this sub-station.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) POWER DISTRIBUTION (Continued) Three 4" transite ducts and four pull boxes were installed under the airport. Where the tie-line crosses the airport, three single conductor #4/0 neoprene jacketed cables, each 800 feet long, were installed in one of the 4" transite ducts. The distribution lines to Stations 606 and Tower Stations 301 and 805 consist of three #1/0 bare stranded copper cables, each 1350 feet long, with twelve 40 foot poles complete with crossarms, guys and hardware. Six transformers were installed on poles.	1	System	
Installed equipment: 1 - 100 KVA "Westinghouse" transformer, serial No. 5394934; 2 - 75 KVA "Niagara-Erie Electric Company" transformers, serial Nos. 12670 and 12856. (The above list does not contain any user-furnished or user-installed equipment.) Construction Contract Cost 23,249.77 Engineering Cost 876.58			24,126.35
POWER PLANT As-built Drawing Numbers and Dates: 1009-EE-4 5 September 1952 1013-EE-4 5 September 1952 3006-EE-4 5 September 1952 3007-EE-4 5 September 1952 3008-EE-4 5 September 1952 3009-EE-4 5 September 1952 3010-EE-4 5 September 1952 3011-EE-4 5 September 1952 3012-EE-4 5 September 1952 3014-EE-4 5 September 1952 3052-EE-4 5 September 1952 4001-EE-4 6 September 1952 4002-EE-4 5 September 1952 4003-EE-4 11 September 1952			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) POWER PLANT (Continued) 4004-EE-4 11 September 1952 6012-EE-4 5 September 1952 4005-EE-4 11 September 1952 6013-EE-4 5 September 1952 4006-EE-4 5 September 1952 6023-EE-4 5 September 1952 4007-EE-4 5 September 1952 6034-EE-4 5 September 1952 6011-EE-4 5 September 1952 *4007-EE-4 5 September 1952 A one-story structure, rectangular shape, with outside dimensions of 100'-6" long x 64'-6" wide x 20'-10" mean height, making a floor area of 6482 square feet. The building is of two types of construction, the main portion of which is 100'-6" long x 53'-9-1/4" wide with a hip roof 15'-0" high from the floor to the eave, and approximately 18'-0" high from the floor to the ridge. This portion of the building is of rigid steel frame "Butler" type construction with corrugated aluminum siding and roofing. Five gravity roof ventilators are provided at the ridge of the roof. The remaining portion of the building measures 100'-6" long x 10'-8-3/4" wide 10'-6" mean height, and is of 2" x 6" wood frame construction with corrugated aluminum over plywood siding and roofing. The shed roof also serves as a support for three (3) exhaust mufflers. The floor is a 6" thick reinforced concrete slab, and reinforced concrete foundations vary in depth from 10" to 18" below the finish grade. Special foundations, pits, and trenches are provided for equipment. The total volume of the building is 146,361 cubic feet. The building contains lighting, emergency lighting, a lavatory, a toilet, a work bench, and all the required fresh water lines, salt water lines, lube oil lines, compressed air piping, and all necessary electrical and mechanical conduits and fixtures. * Supplement to			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) POWER PLANT (Continued) To the southwest of the building is located the storage facilities which consist of three 42000 gallons bolted steel fuel oil storage tanks, each resting on a 32'-0" diameter x 12" deep reinforced concrete pad; and one each 1000 gallons lube and waste oil tanks, each resting on reinforced concrete saddles; and two oil transfer pumps resting on a common reinforced concrete foundation. The oil storage facilities are installed in a common excavated dike, approximately 111' long x 75'-6" wide x 2'-6" deep, and includes all necessary piping, valves, fittings, and electrical wiring and controls.	1	Each	
Installed equipment: 6 "Westinghouse" feeder panels, (no serial Nos.), H & N No. E-317, E-318, E-319, E-320, E-321, E-322; 1 "Westinghouse" incoming line panel, (no serial No.), H & N No. E-323; 3 "Westinghouse" generator control switchgear with panels, (no serial Nos.), H & N Nos. E-503, E-504, E-505; 1 "Westinghouse" panel (box only) without switchgear, (not in use), (no serial No.), H & N No. E-506; 1 - 10 gallon "Larco" water cooler, serial No. 8G-65386, H & N No. CA-179; 1 - 3/4 H.P. "Balder" grinder, serial No. 8123-1573, H & N No. TM-685; 3 - 15 KVA "Westinghouse" transformers (in a bank to make 1 - 45 KVA), serial Nos. 32050280, 3285047, 3255859, H & N No. TR-222; 3 - 1000 KW "National Metals and Supply" and "General Motors Diesel" diesel generators, complete with component parts including 3 - 16 cylinder diesel genines; 3 - 550 gallons fuel oil day tanks, 3 jacket water expansion tanks, 3 lube oil coolers, 3 jacket water coolers, 3 lube oil priming pumps, 3 fuel oil priming pumps, 3 lube oil strainers, 3 lube oil filters, 3 lube oil centrifuges complete with 2 H.P. motors; 3 fuel oil centrifuges complete with 2 H.P. motors, 3 intake air filters, 3 lube oil sump tanks, 3 exhaust mufflers, 3 door mounted engine guage boards, 3 starting air storage tanks, serial Nos. 1193881, 1193885, 1193853, H & N Nos. G-117, G-118, G-119; 1 "Ingersoll-Rand" air compressor with electric motor and aux-			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
EIMER, CMR AREA (Continued) POWER PLANT (Continued) iliary gas engine, serial No. 43067, H & N No. CO-51; 1 jobsite fabricated jacking machine with "Louis Allis" motor, H & N No. MA-79; 4 - 25 g.p.m. 2 H.P. "Worthington" rotary transfer pumps with motors, serial Nos. 13087-52, 13087-52, 13087-52, 13087-52, H & N Nos. PL-48, PL-49, PL-50, PL-51; 3 - 1000 bbls. "C59T153-1000 Navy" steel gas tanks, (no serial Nos.), H & N Nos. PL-52, PL-53, PL-54; 2 - 1000 gallon "Butane Corp." steel tanks, serial Nos. 37273, 37274, H & N Nos. PL-75, PL-76; 2 - 50 g.p.m. 2 H.P. "Marlow" self priming pumps with motors, serial Nos. 74390, 74391, H & N Nos. PL-108, PL-109; 1 "Westinghouse" regulator, complete, serial No. 1529655, H & N No. E-374; 1 oil lubrication strainer, (no serial No.), H & N No. POL-80; 1 "Square-D" battery panel, (no serial No.), H & N No. E-276; 3 "Square-D" diesel control panels, (no serial Nos.), H & N Nos. E-298, E-299, E-300; 1 - 0 to 3000 volt "Westinghouse" flush panel voltmeter, (no serial No.), H & N No. E-500; 5 - 2' x 10' "Airjet" monitor ventilators, (no serial Nos.), H & N Nos. F-412, F-413, F-414, F-415, F-416. (The above list does not contain any user-furnished or user-installed equipment.) Construction Contract Cost 861,389.92 Engineering Cost 24,894.43			886,284.35
PUMP STATION - SALT WATER A reinforced concrete structure, rectangular shape, outside dimensions 17'-6" x 28'-0" x 16'-6" high, set on a 12" thick reinforced concrete slab. Area is 590 square feet, volume 9735 cubic feet. Twelve inches only of the structure extends above grade. Complete with electric wiring and fixtures and piping. A salt water supply line, 42" diameter			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued) PUMP STATION - SALT WATER (Continued) corrugated metal pipe, extends 120' from the structure into the lagoon. This line is anchored with concrete anchors and cables. Two 4" transite underground conduits extend from this structure to the Power Plant, a distance of approximately 416 feet. These conduits contain electric power and control circuits. E.C.O. 276 consists of the extension of an additional 110 lineal feet of 36" diameter corrugated metal pipe. Later, an additional 66 lineal feet of 36" diameter corrugated metal pipe was added and anchored. E.C.O. 278 consists of the construction of a wood frame and corrugated metal siding shelter adjacent to Building 347. Outside dimensions 14'-0" x 14'-0" x 9'-0" mean height. Area is 196 square feet and volume is 1764 cubic feet. E.C.O. 293 consists of new anti-moss screens for this building. Five stainless steel screens are required plus one spare screen for interchanging during cleaning. A 6" base channel is installed at the floor with two 3/8" diameter diagonal stiffeners. 3-1/2" x 2-1/2" x 1-1/2" clip angles at heads of screen frames hold them in position.	1	Each	
Installed equipment: 1 - KVA "Jeffries" transformer, (no serial No.), H & N No. E-324; 4 - 25 H.P., 440 v. "Westinghouse" life line starter drivers, serial Nos. 1577581-A (all have the same serial No.), H & N Nos. E-294, E-295, E-296, E-297; 1 control unit, serial No. 111C005, H & N No. E-302; 4 - 600 g.p.m, "Deming" 2 stage, vertical turbine pumps, serial Nos. 14069, 14072, 14073, 14074, (with 4 - 7-1/2 H.P. "U.S." motors, serial Nos. 921831, 921832, 921833, 931834), H & N No. PU-6, PU-7, PU-8, PU-9; 4 - 700 g.p.m "Deming" 3 stage vertical turbine pumps, serial Nos. 14071, 14075, 14068, 14070, (with 4 - 15 H.P. "U.S." motors, serial Nos. 924065, 922525, 922526, 922527), H & N			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued)			
PUMP STATION - SALT WATER (Continued)			
No. PU-10, PU-11, PU-12, PU-13; 1 - 42" diameter "Hardesty" sluice gate, (no serial No.), H & N No. PL-64; 1 - 2" stem "Hardesty" lift pedestal, (no serial No.), H & N No. PL-65. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 123,572.81 Engineering Cost 2,945.05			126,517.86
ROADS AND AREAS - STABILIZED			
Stabilized roads and areas consist of stabilized coral, with grades determined in the field. Roads are 20'-0" wide. Quantity of new roads and new paved areas are approximately as follows:			
Roads, new, stabilized 3,725 sq. yards Roads, rebuilt, stabilized 740 sq. yards Areas, new, stabilized 303,350 sq. yards (No installed equipment.)	307,815	Sq. Yd.	
Construction Contract Cost 73,820.85 Engineering Cost 188.27			74,009.12
SALT WATER DISTRIBUTION SYSTEM - COOLING			
An underground piping system for distributing salt water for cooling purposes from Building 347 to Buildings 330, 339, 344, and 349. Piping consists of the following amounts, sizes, and types:			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued)			
SALT WATER DISTRIBUTION SYSTEM - COOLING (Continued)			
Transite pipe, Class 150, 12" diameter - 1545 lineal feet. Transite pipe, Class 150, 6" diameter - 285 lineal feet. Transite pipe, Class 150, 4" diameter - 80 lineal feet.			
Also included in this system is a reinforced concrete combination standpipe and manhole, located near Building 339 and of over-all outside dimensions 8'-0" x 4'-4" x 12'-8" deep. All piping is approximately 4'-9" below grade, imbedded in compacted sand. The system includes all necessary valves, plugs, nipples and connections.			
E.C.O. 274 consists of the installation of a dual salt water strainer in a by-pass of the main distribution line to Buildings 330 and 344.	1	System	
Construction Contract Cost 48,085.69 Engineering Cost 1,217.66			49,303.35
SEWER SYSTEM - SANITARY AND COOLING WATER WASTE			
This combined system is comprised of three separate sections serving the area as follows:			
South East Section			
A combined cooling water waste and sanitary sewer extends from the Power Plant to the ocean reef. The main line consists of 383 lineal feet of 21" VCP, two manholes and six service connections.			
Central Section			
A combined cooling water waste and sanitary sewer consisting of 235			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued)			
SEWER SYSTEM - SANITARY AND COOLING WATER WASTE (Continued)			
Central Section (Continued)			
lineal feet of 18" VCP, 25 lineal feet of 12" VCP, 519 lineal feet of 8" VCP, 55 lineal feet of 6" VCP and 6 standard manholes. The outfall lines extends into the lagoon.			
North Section			
A combined cooling water waste and sanitary sewer consisting of 102 lineal feet of 8" VCP and one standard manhole. The outfall line extends into the lagoon. (No installed equipment.)	1	System	
Construction Contract Cost 29,878.14 Engineering Cost 5,364.24			35,242.38
TANK - SALT WATER ELEVATED			
A 30'-0" high salt water tank and tower, located approximately 95 feet east of Building 345A. Tower is constructed of 10" x 10" wood columns with a 4" x 12" beam platform, and contains the required bracing, ladder, and painting platform. It is supported by reinforced concrete footings 4'-6" below grade. The tank has a capacity of approximately 500 barrels and contains a 12" outlet and inlet pipe with a 2-1/2" fire hose connection, valves, and nipples.	1	Each	
Installed equipment: 1 - 700 bbl, jobsite fabricated, bolted steel tank, H & N No. PL-60.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued)			
TANK - SALT WATER ELEVATED (Continued)			
(The previous list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 28,370.85 Engineering Cost 575.56			28,946.41
WATER SYSTEMS - DOMESTIC (FRESH AND SALT)			
A fresh and salt water distribution system, for domestic uses, consisting of 1920 lineal feet of 4" transite, Class 150 mains, with cast iron fittings and valves. A total of eight water services, carlon, consists of the following sizes:			
FRESH WATER SYSTEM			
Quantity / Size / Total Lineal Feet 1 / 1-1/2" / 10 1 / 1" / 70 2 / 3/4" / 115			
SALT WATER SYSTEM			
Quantity / Size / Total Lineal Feet 1 / 2" / 10 1 / 1" / 70 2 / 3/4" / 115	1	System	

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
ELMER, CMR AREA (Continued)				
WATER SYSTEMS - DOMESTIC (FRESH AND SALT) (Continued)				
(No installed equipment.)				
Construction Contract Cost	15,288.95			
Engineering Cost	478.58			15,767 53

COMPLETION REPORT
for
CONTRACT NO. AT-(29-2)-20
OPERATION IVY

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FRED			
BUILDING NO. 4-A - ADDITIONS TO			
E.C.O. 90A authorizes the construction of a new antenna tuning box shelter, wood building with 4" x 4" corner posts set on 2" x 4" plate attached to 4" x 4" foundation; roof and sides of corrugated aluminum. Army furnished labor. (No installed equipment.)	1	Each	
Construction Contract Cost 351.77			351.77
BUILDING NO. 15 - MODIFICATIONS TO			
E.C.O. 89A authorizes the installation of one dehumidification unit and the revision of the existing ducts in accordance with the drawings.	1	Each	
Installed equipment: 1 "Industrial" dehumidification unit, serial No. 21420, H & N No. A-184. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 13,793.78 Engineering Cost 1,036.34			14,830.12
BUILDING NO. 61 - ADDITIONS TO			
E.C.O. 92A authorizes the installation of a new 3 phase, 220 volt			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FRED (Continued)			
BUILDING NO. 61 - ADDITIONS TO (Continued)			
electrical service line to Building 61, with interior wiring and two receptacles. (No installed equipment.)	1	Each	
Construction Contract Cost 379.17			379.17
BUILDING NO. 118 - ADDITIONS TO			
E.C.O. 91A authorizes the installation of a new 3 phase, 220 volt power line cable from the existing transformer station adjacent to the building, to a new 30 ampere main circuit breaker and a small power panel inside of the building. (No installed equipment.)	1	Each	
Construction Contract Cost 419.22			419.22
BUILDINGS 153 AND 155 - MODIFICATIONS TO			
E.C.O. 3701 authorizes the replacement of existing electric service lines at Buildings 153 and 155. The following approximate quantities of materials were used: 1200 lineal feet of #1 weather-proof wire, 150 lineal feet of #4 weather-proof wire, one 35 foot pole with down-guy and anchor, one 3 spool secondary rack, and one 60 ampere switch. (No installed equipment.)	1	Each	
Construction Contract Cost 153.36			153.36

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FRED (Continued)			
BASE OPERATIONS - ADDITION TO			
E.C.O. 87A authorizes the construction of a one-story aluminum structure, rectangular shape; O.D. 25'-2" x 50'-8-1/2" x 13'-4" mean height. Set on a 7" thick reinforced concrete wall, 30" high; 5" thick reinforced concrete floor. Double roof separated by 2" x 4" redwood. Two 8' sliding doors. Complete with electrical wiring and fixtures. Floor area 1276 square feet, volume 17,013 cubic feet. (No new installed equipment.)	1	Each	
Construction Contract Cost 5,408.17 Engineering Cost 34.29			5,442.46
BLAST PROTECTION			
Blast protection to buildings and facilities was accomplished in accordance with the requirements of specific buildings, needs, and locations. In general, doors were removed and either stored or laid flat on the floor; window shutters were locked in the open position; drive pins were added to the wall sill members; posts and timber beams were installed for roof support where required; cable guys were attached to building frames and anchored to concrete deadmen where required; buildings were shored and braced, and wall panel sections were removed as deemed necessary; all water, oil, and gas storage tanks were filled to capacity; towers and other high structures were securely guyed and anchored. (No installed equipment.)	1	Locale	
Construction Contract Cost 40,907.91 Engineering Cost 4,109.62			45,017.53

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FRED (Continued)			
DISTILLATION PLANT - ADDITIONS TO			
E.C.O. 94A authorizes the installation of a 20 H.P. "Ames" boiler complete with pump in Building 56, and the extension of the existing electrical wiring system.	1	Each	
Installed equipment: 1 - 20 H.P. "Ames Iron Works" steam boiler, serial No. 57200, H & N No. G-115; 1 - 1-1/4" x 1-1/4", 125 lb., "Aurora" boiler feed pump, serial No. 318935BF, H & N No. PU-23. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 7,398.54			7,398.54
FIRE HOUSE - ADDITIONS TO			
E.C.O. 3708 authorizes the furnishing of building parts, wash basin, pipe and fittings to extend "Pacific Iron and Steel" building 12'. Construction accomplished by military personnel. (No installed equipment.)	1	Each	
Construction Contract Cost 1,672.72			1,672.72
LATRINE - 50-MAN			
E.C.O. 85A authorizes the construction of a one-story wood and aluminum structure, rectangular shape; O.D. 12'-0" x 12'-0" x 8'-8" mean height, set on 5" thick concrete floor. Wood framing, corrugated aluminum siding and roofing; complete with electrical wiring and fixtures and plumbing. Floor area 144 square feet, volume 1248 cubic			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FRED (Continued)			
LATRINE - 50-MAN (Continued)			
feet. Building contains 2 lavatories, 2 urinals, and 2 water closets. (No installed equipment.)	1	Each	
Construction Contract Cost 6,571.85			6,571.85
MESS HALL - ADDITIONS TO			
E.C.O. 88A authorizes the following additions:			
BUTCHER SHOP			
One-story aluminum construction, rectangular shape, O.D. 25'-2" x 25'-10-1/2" x 10'-10" mean height, set on 5" thick concrete slab. Double roof separated by 3" x 4" redwood; vented window panels. Connected to existing covered walk by enclosed entry-way. Complete with electrical wiring, fixtures and plumbing. Floor area O.D. 651 square feet, volume 7052 cubic feet. All installed equipment furnished by others.	1	Each	
STORAGE ROOM			
One-story aluminum construction, rectangular shape; O.D. 25'-2" x 45'-10-1/2" x 10'-10" mean height, set on 5" thick concrete slab. Double roof separated by 3" x 4" redwood. Complete with electric wiring, fixtures and shelving. Floor area 1154 square feet, volume 12,502 cubic feet. (No installed equipment.)	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FRED (Continued)			
DAIRY REFRIGERATOR			
A portable refrigerator, 675 cubic feet capacity, set on timber skids. Complete with lighting and power wiring. Refrigerator furnished by others.	1	Each	
E.C.O. 3706 authorizes the redesigning and rebuilding of a range hood, H & N No. K-349, AEC No. 5749, with three fans, and the installation of the hood into Building 36.	1	Each	
Construction Contract Cost 9,086.56 Engineering Cost 108.25			9,194.81
FX - ADDITION TO			
E.C.O. 86A authorizes the addition of a one-story aluminum structure, rectangular shape, O.D. 25'-2" x 28'-0" x 10'-10" mean height, set on a 5" thick concrete slab, double roof, separated by 3" x 4" redwood. Complete with electrical wiring and fixtures and shelving. Floor area O.D. 705 square feet, volume 7638 cubic feet. (No installed equipment.)	1	Each	
Construction Contract Cost 1,063.27			1,063.27
SKEET RANGE - ADDITIONS TO			
E.C.O. 93A authorizes the installation of new electrical service consisting of approximately 600 lineal feet of 2 - #8 weatherproof wire, and one weatherproof receptacle. Army furnished poles. (No installed equipment.)	1	Each	

COMPLETION REPORT
for
CONTRACT NO. AT-(29-2)-20
OPERATION IVY

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ALL SITES			
GALLEY - MOBILE			
E.C.O. 260 authorizes the construction of a six-wheel, flat bed trailer mounted frame structure, to be used as a mobile field galley, outside dimensions 8'-6" wide x 22'-2" long x 7'-0" high; plywood sheathed roof and sides, composition roofing, interior plywood partitions; complete with counters, galvanized iron sink, refrigerator, freezer, radio lavatory, field ovens, electrical generating units. All installed equipment to be returned to stock upon termination of function of portable galley.	1	Each	
Construction Contract Cost 6,250.31			6,250.31
GALLEY - PORTABLE			
E.C.O. 3711 authorizes the construction of a one-story wood frame structure to be used as a portable field galley, outside dimensions 22'-2" x 8'-6" x 8'-0" high; 3/8" plywood sheathing on sides, composition roofing over 1/2" plywood sheathing roof, mounted 6" x 8" x 23'-0" wood skids; complete with sink, ovens, refrigerator, freezer, work counter, and cabinets. All installed equipment to be returned to stock upon termination of function of portable galley.	1	Each	
Construction Contract Cost 3,401.25			3,401.25

COMPLETION REPORT
for
CONTRACT NO. AT-(29-2)-20
OPERATION IVY

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
VARIOUS SITES			
NAVIGATION AID			
Pyramidal shaped tower, constructed of 2" x 4" frame with 1" x 10" siding spaced 2" apart, painted white, and topped with two 2'-6" x 3'-0" plywood targets, painted black and white, one perpendicular to and above the other. Size of base is 14'-0", over-all height 20'-8", set in three concrete footings. Located as per directions of survey department to replace existing beacons. (No installed equipment.)	4	Each	
Construction Contract Cost 3,261.13			3,261.13
BADGE CASE			
The badge case is 5'-7" wide x 4'-0" high x 6-1/4" wide wood case divided with 7 horizontal dividers and 15 vertical dividers, making 128 cubicles, each approximately 3-3/4" wide x 5-9/16" high x 3" deep. A 1/8" diameter x 5'-6" long steel rod is stretched horizontally from one side of the cabinet to the other in front of each horizontal divider. The construction of the case is of 3/4" plywood construction, includes 2 - 3/4" plywood doors and is supported by 2" x 6" posts set into the ground. (No installed equipment.)	6	Each	
Construction Contract Cost 300.00			300.00

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ITEM NO. A-35 - MISCELLANEOUS MAINTENANCE WORK ORDERS			
AS-BUILT DRAWING NUMBERS AND DATES:			
MWO 121: (None) MWO 122: FS-691 MWO 123: (None) MWO 124: FS-627 (Job 640 Drawing) MWO 128: Unissued Sketch MWO 129: Unissued Sketch MWO 132: (None) MWO 135: FS-702 23 May 1952 MWO 138: FS-786 9 May 1952 MWO 141: FS-717 10 July 1952 MWO 147: (None) MWO 155: (None) MWO 161: FS-756 11 September 1952			
The following Maintenance Work Orders are charged to Contract Item No. A-35 and are thereby included:			
MWO 121: Site - Tilda: The airstrip was reconstructed and made properly usable and safe. Costs Included in Job III - Maintenance	1	Each	
MWO 122: Site - Elmer: Stabilizer unit No. 2 was installed as per FS-691. Included are a surge tank, sea water pump, and all the required pipes, fittings, insulation, concrete work			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ITEM No. A-35 - MISCELLANEOUS MAINTENANCE WORK ORDERS (Continued)			
MWO 122: Site Elmer: (Continued)			
electrical wiring, conduits, and fixtures.	1	Each	
Construction Contract Cost 3,508.87 Engineering Cost 147.90			3,656.77
MWO 123: All Sites: A new sea mule was constructed using materials available at the jobsite, and salvage materials from the present barge, (a self-propelled pontoon barge, with A-frame, H & N No. 101).	1	Each	
Construction Contract Cost 13,758.42			13,758.42
MWO 124: Site - Fred: Repairs were made to the Cargo Pier, Structure No. 140, by installing sheet steel piling at the share and bulkheads, and placing fill and cement grout as necessary.	1	Each	
Costs Included in Job III - Maintenance			
EMWO 125: Site - Fred: Additional Storage Space in Building 403. Construct and install parts bins and construct second floor decking in Parts Warehouse, Jumbo Quonset No. 403. All in accordance with details furnished by the Warehouse Supervisor. Install eight lights in proposed hot locker room.			
Construction Contract Cost 4,454.33			4,454.33

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ITEM NO. A-35 - MISCELLANEOUS MAINTENANCE WORK ORDERS (Continued)			
MWO 128: Site - Fred: A new fuel oil purifier and a new 4000 gallon storage tank were installed in Building No. 56, Power Plant. Installation included all the necessary pipe, valves, fittings, concrete work, electrical conduits and fixtures.	1	Each	
Construction Contract Cost 7,116.72			7,116.72
MWO 129: Site - Elmer: A new 4000 gallon fuel oil storage tank and a new pump were installed adjacent to the existing storage tanks near the Power Plant, and a 1-1/2" pipe line was installed from the new tank to the existing storage tank near the cargo pier.	1	Each	
Construction Contract Cost 2,990.86			2,990.86
MWO 132: Site - Elmer: Two stainless steel sinks mounted in a wood frame cabinet were installed, and a dry well was constructed, complete with the required plumbing. Also, a wood frame and plywood darkroom was constructed, complete with cabinets, shelving and electrical service.	1	Each	
Construction Contract Cost 972.80			972.80
MWO 135: Site - Fred: Electrical wiring and fixtures was installed, and necessary connections to the overhead distribution line was made in Building 134, Signal Repair Building. Army furnished labor for interior wiring.	1	Each	
Construction Contract Cost 559.28			559.28

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ITEM NO. A-35 - MISCELLANEOUS MAINTENANCE WORK ORDERS (Continued)			
MWO 138: Site - Elmer: Approximately 37 lineal feet of 7'-0" high, wood frame and plywood partitions were added, to make two additional offices, and an existing wood rail was removed; Building 176, Personnel Office.	1	Each	
Construction Contract Cost 168.31			168.31
MWO 141: Site - Elmer: A concrete slab, 54'-0" long x 20'-6" wide x 4" thick poured under existing Building 360, DUKW Repair Shelter.	1	Each	
Construction Contract Cost 1,134.27			1,134.27
MWO 147: Site - Fred: Repairs to asphalt runways and parking areas were made as follows:			
(A) Existing runway from Station No. 00-50 to Station No. 30-50 was seal-coated.			
(B) L-13, Parking area was repaired by scarifying the area, the loose material then bladed into windrows, flattened, sprayed with diluted Bituminal, mixed, bladed, sprayed evenly and rolled.			
(C) The existing runway was patched, broomed and cleaned, surfaced with tack coat of diluted Bituminal, and then cold mixture of sand and Bituminal spread and rolled to a compacted thickness of 3/4".			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ITEM NO. A-35 - MISCELLANEOUS MAINTENANCE WORK ORDERS (Continued)			
MWO 147: Site - Fred: (Continued)			
(D) The MATS parking area was patched, using cold mix as described in Paragraph (C).	1	Each	
Construction Contract Cost 27,472.66			27,472.66
MWO 155: (No Site): AVR-20987 was rehabilitated by replacing motors and overhauling before installation (Navy furnished); overhauling emergency generator and engine; replacing all soft patches and deteriorated or damaged timbers and planking in hull; cleaning all sea valves, piping, buttless bearings, rudder bearings and propellors; placing packing in shaft glands; tuning and adjusting engines, controls, regulators; painting.	1	Each	
MWO 161: Site - Elmer: Building No. 166, Fresh Water Reservoir, was repaired and reinforced by removing water, cleaning, inspecting for leak, holes or tissues; removing and replacing existing expansion joint material; and reinforcing the roof with additional wood beams and columns.	1	Each	
Costs Included in Job III - Maintenance			

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COMPLETION REPORT
for
CONTRACT NO. AT-(29-2)-20
OPERATION IVY

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA TO IRENE			
CAUSEWAY			
Construction of the causeway, including the coax cover, includes an estimated 215,000 cubic yards of coral excavation and fill; 3660 lineal feet of bulkhead, consisting of 40 pound rail piling supporting a 3" x 6" timber wall approximately 12'-0" high backed up by rock fill; and 430 cubic yards of sand cushion for underground power and coax cables, stabilized top. (No installed equipment.)	1	Each	
Construction Contract Cost 297,888.10 Engineering Cost 12,399.71			310,287.81
ALL SITES			
POWER DISTRIBUTION			
Construction of the underground power distribution system for the scientific program includes survey, excavation and backfill, and installation of approximately 20,590 lineal feet of new 3/c 5 KV Neoprene JKT cable. Rehabilitation of previously installed cable connecting existing stations; special conduit runs, service connections to stations and transformers and installations and connection of various portable generating units for special power requirements.			
NOTE: Descriptions of portable generating units and transformers are included in the Completion Reports of the station in which they occur. Timing cables, furnished by the government installed in 36" trenches to Users equipment.			
Allocated to all Stations			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA			
SECURITY FENCING, STATION NO. I AREA			
2220 lineal feet of fence consisting of 7'-0" high wood posts set in concrete with 2'-0" long out riggers and two point galvanized barbed wire strands spaced 6" apart. Includes two 12'-0" x 7'-0" wood frame gates with barbed wire spaced 6" apart. (No installed equipment.)	2220	Lin. Ft.	
Allocated to all Stations			
FLORA, GENE, HELEN AND IRENE			
SITE PREPARATION			
Site preparation on Flora, Gene, Helen, and Irene, consists of the removal of palm trees and undergrowth, and the clearing, grubbing, leveling, and grading of approximately 782,000 square yards of surface area. (No installed equipment.)	782,200	Sq. Yds.	
Allocated to all Stations			
FLORA, HELEN AND IRENE			
STABILIZED ROADS AND AREAS			
Consists of clearing and grading an area of 16,000 square yards, and rolling and water stabilizing approximately 15,350 square yards of coral in the Station 1 area on Flora, using approximately 4000 cubic yards of crushed aggregate fill; stabilizing approximately 2227 square yards of 24 foot wide road on Flora, 2320 square yards on Helen, 3520 square yards on Irene, and a parking area of 5314 square yards on Irene.	44,731	Sq. Yds.	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA, HELEN AND IRENE (Continued)			
STABILIZED ROADS AND AREA (Continued)			
E.C.O. 3715 includes the leveling, grading, and stabilizing approximately 1200 square yards of area at each of Stations Nos. 690.01 thru 690.04, so that the finish grade is 4" below the top of the slab of the stations.	4,800	Sq. Yds.	
(No installed equipment.) TOTAL	49,531	Sq. Yds.	
Allocated to all Stations			
FLORA			
STATION NO. 1			
One-story structural steel building with "Robertson V-Beam" siding; size O.D. 88'-0" x 46'-0" x 61'-0" high; erected on a 2'-0" x 1'-6" reinforced concrete footing placed on concrete pile caps of 48 - 12" x 12" BP 53 H-Bearing piles driven to a depth of approximately 60 feet; eight additional piles with approximately 90 foot penetration serve as interior structural support; 8" reinforced sparkproof concrete floor separated from footings and interior foundations by 1/2" asphalt impregnated celotex; steel trussed roof with composition roofing over Robertson UK roofing decking; exterior steel ladder, with cage, for access to roof; interior aluminum ladder, with cage, for access to cab of a 20-ton bridge crane which travels longitudinally through the building; entire structure shop riveted and field bolted; total areas 4048 square feet; volume 242,880 cubic feet; complete with electric lighting and power wiring and fixtures including grounding system.			
Station No. 1 includes a wood frame telephone booth, size 6'-6" x			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA (Continued)			
STATION NO. 1 (Continued)			
6'-6" x 6'3" mean height, constructed on skids; floor, roof and louvered sides of 1/2" plywood; areas 42 square feet; volume 263 feet.	1	Each	
Station No. 1 also includes a pit latrine which is a one-story wood frame building 14'-6" long x 14'-4" wide, on a 5" concrete slab floor and containing two metal trough urinals, and wood frame toilets over 6'-0" deep pits.			
E.C.O. No. 3707 authorizes the installation of a canvas cover on a wood frame to replace roll-up door No. 5 which was eliminated.			
Installed equipment: 1 - 25 gallon "Larco" water cooler, serial No. 420-13725, H & N No. CA-309; 2 - 15,000 CFM "Chicago-Gyro" explosion proof exhauster fans, serial Nos. 6826, 6820, H N Nos. F-452, F-453; 1 - 2 ton, 5 H.P. "Kimball Elevator Co." working platform, (no serial No., no H & N No.); 2 - 115 volt "Faraday" sirens, 1 received, serial No. 7A13G2, H & N No. E-595; 1 - 20 ton "Crane Hoist Engineering Corp" traveling crane, (no serial No.), H & N No. HS-201. (The above list does not contain any user-furnished or user-installed equipment.)	"		
Construction Contract Cost 508,366.72 Engineering Cost 24,784.28			533,151.00
SUB-STATION NO. 1			
Outdoor sub-station consisting of three 100 KVA transformers installed on a reinforced concrete pad 10'-6" x 4'-6" x 0'-6" thick; primary fuse cutouts, safety switches and junction box mounted on a 9'-0" high unistrut tower; station enclosed by 60 lineal feet of			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA (Continued)			
SUB-STATION NO. 1 (Continued)			
8'-0" high chain link fence including a 3'-0" hinged gate, and grounded to a grid of #1/0 bare copper wire.	1	Each	
Installed equipment: 3 - 100 KVA "Allis-Chalmer" oil immersed, outdoor transformers, serial Nos. 2450637, 2450701, 2450647, H & N Nos. E-305, E-307, E-308. (The above list does not contain any user-furnished or user-installed equipment.)			
Allocated to all Stations			
STATION NO. 2			
A one-story, 4 room wood frame structure, O.D. 24'-0" x 48'-0" x 10'-11" mean height, 1/2" exterior plywood siding and composition roofing, erected on a reinforced concrete floor slab, with a 4'-0" x 33'-0" uncovered concrete entrance slab and two equipment slabs. Interior stud partitions plywood sheathed one side; area 1152 square feet; volume 12576 cubic feet. Includes 58 lineal feet of wood framed work bench, 2 plywood hot cabinets and open shelving are built-in, wood doors and sash with one exterior sliding door 10'-0" x 8'-0"; complete with electrical, telephone and communication wiring and fixtures, dehumidification and ventilating equipment and aluminum duct work.	1	Each	
Installed equipment: 1 dehumidification unit; 1 supply fan unit.			
Construction Contract Cost 38,686.55 Engineering Cost 5,311.99			43,998.54

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA (Continued)			
SUB-STATION NO. 2			
Outdoor sub-station consisting of three transformers installed on a reinforced concrete pad 8'-0" x 3'-0" x 0'-6" thick; primary fuse cutouts and junction box mounted on a 9'-0" high unistrut tower; station enclosed by 52 lineal feet of 8'-0" high chain link fence including a 3'-0" hinged gate, and grounded to a grid of #1/0 bare copper wire.	1	Each	
Installed equipment: 2 - 10 KVA "Uptegraff" transformers, serial Nos. 58182, 58177, H & N Nos. TR-111, TR-113; 1 - 25 KVA "Uptegraff" transformer, serial No. 5026314, H & N No. TR-189. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 1,154.56			1,154.56
STATION NO. 3			
One-story wood frame construction, 12'-8" x 8'-8" x 8'-4" mean height; sides covered with 1/2" plywood; shed roof of composition roofing over 1" diagonal sheathing; constructed on concrete slab with perimeter footing 1'-2" below grade; interior sprayed with vapor-seal; platform on roof for exhaust fan; complete with electrical wiring and fixtures; area O.D. 110 square feet; volume 917 cubic feet.	1	Each	
Installed equipment: 1 - 400 CFM "Master Fan Corp." exhaust fan, serial No. 02022, H & N No. F-448. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 7,249.06			
Engineering Cost 2,388.96			9,638.02

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA (Continued)			
SUB-STATION NO. 3			
Outdoor sub-station consisting of three 10 KVA transformers installed on a reinforced concrete pad 8'-6" x 3'-6" x 0'-6" thick; primary fuse cutouts and safety switch mounted on a 9'-0" high unistrut tower; station enclosed by 54 lineal feet of 8'-0" high chain link fence including a 3'-0" hinged gate, and grounded to a grid of #1/0 bare copper wire.	1	Each	
Installed equipment: 3 - 10 KVA "Westinghouse" transformers, serial Nos. 5446788, 4886752, 5359918, H & N Nos. TR-100, TR-101, TR-103. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 920.04			920.04
STATION NO. 4			
One-story wood frame construction 24'-9" x 16'-8" x 10'-6" mean height with attached generator shed 8'-3" x 16'-8" x 9'-0" mean height with composition roof over diagonal sheathing; erected on a 5" thick reinforced concrete slab 33'-0" x 16'-8"; complete with electrical wiring and fixtures, dehumidification equipment and ducts. Area 550 square feet, volume 5775 cubic feet.	1	Each	
Installed equipment: 2 - self-contained, "Industrial AC" dehumidification units, serial No. 21474, 21425, H & N Nos. A-180, A-181; 2 - 16" "Master" exhauster roof fans, serial Nos. 5177, 5170, H & N Nos. K-269, K-291; 2 - 4 KVA "Westinghouse" generator motor sets, serial Nos. 1S-12B5038, 2S-12B5038, H & N No. G-130, G-121.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA (Continued) STATION NO. 4 (Continued) (The previous list does not contain any user-furnished or user-installed equipment.) Construction Contract Cost 45,707.26 Engineering Cost 2,911.00			48,618.26
STATION NO. 5 One-story wood frame construction 33'-0" x 24'-9" x 11'-1" mean height erected on a 4" thick reinforced concrete slab; exterior walls of 1/2" plywood; trussed rafters with 1" x 6" diagonal sheathing and cold process composition roofing; interior furred ceiling of 1/4" plywood; cocoon treated; complete with electrical wiring and fixtures; dehumidification equipment and ducts; total floor area 817 square feet; volume 9055 cubic feet.	1	Each	
E.C.O. 3713 authorizes the installation of ducts and vents from the electronic equipment; the covering of west side of the station and the roof with sisulation paper; the adjustment of the dehumidification air intakes to compensate for exhausted air from the electronic equipment; the covering of the dehumidification units with a wood frame and canvas structure to protect it from the sun; the removal of the shed and winch to facilitate free air circulation around the dehumidification units.			
E.C.O. 3719 authorizes the installation of a continuous ceiling on existing joists throughout Station No. 5.			
Installed equipment: 3 self-contained "Industrial AC" dehumidification units, serial Nos. 21419, 21476, 21479, H & N Nos. A-175, A-182, A-183.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA (Continued)			
STATION NO. 5 (Continued)			
(The previous list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 41,063.35 Engineering Cost 2,756.33			43,819.68
STATION NO. 6			
A free standing steel tower 375'-0" high; shop welded and field bolted; horizontally and vertically braced; four legs, each anchored to a reinforced concrete foundation 17'-0" x 17'-0" x 7'-6" thick; horizontal section at base measures 33'-9" x 33'-9" tapering to 5'-6" x 6'-6" at the 325'-0" level and continuing that dimension to the top; 3/16" checkered floor plate equipment platforms occur at the 325 foot and 375 foot levels; a steel ladder with safety cages is provided for full height of tower with landings approximately 20'-0" apart; complete with lightning rod and grounding grid; electric cable for beacon and obstruction lights and electric power wiring. (No installed equipment.)	1	Each	
Construction Contract Cost 99,260.20 Engineering Cost 3,826.79			103,086.99
STATION No. 7			
An all aluminum tower 9'-0" x 6'-0" x 14'-0" high with 3/16" tread plate platform decks at 8'-0" and 14'-0" levels; 6" I beam columns anchored to floor slab of Station 1. A 12" built-up beam extends from a pipe column above upper platform and connects to a structural column			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA (Continued)			
STATION NO. 7 (Continued)			
of Station No. 1. (No installed equipment.)	1	Each	
Construction Contract Cost 8,718.55 Engineering Cost 471.59			9,190.14
JANET			
STATION NO. 10			
Consists of reactivation of Greenhouse Station No. 771, which is a reinforced concrete structure 8'-0" x 14'-6" x 7'-6" high from 1'-0" thick foundation footings 4'-6" below grade. Walls, roof and partitions are 1'-0" thick; complete, with electrical wiring and fixtures. (No installed equipment.)	1	Each	
Construction Contract Cost 208.87 Engineering Cost 61.47			270.34
EDNA			
STATION NO. 11			
One-story wood construction, rectangular shape; size O.D. 10'-10" x 10'-10" x 7'-8"; set on continuous reinforced concrete foundation with a 6' x 6' x 3'-3" concrete block in center of coral floor, below grade. Entire structure covered with 15# roof felt placed with hot mopped asphalt. Floor area 117 square feet, volume 897 cubic feet.	1	Each	

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
EDNA (Continued)				
STATION NO. 11 (Continued)				
(No installed equipment.)				
Construction Contract Cost	3,269.19			
Engineering Cost	237.62			3,506.81
YVONNE				
STATION NO. 12				
Consists of reactivation of Greenhouse Station No. 773, which is a reinforced concrete structure 8'-0" x 14'-6" x 7'-6" high from 1'-0" thick foundation footings 4'-6" below grade. Walls, roof and partitions are 1'-0" thick; complete with electrical wiring and fixtures. (No installed equipment.)		1	Each	
Construction Contract Cost	208.87			
Engineering Cost	123.47			332.34
LEROY				
STATION NO. 13				
One-story wood construction, rectangular shape; size O.D. 10'-10" x 10'-10" x 7'-8"; set on continuous reinforced concrete foundation with a 6' x 6' x 5'-8" concrete block in center of coral floor below grade. Entire structure covered with 15# roof felt placed with hot mopped asphalt. Floor area 117 square feet, volume 897 cubic feet.		1	Each	

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
LEROY (Continued)				
STATION NO. 13 (Continued)				
(No installed equipment.)				
Construction Contract Cost	6,065.19			
Engineering Cost	13.62			6,078.81
FRED				
STATION NO. 14				
Consists of reactivation of Greenhouse Station No. 775, which is a wood building 10'-0" x 10'-0" x 7'-8" high erected on 1'-0" x 2'-0" reinforced concrete footing and having a concrete block 5'-0" square centered inside the structure from grade down to coral rock bed; complete with electrical wiring and fixtures. (No installed equipment.)		1	Each	
Construction Contract Cost	208.87			
Engineering Cost	123.47			332.34
YVONNE				
STATION NO. 50				
Consists of 117 - 55 gallon oil drums resting above high tide level on 2-1/2" diameter x 15'-3" high standard pipes driven into the reef. Drums are painted luminous flame orange and are arranged 5'-0" center to form a 100 foot cross three drums wide; complete with 10 KVA transformer on pole, complete with fuse cutout, switch, rack, wiring, conduits, and fittings. (Installation of light fixtures deleted.)		1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
STATION NO. 50 (Continued)			
Installed equipment: 1 - 10 KVA, 2400-120/240 volt, single phase transformer.			
Construction Contract Cost 19,963.50 Engineering Cost 287.06			20,250.56
STATION NO. 51			
A 200'-0" x 200'-0" x 20'-0" wide white cross in a 200'-0" diameter x 20'-0" wide white circle painted on a 200'-0" square black background with a 28'-3" square x 17'-0" high radar reflector in the center; complete with electrical wiring to thirty-six 75 watt spotlights on a timber frame around the radar reflector.	1	Each	
Installed equipment: 1 - 5 KVA "Gregory" transformer, serial No. 5026231, H & N NO. TR-59. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 6,579.93 Engineering Cost 50.71			6,630.64
LEROY			
STATION NO. 52			
A 28'-3" x 28'-3" x 17'-0" high radar reflector. (Installation of light fixtures deleted.)	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
LEROY (Continued)			
STATION NO. 52 (Continued)			
(No installed equipment.)			
Construction Contract Cost 7,373.35 Engineering Cost 147.77			7,521.12
ELMER			
STATION NO. 53			
A 28'-3" x 28'-3" x 17'-0" high radar reflector with one transformer mounted on pole, complete with fuse cutout, switch, rack, wiring, conduit, and fittings. (Installation of light fixtures deleted.)	1	Each	
Installed equipment: 1 - 10 KVA, 2400 - 120/240 volt, single phase transformer.			
Construction Contract Cost 2,236.77 Engineering Cost 137.49			2,374.26
IRENE			
STATION NO. 200			
2059-I-19, 3051-I-3, 3080-I-3, 4041-I-3, 4042-I-3, 4043-I-3, 6057-I-3, 6058-I-3, 6060-I-3, 6066-I-3, 6069-I-3, 6074-I-3, 6079-I-3, 6085-I-3, 6089-I-3, 6090-I-3, 6117-I-3			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
IRENE (Continued)			
STATION NO. 200 (Continued)			
A heavily reinforced concrete structure 44'-0" x 52'-0" x 15'-0" high consisting of four rooms with 4'-0" thick exterior walls, 3' thick floor and ceiling slabs and a "U" shaped entrance tunnel of 11'-0" average width x 130 feet long; average walls, roof and floor slab 3'-0" thick; all ceiling heights 9'-0"; area 1513 square feet, interior volume 13,617 cubic feet, exterior volume 49,830 cubic feet; exterior and interior finish concrete with unistrut inserts in walls and ceilings, steel and lead interior doors and steel exterior doors, the above structure is covered by 9000 cubic yards of earth fill topped by sacks of cement and sand grout. Exterior to the covered area are a 260 square foot loading dock, an 80 foot long x 20 foot wide reinforced concrete approach ramp with average 8 foot high retaining walls each side, topped by pipe railings; a reinforced concrete drainage sump 5'-0" square x 10'-6" high, a shallow salt water well and surfaced coral parking area; all complete with drainage piping, explosion proof dehumidification, ventilation; power, light and communication wiring and fixtures and exterior flood lighting.	1	Each	
NRLK Shed: A wood frame structure 24'-0" long x 12'-8" wide x 11'-0" high mean height, with plywood siding, corrugated aluminum roof, plywood floor, resting on 6" x 6" x 3'-0" long wood post and concrete fill footings, located approximately 40'-0" west of Station No. 200. Area 304 square feet, volume 3344 cubic feet. (No installed equipment.)	1	Each	
E.C.O. 297 authorizes the removal and the replacement of the 5 KV shielded cable.			
E.C.O. 3714 authorizes the installation of a centrifugal pump in the cooling water supply line to the refrigerating unit at Station No. 200, and a supply tank for priming the pump, together with all necessary piping, fittings and valves.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
IRENE (Continued) STATION NO. 200 (Continued) Installed equipment (Station No. 200): 4 - direct drive suspended, 65,000 B.T.U. "H.E. Peterson" dehumidifiers, serial No. E-1232 thru E-1235, H & N Nos. A-176 thru A-179; 1 - 1/2 H.P. 2500 CFM "Master Fan" utility fan, serial No. 0-1584, H & N No. F-208; 1 - 2 x 3 "Fairbanks-Morse" centrifugal pump, serial No. 735491, H & N No. DI-136; 1 - 150 g.p.m. "Pacific" bilge pump, serial No. 8851201, H & N No. PU-16; 2 - 40 g.p.m. "Marlow" condenser water pumps, serial Nos. 933094, 82147, H & N Nos. PU-21, PU-22; 2 - 105,000 B.T.U., refrigerating condensing units, serial Nos. 534403, 531587, H & N No. R-164, R-165; 1 bush type combination cooling coil with fan, (jobsite prefabrication), H & N No. A-196; 1 - 1/2 H.P. "Westinghouse" motor, H & N No. MO-160. (The above list does not contain any user-furnished or user-installed equipment.) Construction Contract Cost 560,156.94 Engineering Cost 26,474.44			586,631.38
SUB-STATION NO. 200 Sub-Station No. 200 which adjoins and serves Station No. 200, consists of 3 - 75 KVA transformers, 3 primary fuse cutouts, a safety switch, the necessary wiring, conduits, and fittings, which "Unistrut" framing supports; erected on a reinforced concrete slab, 4'-0" wide x 9'-0" long, and enclosed by 56 lineal feet of timber fence.	1	Each	
Installed equipment: 3 - 75 KVA oil immersed "Allis-Chalmers" distribution transformers, serial Nos. 2450537, 2450561, 2452823, H & N Nos. TR-210, TR-211, TR-212.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
IRENE (Continued)			
SUB-STATION No. 200 (Continued)			
(The previous list does not contain any user-furnished or user-installed equipment.)			
Included on B-31			
FLORA			
STATION NO. 201			
A rectangular shaped reinforced concrete, timber and earth fill structure, O.D. 24'-11" x 32'-0" x 24'-0" high with one 6'-0" thick reinforced concrete wall extending 11'-0" above that height and supported by 12 steel "H" beam piles and a 3'-0" thick pile cap; one 1'-6" thick concrete wall and two timber walls to 24'-0" height with contained earth fill; complete with rolled steel shape supports and electrical services. Located in Station No. 1.	1	Each	
E.C.O. 290 authorizes the installation of two additional 3" conduits under the foundation and thru the floor, and the relocation of three 3" pipe sleeves. (No installed equipment.)			
Construction Contract Cost 52,138.83 Engineering Cost 2,953.36			55,092.19
IRENE			
STATION NO. 202			
A rectangular shaped, all reinforced concrete structure with embedded			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
IRENE (Continued)			
STATION NO. 202 (Continued)			
continuous anchors in walls and ceiling and exterior copper shielding, O.D. 16'-0" x 14'-0" x 20'-9" high, connected to Station 200 by a wood framed, "L" shaped, tunnel with concrete floor, length 87' x 5'-3" wide x 9'-0" high: Contains a concrete and timber framed retaining wall, length 92' x 19'-8" maximum height, tapering at the ends to 9'-0"; complete with electrical wiring and fixtures, ventilation and lead door; all covered with compacted earth fill to a height of ten feet above the highest point of the structure, sloping to the top of the retaining wall. (No installed equipment.)	1	Each	
E.C.O. 291 authorizes the installation of a steel plate form and the pouring of additional concrete in the foundation; and the construction of a reinforced concrete wall for the center panel of the retaining wall.			
Construction Contract Cost 70,390.70 Engineering Cost 3,583.83			73,974.53
AS LISTED BELOW			
STATION NOS. 203.01 THRU 203.09			
A rectangular reinforced concrete foundation slab 5'-4" x 10'-10" x 8" thick topped with 8" thick perimeter walls approximately 8'-0" high with bearing plates and anchor bolts, supporting a perforated lead baffle, 8'-0" x 8'-0" x 1'-0" thick which is mounted on an I-beam stand.	9	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued)			
STATION NOS. 203.01 THRU 203.09 (Continued)			
Locations:			
Station No. 203.01 Flora - Gene Station No. 203.02 Gene Station No. 203.03 Helen - Irene Station No. 203.04 thru 203.09 Irene (No installed equipment.)			
Construction Contract Cost 16,100.98 Engineering Cost 286.27			16,387.25
FLORA TO IRENE			
STATION NO. 204 AND AUXILIARY STRUCTURES			
A timber, frame flume, 8'-0" x 8'-0" I.D., in nine lineal sections totaling 8,860 lineal feet long; interior sheathed all around with plywood and full reinforced paper lining over 2" x 4" framing. Flume is supported a variable distance above grade by 4" x 4" diagonally braced posts spaced 8'-0" apart, and 4" x 6" diagonally braced posts spaced 12'-0" apart, all on 4'-0" deep concrete footings. (No installed equipment.)	1	Each	
"Chic Sales" Houses: Adjacent to, and spaced along Station No. 204 are 24 wood frame sheds, each 4'-0" x 4'-0" x 7'-9" high, set on 4" x 4" wood sleeper, with plywood floor and exterior sheathing, aluminum roof; complete with light, power and communication wiring and fixtures. (No installed equipment.)	24	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA TO IRENE (Continued)			
STATION NO. 204 AND AUXILIARY STRUCTURES (Continued)			
E.C.O. 3717 authorizes the painting of the interior of the flume, the installation of a plywood drip strip on the flume, and the installation of a corrugated aluminum roof with sheathing, 12'-0" wide, placed 1'-2" above the flume.			
Construction Contract Cost 556,253.94 Engineering Cost 5,845.78			562,099.72
YVONNE			
STATION NO. 250			
Consists of reactivation of Greenhouse Station 6A including installation of dehumidification units; power, light and signal panels; safety switches for Users equipment; electric wiring for lights and receptacles and various other equipment.	1	Each	
Installed equipment: 1 - 12" diameter "Master" supply fan, serial No. OZ 111, H & N No. F-466; 1 "Kilpatrick" evaporator dehumidification unit, serial No. 332-D6-9852-1, H & N No. A-190-B; 1 "Kilpatrick" condensor dehumidification unit, serial No. 331-D-122950-28, H & N No. A-127. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 18,051.01 Engineering Cost 2,794.50			20,845.51

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
STATION NO. 251			
Heavy timber frame structure, 8'-0" x 4'-0" x approximately 8'-0" high mounted on a 8" wide x 5'-0" long x 4" thick concrete footings top and upper 4'-0" of sides covered with 1/2" exterior plywood; earth fill built up approximately 8'-0" from finish grade to top of structure and out, sloping away at 1-1/2 to 1 maximum.	1	Each	
Installed equipment: 1 - 5 KVA "Gregory" transformer, serial No. 5026231, H & N No. TR-59. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 1,219.08 Engineering Cost 187.87			1,406.95
STATION NO. 252			
Consists of rehabilitation of Greenhouse Station 6B, including installation of dehumidification units; lighting panel and safety switches mounted on a 12'-0" x 6" x 6" electrical gutter with wiring for lights, power and Users equipment.	1	Each	
Installed equipment: 1 "Kilpatrick" condensor dehumidification unit, serial No. 331-D-122950-26, H & N No. A-128; 1 "Kilpatrick" evaporator dehumidification unit, serial No. 332-D-1-102750-23, H & N No. A-133-A; 6 - 25 KVA transformers. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 22,230.80 Engineering Cost 669.68			22,900.48

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ALICE STATION NO. 300 A heavily reinforced concrete structure, irregular shape, two-story. First floor consists of two rooms and a tunnel; one room 12'-0" x 12'-0" x 14'-0" high I.D. with 5'-0" thick walls and 1'-6" thick ceilings; adjoining room is 8'-0" x 14'-0" x 8'-0" high I.D. with two exterior walls, one 2'-0" and one 1'-0" thick, with a frame partition adjacent to the tunnel which is 14'-0" x 4'-0" x 8'-0" high I.D. with a 2'-0" thick exterior wall. The tunnel and second room described are timber lined and have a wood framed shed roof covered with approximately 8'0" of earth fill. Second floor consists of one room 12'-0" x 12"-0" x 10'-8" high I.D. with 5'-0" thick walls and ceiling. Total interior floor area is 456 square feet, interior volume is 4895 cubic feet. Building is set on a reinforced concrete slab 24'-0" x 44"-0" x 4'-0" thick. Complete with blast doors, 1/2 ton electric hoist, four 1000 pound capacity travelling hoists, electrical and communication wiring and fixtures, and dehumidification equipment and ducts.	1	Each	
Installed equipment: 1 "Kilpatrick" condensor dehumidification unit, serial No. 102750.17, H & N No. A-111-A; 1 - 300 CFM "American Blower" supply fan, (no serial No.), H & N No. F-462; 1 "Yale" 35' lift chain spur geared hoist (no serial No.), H & N No. TM-607; 1 - 1/2 ton "Budge-It" chain hoist, (no serial No.), H & N No. TM-669; 1 - 1/2 ton "Wright Speedway" electric hoist, serial No. Z-7682, H & N No. TM-716; 1 - 50 KW diesel engine generator, H & N No. G-67. (The above list does not contain any user-furnished or user-installed equipment.)			
E.C.O. 282 authorizes the dust-proofing of the second floor room by painting the ceiling, floor, and walls, and the construction and			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ALICE (Continued)			
STATION NO. 300 (Continued)			
installation of a steel door in place of the door which was originally designated.			
Construction Contract Cost 203,951.56 Engineering Cost 6,782.90			210,734.46
ELMER			
STATION NO. 301			
A 125' steel tower (combination of two existing 75' towers) horizontally and vertically cross-braced, shop welded and field bolted; a 14'-3" x 14'-3" x 8'-0" O.D. cab with 3/16" checkered floor plate and aluminum sides and roof is mounted above the 125' level; four vertical legs anchored to reinforced concrete footings; steel stairway inside of frame; dumb-waiter on outside of frame equipped with operating unit on concrete pad; eight guys of 1-1/4" galvanized bridge strand from 112'-6" level to reinforced concrete anchors; includes 24'-0" x 9'-6" x 9'-0" high frame generator shed on 6" concrete pad with corrugated aluminum sides and roof; complete with electrical wiring and fixtures including search lights, flood lights, obstruction lights and power to Users equipment.	1	Each	
E.C.O. 3702 (paragraphs 1 and 3) authorizes the construction of a floor at elevation 87.5 feet, similar to the floor at elevation 112.5 feet; includes all necessary electrical fixtures and circuits.			
E.C.O. 3716 authorizes the inverting and welding of bolts at side "C" at the 125 foot level of Station No. 301 to facilitate the removal and replacement of the hand rail.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
STATION NO. 301 (Continued)			
Installed equipment: 1 custom made 2-drum hoist, H & N No. HS-57. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 99,603.87 Engineering Cost 4,810.63			104,414.50
STATION NO. 302			
Reinforced concrete building 9'-4" x 9'-4" x 9'-4" high O.D. constructed on continuous concrete footing 1'-0" below grade; walls 8" thick, floor and roof 4" thick; area 87 square feet, volume 813 cubic feet; plywood door; adjacent to reinforced concrete block 25'-0" x 4'-0" x 4'-9" fitted with seven steel mounting plates 2'-10" x 2'-10" x 1/2", various 3" diameter embedded pipe sleeves and 18 gauge galvanized sheet metal cable ducts. (No installed equipment.)	1	Each	
Construction Contract Cost 12,904.07 Engineering Cost 5,342.08			18,246.15
JANET			
STATION NO. 303			
Two reinforced concrete blocks, one 17'-0" wide x 4'-0" high x 4'-0" long, the other 17'-0" wide x 4'-0" high x 3'-0" long, anchored to the concrete roof of existing Greenhouse Station 69 (Station No. 1001.01) fitted with ten 1/2" thick steel mounting plates, various 3"			

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
JANET (Continued)				
STATION NO. 303 (Continued)				
diameter embedded pipe sleeves and 18 gauge galvanized sheet metal cable ducts. (No installed equipment.)		1	Each	
Construction Contract Cost	7,592.78			
Engineering Cost	210.08			7,802.86
OSCAR				
STATION NO. 304				
Work done for this station includes the installation and the removal of Users' cameras and the installation of strip planking. (No installed equipment.)		1	Each	
Construction Contract Cost	38.00			38.00
URSULA				
STATION NO. 305				
Reinforced concrete slab 12'-0" square and 1'-3" thick with a reinforced concrete pedestal 4'-0" x 4'-0" x 4'-0" fitted with a 1/2" thick steel mounting plate and various 3" diameter embedded pipe sleeves. (No installed equipment.)		1	Each	
Construction Contract Cost	2,988.00			
Engineering Cost	75.00			3,063.00

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
URSULA (Continued)			
STATION NO. 306			
Three reinforced concrete blocks, one 17'-0" long x 4'-0" wide x 3'-0" high, one 16'-8" x 4'-0" x 2'-3" high and one 4'-0" x 4'-0" x 4'-0" high anchored to the concrete roof of existing Greenhouse Station 69; fitted with nine 1/2" thick steel mounting plates, various 3" diameter embedded pipe sleeves and 18 gauge galvanized sheet metal cable ducts. (No installed equipment.)	1	Each	
Construction Contract Cost 5,746.02 Engineering Cost 191.36			5,937.38
YVONNE			
STATION NO. 307			
Reinforced concrete block, 17'-0" long x 4'-0" wide x 3'-0" high, anchored to the roof of Station No. 1001.03 (existing Greenhouse Station 69), fitted with three 1/2" thick steel mounting plates, various 3" diameter embedded pipe sleeves, and 18 guage galvanized sheet metal cable ducts. A transformer is installed in conjunction with this station.	1	Each	
Installed equipment: 1 - 5 KVA "Gregory" transformer, serial No. 5026219, H & N No. TR-51. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 3,516.95 Engineering Cost 181.88			3,698.83

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
ELMER				
STATION NO. 308				
Reinforced concrete slab 12'-0" square and 1'-3" thick with a reinforced concrete pedestal 4'-0" x 4'-0" x 4'-0" fitted with a 1/2" thick steel mounting plate and various 3" diameter embedded pipe sleeves. (No installed equipment.)		1	Each	
Construction Contract Cost	3,265.92			
Engineering Cost	65.73			3,331.65
YVONNE				
STATION NO. 309				
A prefabricated aluminum Bilby outside triangulation tower 75' high with wood platform at 70'-0" level; field bolted; three legs anchored to 3" x 12" timbers 5'-0" below grade. (No installed equipment.)		1	Each	
Construction Contract Cost	2,559.00			2,559.00
FLORA				
STATION NO. 330				
An array of pipes set in concrete floor approximately 9'-6" from zero; complete with electrical and telephone connections. (No installed equipment.)		1	Each	
Construction Contract Cost	1,079.77			
Engineering Cost	2.49			1,082.26

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA (Continued)			
STATION NOS. 331.01 THRU 331.07			
Welded steel towers 4'-0" x 4'-0" x 26'-2-5/8" over-all height with 1/2" steel plate mounting platform at 18'-8-5/8" and various other levels; steel access ladder; four legs anchored to reinforced concrete pad 9'-0" x 9'-0" x 1'-3"; stations are completely enclosed in wood frame shelters covered with 1/2" exterior grade plywood; anchored to four concrete deadmen by cables. All stations contain a 6'-0" x 3'-2" opening and shutter at the 18'-8-5/8" level; Station Nos. 331.01 and 331.05 have a 3'-2" x 3'-2" opening and shutter at the 18'-8-5/8" level; Stations Nos. 331.02 and 332.04 have a 3'-2" x 3'-2" opening and shutter at the 12'-7-1/4" level; and Stations Nos. 331.03 and 331.07 have a 3'-2" x 3'-2" opening and shutter at the 6'-1-9/16" level. (No installed equipment.)	7	Each	
Construction Contract Cost 40,929.58 Engineering Cost 1,834.61			42,764.19
STATION NOS. 331.08 and 331.09			
E.C.O. 3704 authorizes the construction of two steel towers each 4'-4" x 4'-4" x 21'-10-5/8" high on 9'-0" x 9'-0" x 4'-0" thick reinforced concrete footings. Each tower has two 1/2" steel plate platforms with guard chains around the upper level; steel access ladders. Each tower enclosed within a shelter of 1/2" plywood on timber frame anchored by cables to four 4'-0" x 4'-0" x 3'-0" concrete deadmen. Both stations have 3'-2" x 3'-2" opening and shutter and a 6'-0" x 3'-2" opening and shutter at the 18'-8-5/8" level, and a 3'-2" x 3'-2" opening and shutter at the 10'-3-1/2" level. (No installed equipment.)	2	Each	
Construction Contract Cost 9,825.40 Engineering Cost 37.82			9,863.22

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA (Continued)			
STATION NO. 332			
Consists of setting one 20'-0" high telephone pole in accordance with User's instructions. (No installed equipment.)	1	Each	
No Costs			
STATION NOS. 333.01 THRU 333.07			
Billboard type structure, 15'-0" long x 14'-0" high, timber frame covered with plywood and containing a 2'-0" x 3'-0" opening, mounted on two 35'-0" long telephone poles set in concrete and anchored by guy cables to four concrete deadmen. (No installed equipment.)	7	Each	
Construction Contract Cost 13,044.50 Engineering Cost 170.38			13,214.88
ALICE			
STATION NO. 334			
Billboard type structure, 16'-0" long x 8'-0" high, timber frame covered with plywood and containing three 12'-6" x 1'-0" openings, mounted on two 35'-0" telephone poles set in concrete and anchored by guy cables to four concrete deadmen. (No installed equipment.)	1	Each	
STATION NO. 335			
Billboard type structure, 16'-7" long x 11'-10" high, timber frame			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ALICE (Continued)			
STATION NO. 335 (Continued)			
covered with plywood and containing twelve openings of various shapes and sizes, mounted on two 35'-0" telephone poles set in concrete and anchored by guy cables to four concrete deadmen. (No installed equipment.)	1	Each	
Construction Contract Cost 11,521.40 Engineering Cost 141.15			11,662.55
STATION NO. 352			
Preliminary engineering design only.	1	Each	
Construction Contract Cost 102.00			102.00
AS NOTED BELOW			
STATION NOS. 390.01 THRU 390.06			
A 1'-2" diameter hole in the ground 4'-0" deep.	6	Each	
Locations: Station Nos. 390.01 and 390.02 Janet Station No. 390.03 Yvonne Station No. 390.04 David Station Nos. 390.05 and 390.06 Elmer (No installed equipment.)			
No Costs			

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
STATION NO. 400				
Preliminary engineering design only.		1	Each	
Engineering Cost	70.00			70.00
STATION NO. 410				
Preliminary engineering design only.		1	Each	
Engineering Cost	19.00			19.00
REEF BETWEEN CLARA & FLORA				
STATION NOS. 411.01 THRU 411.47				
Stakes made of 2" diameter pipe extending 4'-0" above grade or high tide. (No installed equipment.)		47	Each	
Construction Contract Cost	16,921.97			
Engineering Cost	16.12			16,938.09
AS LISTED BELOW				
STATION NOS. 412.01 THRU 412.24				
Each station consists of two 2-1/2" diameter steel bars driven into the reef to a depth of 5'-0" and supporting a 3/4" diameter steel horizontal bar approximately 5'-0" above high tide level.				

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued)				
STATION NOS. 412.01 THRU 412.24 (Continued)				
Locations:				
5 stations on reef between Wilma and Yvonne. 19 stations on Yvonne. (No installed equipment.)		24	Each	
Construction Contract Cost	4,067.57			
Engineering Cost	237.69			4,305.26
STATION NO. 430				
Preliminary engineering design only.		1	Each	
Engineering Cost	288.00			288.00
EDNA				
STATION NO. 440				
Timber platform 10'-8" x 12'-0" placed 5'-0" below grade with vertical frame extending 1'-0" above grade. Protected by sandbags and back filled. (No installed equipment.)		1	Each	
Construction Contract Cost	1,662.02			
Engineering Cost	166.03			1,828.05

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE STATION NO. 441 Consists of eight 12" x 12" timbers bolted to two 4" x 12" stringers forming a frame work platform 12'-0" x 15'-4" placed 2'-0" below grade. (No installed equipment.)	1	Each	
Construction Contract Cost 1,448.16 Engineering Cost 104.95			1,553.11
AS LISTED BELOW STATION NOS. 510.01 THRU 510.66 5" inside diameter asbestos-cement pipe 7'-0" long buried to a depth of 6'-6" with 6" of concrete grout inside, and a fitted plywood cap. Locations: 7 Stations on Alice 7 Stations on Belle 5 Stations on Clara 5 Stations on Daisy 5 Stations on Edna 6 Stations on Gene 1 Station on reef between Gene and Helen 4 Stations on Helen 5 Stations on reef between Helen and Irene 6 Stations on Irene 15 Stations on Janet E.C.O. 2718 authorized the relocation of Station Nos. 510.15 thru 510.18 to new positions on Clara, as designated by the User.	66	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued)			
STATION NOS. 510.01 THRU 510.66 (Continued)			
(No installed equipment.)			
Construction Contract Cost 13,065.96 Engineering Cost 126.73			13,192.69
STATION NOS. 511.01 THRU 511.39			
2-1/2" x 2-1/2" x 1/4" angles driven to a depth of 3'-0" into the ground or the reef and extending 1'-0" above grade or 3'-0" above high tide line with top 1'-0" out to 2" x 2" x 1/4".			
Locations:			
27 Stations on Yvonne 12 Stations on reef at Yvonne	39	Each	
(No installed equipment.)			
Construction Contract Cost 4,805.79 Engineering Cost 76.74			4,882.53
CLARA			
STATION NO. 520			
A heavily reinforced concrete structure consisting of one room, one "L" shaped tunnel, and two retaining walls with foundations approximately 9'-4" below natural grade. The single room is 16'-0" x 8'-0" x 8'-10-1/2" high inside with 4'-4" thick floor and walls, and 4'-0" thick roof; lead lined steel access door; the tunnel has one 14'-3"			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
CLARA (Continued) STATION NO. 520 (Continued) leg and one 17'-0" leg, 3'-0" wide x approximately 8'-0" high inside, with 3'-0" walls, 2'-6" floor and 2'-4" roof; retaining walls each consist of a base 14'-3" long, 1'-3" thick, which tapers from 9'-7" wide to 2'-3" with a wall 17'-3" high tapering to 6'-0" high and from 1'-0" thick at the base to 8" at the top; complete with electrical wiring and fixtures; plumbing for air conditioner and dry condenser; entire structure covered to a depth of approximately 6'-0" and slopes covered with bags of cement and coral aggregate.	1	Each	
Installed equipment: 1 "Kilpatrick" evaporator dehumidification unit, serial No. 102750.17, H & N No. A-112-B; 1 "Kilpatrick" condensor dehumidification unit, serial No. 122950.32, H & N No. A-131; 2 - 50 KW "International-Harvey" portable generator units, serial Nos. UDR-22988, UDR-22999, H & N Nos. G-65, G-68. (The above list does not contain any user-furnished or user-installed equipment.) Construction Contract Cost 139,656.19 Engineering Cost 8,850.00			148,506.19
AS LISTED BELOW STATION NOS. 521.01 THRU 521.06 24" diameter pipe, sealed at the bottom with 3/8" steel plate, set 18'-0" below grade and collared at grade level with 6'-6" square reinforced concrete pad 1'-6" thick.			

DESCRIPTION OF PROPERTY UNITS		QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued)				
STATION NOS. 521.01 THRU 521.06 (Continued)				
Locations:				
Station No. 521.01 Belle Station No. 521.02 Daisy Station No. 521.03 Edna Station Nos. 521.04 thru 521.06 Yvonne (No installed equipment.)		6	Each	
Construction Contract Cost Engineering Cost	22,144.24 255.41			22,399.65
STATION NO. 523				
Preliminary engineering design only.		1	Each	
Construction Contract Cost	92.00			92.00
IRENE AND JANET				
STATION NOS. 530.01 AND 530.02				
Reinforced concrete block 1'-0" x 1'-0" x 6'-0" high, placed vertically with 1'-0" extending above grade; with embedded 1-1/2" diameter conduit and eight embedded anchor bolts. (No installed equipment.)		2	Each	
Construction Contract Cost Engineering Cost	1,289.00 61.81			1,350.81

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW STATION NOS. 531.01 AND 531.03 THRU 531.06 Reinforced concrete block 1'-0" x 1'-0' x 6'-0" high, placed vertically with 1'-0" extending above grade; with embedded 1-1/2" diameter conduit and eight embedded anchor bolts. Location: Station No. 531.01 Alice Station No. 531.03 Tilda Station No. 531.04 Yvonne Station No. 531.05 Elmer Station No. 531.06 Leroy (No installed equipment.) Construction Contract Cost 3,740.49 Engineering Cost 7.01	5	Each	3,747.50

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
LAGOON STATION NOS. 540.01 THRU 540.20 Establish location in lagoon in accordance with Users directions and furnish a 3'-0" x 3'-0"x 3' x 0" concrete anchor connected by 1/2" cable to a 55 gallon drum float. (No installed equipment.) Construction Contract Cost 10,281.77 Engineering Cost 8.11	20	Each	10,289.88
AS LISTED BELOW STATION NOS. 541.01 THRU 541.33 A trapezoid shaped reinforced concrete block 6'-10" long, 2'-6" wide at one end, 4'-8" wide at the other, and 1'-8-1/2" high, placed approximately 1'-4" below grade; contains one circular pit 3'-0-1/4" diameter x 1'-2-1/4" deep and one rectangular pit 2'-2" x 1'-8" x 1'-1" deep with steel cover. Locations: 1 Station on Alice 1 Station on Bella 1 Station on Clara 1 Station on Irene 2 Stations on Janet 1 Station on Kate 1 Station on Lucy 1 Station on Mary 1 Station on Nancy 1 Station on Olive 1 Station on Ursula 1 Station on Vera 1 Station on Wilma 2 Stations on Yvonne 1 Station on Bruce 2 Stations on David 2 Stations on Elmer 2 Stations on Fred 1 Station on Glenn 2 Stations on Keith			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued)			
STATION NOS. 541.01 THRU 541.33 (Continued)			
LOCATIONS: (Continued)			
1 Station on Pearl 2 Stations on Ruby 1 Station on Sally 2 Stations on Leroy 1 Station on Mac (No installed equipment.)	33	Each	
Construction Contract Cost 23,688.81 Engineering Cost 256.08			23,944.89
STATION NOS. 542.01 THRU 542.08			
Reinforced concrete shapes consisting of horizontal slabs 9'-4" wide x 1'-0" thick varying in length from 7'-0" to 11'-1"; with vertical wall 9'-4" wide x 1'-0" thick varying in height from 5'-8" to 10'-0".			
LOCATIONS:			
Station No. 542.01 Alice Station No. 542.02 Janet Station No. 542.03 Nancy Station No. 542.04 Wilma Station No. 542.05 Yvonne Station No. 542.06 Bruce Station No. 542.07 Elmer Station No. 542.08 Fred (No installed equipment.)	8	Each	
Construction Contract Cost 19,934.71 Engineering Cost 451.99			20,386.70

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
IRENE			
STATION NO. 600			
Reinforced concrete structure 14'-0" x 28'-6" x 14'-6" high O.D. with 3'-0" thick walls and roof and 3'-6" thick floor slab; embedded unistruts in walls, ceiling and deck; divided into two rooms by a 1'-6" thick partition; explosion proof doors; complete with electrical light and power wiring and fixtures, ventilation and power generating equipment; total area 180 square feet; interior volume 1440 cubic feet. (No installed equipment.)	1	Each	
Construction Contract Cost 70,520.58 Engineering Cost 4,428.23			74,948.81
SUB-STATION NO. 600			
Outdoor sub-station consisting of three 15 KVA transformers installed on a reinforced concrete pad 8'-6" x 3'-6" x 0'-6" thick; primary fuse cutouts and safety switch mounted on a wood frame; station enclosed by 56'-6" of timber fence on 4 x 4 posts.	1	Each	
Installed equipment: 3 - 15 KVA "Gregory" transformers, serial No. 5026279, 4824012, 5026285, H & N No. TR-136, TR-133, TR-148. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 1,226.52			1,226.52

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
JANET			
STATION NO. 601			
Consists of reactivation of Greenhouse Station 301J complete with electrical light and power wiring and fixtures, ventilating and power generating equipment. (No installed equipment.)	1	Each	
Allocated to all Stations			
SUB-STATION NO. 601			
Sub-station No. 601 consists of three transformers installed in conjunction with Station No. 601. Includes all necessary cutouts, switches, wiring, conduits, and fittings.	1	Each	
Installed equipment: 2 - 15 KVA "Gregory" transformers, serial Nos. 5026277 and (none), H & N Nos. TR-135 and TR-151; 1 - 15 KVA "Allis-Chalmers" transformer, serial No. 2248616, H & N No. TR-152. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 11,641.27 Engineering Cost 355.63			11,996.90
KATE			
STATION NO. 602			
Consists of reactivation of Greenhouse Station 301H complete with electrical light and power wiring and fixtures, ventilating and power generating equipment.	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
KATE (Continued) STATION NO. 602 (Continued) Installed equipment: 3 - 5 KVA "General Electric" transformers, serial Nos. B-266472, B-266434, B-266431, H & N Nos. TR-46, TR-47, TR-49. (The above list does not contain any user-furnished or user-installed equipment.) Allocated to all Stations			
SUB-STATION NO. 602 Sub-station No. 602 consists of three transformers installed in conjunction with Station No. 602. Includes all necessary cutouts, switches, wiring, conduits, and fittings. Installed equipment: 3 - 5 KVA "General Electric" transformers, serial Nos. B-266472, B-266434, and B-222431; H & N Nos. TR-46, TR-47, and TR-49. (The above list does not contain any user-furnished or user-installed equipment.) Construction Contract Cost 8,378.48 Engineering Cost 456.36	1	Each	8,834.84
MARY STATION NO. 603 Reinforced concrete structure 10'-8" x 24'-8" x 10'-4" high O.D. with 1'-0" thick walls and roof and 1'-4" thick floor slab; embedded unistruts in walls, ceiling and deck; divided into two rooms by a			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
MARY (Continued)			
STATION NO. 603 (Continued)			
1'-0" thick partition; explosion proof doors; complete with electrical light and power wiring and fixtures, ventilating and power generating equipment; total area 263 square feet; volume 2718 cubic feet.	1	Each	
Installed equipment: 1 - 75 KW "Caterpillar" portable generator, serial No. 4S-1247-SP, H & N No. G-13. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 32,223.98 Engineering Cost 2,671.33			34,895.31
SALLY			
STATION NO. 604			
Consists of reactivation of Greenhouse Station 132a and 132b complete with electrical light and power wiring and fixtures, ventilating and power generating equipment.	1	Each	
Installed equipment: 1 - 50 KW "International-Harvey" portable generator, serial No. UDR-22998, H & N No. G-64. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 19,303.53 Engineering Cost 1,647.87			20,951.40

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE			
STATION NO. 605			
Consists of reactivation of Greenhouse Station 55 complete with electrical light and power wiring and fixtures, ventilating and power generating equipment.	1	Each	
Installed equipment: 1 - 883 C.F.M. "American" supply fan, (no serial No.), H & N No. F-392; 3 - 15 KVA "Gregory" transformers, serial Nos. 5026286, 5026295, 5026290, H & N Nos. TR-139, TR-140, TR-141. (The above list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 10,512.19 Engineering Cost 2,524.88			13,037.07
ELMER			
STATION NO. 606			
Heavy timber frame construction; outside dimensions 9'-4" x 23'-0" x 9'-3" high; erected on a 6" thick reinforced concrete slab; exterior walls of 1" diagonal sheathing covered with corrugated aluminum wrapped with 15 lb. asphalt impregnated felt; roof of 1" diagonal sheathing with cold process roofing over two layers of felt; complete with electrical light and power wiring and fixtures, ventilating and power generating equipment; total area 215 square feet; volume 2006 cubic feet.	1	Each	
Construction Contract Cost 29,131.99 Engineering Cost 522.00			29,653.99

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
NOAH STATION NO. 610 Reinforced concrete pad 33'-0" x 4'-0" x 3'-0" thick placed on the reef 1'-0" below tide level with an 8" diameter pipe extending vertically 16'-0"; pipe anchored by means of cables to the concrete base and to two reinforced concrete deadmen 4'-0" x 4'-0" x 4'-0". (No installed equipment.)	1	Each	
Construction Contract Cost 19,434.18 Engineering Cost 260.18			19,694.36
JANET STATION NO. 611.01 Reinforced concrete pad 22'-6" x 12'-0" x 3'-9" thick, placed at grade level, supporting an 8" diameter pipe frame 15'-0" high x 12'-6" wide; connecting steel covered reinforced concrete battery box 3'-6" x 4'-0" x 3'-9" deep O.D. (No installed equipment.)	1	Each	
Construction Contract Cost 10,913.52 Engineering Cost 527.89			11,441.41
AS LISTED BELOW STATION NOS. 611.02 THRU 611.04 Reinforced concrete slab 12'-0" x 14'-0" x 3'-0" thick, placed at grade level, supporting an 8" diameter pipe frame 15'-0" high x 12'-3" wide; connecting steel covered reinforced concrete battery box			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued)			
STATION NOS. 611.02 THRU 611.04 (Continued)			
3'-6" x 4'-0" x 3'-9" deep O.D.			
Locations:			
Station No. 611.02 Kate Station No. 611.03 Mary Station No. 611.04 Sally (No installed equipment.)	3	Each	
Construction Contract Cost 23,469.18 Engineering Cost 1,134.09			24,603.27
ELMER			
STATION NO. 612			
Reinforced concrete slab 5'-0" x 2'-0" x 5'-0" thick, placed at grade level, supporting two vertical 8" diameter pipes 15'-0" high. (No installed equipment.)	1	Each	
Construction Contract Cost 3,263.92 Engineering Cost 305.19			3,569.11
AS LISTED BELOW			
STATION NOS. 613.01 AND 613.02			
Reinforced concrete pad 9'-0" x 3'-0" x 3'-0" thick, placed at grade level, supporting one 8" diameter vertical pipe 10'-0" high.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued)			
STATION NOS. 613.01 AND 613.02 (Continued)			
Locations:			
Station No. 613.01 Olive Station No. 613.02 Yvonne (No installed equipment.)	2	Each	
Construction Contract Cost 3,287.08 Engineering Cost 294.54			3,581.62
GENE			
STATION NO. 614			
A reinforced concrete cube 1'-6" x 1'-6" x 1'-6" with two embedded conduits furnished by the User. (No installed equipment.)	1	Each	
Construction Contract Cost 667.74 Engineering Cost 54.34			722.08
AS LISTED BELOW			
STATION NOS. 615.01 AND 615.02			
A reinforced concrete cube 1'-6" x 1'-6" x 1'-6" with three embedded conduits furnished by the User.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued)			
STATION NOS. 615.01 AND 615.02 (Continued)			
Locations:			
Station No. 615.01 Helen Station No. 615.02 Irene (No installed equipment.)	2	Each	
Construction Contract Cost 1,654.49 Engineering Cost 70.69			1,725.18
STATION NOS. 616.01 AND 616.02			
A triangular shaped reinforced concrete ramp, 2'-0" in width, sloping from finish grade to 4'-0" above finish grade in 7'-0", poured monolithically with a base slab 4'-0" wide x 2'-6" deep x 19'-0" long. There is one embedded conduit furnished by the User.			
Locations:			
Station No. 616.01 Helen Station No. 616.02 Irene (No installed equipment.)	2	Each	
Construction Contract Cost 6,058.69 Engineering Cost 301.03			6,359.72

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE			
STATION NO. 617.01			
An 8" diameter extra strong pipe column, extending 12'-6" above a "Tee" shaped reinforced concrete base, in which it's lower end is embedded and topped by a 3" extra strong pipe extending vertically 2'-0" above the lower pipe, and capped by a cross fitting. The pipe column has three heavy steel guys with deadmen anchored in the concrete base. Stem of the "Tee" shaped base is 6'-0" wide x 22'-3" long with average thickness of 4'-6"; the "Tee" cross bar is 3'-0" wide x 30'-0" long by an average thickness of 4'-6". (No installed equipment.)	1	Each	
Construction Contract Cost 17,167.00 Engineering Cost 753.66			17,920.66
STATION NO. 617.02			
An 8" diameter extra strong pipe column, extending vertically 13'-0" above a "Tee" shaped reinforced concrete base, in which it's lower portion is embedded; topped by a 3" diameter extra strong pipe extending vertically 2'-0" above the larger pipe; with three steel guys to deadmen anchors embedded in the base. Stem of the "Tee" base is 6'-0" wide x 3'-0" deep x 24'-0" long, the cross bar is 3'-0" x 30'-0" x 3'-0" deep. (No installed equipment.)	1	Each	
Construction Contract Cost 9,957.18 Engineering Cost 437.50			10,394.68

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
STATION NOS. 617.03 THRU 615.08			
An 8" diameter, extra strong, pipe column with a 1/2" x 9" steel plate leading edge welded thereto, extending approximately 12'-0" vertically above a "Tee" shaped reinforced concrete base, in which the lower end is embedded, topped with a 3" diameter extra strong pipe extending 2'-0" above it's top, capped by a cross fitting. There are three steel guys to deadmen anchors in the concrete base. The stem section of the "Tee" base which varies in size, is approximately 4'-0" wide x 24'-0" long x 3'-0" deep. The cross bar of the "Tee" base is approximately 3'-0" wide x 30'-0" long x 3'-0" deep. (No installed equipment.)	6	Each	
Construction Contract Cost 48,921.07 Engineering Cost 2,148.25			51,069.32
STATION NO. 618			
A 15'-0" high mast of 8" double extra heavy pipe, provided with opening for cable entrance, set in a rectangular reinforced concrete footing 6'-0" x 18'-0" x 3'-0" deep; includes a reinforced concrete battery box 2'-6" square 3'-9" deep, with removeable steel plate top and 3" diameter steel conduit for cables. (No installed equipment.)	1	Each	
Construction Contract Cost 7,189.83 Engineering Cost 278.07			7,467.90

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
STATION NOS. 619.01 AND 619.02			
A double upright frame with cross connection at top, all of 8" diameter double extra strong pipe, with three instrument mounts on the cross bar and the lower ends of the uprights embedded in a reinforced concrete base 12'-0" wide x 16'-0" long x 3'-0" deep. A reinforced concrete battery box 3'-6" x 4'-0" x 3'-9" deep, with a gasketed steel plate cover adjoins. (No installed equipment.)	2	Each	
Construction Contract Cost 14,902.28 Engineering Cost 262.54			15,164.82
AS LISTED BELOW			
STATION NOS. 620.01 THRU 620.04			
A 4" diameter pipe standard 8'-0" high with instrument bases and eyebolt, it's lower end incased in concrete and embedded in the reef.			
Locations: Station No. 620.01 reef at Gene Station No. 620.02 reef at Helen Station No. 620.03 reef at Irene Station No. 620.04 reef at Noah (No installed equipment.)	4	Each	
Construction Contract Cost 7,145.64 Engineering Cost 307.11			7,452.75

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued)			
STATION NOS. 621.01 THRU 621.06 AND 621.10 THRU 621.15			
A wood framed and decked raft, 12'-0" x 12'-0", with 8 oil drum floats and an angle iron stanchion and obstruction light, moored in the lagoon with an oil drum mooring buoy attached by 1/2" wire rope to a 4'-0" cube concrete anchor.			
Locations:			
14 in Lagoon 1 at Mack (No installed equipment.)	12	Each	
Construction Contract Cost 23,525.87 Engineering Cost 553.64			24.079.51
ELMER			
STATION NO. 622			
This is a location stake set in the ground, requiring detailed engineer services. (No installed equipment.)	1	Each	
Construction Contract Cost 660.00			660 00
JANET			
STATION NOS. 623.01 THRU 623.10			
A reinforced concrete base 12'-0" square x 4'-0" thick provided with			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
JANET (Continued)			
STATION NOS. 623.01 THRU 623.10 (Continued)			
a 2'-0" radius circle of bolts. (No installed equipment.)	10	Each	
Construction Contract Cost 30,541.24 Engineering Cost 335.53			30,876.77
AS LISTED BELOW			
STATION NOS. 630.01 THRU 630.04			
Three 2" pipe standards, 6'-0" high, with steel plate leading fins welded thereto, and cable guyed, to two steel beams embedded in and extending from a concrete base 7'-6" wide x 8'-9" long x 3'-0" deep. The base is formed to contain a 2'-0" cube battery box with gasketed steel cover and connecting conduits. Thru the concrete base a 24" diameter steel pipe extends 17'-0" into the ground with a seal plate provided at the bottom.			
Locations:			
Station No. 630.01 Janet Station No. 630.02 Lucy Station No. 630.03 Mary Station No. 630.04 Tilda (No installed equipment.)	4	Each	
Construction Contract Cost 17,487.11 Engineering Cost 388.68			17,875.79

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
LAGOON STATION NOS. 640.01 THRU 640.04 A wood framed and decked raft 24'-7-1/2" long x 15'-5" wide with 26 oil drum floats supporting a triangular wood and canvas framed louvered and fins 10'-0" high x 10'-5" at the base, raft anchored in Lagoon with Northill galvanized utility anchors. (No installed equipment.)	4	Each	
Construction Contract Cost 27,977.10 Engineering Cost 1,566.88			29,543.98
AS LISTED BELOW STATION NOS. 641.01 THRU 641.04 A twenty foot high telephone pole, with painted black and white stripes set erect in the reef. Locations: Station No. 641.01 reef near Janet Station No. 641.02 reef near Ursula & Yvonne Station No. 641.03 reef near Yvonne Station No. 641.04 reef near Elmer (No installed equipment.)	4	Each	
Construction Contract Cost 5,745.94 Engineering Cost 8.36			5,754.30

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued)			
STATION NOS. 642.01 THRU 642.20			
A fifty five gallon oil drum, painted white, anchored in the lagoon with a 3'-0" concrete cube and 1/2" cable.			
Locations:			
Station Nos. 642.01 thru 642.05 reef near Janet Station Nos. 642.06 thru 642.10 reef near Ursula & Yvonne Station Nos. 642.11 thru 642.15 reef near Yvonne Station Nos. 642.16 thru 642.20 reef near Elmer	20	Each	
(No installed equipment.)			
Construction Contract Cost 8,373.44 Engineering Cost 6.24			8,379.68
STATION NOS. 650.01 THRU 650.06			
A ten inch diameter hole drilled approximately ten feet into the ground.			
Locations:			
Station No. 650.01 Irene Station No. 650.02 Janet Station No. 650.03 Kate Station No. 650.04 Mary Station No. 650.05 Sally Station No. 650.06 Elmer	6	Each	
(No installed equipment.)			
Construction Contract Cost 7,734.65 Engineering Cost 14.96			7,749.61

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
LAGOON			
STATION NOS. 670.01 THRU 670.04			
A triped furnished by the User and placed on the Lagoon bottom with signal cable to shore. (No installed equipment.)	4	Each	
Construction Contract Cost 948.87 Engineering Cost 12.47			961.34
GENE			
STATION NO. 671			
E.C.O. 280 authorizes the construction of a deadman; a ten inch diameter pile butt log buried on the jetty 6'-0" below surface grade with loop of one inch mild plow steel wire rope extending to 1'-0" above finish grade.	1	Each	
Additional construction consisted of a 5'-0" long log pile deadman looped with 3/4" cable and buried five feet in the ground, to be used as an anchor for Station Nos. 672.01 thru 672.03 (Locations: Ocean, north of Flora) which were furnished and installed by the User. (No installed equipment.)	1	Each	
Construction Contract Cost 186.36 Engineering Cost 1.22			187.58
OCEAN			
STATION NOS. 672.01 THRU 672.03			
"Tuna" cans located in ocean north of Flora. (No installed equipment.)	3	Each	
No Costs			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW STATION NOS. 690.01 THRU 690.04 A rectangular shaped reinforced concrete structure 7'-4" x 3'-4" x 3'-10'-1/2" high; 10" thick floor slab; exterior and division walls of varing thickness for two compartments; the larger compartment, unroofed, has an 18" O.D. spiral weld pipe 14'-0" long buried vertically into the ground and collared by the floor slab. This pipe has a water tight concrete seal at the bottom, a water tight steel cover and two connecting 2" standard pipes capped above floor level; the smaller, heavy walled compartment is closed at top by a rectangular steel plate. Two 2" diameter steel rods are cast into and extend 4'-6" above the concrete. Two 4" "I" beams are cast into and extend horizontally 3'-0" beyond the concrete. Locations: Station No. 690.01 Janet Station No. 690.02 Lucy Station No. 690.03 Mary Station No. 690.04 Sally (No installed equipment.) Construction Contract Cost 17,924.70 Engineering Cost 479.00	4	Each	18,403.70
STATION NOS. 800 THRU 803 Reactivation of existing concrete structure 300 square feet roofed area, 294 square feet of unroofed area; and a roofed volume of 2242 cubic feet. Reactivation includes installations of two dry condenser units and two air conditioner units, piping, wiring and connections; also contains protective earth fill over and around the structure.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued) STATION NOS. 800 THRU 803 (Continued) Station 800 and 801 Janet - 2 Station 802 and 803 Tilda - 2 4 Units Locations: Station Nos. 800 and 801 Janet Station Nos. 802 and 803 Tilda	4	Each	
Installed equipment (Station 800): 2 "Kilpatrick" evaporator dehumidification units, serial Nos. 102750.15, 81450-4, H & N No. A-116, A-81-A; 2 "Kilpatrick" condensor dehumidification units, serial Nos. 81450-11, 81450-2, H & N Nos. A-88-B, A-78-B.			
Installed equipment (Station 801): 2 "Kilpatrick" condensor dehumidification unit, serial No. 81450-9, 81450-4, H & N No. A-90-B, A-86-B; 2 "Kilpatrick" evaporator dehumidification units, serial Nos. 102750.15, 102750.22, H & N Nos. A-115-B, A-110-B.			
Installed equipment (Station 802): 2 "Kilpatrick" condensor dehumidification units, serial Nos. 102750.16, 81450.13, H & N Nos. A-108-A, A-80-B; 2 "Kilpatrick" evaporator dehumidification units, serial Nos. 81450-4, 102750.21, H & N Nos. A-88-A, A-114-B.			
Installed equipment (Station 803): 2 "Kilpatrick" complete dehumidification units, serial Nos. 71152-4-B and 71152-3-A, 71152-1-A and 71152-2-B, H & N Nos. A-173-A & B, A-174-A & B. (The above lists do not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 74,244.01 Engineering Cost 686.53			74,930.54

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
JANET SUB-STATION NO. 800 Sub-station No. 800 consists of two generators and three transformers installed in conjunction with Station No. 800. Includes all necessary cutouts, switches, wiring, conduits, and fittings.	1	Each	
Installed equipment: 1 - 75 KW "Caterpillar" generator, serial No. 35-4864-SP, H & N No. G-3; 1 - 75 KW generator, serial No. (none), H & N No. G-19; 3 - 10 KVA transformers, H & N Nos. TR-89, TR-91, and TR-93. (The above list does not contain any user-furnished or user-installed equipment.) Allocated to all Stations			
TILDA SUB-STATION NO. 802 Sub-station No. 802 consists of two generators installed in conjunction with Station No. 802. Includes all necessary cutouts, switches, wiring, conduits, and fittings.	1	Each	
Installed equipment: 2 - 75 KW "Caterpillar" generators, serial Nos. (none) and 3R-9907-SP, H & N Nos. G-21, and G-22. (The above list does not contain any user-furnished or user-installed equipment.) Allocated to all Stations			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
BRUCE STATION NO. 804 A wood frame tower 12'-9" square x 34'-6" high O.D. containing three floors with connecting ladder and hatches, centered on a reinforced concrete base 16'-0" square x 3'-6" thick. The floor of the first story is 1" T & G separated from the concrete base by redwood sleepers; the second story, which is open to the weather, and the roof are two layers of 1" diagonal sheathing, covered over by a built-up composition roof decked over with 1/2" plywood. Flooring for the third story is 2" T & G. The first and third stories are enclosed with two layers of 1" diagonal sheathing separated by 15 lb. paper. Entrance is by a steel blast door at the first floor. Total floor area is 489 square feet, total volume of enclosed portions is 2608 cubic feet; includes all necessary electrical wiring and fixtures.	1	Each	
Installed equipment: 1 - 50 KW "International-Harvester" portable generator unit, serial No. UDR-22997, H & N No. G-63; 1 - 1/4 ton "Wright" electric hoist, serial No. KA-6192, H & N No. TM-701; 1 generator unit, H & N No. G-64. (The above list does not contain any user-furnished or user-installed equipment.)			
E.C.O. 292 authorizes the cutting of the first floor door and frame, and the welding of a 1/4" steel plate to extend the door and frame to an overall height of 7'-2".			
Construction Contract Cost 42,643.74 Engineering Cost 3,408.99			46,052.73

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER			
STATION NO. 805			
Two 3/16" checkered floor plate platforms in tower shaft of Station No. 301; one platform at 100' level and one platform at 112'-6" level; the area between these levels is enclosed with 1/2" exterior plywood; complete with electrical wiring and fixtures.	1	Each	
E.C.O. 3702 (paragraph 2) authorizes the addition of a transformer to feed a portion of Station No. 805.			
Installed equipment: 1 - 15 KVA, single phase transformer. (The above list does not contain any user-furnished or user-installed equipment.)			
Included with Station No. 301 - Elmer			
MACK			
STATION NO. 806			
A wood frame building 9'-0" square x 8'-6" high with composition shed roof, plywood floor and exterior sheating over 2" x 6" studs, erected on an existing wood platform, area 81 square feet, volume 689 cubic feet. (No installed equipment.)	1	Each	
Construction Contract Cost 2,649.77 Engineering Cost 89.11			2,738.88

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW			
STATION NOS. 810.01, 810.02 AND 810.04 THRU 810.11			
A box-shaped reinforced concrete structure 4'-10" square x 5'-2" high O.D., walls and base are 1'-2" thick.			
Locations:			
Station No. 810.01 Alice Station No. 810.02 Irene Station No. 810.04 Janet Station No. 810.05 Lucy Station No. 810.06 Mary Station No. 810.07 Olive Station No. 810.08 Tilda Station No. 810.09 Yvonne Station No. 810.10 Yvonne Station No. 810.11 Yvonne	10	Each	
(No installed equipment.)			
NOAH			
STATION NO. 810.03			
A boat-shaped reinforced concrete structure, 12'-6" long x 9'-6" high x 4'-6" at the wide point, erected on a reinforced concrete base 6'-0" wide x 14'-6" long x 3'-0" thick; contains a 2'-6" square x 4'-0" deep open section in the upper face.	1	Each	
(No installed equipment.)			
Construction Contract Cost 23,329.26 Engineering Cost 464.42			23,793.68

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ALICE			
STATION NO. 840			
Three continuous "Unistrut" anchorages each 22'-0" long embedded in the concrete roof of Station 300. (No installed equipment.)	1	Each	
Construction Contract Cost 92.22 Engineering Cost 14.12			106.34
FLORA			
STATION NO. 841			
A steel ladder, fastened to the exterior of Station No. 1, 62'-5-1/2" high, with one cross-over platform at the 31'-0" level.			
E.C.O. 3712 authorizes the construction of a 20'-0" high open wood frame tower, with an 8'-0" square wood decked platform on top and a 2" x 4" railing around, to support and raise the ladder an additional 20 feet. (No installed equipment.)	1	Each	
Construction Contract Cost 5,537.06 Engineering Cost 302.96			5,840.02
STATION NO. 842			
An open wood frame tower, 8'-6-1/2" square x 20'-0" high, O.D., with a 2" thick wood plank platform and a wood railing on top; erected on			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA (Continued)			
STATION NO. 842 (Continued)			
four individual concrete piers; contains a box for a telephone installation. (No installed equipment.)	1	Each	
Construction Contract Cost 7,665.23 Engineering Cost 550.47			8,215.70
SUB-STATION NO. 842			
Sub-station No. 842, adjoining and serving Station 842, consists of one 15 KVA transformer, and necessary primary fuse cutouts, safety switches, wiring, conduits, and fittings, with unistrut framing supports, erected on a reinforced concrete slab 3'-6" wide x 8'-6" long, and surrounded by 54 lineal feet of chain link and barbed wire fence with pipe posts and hinged gate.	1	Each	
Installed equipment: 1 - 15 KVA "Gregory" transformer, serial No. (none), H & N No. TR-150. (The above list does not contain any user-furnished or user-installed equipment.)			
Allocated to all Stations			
ELMER			
STATION NO. 910			
A wood framed platform 9'-10" wide x 19'-4" long, decked with 2" planking, at 15'-7" above grade, supported by four 4" x 6" timber			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ELMER (Continued)			
STATION NO. 910 (Continued)			
columns, braced, with 2'-0" square x 1'-6" deep concrete footings. (No installed equipment.)	1	Each	
Construction Contract Cost 2,134.61 Engineering Cost 179.48			2,314.09
AS LISTED BELOW			
STATION NOS. 1000.01 THRU 1000.10			
A wood frame building 8'-7-1/4" wide x 12'-7-1/4" long x 8'-6" mean height with corrugated aluminum roof and siding and a wooden door and concrete floor slab, erected on a continuous concrete foundation. Area 108 square feet, volume 914 cubic feet, complete with signal and telephone terminal cabinets.			
Locations:			
Station No. 1000.03 Clara Station No. 1000.04 Daisy Station No. 1000.05 Edna Station No. 1000.06 Irene Station No. 1000.08 Lucy Station No. 1000.10 Helen	6	Each	
Same as above except erected on an existing concrete slab.			
Location:			
Station No. 1000.07 Kate - 1	1	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued)			
STATION NOS. 1000.01 THRU 1000.10 (Continued)			
Telephone and signal terminal cabinet installed in existing Greenhouse Building.			
Location:			
Station No. 1000.01 Alice Station No. 1000.02 Belle Station No. 1000.09 Mary	3	Each	
Installed equipment (Station No. 1000.04): 1 - KW "U.S." portable generator, serial No. 117176, H & N No. G-99.			
Installed equipment (Station No. 1000.08): 1 - 3 KW "Anderson-O'Brien" portable generator, serial No. 282, H & N No. G-89. (The above lists do not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 31,632.92 Engineering Cost 279.18			31,912.10
STATION NOS. 1001.01 THRU 1001.03			
Telephone and signal terminal cabinets installed in existing Greenhouse Station 69.			
Locations:			
Station No. 1001.01 Janet Station No. 1001.02 Ursula Station No. 1001.03 Yvonne	3	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
AS LISTED BELOW (Continued)			
STATION NOS. 1001.01 THRU 1001.03 (Continued)			
Installed equipment (Station No. 1101.01): 1 - 5 KW "Palmer" portable generator, serial No. UAA-12469, H & N No. G-70.			
Installed equipment (Station No. 1001.02): 1 - 5 KW "Palmer" portable generator, serial No. 02-5-1P-12, H & N No. G-69. (The above lists do not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 1,004.00			1,004.00
ELMER			
STATION NO. 1002			
A 45' telephone pole with power drop and connection to Greenhouse Building 311. (No installed equipment.)	1	Each	
Construction Contract Cost 36.00			36.00
STATION NO. 1020			
A wood telephone pole with single cross arm 50' above ground. (No installed equipment.)	1	Each	
Construction Contract Cost 832.00			832.00

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
FLORA			
STATION NO. 1130			
A 4600 foot drilled 8" hole and two forty-five foot telephone poles with pulley and cord for hoisting an antenna. (No installed equipment.)	1	Each	
Included in Job IV - Support Services			
ELMER			
STATION NO. 1131			
A 4200 foot drilled 8" hole and two forty-five foot telephone poles with pulley and cord for hoisting an antenna. (No installed equipment.)	1	Each	
Included in Job IV - Support Services			
JANET AND YVONNE			
STATION NOS. 1300.01 AND 1300.03			
Telephone switchboards with main frame, cabinets and battery rack and lighting fixtures installed in existing Greenhouse Station 23a and 23b.			
Location:			
Station No. 1300.01 Janet - 1 Station No. 1300.03 Yvonne - 1	2	Each	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
JANET AND YVONNE (Continued) STATION NOS. 1300.01 AND 1300.03 (Continued) Installed in conjunction with Station Nos. 1300.01 and 1300.03 are two sub-stations consisting of three transformers each, and all the necessary cutouts, switches, wiring, conduits, and fittings. Installed equipment (Station No. 1300.01 and Sub-station): 1 - "Kilpatrick" condensor dehumidification unit, serial No. 102750.23, H & N No. A-133-B; 1 - "Kilpatrick" evaporator dehumidification unit, serial No. 81450-3, H & N No. A-85-A; 1 - 10 KW "Onan" portable generator, serial No. 94-187587, H & N No. G-8; 1 - "Kellog-Junior" telephone switchboard, serial No. 24439, H & N No. E-146; 1 - 10 KVA "General Electric" transformer, serial No. B-266463, H & N No. TR-48; 1 - 10 KVA "American" transformer, serial No. W5166079, H & N No. TR-75, 1 - 5 KV transformer, serial No. 1042727, H & N No. TR-42. Station No. 1300.03 and Sub-station: 1 - "Kilpatrick" condensor dehumidification unit, serial No. 102750.19, H & N No. A-109-A; 1 - "Kilpatrick" evaporator dehumidification unit, serial No. 102750.19, H & N No. A-109-B; 1 - "Kellogg-Masterbuilt, Jr." telephone switchboard, serial No. 24437, H & N No. E-144; 3 - 10 KVA "Uptegraff" transformers, serial Nos. 58179, 58184, and 58181, H & N Nos. TR-110, TR-115, and TR-112. (The above lists do not contain any user-furnished or user-installed equipment.) Construction Contract Cost 46,188.49 Engineering Cost 1,632.11			47,820.60

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE			
STATION NOS. 6101.01 THRU 6101.04			
A reinforced concrete cube 1'-6" x 1'-6" x 1'-6" with one embedded conduit furnished by the User. (No installed equipment.)	4	Each	
Construction Contract Cost 1,069.39 Engineering Cost 3.38			1,072.77
JANET			
STATION NO. 6103			
E.C.O. 3703 authorizes the construction of this station, a reinforced concrete cube, 1'-6" x 1'-6" x 1'-6", with one embedded conduit furnished by the User. (No installed equipment.)	1	Each	
No Costs			
YVONNE			
STATION NO. 6140			
Timing cables, furnished by the User, installed in 36" trenches to Users' equipment.	1	System	
Installed equipment: 1 - 5 KVA "Gregory" transformer, serial No. 5026236, H & N No. TR-62.			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
YVONNE (Continued)			
STATION NO. 6140 (Continued)			
(The previous list does not contain any user-furnished or user-installed equipment.)			
Construction Contract Cost 253.00			253.00
ALL SITES			
AS BUILT DRAWING NUMBERS AND DATES			
3059-ANN-8, 3060-ANN-8, 3061-ANN-8, 3115-J-6, 3117-J-6, 3130-L-6, 3131-M-6, 3136-U-6, 3121-Y-6, 3122-Y-6, 3123-Y-6, 3124-Y-6, 3125-Y-6, 3126-Y-6, 3127-Y-6, 3128-Y-6, 3129-Y-6, 3116-EE-6, 3119-EE-6, 3092-EE-6, 3097-EE-6			
SIGNAL AND CONTROL SYSTEM - ON ISLANDS			
SITE / TYPE CABLE / LENGTH			
Janet - from Stations Nos. 1300.01 and 1001.01 to various scientific structures — 2/C #14 Romex — 41,736'			
Kate - Station No. 1000.07 to Station No. 602 — 2/C #14 Romex — 648'			
Lucy - Station No. 630.02 to Station No. 1000.08 — 2/C #14 Romex — 3,888'			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ALL SITES (Continued)			
SIGNAL AND CONTROL SYSTEM - ON ISLANDS (Continued)			
SITE — TYPE CABLE — LENGTH			
Mary - Station No. 1000.09 to Station Nos. 690.03 and 630.03 — 2/C #14 Romex — 3,552'			
Sally, Tilda, and Ursula — 2/C #14 Romex — 49,860'			
Yvonne - Station No. 1001.03 to various scientific structures — 2/C #14 Romex — 40,999'			
Elmer — 2/C #14 Romex — 35,448' (No installed equipment.)	1	System	
Allocated to all Stations			
SIGNAL AND CONTROL SYSTEM - SUBMARINE			
The Signal and Control System, Submarine, includes the following cables laid between the islands, as indicated below, and buried in 36" deep trenches where they cross the islands:			
SITE — TYPE CABLE — LENGTH			
Scientific Stations from Alice thru Irene — 2/C #14 Romex — 17,200'			
Clara to Daisy — 115-P — 4,400'			
Daisy to Edna — 115-P — 5,280'			
Edna to Flora — 115-P — 11,520'			

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST

ALL SITES (Continued)

SIGNAL AND CONTROL SYSTEM - SUBMARINE (Continued)

SITE	TYPE CABLE	LENGTH
Gene to Irene	2/C #14 Romex	73,700'

In addition to existing cable between Alice and Janet, two 10/c type 115-P cables, each 5760 feet long, were installed between Alice and Belle. The two existing type 115-P cables between Belle and Janet were cut and relocated so that they now connect Belle and Clara and also Flora and Janet.

TELEPHONE SYSTEM - SUBMARINE

The telephone system, submarine includes the following submarine cables laid in the lagoon or on the reefs between the islands, as indicated below, and buried in 36" deep trenches where they cross the islands:

SITE	TYPE CABLE	LENGTH	LOCATION
from:			
Janet to Gene	16 Pr. #19	18,000'	in Lagoon
Alice to Belle	6 Pr. #19	10,200'	on reef
Belle to Clara	6 Pr. #19	9,700'	on reef
Clara to Daisy	6 Pr. #19	4,740'	on reef
Daisy to Edna	6 Pr. #19	3,500'	on reef
Edna to Flora	6 Pr. #19	7,900'	on reef
Flora to Gene	51 Pr. #19	3,300'	direct burial on Causeway
Gene to Helen	6 Pr. #19	3,800'	direct burial on Causeway
Helen to Irene	6 Pr. #19	3,800'	direct burial on Causeway

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ALL SITES (Continued) TELEPHONE SYSTEM - SUBMARINE (Continued) SITE — TYPE CABLE — LENGTH — LOCATION from: Janet to Telephone Buoy at Berth 881 — 6 Pr. #19 — 6,000' — in Lagoon Kate to Lucy — 6 Pr. #19 — 2,800' — on reef Flora to Telephone Buoy — 6 Pr. #19 — 10,000' — in Lagoon Bruce to David — 6 Pr. #19 — 18,000' — in Lagoon Edna to Yvonne — 6 Pr. #19 — 54,000' — replace existing cable in Lagoon Installation of telephone cable on individual sites, other than camp services, includes the following: SITE — TYPE CABLE — LENGTH Janet — 1 Pr. #17 TBPR — 2880' Sally, Tilda, Ursula — 1 Pr. #17 TBPR — 7804' Yvonne — 1 Pr. #17 DB — 6300' This system also includes all branches to the various scientific stations located in the ocean or lagoon. Installed equipment is described in the Completion Report of the building, station, or facility in which they occur. Construction Contract Cost 272,843.30 Engineering Cost 2,966.57			275,809.87

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ALL SITES (Continued) AS BUILT DRAWING NUMBERS AND DATES 1048-G-2, 1051-F-2, 3059-ANN-8, 3060-ANN-8, 3061-ANN-8, 3086-G-2, 3115-J-6, 3117-K-6, 3130-L-6, 3131-M-6, 3136-U-6, 3121-Y-6, 3122-Y-6, 3123-Y-6, 3124-Y-6, 3125-Y-6, 3126-Y-6, 3127-Y-6, 3128-Y-6, 3129-Y-6, 3116-EE-7, 3119-EE-7, 3092-EE-7, 3097-EE-7 TELEPHONE SYSTEM - ON ISLANDS Installation of telephone cable on individual sites, other than camp services, includes the following: SITE — TYPE CABLE — LENGTH Janet — 1 Pr. #17 TBPR — 2880' Sally thru Ursula — 1 Pr. #17 TBPR — 7804' Yvonne — 1 Pr. #17 DB — 6300' This system also includes all miscellaneous branches and tributaries to scientific stations, buildings, and facilities. Installed equipment is described in the Completion Report of the building, station, or facility in which they occur. TELEPHONE TERMINAL BUILDING F-1 Wood frame structure, O.D. 12'-6" x 8'-0" x 8'-3" mean height, erected on concrete footings; shed roof and sides of corrugated aluminum, stabilized coral floor; area 100 square feet, volume 825 cubic feet.	1	System	

DESCRIPTION OF PROPERTY UNITS	QUAN.	UNIT	TOTAL COST
ALL SITES (Continued) TELEPHONE TERMINAL BUILDING F-1 (Continued) (No installed equipment.) TELEPHONE TERMINAL BUILDING G-92 A one-story, two room wood frame building 13'-0" x 25'-0" x 9'-2" average height, plywood sheathed interior and exterior, with felt and mineral composition roof; complete with light, signal and telephone wiring, fixtures and cabinets, telephone switchboard, dehumidification equipment and ducts, erected on a 4" thick reinforced concrete slab; floor area 325 square feet, volume 2980 cubic feet; includes 45 square feet of exterior slab for equipment.	1	Each	
Installed equipment: 1 "Industrial" dehumidification unit, serial No. 21472, H & N No. A-185; 1 "Kellogg-Junior" telephone switchboard, serial No. 24438, H & N No. E-145. (The above list does not contain any user-furnished or user-installed equipment.) Allocated to all Stations			

DRAWING NUMBER EXPLANATION

DEPT. IDENTIFICATION

Architectural	-	1001 & up
Civil	-	2001 & up
Electrical	-	3001 & up
Mechanical	-	4001 & up
Sanitary	-	5001 & up
Structural	-	6001 & up
Surveys	-	7001 & up
Miscellaneous	-	8001 & up

CONST. TYPE IDENTIFICATION

Site Plans	1
Buildings	2
Special Structures	3
Power Plants	4
Refrigeration	5
Electrical Distribution	6
Communications	7
Signal and Control	8
Water Systems	9
Sewer Systems	10
Fuel Systems	11
Air Strips	12
Roads	13
Grading and Paving	14
Surveys - Topography and Hydrography	16
Instrumentation	17
Miscellaneous	18
General Location Plan	19

SITE IDENTIFICATION

Girls and/or Boys names are used to identify sites, as per the accepted code. The first letter in the Girl's name and the first letter doubled in the Boy's name will be used in Drawing Number. Letters Q and X are not included in the above names, but will be used as follows:

Q - for drawings covering entire Atoll
X - for drawings covering all Shot Islands

Where drawing covers two or more sites other than Shot Islands, the letter foremost in the alphabet will occur in the drawing number.

DRAWING NUMBER EXAMPLE

Drawing numbers are arranged as follows:

1. Department identification and sheet number.
2. Site identification
3. Type identification

Example: The Mechanical Department wants a number for power plan piping located on Engebi.

Dept. - 4001 (& up)
Site - J - Janet (Engebi)
Type - 4 (Power Plant)

Dwg number is then 4001-J-4

ENGINEERING DRAWINGS

NO.	DESCRIPTION STATION NO. 1	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
1024-F-3	Floor Plan	(12/21/51) (1/22/52)	2/1/52	3/25/52	Rev. 1 4/14/52 Rev. 2 6/5/52
1025-F-3	Elevations & Sections	(12/21/51) (1/22/52)	2/1/52	3/25/52	Rev. 1 4/14/52 Rev. 2 6/5/52
1049-F-3	Tel. Booth - Plan & Dets.	6/12/52	7/16/52	7/21/52	
3029-F-3	Lighting & Grounding	3/13/52	4/30/52	5/27/52	4/14/52 Re-sub. for approval
3047-F-3	Power Layout	3/13/52	4/30/52	5/27/52	4/14/52 Re-sub. for approval
3084-F-6	Substation for Sta. No. 1	6/12/52	7/17/52	7/21/52	
6038-F-3	Framing Plans & Elevations	1/11/52	3/14/52	1/11/52	Rev. 1 4/14/52
6043-F-3	Framing Details Sht. 1	1/11/52	3/14/52	1/11/52	
6051-F-3	Foundation Plan & Details	3/13/52	4/23/52		Piling only
6056-F-3	"Support" Plan & Details	3/5/52	4/8/52	4/11/52	3/26/52 Re-sub. for approval
6059-F-3	Framing Details Sht. 2	3/14/52	3/14/52	3/25/52	
6071-F-3	Ladder Details	3/13/52	4/15/52	4/17/52	4/7/52 Re-sub. for approval

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NO. 1 (Cont.)				
SK-404	Clear. Diag. (Bridge Crane)				
SK-405	Area Served by 20-T Crane				
SK-402	Clear. Diag. 20-T Crane				
6114-F-3	Mov. Platform-Plans & Dets.	6/16/52	7/3/52	7/23/52	
6051-F-3	Same as above	3/13/52	4/30/52	6/5/52	Design affected by change in Sta. 201
3029-F-3	Same as above	5/. /52	5/22/52	5/27/52	
3047-F-3	Same as above	5/20/52	5/22/52	5/27/52	Rev. 2 8/7/52
	STATION NO. 2				
1034-F-3	Plan, Elevation & Details	2/7/52	2/15/52	2/20/52	Rev. 1 4/25/52
SK-412	Sta. 2, 4 & 5 Ceiling Diffus.				
3032-F-3	Electrical Details	2/7/52	2/15/52	2/20/52	Rev. 1 4/25/52 Rev. 2 6/4/52
3083-F-6	Substation for Sta. No. 2	6/12/52	7/17/52	7/21/52	Rev. 2 4/25/52
4028-F-3	Vent. & Dehumid. Plans & Det.	2/7/52	2/15/52	2/20/52	Rev. 2 4/25/52 Rev. 1 4/15/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NO. 3				
1027-F-3	Floor Plan, Elevs. & Sections	2/12/52	2/19/52	3/3/52	Rev. 1 5/7/52
3087-F-6	Substation No. 3	6/12/52	7/17/52	7/21/52	
	STATION NO. 4				
1037-F-3	Floor Plan, Elev. & Sections	5/8/52	6/3/52	6/6/52	Rev. 1 6/11/52
4040-F-3	Sta. 4 Dehumid. Plans & Det.	5/8/52	6/3/52	6/6/52	Rev. 1 6/11/52
	STATION NO. 5				
1054-F-3	Plans, Elev. & Details	6/5/52	7/9/52	7/11/52	
4050-F-3	Dehumid. & Elec. Plans, Sect. & Dets.	6/5/52	7/9/52	7/11/52	
	STATION NOS. 11 & 13				
6052-X-3	Plans & Details	2/1/52	3/4/52	3/4/52	Rev. 1 3/11/52 11 Edna; 13 Leroy
3034-X-3	Elect.	2/1/52	3/4/52		Cancelled by User 3/6/52
	STATION NO. 6				
6099-F-3	Elevation	4/25/52	5/7/52	5/9/52	Rev. 1 6/25/52 Rev. 2 None Rev. 3 7/30/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NO. 6 (Cont.)				
6133-F-3	Fdn. Plan & Det.	6/12/52		6/27/52	
6140-F-3	Framing Elev.		6/17/52	7/10/52	Rev. 1 7/10/52
	STATION NO. 7				
6110-F-3	Support Details	5/8/52	5/22/52	5/26/52	Rev. 1 7/28/52 Rev. 2 8/20/52
	STATION NO. 50				
6156-Y-3	Plans & Details		7/11/52	7/31/52	
3143-Y-3	Elect. Layout (50,52,53)		7/25/52	8/20/52	
	STATION NO. 200				
2059-I-19	Location & Grading Plan	5/2/52	5/8/52	5/29/52	Rev. 1 6/11/52 Rev. 2 8/14/52 Rev. 3 8/22/52
3051-I-3	Power & Lighting Layout	5/2/52	5/8/52	5/29/52	Rev 2 6/11/52 Rev. 3 8/4/52
SK-312	Prelim. Single Line Diagram				
3080-I-3	Tel. L/O & Wiring Diagram	5/2/52	5/8/52	5/29/52	Rev. 2 8/4/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION STATION NO. 200 (Cont.)	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
4041-I-3	Dehumidification Plan	5/2/52	5/8/52	5/29/52	Rev. 2 7/28/52
4042-I-3	Dehumidification Sect. & Det.	5/2/52	5/8/52	5/29/52	Rev. 1 7/28/52
4043-I-3	Dehumidification Dets. & Diag.	5/2/52	5/8/52	5/29/52	Rev. 1 7/28/52
SK-325	Dehumidification Cont. Board Station	5/2/52	5/8/52	5/29/52	
6057-I-3	Foundation Plan	5/2/52	5/8/52	5/29/52	Rev. 1 7/25/52
6058-I-3	Roof Framing Plan	5/2/52	5/8/52	5/29/52	Rev. 1 7/25/52
6060-I-3	Blast Door & Details	5/2/52	5/8/52	5/29/52	Rev. 1 6/19/52
6066-I-3	Sections & Details	5/2/52	5/8/52	5/29/52	Rev. 1 7/25/52
6069-I-3	Retaining & Wing Walls	5/2/52	5/8/52	5/29/52	
6074-I-3	Door Details, Lead	5/2/52	5/8/52	5/29/52	
6079-I-3	Interior Door Details	5/2/52	5/8/52	5/29/52	
6085-I-3	Struct. Sections Sta. 200	5/2/52	5/8/52	5/29/52	Rev. 1 6/11/52
6089-I-3	Door & Stl. Details	5/2/52	5/8/52	5/29/52	

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NO. 200 (Cont.)				
6090-I-3	Cont. Anchorage & Det.	5/2/52	5/8/52	5/29/52	Rev. 1 6/10/52 Rev. 2 7/25/52
6117-I-3	Door Hardware	5/16/52	6/3/52	6/5/52	Rev. 1 6/19/52
3085-I-6	Substation No. 200	6/17/52	7/29/52	7/31/52	Rev. 1 8/4/52
	STATION NO. 201				
6125-F-3	Sect. & Details	7/11/52	7/18/52	7/30/52	Rev. 1 8/7/52
6126-F-3	Plans & Details				Voided
	STATION NO. 202				
6146-I-3	Plans and Details	7/11/52	7/23/52	8/5/52	Rev. 1 8/7/52 Rev. 2 8/19/52
6147-I-3	Lead Door Details	7/11/52	7/22/52	8/5/52	
3142	Elect. & Dehum.	8/13/52			
	STATION NOS. 203.01 - 203.09				
6145-F-3	Plans and Elevations	7/11/52	7/22/52	7/28/52	Rev. 1 8/7/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NO. 204				
2111-FI-19	Sta. Nos. 204,203.01, 203.09 & Coax Trench L/O	7/9/52	7/29/52	7/31/52	
6142-FI-3	Plan, Sect., & Elev.	7/11/52	7/22/52	7/28/52	Rev. 1 8/14/52
6167-FI-3	Auxiliary Houses	8/13/52	8/22/52	8/26/52	
	STATION NOS. 250 & 252				
4053-Y-3	Dehumid & Vent.	6/25/52	7/24/52	7/29/52	Resubmitted 7/16/52
3112-Y-3	Elect. Layout	6/25/52	7/24/52	7/29/52	Resubmitted 7/16/52
6136-Y-3	Plans & Details	6/25/52	8/1/52	8/4/52	Resubmitted 7/16/52
6152-Y-3	Lead Door Details	7/16/52	7/29/52	7/31/52	Resubmitted 7/16/52
	STATION NO. 251				
6137-Y-3	Plans & Details	6/20/52	7/3/52	7/8/52	
	STATION NO. 300				
3063-A-3	Sta. No. 300 Elect. Layout	4/24/52	6/3/52	6/6/52	Resubmitted 5/26/52
6047-A-3	Foundation Plans & Details	4/24/52	6/3/52	6/6/52	Resubmitted 5/26/52

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NO. 300 (Cont.)				
6048-A-3	Second Floor Roof Frame Pl. & Details	4/24/52	6/3/52	6/6/52	Resubmitted 5/26/52 Rev. 1 7/16/52
6049-A-3	Elev. Sect. & Details	4/24/52 1/24/52*	6/3/52	6/6/52	Resubmitted 5/26/52 *Schematic Rev. 1 7/16/52
4048-A-3	Dehumid. Plan, Sect. & Dets.	4/24/52			Resubmitted 5/26/52
6094-A-3	Blast Door & Dets.	4/24/52	6/3/52	6/6/52	Resubmitted 5/26/52 Rev. 1 6/23/52
6091-A-3	Lead Shutters & Details	4/24/52	6/3/52	6/6/52	Resubmitted 5/26/52 Rev. 1 6/11/52
6160-A-3	Baffles	None	7/22/52	7/31/52	
	STATION NO. 301 (Deleted 4/8/52)				
SK-409	Lead Shutters	Replaced by Drawing 6091-A-3			
6050-LL-3	Plans, Sections & Details	1/29/52			Void
6091-A-3	Shutter & Details	1/29/52			Void

ENGINEERING DRAWINGS

NO.	DESCRIPTION STATION NO. 301 (STA. 302 GIVEN NO. STA. 301 4/8/52) & 805	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
6021-EE-3	Foundation Plans & Details				Void
6030-EE-3	Struct. Stl. & Cable Det.				Void
6082-EE-3	Sta. 301 & (805) Elev. and Sections	2/29/52*			Was SK-614 Void *Preliminary
SK-614	Schematic "B"	Superseded by Drawing No. 6082-EE-3			
6092-EE-3	301 & 805 Framing Elev.	4/24/52	5/22/52	6/3/52	
6093-EE-3	Sta. 301 & 805 - Foundation and Details	4/24/52	5/22/52	6/3/52	Rev. 1 6/17/52
6095-EE-3	Sta. 301 & 805 - Framing Plans & Details	4/24/52	5/22/52	6/3/52	
3069-EE-3	Sta. 301 & 805 - Elect. Layout	4/24/52	5/22/52	6/3/52	Rev. 1 7/16/52
1057-EE-3	Generator Shelter - Plans, Elev. & Details	6/16/52	7/9/52	7/15/52	
	STATION NO. 302				
6148-Q-3	Fabricated Items 302, 303, 305 306, 307, 308	7/23/52	8/5/52	8/7/52	

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NO. 303				
6153-J-3	Plans & Details	7/23/52	8/5/52	8/7/52	
	STATION NO. 304				
	No Dwgs.				
	STATION NO. 305				
6159-Q-3	Plan & Details	7/23/52	8/5/52	8/7/52	
	STATION NO. 306				
6155-J-3	Plans & Details	7/23/52	8/5/52	8/7/52	
	STATION NO. 307				
6158-Y-3	Plans & Details	7/23/52	8/5/52	8/7/52	
	STATION NO. 308				
	(See Station No. 305)				
	STATION NO. 331.01-.07				
6118-F-3	Plans & Details	6/12/52	6/23/52	6/25/52	Rev. 1 6/27/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NO. 331.01-.07 (Cont.)				
6162-F-3	Shelters	None		8/5/52	
	STATION NOS. 331.01-.07, 334, 335				
6161-Q-3	Elev. & Details	None	7/22/52	7/30/52	
	STATION NO. 410 (DAISY)				
6122-D-3	Plans & Details	6/5/52			Voided 7/7/52
	STATION NO. 411				
	No Dwgs.				
	STATION NOS. 412.01 - 412.24 (YVONNE)				
6127-Y-3	Details	6/12/52			Void 7/11/52
6150-Y-3	Plans & Details	7/18/52	8/1/52	8/4/52	
	STATION NO. 430				
6131-E-3	Struct. Steel Details	6/16/52			Voided Memo #1111 7/3/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NO. 440				
6168-E-3	Plans & Details	None	7/25/52	8/14/52	
	STATION NO. 441				
6151-Y-3	Plans & Details	7/17/52	7/25/52	8/1/52	
	STATION NO. 510.01 THRU .66				
6130-Q-3	Sect. & Details	6/13/52	7/22/52	7/24/52	
	STATION NO. 511.01 THRU .39				
6135-Y-3	Elev. & Details	6/16/52	7/22/52	7/24/52	
	STATION NO. 520				
611-C-3	Retain. Wall & Load. Plat.	6/17/52	7/11/52	7/15/52	
6112-C-3	Floor Plan & Details	6/17/52	7/11/52	7/15/52	
6115-C-3	Lead Door Details	6/17/52	7/11/52	7/15/52	
SK-118	Sta. 520 Clara				
SK-119	Sta. 520 Clara				
SK-120	Sta. 520 Clara				

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NO. 520 (Cont.)				
SK-225	Sta. 520 Clara-Plot Plan.				
6123-C-3	Elev. & Det.	6/17/52	7/11/52	7/15/52	Rev. 1 8/15/52
3094-C-3	Elect. L/O	6/17/52	7/11/52	7/15/52	
4051-C-3	Plumbing & Dehumid.	6/17/52	7/11/52	7/15/52	
	STATION NOS. 521.01, .02, .03, .04, .05 & .06				
6134-Q-3	Plan, Sections & Details	[illegible]/12/52	6/23/52	6/25/52	
	STATION NOS. 530 - 531				
6154-I-3	Plans & Details	None	7/17/52	7/23/52	
	STATION NO. 541				
6157-Q-3	Plans & Details	None	7/14/52	7/29/52	
	STATION NOS. 542.01 - 542.08				
6171-Q-3	Plans & Details	None	7/14/52	8/26/52	

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NO. 600				
3075-Q-3	Sta. 600 thru 606 Wiring Diagram	4/24/52	5/15/52	5/29/52	
3078-I-3	Sta. 600 thru 603 Electrical Layout	4/24/52	5/15/52	5/29/52	Rev. 1 6/16/52
3109-I-6	Substation-Sta. 600	6/18/52	7/16/52	7/21/52	
6086-I-3	Sta. 600 - Plans & Dets.	4/24/52	5/22/52	5/29/52	Rev. 1 6/16/52
SK-324	Light. Panels Sta. 600 - 606				
	STATION NO. 601				
3072-J-3	Electrical Layout	5/21/52	6/19/52	6/24/52	
	STATION NO. 602				
3073-K-3	Electrical Layout	5/5/52	6/6/52	6/10/52	Rev. 1 6/17/52
	STATION NO. 603				
6087-M-3	Plans & Details	4/24/52	5/15/52	5/29/52	Rev. 1 6/16/52
	For Elect. Dwgs. See Sta. 600				

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NOS. 604 - 605				
3074-S-3	Electrical Layout, Sta. 604	6/3/52	6/16/52	6/19/52	
3082-Y-3	Sta. 605 - Elect. Layout	6/3/52	6/16/52	6/19/52	
6096-S-3	Plans & Dets., Sta. 604				Void
6097-Y-3	Plans & Dets., Sta. 605				Void
4049-S-3	Vent. Plan, Sect. & Det. Sta. 604	6/3/52	6/16/52	6/19/52	
	STATION NO. 606				
3071-EE-3	Electrical Layout	4/24/52	5/15/52	5/29/52	Rev. 1 6/17/52
6088-EE-3	Plans & Details	4/24/52	5/15/52	5/29/52	Rev. 1 6/17/52
	STATION NO. 610				
6072-NN-3	Pressure Station, Noah	2/22/52	3/14/52	3/28/52	Rev. 1 4/15/52
	STATION NOS. 611.01, .02, .03, .04 (JANET, KATE, MARY & TILDA)				
6100-J-3	Plans & Dets. Janet .01	5/8/52	6/6/52	6/10/52	
6106-K-3	Elev. & Details - Kate, Mary & Tilda .02, .03, .04	5/5/52	7/23/52	7/28/52	

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	STATION NO. 612				
6101-EE-3	15' Tower - Plans & Details	6/5/52	6/16/52	6/19/52	Rev. 1 6/20/52 Rev. 2 7/29/52
	STATION NOS. 613.01, .02 (OLIVE & YVONNE)				
6098-O-3	Elev. & Details	5/5/52	6/6/52	6/10/52	Rev. 1 6/19/52
	STATION NOS. 614, 615.01, 615.02, 616.01, 616.02 (GENE, HELEN, IRENE, HELEN, IRENE)				
6108-Q-3	Plans & Details - Sta. 614, 615.01, .02, 616.01, .02 & Sta. 6101.01 thru 6101.04	5/7/52	6/6/52	6/10/52	
	STATION NOS. 617.01, .02, .03, .04, .05, .06, .07, .08				
6113-Y-3	Elev. & Det. .02	6/17/52	7/1/52	7/3/52	
6116-Y-3	Elev. .03, .04, .05, .06, .07, .08	6/16/52	7/1/52	7/3/52	Rev. 1 7/31/52
6103-Y-3	Elev. & Det. .01	6/3/52	6/16/52	6/19/52	Rev. 1 7/23/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
6104-Y-3	Elev. & Det.	5/5/52	6/6/52	6/10/52	Rev. 1 6/19/52
	STATION NO. 619				
6105-Y-3	Elevations & Details	5/5/52	7/23/52	7/28/52	
	STATION NOS. 620.01, .02, .03 .04 (REEF - FLORA TO IRENE)				
6128-Q-3	Sections & Details	6/12/52	6/23/52	6/25/52	
	STATION NO. 621.01 THRU .15				
6141-Q-3	Plan, Sect. & Det. - Lagoon Raft	6/25/52	7/9/52	7/14/52	Rev. 1 8/13/52
2100-Y-19	Location Plan	Prel. Field Issue Only			Voided
	STATION NO. 623.01 THRU .10 (JANET)				
6129-J-3	Elev. & Details	6/5/52	7/7/52	7/10/52	
	STATION NOS. 630.01, .02, .03 .04 (JANET, LUCY, MARY, SALLY)				
6124-Q-3	Elev. & Det.	6/5/52	7/22/52	7/24/52	

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
6163-Q-3	Pl. Sects. Elev. & Dets.	None	7/17/52	8/14/52	
	STATION NO. 641				
	STATION NO. 642				
	STATION NO. 6140				
	STATION NOS. 690.01, .02, .03 .04 (JANET, LUCY, MARY, SALLY)				
6109-Q-3	Elev. & Det.	5/7/52	6/3/52	6/6/52	Rev. 1 6/11/52 Rev. 2 7/14/52 Rev. 3 7/25/52
	STATION NOS. 800, 801, 802, 803				
4054-Q-3	Dehumid. Pl. & Sect.	None	7/22/52	8/1/52	
6164-Q-3	Plans & Wall Elev.	None	7/22/52	8/14/52	
	STATION NO. 804				
6065-BB-3	Doors & Details	4/24/52	5/21/52	5/26/52	
6080-BB-3	Plans & Elevations	4/24/52	5/21/52	5/26/52	Rev. 1 6/17/52
6084-BB-3	Structural Details	4/24/52	5/21/52	5/26/52	

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
3067-BB-3	Electrical Layout	4/24/52	5/21/52	5/26/52	
	STATION NO. 805 (701)				
	See Station 301				
	STATION NO. 806				
6166-MM-3	Plans & Details	None	7/17/52	8/7/52	
	STATION NO. 810.01 THRU .08 (ALICE, IRENE, NOAH, JANET, LUCY, MARY, OLIVE, TILDA) 810.09 THRU .12(YVONNE)				
6119-Q-3	Plans & Dets.	6/3/52	7/22/52	7/24/52	
	STATION NO. 840 (706)				
	Incorporated on Dwg. 6048-A-3 (Sta 300)				
	STATION NO. 841 (707)				
6068-F-3	Plans & Details	3/13/52	4/17/52	4/22/52	

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
6070-I-3	20' Tower	3/14/52	4/17/52	4/22/52	Rev. 2 7/21/52
3110-I-3	Elect. Layout & Sub. Sta.	6/18/52	7/17/52	7/21/52	
	STATION NO. 910				
6165-EE-3	Pl. & Details	None	8/13/52		Voided 8/18/52
	STATION NOS. 1000.01, .02, .03 .04, .05, .06, .08, .10 (ALICE, BELLE, CLARA, DAISY, EDNA, IRENE, LUCY, HELEN)				
1050-Q-3	Architectural	4/14/52 6/17/52	7/9/52	7/14/52	
	STATION NOS. 1300.01, .02, .03				
3140-J-3	Y & J Elect. L/O	8/6/52	8/22/52	8/26/52	
	MODIF. 300' TOWERS				
6170-Q-3	Struct. Steel Dets.	None			
6169-Q-3	Elevator Pit & Steel Fdns.	None			

ENGINEERING DRAWINGS

NO.	DESCRIPTION CORAL HEAD PHOTO TOWERS	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
6053-MM-3	Plan & Elevation Platform & Gen. House	None			Campbell & Spain Only

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	CAMP FACILITIES ON GENE				
	G-1				
1018-G-4	Floor Plans, Elev. & Sect.				Superseded by 1020-G-4
1020-G-4	Floor Plans, Elev. & Sect.	1/29/52	1/11/52	1/24/52	Rev. 1 4/3/52
3018-G-4	Conduit Plan	1/11/52	1/11/52	1/24/52	Rev. 1 4/3/52 Rev. 2 5/6/52
3019-G-4	Lighting	1/11/52	1/11/52	1/24/52	Rev. 1 4/3/52
3020-G-4	Single Line Diagram	1/11/52	1/11/52	1/24/52	Rev. 1 4/3/52 Rev. 2 5/6/52
3021-G-4	Sections & Details	1/11/52	1/11/52	1/24/52	Rev. 1 4/3/52
4025-G-4	Equip. & Piping Plans & Sect.	1/11/52	1/11/52	1/24/52	Rev. 1 4/3/52
4026-G-4	5 Cyl. Diesel Eng. Piping	1/11/52	1/11/52	1/24/52	
4027-G-4	8 Cyl. Diesel Eng. Piping	1/11/52	1/11/52	1/24/52	
6032-G-4	Foundation Plan & Details	1/11/52	1/11/52	1/24/52	Rev. 1 4/3/52
6033-G-4	Roof Framing Plan & Det.	1/11/52	1/11/52	1/24/52	Rev. 1 4/3/52
6035-G-4	Equip. Fdn. Plan & Details Unit 3	1/11/52	1/11/52	1/24/52	

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	CAMP FACILITIES ON GENE (Cont.)				
	G-1 (Cont.)				
6036-G-4	Equip. Fdn. Plan & Details Units 1 & 2	1/11/52	1/11/52	1/24/52	
6037-G-4	Misc. Foundation Details	1/11/52	1/11/52	1/24/52	
	G-5				
4033-G-9	Water Distillation Plant	1/28/52	1/29/52	1/30/52	Voided
SK-411	Replaced by 4033-G-9				Voided
	GENERAL FACILITIES				
1030-G-1	Camp L/O Scheme "A"	1/18/52	1/29/52	1/15/52	Rev. 1 4/30/52 Rev. 3 6/3/52
2035-G-15	L/O & Det. Channel & Pier	1/29/52	1/29/52	1/15/52	Superseded by 5010-G-15
3026-G-7	Telephone Buoy, Berth 881	1/29/52	1/29/52	1/17/52	
3035-G-6	Power Distribution	1/29/52	1/29/52	2/14/52	Rev. 2 4/3/52 Rev. 3 6/3/52
3037-G-6	Transformer Sta. #1, Plan and Details	1/29/52	1/29/52	2/18/52	

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	CAMP FACILITIES ON GENE (Cont.)				
	GENERAL FACILITIES (Cont.)				
3065-G-18	Causeway & Pier Lighting	6/17/52		7/3/52	
6042-G-18	Load & Passenger Pier	1/29/52	1/29/52	1/15/52	Rev. 1 6/27/52
5008-G-9	Fresh & Salt Water Dist. System	1/29/52	1/29/52	2/14/52	
5009-G-10	Sewage Facilities	1/29/52	1/29/52	2/14/52	
5010-G-15	Marine Facilities	3/12/52	3/14/52 4/10/52	3/26/52	Rev. 1 4/16/52
	Telephone Exch. Bldg.-G-92				
1048-G-2	Plan, Elev., Sect. & Dets.	6/3/52	6/11/52	6/13/52	Rev. 1 7/8/52
3086-G-2	Elect. & Telephone L/O	6/3/52	6/11/52	6/13/52	Rev. 2 7/10/52
	G-40, G-41 & G-42				
1031-G-2	Floor Plan	1/22/52	1/29/52 2/1/52	1/30/52	
1032-G-2	Elev. Sections & Details	1/22/52	1/29/52 2/1/52	1/30/52	

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	CAMP FACILITIES ON GENE (Cont.)				
	G-40, G-41 & G-42 (Cont.)				
3030-G-2	Power Plan & Details	1/29/52	1/29/52	2/19/52	
3033-G-2	Lighting Plan	1/29/52	1/29/52	2/19/52	
4032-G-2	Plumb. & Steam Piping	1/22/52	1/29/52 2/1/52	2/19/52	

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 15				
3066-FF-2	Electrical Layout	4/16/52	5/21/52	5/23/52	Rev. 1 7/7/52
4045-FF-2	Modifications	4/16/52	5/21/52	5/23/52	Rev. 1 7/7/52
	BLDG. NO. 120				
1044-EE-2	Plan, Elevs. & Details	(Engr done in field)			
	BLDG. NO. 194				
1036-EE-2	Floor Plan, Elevs. & Sections	3/11/52	3/24/52	3/28/52	3/28/52 Jobsite Rev. 1 4/8/52
3045-EE-2	Electrical Layout	3/11/52	3/24/52	3/28/52	3/28/52 Jobsite Rev. 1 4/8/52**
4044-EE-2	Plumb. & Dehumid., Plans, Sections & Details	3/11/52	3/24/52	3/28/52	Preliminary Drawings Rev. 1 4/8/52
6073-EE-2	Foundation & Crane Details	3/11/52	3/24/52	3/28/52	Preliminary Drawings
	BLDG. NO. 208				
2087-EE-2	Fence Changes Admin. Compound		4/24/52	4/29/52	**Rev. 2 8/4/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 221				
4046-EE-2	Modifications	4/16/52	5/21/52	5/23/52	
SK-121	Conference Rm. Alterations-Arch.	)	)	)	
4052-EE-2	Vent. & Elect.-Conference Room	6/16/52)	Estimating	Department	Only.
	BLDG. NO. 222				
1033-EE-2	Flr. Plan, Elev., Sect. & Dets.	2/8/52	2/15/52	3/5/52	Rev. 1 5/13/52
3036-EE-2	Electrical Layout	2/8/52	2/15/52	3/5/52	Rev. 1 5/13/52
	BLDG. NO. 301 (Elmer)				
SK-408					
3107-EE-4	Alterations to Bldg. 301	6/26/52	7/16/52	7/21/52	
3114-EE-4	Single Line Diagram	6/26/52	7/16/52	7/21/52	
	BLDG. NO. 330 & 329				
1026-EE-2	Floor Plan & Elevations	1/5/52	1/15/52	1/16/52	Rev. 3 4/24/52
3024-EE-2	Power & Lighting Revisions	1/5/52	1/15/52	1/16/52	Rev. 3 6/3/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 330 & 329 (Cont.)				
3068-EE-2	Modification-Communication	4/17/52	4/30/52	6/3/52	
4019-EE-2	Cooling Water Piping, Plan and Detail	(12/11/51) (1/5/52)	/15/52	1/16/52	Rev. 2 4/24/52
4024-EE-2	Cooling Water Piping - Diagram	(12/11/51) (1/5/52)	1/15/52	1/16/52	Rev. 2 4/24/52
4029-EE-2	Ventilation Plans & Dets.	1/5/52	1/15/52	1/16/52	Rev. 1 2/13/52
6041-EE-2	Foundation Plan & Details	1/5/52	1/15/52		Rev. 2 4/24/52
6020-EE-2	Equip. Protection Cages	3/4/52			Void
	BLDG. NO. 338 (Cancelled)				
1004-EE-2	Floor Plan, Elev. & Sections	1/5/52	11/23/51	1/16/52	Void
1012-EE-2	Schedules & Details	1/5/52	11/23/51	1/16/52	Void
1017-EE-2	Miscellaneous Details	1/5/52	11/23/51	1/16/52	Void
3002-EE-2	Receptacle Plan	12/11/51	11/23/51	1/16/52	Void
3003-EE-2	Electrical Room, Cond., Layout	12/11/51	11/23/51	1/16/52	Void

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 338 (Cancelled) (Cont.)				
3004-EE-2	Conduit Plan	12/11/51	11/23/51	1/16/52	Void
3005-EE-2	Grounding Plan	12/11/51	11/23/51	1/16/52	Void
3013-EE-2	Conduit Schedule	12/11/51) 1/5/52)	11/23/51	1/16/52	Void
3015-EE-2	Lighting Plan	12/11/51) 1/5/52)	11/23/51	1/16/52	Void
3016-EE-2	Communications Plan	12/11/51) 1/5/52)	11/23/51	1/16/52	Void
4008-EE-2	Underground Piping Plan	12/11/51) 1/5/52)	11/23/51	1/16/52	Void
4009-EE-2	Above ground Plumb. Plan	12/11/51) 1/5/52)			Void
4010-EE-2	Cooling Water & Misc. Serv. Piping Plan	12/11/51) 1/5/52)			Void
4011-EE-2	Misc. Piping Plans and Details	12/11/51) 1/5/52)			Void
4012-EE-2	Equip. Cooling Water Piping				

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 338 (Cancelled) (Cont.)				
4013-EE-3	House Compressor & Vac. Pump				Void
4014-EE-3	Ventilation - Plan	1/5/52			Void
4015-EE-3	Ventilation Sections & Dets.	1/5/52			Void
4030-EE-2	Pipe Trench - Sect. & Detail				
6002-EE-2	Foundation Plans & Details	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void
6003-EE-2	Equipment Foundation	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void
6004-EE-2	Liquefier Pit. Plan & Dets.	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void
6005-EE-2	Rooms 110 & 111, Floor Slabs	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void
6006-EE-2	Compressor Rooms, Floor Slabs	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void
6007-EE-2	Compressor Room, Trench System	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 338 (Cancelled) (Cont.)				
6008-EE-2	Liquefier & N2 Compressor Rm., Trench System	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void
6009-EE-2	Blast Wall "A" Elev. & Dets.	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void
6010-EE-2	Blast Wall "B" Elev. & Dets.	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void
6014-EE-2	Misc. Foundation Details	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void
6015-EE-2	Liquefier Room Blast Pl. Panel Plan	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void
6016-EE-2	Cont. Panel Board - Details	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void
6018-EE-2	Blast Wall "C" Elev. & Det.	(12/11/51) (1/5/52)	11/23/51	1/16/52	Void
6019-EE-2	Roof Framing, Plan & Det.	1/5/52			Void
6027-EE-2	Liquefier Pit, Steel Framing & Details	1/5/52			Void

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 338 (Cancelled) (Cont.)				
6031-EE-2	Framing Details - Lean to	1/5/52			Void
6045-EE-2	Elev. Sill Angles, Anchor Bolt Plan				Void
6046-EE-2	Canopy Framing & Details				Void
SK-301	480-V Main Panel Board				Void
SK-302	480-V Pump & Compressor				Void
SK-303	480-V Station Anx.				Void
SK-305	Ext. to 480-V Cont. C.				Void
SK-403	Vacuum Tank				Void
SK-601	Liquefier Pit Ladder Details				Void
	BLDG. NO. 339				
1009-EE-4	Plan, Elev. & Sections	1/5/52	1/14/52	1/17/52	Rev. 1
1013-EE-4	Roof Plan, Schedules & Dets.	1/5/52	1/14/52	1/17/52	
3006-EE-4	Conduit & Equip. Plan	Prior to 11/15/51	12/3/51	11/26/51	Rev. 2 3/27/52 Rev. 3 4/29/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 339 (Cont.)				
3007-EE-4	Diesel Control Panel	Prior to 11/15/51	12/3/51	11/26/51	
3008-EE-4	Conduit Schedule	Prior to 11/15/51	12/3/51	11/26/51	Rev. 2 3/27/52
3009-EE-4	Grounding Electrical Plan	Prior to 11/15/51	12/3/51	11/26/51	Rev. 2 3/27/52
3010-EE-4	Lighting Plan & Details	Prior to 11/15/51	12/3/51	11/26/51	Rev. 2 3/27/52
3011-EE-4	Station Serv. & Bat. Panel W. Diag.	Prior to 11/15/51	12/3/51	11/26/51	Rev. 2 3/27/52
3012-EE-4	One Line Diagram	Prior to 11/15/51	12/3/51	11/26/51	Rev. 2 3/27/52
3014-EE-4	Elect. Symb. & Fix. Schedule	Prior to 11/15/51	12/3/51	11/26/51	Rev. 2
3052-EE-4	Station Serv. & Lighting Trans. Banks	3/25/52	3/28/52	3/31/52	
4001-EE-4	Underground Piping Plan	Prior to 11/15/51	1/14/52	11/26/51	Rev. 1
4002-EE-4	General Arrangement Plan	1/5/52	1/14/52	1/17/52	

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 339 (Cont.)				
4003-EE-4	Diesel Engine Piping, Pl. & Det.	1/5/52	1/14/52	1/17/52	Rev. 1
4004-EE-4	Diesel Engine Piping Sections	1/5/52	1/14/52	1/17/52	
4005-EE-4	Diesel Engine Piping Diagrams	1/5/52	1/14/52	1/17/52	
4006-EE-4	Miscellaneous Details	1/5/52	1/14/52	1/17/52	
4007-EE-4	Fuel Oil Stor. Facilities	1/5/52	1/14/52	1/17/52	
6011-EE-4	Roof Framing, Plan & Dets.	1/5/52	1/14/52	1/17/52	
6012-EE-4	Foundation Plan & Details	Prior to 11/15/51	12/3/51	11/26/51	Rev. 1 11/28/51 Rev. 2 4/29/52
6013-EE-4	Foundation Details	Prior to 11/15/51	12/3/51	11/26/51	Rev. 1 1/10/52 Rev. 2 4/29/52
6023-EE-4	Generator Fdn. Details	Prior to 11/15/51	12/3/51	11/26/51	
6034-EE-4	Structural Details	1/5/52	1/14/52	1/17/52	
SK-406	1000 Gal. Oil Tank			[illegible]	
SK-111	Location Plan			11/27/51	Drawing Complete

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 339 (Cont.)				
SK-117	Chain Link Fence & Gate at Switchboard			3/26/52 4/7/52	Rev. 1 4/7/52
	BLDG. NO. 340				
1029-EE-2	Typ. Units "A" thru "L"	Replaced by	Drawing No. 6067-EE-2		Void
6067-EE-2	Framing, Plan. Elev. & Det.	2/21/52	3/24/52	3/26/52	Rev. 1 4/3/52
	BLDG. NO. 341				
1010-EE-2	Flr. Plan, Elev. & Sect.	1/3/52 2/22/52	3/24/52	3/28/52	Rev. 1 4/25/52 Rev. 2 7/23/52
1039-EE-2	Fdn. Plans, Sect. & Dets.	2/22/52	3/24/52	3/28/52	
3043-EE-2	Electrical Layout	2/22/52	3/24/52	3/28/52	Rev. 2 4/25/52
4039-EE-2	Plumbing & Dehumid. Pl. Sect. & Details	2/22/52	3/14/52	3/28/52	Rev. 1 4/25/52
6017-EE-2	Steel Framing Details	2/22/52	3/14/52	3/28/52	Rev. 1 4/25/52 Rev. 2 7/23/52
6024-EE-2	Fdn. Plans & Details	2/22/52	3/14/52	3/28/52	
SK-613	20-Ton Crane Welded Girder				

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 341 (Cont.)				
SK-317	Main Switchboard				
	BLDG. NO. 342				
1006-EE-2	Plan, Elev. & Sections	2/22/52	3/12/52	3/19/52	
1041-EE-2	Sections & Details	3/14/52	3/20/52	3/25/52	
3044-EE-2	Electrical Layout	2/22/52	3/12/52	3/19/52	Rev. 1 4/3/52 Rev. 3 4/25/52
4038-EE-2	Vent. & Dehumid. Pl. & Det.	2/22/52	3/12/52	3/19/52	Rev. 1 4/3/52
SK-315	Panels				
	BLDG. NO. 343 (Deleted 2/6/52)				
1007-EE-2	Plan & Elevations				Void
	BLDG. NO. 344				
1005-EE-2	Plan, Elev. & Sections				Void
1038-EE-2	Flr. Plans, Elev. & Sec.	2/21/52	3/4/52	4/7/52	Rev. 1 4/29/52 Rev. 2 5/27/52
1042-EE-2	Schedules & Details	3/11/52		4/7/52	Rev. 1 4/29/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION BLDG. NO. 344 (Cont.)	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
3017-EE-2	Electrical Layout				Void
3038-EE-2	Conduit Layout	2/21/52	3/4/52	4/7/52	Rev. 1 4/29/52
3040-EE-2	Light. & Gnd. Plan & Dets.	2/21/52	3/4/52	4/7/52	Rev. 1 4/29/52
3041-EE-2	Single Line Commun. Pl. & Det.	2/21/52	3/4/52	4/7/52	Rev. 1 4/29/52
4012-EE-2	Equip. Cooling Water Piping Typ. Det.	2/21/52	11/23/51 3/4/52	4/7/52 4/7/52	
4016-EE-2	Cooling Water Piping Plan				Void
4017-EE-2	Cooling Water Piping Sect. & Det.				Void
4018-EE-2	Vent. Plan Sect. & Details				Void
4034-EE-2	Plumbing Plan	2/21/52	3/4/52	4/7/52	Rev. 1 5/27/52
4035-EE-2	Cooling Water Piping Plan	2/21/52	3/4/52	4/7/52	Rev. 1 5/27/52
4036-EE-2	Cooling Water Piping Diagram and Section	2/21/52	3/4/52	4/7/52	Rev. 1 4/29/52
4037-EE-2	Vent. Plan Sect. & Dets.	2/21/52	3/4/52	4/7/52	Rev. 1 4/29/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 344 (Cont.)				
6001-EE-2	Fdn. Plans & Dets				Void
6054-EE-2	Foundation Plan	2/21/52	3/4/52	4/7/52	Rev. 1 4/29/52
6055-EE-2	Blast Wall "A" Elev. & Det.	2/21/52	3/4/52	4/7/52	Rev. 1 4/29/52
6061-EE-2	Blast Wall "B" Sump Elev. and Details	2/21/52	3/4/52	4/7/52	Rev. 1 4/29/52
6062-EE-2	Liquefier Pit, Plan & Dets.	2/21/52	3/4/52	4/7/52	
6063-EE-2	Liquefier Pit, Steel Framing & Details	2/21/52	3/4/52	4/7/52	
6064-EE-2	Equip. Foundations	2/21/52	3/4/52	4/7/52	
*6076-EE-2	Wood Lean-To Struct. Det.	3/11/52		4/7/52	
*6077-EE-2	Blast Plate & Panel, Boiler Pl. Shield, Plans & Elev.	3/11/52		4/7/52	
*6078-EE-2	Foundation Details	3/11/52		4/7/52	
*6081-EE-2	Wood Framing Elev.	3/11/52		4/7/52	
*6083-EE-2	Anchor Bolt Plan	3/11/52		4/7/52	Rev. 1 4/29/52

*Preliminary Drawings Sent to Jobsite

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 344 (Cont.)				
6075-EE-2	Framing Plans & Details				Void
6102-EE-2	Pipe Support Beams & Rack Details	5/6/52 4/22/52	5/22/52	5/26/52	
SK-306	Main Switchboard				Void
SK-307	Modification of Main Switchboard				Void
SK-308	Motor Control Center				
SK-311	1250 KVA Transformer				
6107-EE-2	Panel & Shelf Nitro. Rm.	4/30/52	5/5/52	5/9/52	
	BLDG. NO. 345				
1011-EE-2	Plans, Elev. & Section				Superseded by 1014-EE-2
1014-EE-2	Plan, Sect. & Elevations	2/14/52	2/19/52	2/22/52	
6025-EE-2	Bent Framing Details				Void
6026-EE-2	Fdn. Plans & Details				Void

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 346 (Deleted 11/15/51				
1008-EE-2	Plan, Elev. & Sections				Void
1016-EE-2	Blast Proof Doors				Void
3022-EE-2	Lighting L/O & Details				Void
3023-EE-2	Power L/O & S.L. Dia.				Void
4020-EE-2	Air Cond. Plan & Details				Void
4021-EE-2	Air Cond. Misc. Details				Void
4022-EE-2	Plumb. Plan & Details				Void
4023-EE-2	Plumb. Misc. Details				Void
6028-EE-2	Foundation Plan & Det.				Void
6029-EE-2	Roof Plan & Details				Void
6039-EE-2	Struct. Details				Void
	BLDG. NO. 347				
3028-EE-9	Bldg. 347 & Fuel Oil Transfer Pump Elect. Plan & Details	2/12/52	3/6/52	3/11/52	

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	BLDG. NO. 347 (Cont.)				
5004-EE-9	Salt Water Pump House Piping Details	1/5/52	1/5/52	1/31/52	Was SK-504
6022-EE-9	Foundation Plan & Details	1/18/52	1/22/52	1/31/52	Rev. 1
SK-504	Replaced by Drg. 5004-EE-9				
	BLDG. NO. 348 (Cancelled)				
6044-EE-2	Plans, Elev. & Details				Void
	BLDG. NO. 349				
5007-EE-9	Piping & Misc. Details	3/13/52	4/10/52	4/14/52	
6040-EE-9	Plan, Section & Details	1/17/52	1/22/52	1/31/52	
SK-629	Design of Protection-Plot Plan & Details				
	TYP. DETAILS USED ON ALL SITES				
SK-101	Al. Angle Clip, 5" x 3" Ladder Anchors	For Purchasing			
SK-102	4" Al. Barrel Bolts				
SK-103	6" Al. Barrel Bolts				

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	TYP. DETAILS USED ON ALL SITES (Cont.)				
SK-104	Al. Angle Clip 3-1/2" x 3" Toilet Partition Anchors	For Purchasing			
SK-105	1-1/2" x 2-1/2" Al. Cabinet Hinge				
SK-106	2-1/2" x 2-1/2" Al. Cabinet Hinge				
SK-107	3-1/2" Al. Hinge Hasp				
SK-108	6" Al. Hinge Hasp				
SK-109	Shelf Bracket				
SK-110	Toilet Paper Holder				
SK-112	Tarpaulin Details				
SK-413	Air Diffusers				
	SKETCHES FOR DESIGN STUDY				
SK-407	Aux. Ramp for LCT				
SK-410	Aux. Ramp LCT, Sch. 2				

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	SKETCHES FOR DESIGN STUDY (Cont.)				
SK-116	Blast Door Details	Information for LASL - Campbell			From Greenhouse
	WAREHOUSE REC. & CLASSIFICATION				
1022-EE-2	Floor Plan & Elev.				
1023-EE-3	Floor Plan & Site Plan Schem.				
1035-EE-1	Warehouse Storage Plan				
1043-EE-2	Whse. Flr. Pl. Elev. Section and Details	Drawn for Cost Study Reports			
SK-113	Warehouse Study				
SK-114	Addendum 1 to Exhibit "C"				
SK-115	Addendum 2 to Exhibit "C"				
	T. & C. BLDG.				
1015-F-2	Floor, Plan-Schematic	Replaced by Station 5			Void
	J.T.F. REC. BLDG.				
1047-EE-2	Plan, Elev. & Details	4/16/52			

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	J.T.F. REC. BLDG. (Cont.)				
4047-EE-2	Plumb. & Elect. Plans & Dets.	4/16/52			
	MEAT THAWING & CUTTING BLDG.				
1045-FF-2	Plan, Elev. & Details	Engr. Done	in Field.		Void
	40 MAN LATRINE				
1040-F-2	Plans, Elevs. & Details	Used 640 "As-Built" 2F-944			Void
	AIR FREIGHT STORAGE BLDG.				
1046-FF-2	Plan, Elevs. & Details	Engr. Done	in Field		Void
	WAREHOUSING				
1052-EE-3	Plans & Details				Void-Replaced by 1055-EE-2
1053-EE-3	Bin Layout				Void-Replaced by 1056-EE-2
SK-420	Proposed Sprinkler L/O				
6120-EE-2	Fdn. Plan & Details	7/25/52			Superseded by 1060-1063
6121-EE-2	Mezz. Framing Plans & Det.	7/25/52			Superseded by 1060-1063

ENGINEERING DRAWINGS

NO.	DESCRIPTION WAREHOUSING (Cont.)	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
1055-EE-2	Plans, Sect., Elev. & Det.				
1056-EE-2	Bin Layout				
3095-EE-2	Elect. L/O D, F, G, H				Void
3096-EE-2	Elect. L/O C				
3097-EE-2	Elect. L/O B, L				Void
3098-EE-2	Elect. L/O B, D & M				
3099-EE-2	Quonset. Whse.-Bldg. "L"				
2092-EE-19	Location Plan Whse's	7/25/52			
3101-EE-2	Whse. Bldg. "A"	7/25/52	8/15/52		
3102-EE-2	Whse. Bldg. "E"				
3103-EE-2	Whse. Bldg. "F"				
3104-EE-2	Whse. Bldg. "G"	7/25/52	8/15/52		
3100-EE-2	Whse. Bldg. "H"	7/25/52	8/15/52		
3105-EE-2	Whse. Bldg. "J"				

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	WAREHOUSING (Cont.)				
3106-EE-2	Whse. Bldg. "K"				
1060-EE-2	Whse. Bldg. 510	7/25/52	8/15/52		
1061-EE-2	Whse. Bldg. 502	7/25/52	8/15/52		
1062-EE-2	Whse. Bldg. 506	7/25/52	8/15/52		
1063-EE-2	Whse. Bldg. Typ.	7/25/52			Void
6143-EE-2	Whse. Bldg. Fnd. Plan	7/25/52			Void
6144-EE-2	Whse. Bldg. Wood Fr. Plan	7/25/52	8/15/52		Void
	MISCELLANEOUS DRAWINGS				
1051-F-2	Telephone Bldg.-Plans & Details-Bldg. No. F-1	5/22/52	5/29/52	6/3/52	
SK-421	Proposed Veh. Paint Spray booth in Modif. Bldg. No. 401				
SK-419	Foam Fire Prot. System for POL Area "Elmer"				
3070-EE-18	Smoking Control	4/18/52	5/2/52	5/7/52	
SK-502	S.W. Fire Lines POL Area				

ENGINEERING DRAWINGS

NO.	DESCRIPTION MISCELLANEOUS DRAWINGS (Cont.)	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
SK-503	Pumphouse Fire Prot. System				
SK-504	Alter. to Elev. S.W. Tank				
SK-505	L/O Fire P.H. Whse. Sprinkler System				
SK-506	L/O F.W. Lines Whse. Sprinkler System				
6053-MM-3	Coral Head Photo Tower	(Used "As-Built" - 640)			Mod. of F.S. 31 Rev. 1 2/1/52
SK-616	Bracing-Exist. Al. Bldgs.				
SK-617	Bracing-Exist. Quonsets				
SK-618	Frame Clamp Elev. Bracing Al. Bldgs.				
SK-619	Bracing Assem.-Al. Bldgs.				
SK-620	Reinf. of Exist. Bldgs. Water Tower "Fred"				
SK-621	Alternate Wood Bracing for Al. Bldgs.				

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	MISCELLANEOUS DRAWINGS (Cont.)				
SK-622	Reinf. of Exist. Bldgs. Power Plt. Typ. Cross Section				
SK-623	Reinf. of Exist. Bldgs. Power Plt. Typ. End Wall Guys				
SK-624	Reinf. of Exist. Bldgs. Power Plant Typ. Side Wall Guys				
2074-F-18	Fence Details Zero Area	4/7/52	4/14/52	4/16/52	
SK-625	Reinf. of Exist. Bldg. No. 121 Conn. Details				
SK-626	Bracing of Exist. Bldg. Nos. 301, "Elmer" & No. 56 "Fred", Tie Rod Detail				
SK-627	Bracing of Exist. Bldg. No. 56 "Fred" Bracing Plan				
SK-628	Bracing of Exist. Bldg. No. 220 "Elmer"				
SK-630	Types of Guy Protect. for Exist. Al. Bldg. Elmer & Fred				

NO.	DESCRIPTION MISCELLANEOUS DRAWINGS (Cont.)	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
SK-631	Prot. of Exist. Bldgs. Bldg. No. 313 Plot Plan				
SK-632	Wood End Bracing Prot. for Exist Alum. Bldg. Fred & Elmer				
SK-123	Tentative Bldg. L/O-"Elmer"				
SK-124	Tentative Bldg. L/O-"Fred"				
1058-EE-18	Badge Cases-Plans & Dets		5/29/52	6/6/52	
1059-EE-2	Bldg. 209-Conf. Rm. Alter'ns.	6/17/52		6/23/52	
3132-FF-6	Long Term Improvements				
2110-Q-19	Survey Targets Progrm. 11.1			6/23/52	
SK-633	Bldg. 166-Reinf. Wood Roof				

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	ELECTRICAL DISTRIBUTION SYSTEMS				
3001-EE-6	Single Line Diagram - CMR Area				
3025-EE-6	Elmer - Power Distribution				Superseded by 3039-EE-6
3027-EE-6	Power Distribution Details				
3031-Q-18	Elect. Fix. Sched. Notes & Symb.	2/1/52	2/12/52	2/14/52	Rev. 1
3039-EE-6	Elmer - Power Distribution	4/9/52	4/17/52	4/25/52	Replaced 3025-EE-6 Rev. 1 6/3/52
3042-Q-6	Power Distr. Gen. Use	3/21/52	4/2/52	4/11/52	Rev. 1 4/29/52
3046-Q-6	Power Distr. Gen. Use	3/21/52	4/2/52	4/11/52	Rev. 1 6/17/52
3053-Q-6	Power Distr. Det., Gen. Use	3/21/52	4/2/52	4/11/52	
3054-Q-6	Power Distr. Det., Gen. Use	3/21/52	4/2/52	4/11/52	
3055-Q-6	Power Distr. Det., Gen. Use	3/21/52	4/2/52	4/11/52	
3056-Q-6	Power Distr. Det., Gen. Use	3/21/52	4/2/52	4/11/52	
3057-Q-6	Power Distr. Det., Gen. Use	3/21/52	4/2/52	4/11/52	
3058-Q-6	Power Distr. Det., Gen. Use	3/21/52	4/2/52	4/11/52	

NO.	DESCRIPTION ELECTRICAL DISTRIBUTION SYSTEMS (Cont.)	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
3059-ANN-8	Signal & Control System Ato NN	6/20/52	7/17/52	7/22/52	
3060-ANN-8	Signal & Control System Ato NN	6/20/52	7/17/52	7/22/52	
3061-ANN-8	Signal & Control System Ato NN	6/20/52	7/17/52	7/22/52	
3062-Q-8	Block Diag. Signal Syst.	4/10/52	4/29/52	5/23/52	Rev. 1 6/13/52 Rev. 2 6/19/52
3064-EE-7	CMR Area, Communication & P. A. System Plan	4/17/52	4/30/52	6/3/52	
3049-EE-6	Substation (Bldg. 341 & 342)	4/10/52	4/17/52	4/21/52	
3048-EE-6	Substation (Bldg. 340)	4/10/52	4/17/52	4/21/52	
3050-EE-6	Substation (Bldg. 330)	4/10/52	4/17/52	4/21/52	
SK-304	CMR Public Address System				
SK-309	Flora, Loc. of Substation		3/17/52		
SK-310	Dewar Area, Main Switchboard				
SK-313	Elmer, Intercomm. System L/O				
SK-314	Speical Buss Duct				

NO.	DESCRIPTION ELECTRICAL DISTRIBUTION SYSTEMS (Cont.)	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
3076-Q-7	Block Diag. Tel. System - General Use	4/10/52	4/17/52	4/23/52	Rev. 1 5/16/52 Rev. 3 6/19/52 Rev. 4 7/11/52
3079-EE-7	Communication & Telephone Plan	Incorporated on Dwg.		3090-EE-7	Cancelled
3085-I-6	Sub Sta. for Sta. 200	6/17/52	See Sta.	200	Voided
3087-F-6	Sub Sta. No. 3	6/12/52	See Sta.	3	Voided
3088-FI-6	Power Dist. F to I	6/17/52	7/22/52	7/24/52	
3089-F-6	Power Dist. & Sec. Light'g.	6/12/52	7/17/52	7/21/52	Rev. 1 8/7/52
SK-318	Signal & Cont. Syst. F to I				
SK-319	Signal & Cont. Syst. F to I				
SK-320	Prot. light. Ad. Compound	6/19/52			
SK-321	Load Curves - Parry P.P.				
SK-322	Load Curves - Parry P.P.				
SK-323	Load Curves - Parry P.P.				
3090-EE-7	Power & Tel. Plan - Sht. 1	6/18/52	7/16/52	7/21/52	Rev. 1 8/13/52

NO.	DESCRIPTION ELECTRICAL DISTRIBUTION SYSTEMS (Cont.)	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
3091-EE-7	Power & Tel. Plan - Sht. 2	6/18/52	7/16/52	7/21/52	Rev. 1 8/13/52
3092-EE-7	Power & Tel. Plan - Sht. 3	6/18/52	7/16/52	7/21/52	Rev. 1 8/13/52
3093-EE-7	Power & Tel. Plan - Sht. 4	6/18/52	7/16/52	7/21/52	Rev. 1 8/13/52
SK-326	Pole Mtd. Transformer	Replaced by Dwg. No.		3111-Q-6	
SK-327	Pole Mtd. Transformer	Replaced by Dwg. No.		3111-Q-6	
3111-Q-6	Elect. Dist. - Details	6/17/52	7/29/52	7/31/52	
3133-EE-7	Power & Tel. Plan - Sht. 5	7/1/52			
3115-J-6	U. G. Elect. Syst.	7/15/52	8/25/52	8/27/52	
3116-EE-7	Power & Tel. Plan - Sht. 6	7/31/52	8/6/52	8/13/52	
3117-K-6	U. G. Elect. Syst.	7/10/52	7/29/52	8/5/52	
3118-EE-7	Power & Tel. Plan - Sht. 7	7/31/52			
3119-EE-7	Power & Tel. Plan - Sht. 8	7/31/52	8/6/52	8/13/52	
3120-EE-6	Sub-Station 194	6/23/52	7/1/52	7/3/52	
3121-Y-6	U. G. Distribution - Sht. 1	7/23/52	8/25/52	8/27/52	Yvonne U. G. Elect. Prelim. For Constr. 8/19/52

NO.	DESCRIPTION ELECTRICAL DISTRIBUTION SYSTEMS (Cont.)	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
3122-Y-6	U. G. Distribution - Sht. 2	7/23/52	8/25/52	8/27/52	Yvonne U. G. Elect. Prelim. for Constr. 8/19/52
3123-Y-6	U. G. Distrubution - Sht. 3	7/23/52	8/25/52	8/27/52	Yvonne U. G. Elect. Prelim. for Constr. 8/19/52
3124-Y-6	U. G. Distribution - Sht. 4	7/23/52	8/25/52	8/27/52	Yvonne U. G. Elect. Prelim. for Constr. 8/19/52
3125-Y-6	U. G. Distribution - Sht. 5	7/23/52	8/25/52	8/27/52	Yvonne U. G. Elect. Prelim. for Constr. 8/19/52
3126-Y-6	U. G. Distribution - Sht. 6	7/23/52	8/25/52	8/27/52	Yvonne U. G. Elect. Prelim. for Constr. 8/19/52
3127-Y-6	U. G. Distribution - Sht. 7	7/23/52	8/25/52	8/27/52	Yvonne U. G. Elect. Prelim. for Constr. 8/19/52
3128-Y-6	U. G. Distribution - Sht. 8	7/23/52	8/25/52	8/27/52	Yvonne U. G. Elect. Prelim. for Constr. 8/19/52

NO.	DESCRIPTION ELECTRICAL DISTRIBUTION SYSTEMS (Cont.)	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
3129-V-6	U. G. Distribution - Sht. 9	7/23/52	8/25/52	8/27/52	Yvonne U. G. Elect. Prelim. for Constr. 8/19/52
3130-L-6	U. G. Elect. System	7/10/52	7/29/52	8/5/52	
3131-M-6	U. G. Elect. System	7/10/52	7/29/52	8/5/52	
3133-O-6	U. G. Elect. System	7/15/52	8/25/52	8/27/52	
3134-S-6	U. G. Elect. System	7/10/52	7/29/52	8/5/52	
3135-T-6	U. G. Elect. System	7/10/52	7/29/52	8/5/52	
3136-U-6	U. G. Elect. System	7/10/52	7/29/52	8/5/52	
3137-FF-6	Long Term Improvements - Lighting				
SK-328	O.H. Dist. Elmer (Long Term Improvements)				
SK-329	Street Lighting - Long Term Improvements				
3138-BB-6	U. G. Elect. System	7/15/52	8/25/52	8/27/52	

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	ELECTRICAL DISTRIBUTION SYSTEMS (Cont.)				
3139-Q-6	Temp. Tranif. Bank	7/10/52	7/29/52	8/4/52	
3141-DD-6	U. G. Elect. System	7/23/52	8/25/52	8/27/52	
SK-330	M.H. Plan - Long Term Improvements				
SK-331	Single Line Diag. - Long Term Improvements				
SK-332	M.H. Schedule - Long Term Improvements				
SK-333	Pole Det. Spec. Transt. Pole				
SK-334	O.H. Distr. Long Term Imrovements				
3144-ANN-6	Elect. U. G. Distri. System		7/17/52	8/21/52	Rev. 1 8/27/52
3145-EE-6	Admin. Compound - Protective Lighting	5/19/52	5/29/52	8/19/52	Rev. 1 8/20/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION WATER & SEWER DISTRIBUTION SYSTEMS	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
5001-EE-9	Salt Water Dist. System	2/22/52	3/12/52	3/27/52	Was SK-501
5002-EE-9	Domestic Water Systems	2/21/52	3/12/52	3/27/52	Was SK-502
5003-EE-10	Cooling Water Waste Sewers	2/21/52	3/12/52	3/27/52	Was SK-505
5005-Q-9	Typical Details Water & Sewer	1/29/52	2/12/52	2/14/52	Was SK-503
5006-EE-10	Sanitary Sewers	Combined with 5003-EE-10			Void
3081-EE-9	Control Wiring Diag. S.W. System	6/5/52	6/11/52	6/13/52	
SK-501	Replaced by Dwg. 5001-EE-9				
SK-502	Replaced by Dwg. 5002-EE-9				
SK-503	Replaced by Dwg. 5005-EE-9				
SK-505	Replaced by Dwg. 5003-EE-9				
5011-EE-9	Salt Water Fire Lines - Quonset Warehouse Area				
SK-507	Long Term Improvements - Fresh & Salt Wtr. Dist. Syst.				
SK-508	Long Term Improvements - Water Catchment Area. Fred				

ENGINEERING DRAWINGS

NO.	DESCRIPTION		SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	INSTRUMENTATION					
2105-Q-19	Scientific Program			6/17/52	6/18/52	Rev. 1 8/11/52 Rev. 2 8/27/52
2108-Q-19	Lagoon Stations			6/17/52	6/19/52	Rev. 1 8/11/52 Rev. 2 8/27/52
2012-AB	Alice Belle & Vicinity	1		6/17/52	6/18/52	Rev. 1 8/11/52 Rev. 2 8/27/52
2006-AB	Alice Belle & Vicinity	2		6/17/52	6/18/52	Rev. 1 8/11/52
2009-AB	Alice Belle & Vicinity	3		6/17/52	6/18/52	
2011-AB	Alice Belle & Vicinity	4		6/17/52	6/18/52	Rev. 1 8/11/52
2015-AB	Alice Belle & Vicinity	5		6/17/52	6/18/52	Rev. 1 8/11/52
2016-AB	Alice Belle & Vicinity	6		6/17/52	6/18/52	
2044-AI	Alice to Irene	1		6/17/52	6/18/52	Rev. 1 8/11/52 Rev. 2 8/27/52
2045-AI	Alice to Irene	2		6/17/52	6/18/52	Rev. 1 8/11/52 Rev. 2 8/27/52
2046-AI	Alice to Irene	3		6/17/52	6/18/52	Rev. 1 8/11/52 Rev. 2 8/27/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION		SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	INSTRUMENTATION (Cont.)					
2040-CF	Clara to Flora	1		6/17/52	3/14/52	Rev. 1 8/11/52
2041-CF	Clara to Flora	2		6/17/52	6/18/52	Rev. 1 8/11/52
2042-CF	Clara to Flora	3		6/17/52	3/21/52	Rev. 1 8/11/52
2043-CF	Clara to Flora	4		6/17/52	3/24/52	Rev. 1 8/11/52
2047-F	Zero Area - Flora			3/17/52	3/24/52	Rev. 1 4/17/52 Rev. 2 4/30/52 Rev. 3 5/21/52 Rev. 4 6/18/52 Rev. 5 7/15/52 Rev. 6 8/4/52 Rev. 7 8/14/52
2018-FI	Flora to Irene	1		6/17/52	6/18/52	Rev. 1 8/11/52
2019-FI	Flora to Irene	2		6/17/52	6/18/52	Rev. 1 8/11/52
2022-FI	Flora to Irene	3		6/17/52	6/18/52	Rev. 1 8/11/52
2023-FI	Flora to Irene	4		6/17/52	6/18/52	Rev. 1 8/11/52
2024-FI	Flora to Irene	5		6/17/52	6/18/52	Rev. 1 8/11/52

NO.	DESCRIPTION		SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	INSTRUMENTATION (Cont.)					
2025-FI	Flora to Irene	6		6/17/52	6/18/52	Rev. 1 8/11/52 Rev. 2 8/14/52
2026-FI	Flora to Irene	7		6/17/52	6/18/52	Rev. 1 8/11/52 Rev. 2 8/27/52
2027-FI	Flora to Irene	8		6/17/52	6/18/52	Rev. 1 8/11/52
2028-FI	Flora to Irene	9		6/17/52	6/18/52	Rev. 1 8/11/52
2029-FI	Flora to Irene	10		6/17/52	6/18/52	Rev. 1 8/11/52
2030-FI	Flora to Irene	11		6/17/52	6/18/52	Rev. 1 8/11/52 Rev. 2 8/14/52
2102-J	Janet			6/17/52	6/3/52	Rev. 1 6/18/52 Rev. 2 7/22/52 Rev. 3 8/11/52 Rev. 4 8/27/52
2101-K	Kate			6/17/52	6/3/52	Rev. 1 6/18/52 Rev. 2 8/11/52
2106-L	Lucy			6/17/52	6/3/52	Rev. 1 6/18/52 Rev. 2 8/11/52
2099-M	Mary			6/17/52	5/29/52	Rev. 1 6/18/52 Rev. 2 8/11/52

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	INSTRUMENTATION (Cont.)				
2083-O	Olive 1		6/17/52	6/18/52	Rev. 1 8/11/52
2084-O	Olive 2		6/17/52	6/18/52	
2089-P	Pearl 1		6/17/52	6/18/52	Rev. 1 8/11/52
2090-P	Pearl 2		6/17/52	6/18/52	
2091-N-19	Nancy		6/17/52	6/18/52	Rev. 1 6/18/52
2103-S	Sally		6/17/52	6/3/52	Rev. 1 6/18/52 Rev. 2 8/11/52
2104-T	Tilda		6/17/52	6/6/52	Rev. 1 8/11/52
2107-U	Ursula		6/17/52	6/19/52	Rev. 1 8/11/52
2064-Y	Yvonne 3		6/17/52	4/1/52	Rev. 1 6/3/52 Rev. 2 6/18/52 Rev. 3 8/11/52
2065-Y	Yvonne 4		6/17/52	4/1/52	Rev. 1 6/3/52 Rev. 2 8/11/52
2066-Y	Yvonne 5		6/17/52	4/1/52	Rev. 1 6/3/52 Rev. 2 8/11/52

NO.	DESCRIPTION		SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	INSTRUMENTATION (Cont.)					
2067-Y	Yvonne	6		6/17/52	4/1/52	Rev. 1 6/3/52 Rev. 2 6/18/52 Rev. 3 8/11/52
2068-Y	Yvonne	7		6/17/52	4/1/52	Rev. 1 6/3/52 Rev. 2 6/18/52 Rev. 3 8/11/52
2069-Y	Yvonne	8		6/17/52	4/1/52	Rev. 1 6/3/52 Rev. 2 8/11/52
2070-Y	Yvonne	9		6/17/52	4/1/52	Rev. 1 6/3/52 Rev. 2 8/11/52
2071-Y	Yvonne	10		6/17/52	4/1/52	Rev. 1 8/11/52
2072-Y	Yvonne	11		6/17/52	4/1/52	Rev. 1 6/3/52 Rev. 2 6/18/52 Rev. 3 8/11/52
2095-BB	Bruce	1		6/17/52	6/18/52	Rev. 1 8/11/52
2096-BB	Bruce	2		6/17/52	6/18/52	
2097-EE	Elmer North End			6/17/52	5/23/52	Rev. 1 6/18/52 Rev. 2 8/11/52

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	INSTRUMENTATION (Cont.)				
3109-EE	Elmer Admin. Comp'd.		6/17/52	7/8/52*	Rev. 1 8/11/52 *Spain & Campbell only
2076-LL	Leroy		6/17/52	6/18/52	Rev. 1 8/11/52
2012-Y	Yvonne Gen'l. Layout		6/17/52	7/30/52	Rev. 1 8/1/52
2110-Q-19	Locat. & Target Details Prog. 11.1			5/23/52	Campbell 3, Spain 1 only
	SITE & PLOT PLANS				
	GENE				
1030-G1	Camp Layout				Rev. 1 4/30/52 Rev. 2 5/21/52 Rev. 3 6/3/52
	ELMER				
2010-EE-14	CMR Area	2/15/52			Rev. 1 4/1/52 Rev. 2 8/15/52
	SITE PLANS				
1001-EE-1	Site Plan, Scheme "A"				Void
1002-EE-1	Site Plan, Scheme "B"				Void

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	SITE PLANS (Cont.)				
1003-EE-1	Site Plan, Scheme "C"				Void
1019-EE-1	Site Plan, Scheme "D"				Void
1021-EE-1	Site Plan, Scheme "E"				Void
1028-EE-1	Site Plan, Scheme "F"				Void
	GENERAL LAYOUTS				
2051-AI-19	Loc. Plan Alice-Irene 1	2/25/52		2/22/52	
2052-AI-19	Loc. Plan Alice-Irene 2	2/25/52		2/22/52	Rev. 1 3/16/52
2053-AI-19	Loc. Plan Alice-Irene 3	2/25/52		2/22/52	
2034-F-19	Flora	1/11/52		1/19/52	Campbell & Spain
2033-G-19	Gene	1/11/52		1/19/52	Campbell & Spain
2036-I-19	Irene	1/11/52		1/19/52	Campbell & Spain
2002-EE-19	Elmer South Half				
2003-EE-19	Elmer North Half				
2079-EE-19	Elmer North End			4/11/52	

FIELD SKETCHES

NO.	DESCRIPTION SKETCHES	DATE OF SKETCH	SITE
SK-224	Site Plan P.O.L. Facil. Add. Dikes & Separ. Walls		
SK-226	Bldg. Coordinates Admin. Comp.		
SK-122	Tentative Area L/O - Elmer		
SK-123	Tentative Bldg. L/O - Elmer		
SK-124	Tentative Bldg. L/O - Fred		
SK-125	Roads & Tentat. Area L/O - Elmer		
SK-701	Recom. Expan. Hor. Control Net		
SK-702	Primary Triangulation Net		
SK-703	"Greek" Atoll Map-Survey Report		

FIELD SKETCHES

NO.	DESCRIPTION		DATE OF SKETCH	SITE	
	WHARVES, PIERS & CAUSEWAYS				
2007-B-15	Boat Channel				Void
2008-EE-15	Deep Water Wharf, Gen. Plan	6/16/52			
2013-EE-15	Deep Water Wharf Plan, Section & Details				This No. Changed to 6138-EE-15
2014-AB-13	Typ. Causeway Sect. & Det.				
2017-EE-15	Deep Water Wharf, Typ. Det.				This No. Changed to 6139-EE-15
2031-FI-13	Plan & Profile, Causeway				Void
2032-FI-13	Plan & Profile #2 Causeway	12/29/51	1/15/52		
2038-FI-13	Causeway Scheme #3	1/17/52	1/29/52	1/29/52	Superseded by 5010-G-15
4031-EE-15	P.O.L. Facilities for Wharf	6/16/52			
6132-EE-15	Deep Water Wharf - Struc. Support Details	6/16/52			
3108-EE-15	Dp. Water Wharf-Elect. L/O	6/16/52			
SK-223	Typ. Section Thru Causeway				PG-3-295, 4/2/52 states this sketch being held up pending further study.

ENGINEERING DRAWINGS

NO.	DESCRIPTION	SUBMITTED FOR APPROVAL	AEC APPROVAL DATE	H&N DATE	REMARKS
	WHARVES, PIERS & CAUSEWAYS (Cont.)				
SK-418	L.C.T. Modification for use on Elmer				
6138-EE-15	L.C.T. Modification for use on Elmer	6/16/52			
6139-EE-15	L.C.T. Modification for use on Elmer	6/16/52			
SK-227	Deep Water Wharf				
2082-FI-13	Road L/O	4/30/52	5/5/52	5/9/52	

NO.	DESCRIPTION	DATE OF SKETCH	SITE
537	Hydrography - Causeway	10/20/51	Alice, Belle, Clara, Flora & Ursula
538	Hydrography - Turning Basin	10/23/51	Bruce
539	High Tide Line	10/26/51	Pearl
540	Hydrography - Causeway	10/26/51	Pearl & Ruby
541	Location of Test Holes	10/30/51	Elmer
542	Centerline Profile	12/2/51	Flora, Gene, Helen & Irene
543	Topography & Hydrography	12/11/51	Flora, Gene, Helen & Irene
544	Hydrography, Proposed Pier	12/13/51	Gene
545	Hydrography (Radial)	1/3/52	Flora
546	Plan and Profile, Marine Ramps	1/5/52	Elmer
547	Marine Facilities	1/24/52	Gene
548	Topography	2/2/52	Gene
549	Topography	2/19/52	Irene
550	Topography	2/27/52	Clara
551	Topography	3/1/52	Leroy

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
552	Hydrography	3/1/52	Leroy
553	Hydrography	3/6/52	Noah
554	Topography	3/10/52	Daisy
555	Topography	3/12/52	Edna
556	Hydrography	3/15/52	Mary & General
557	Camp Site	3/29/52	Gene
558	Topography, North End	3/31/52	Elmer
559	Salt & Fresh Water Mains	4/1/52	Gene
560	Sanitary Sewers	4/2/52	Gene
561	Electrical Power Distribution	4/3/52	Gene
562	Topography	4/12/52	Olive
563	Profile, LCT & Ramp	4/12/52	Elmer
564	Topography	4/19/52	Pearl
565	Topography	4/23/52	Nancy
566	Topography	5/1/52	Bruce

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
567	General Layout (1" equals 400')	5/24/52	Elmer
568	Tracing USS Bowditch Triangulation	6/4/52	General
569	Precise Control	6/52	Flora, Gene, Helen & Irene
570	Anchorage Limits	6/30/52	General
571	Topography	7/12/52	Ruby
572	Proposed Location of Whses.	8/5/52	Elmer
573	Anchor Locations - Gene	9/4/52	Gene
574	Proposed Fill	11/22/52	Ruby
575	Hydrography	11/25/52	Flora
576	General Layout	11/28/52	Ruby to Ursula
577	Location Data	12/10/52	Ruby, Sally, Wilma, Vera, Fred, Glenn & Keith
		SHEET	
578	As-Built Location of Structures & Facilities	A	Elmer
579	As-Built Location of Structures & Facilities	1	Elmer
580	As-Built Location of Structures & Facilities	2	Elmer

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
581	As-Built Location of Structures & Facilities	3	Elmer
582	As-Built Location of Structures & Facilities	4	Elmer
583	As-Built Location of Structures & Facilities	5	Elmer
584	As-Built Location of Structures & Facilities	6	Elmer
585	As-Built Location of Structures & Facilities	7	Elmer
[illegible]	As-Built Location of Structures & Facilities	8	Elmer
587	As-Built Location of Structures & Facilities	9	Elmer
588	As-Built Location of Structures & Facilities	10	Elmer
589	Proposed Warehouse Layout		Elmer

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
681	Power Panel, Officer's Club, Site "B"	11/19/51	
682	Work Slab Plan & Section Heavy Equipment, Site "B"	11/28/51	
683	Paint Shop Location "B"	11/30/51	
684	Location of Test Area - Sand Samples Sally & Tilda "D"	12/11/51	
685	Reefer Alarm Signal, Site "B"	12/12/51	
686	Cement Handling Platform, Site "B"	12/26/51	
687	Part Profile LCT, Site "B"	1/5/52	
688	LST Landing, Site "B"	1/7/52	
689	Storage Bldg., Coast Guard, Site "A"	1/15/52	
690	Coral Head Photo Tower, Cab Details, Site "Mack"	1/19/52	
691	Piping Details #2 Stabilizer Installation, Site "B"	1/21/52	
692	Plot Plan Fence for Warehouse Classification Yard, Site "B"	1/24/52	
693	By-Pass Piping POL Loc. Elmer, Site "B"	1/22/52	

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
694	Erection 75' Tower	1/29/52	
695	Latrine & Wash Rack at L-13 Maint. Bldg., Fred	2/19/52	
696	Portable Field Galley	3/1/52	
697	Typical Section Thru Causeway - Helen-Irene - Flora-Gene	3/5/52	
698	Proposed POL Revisions - Site Fred	3/5/52	
699	Alteration to Landing Stage - Coral Head Photo Tower	3/6/52	
700	Alteration to Que House - Elmer	3/8/52	
701	Addition to PX - Fred	3/13/52	
702	Signal Equip't. Repair & Storage Bldg. #134 - Fred	3/18/52	
703	Addition to B.O. - Bldg. 89 - Fred	3/22/52	
704	Insulating & Ventilating Toilet Room Task Force Headquarters - Bldg. #221 - Elmer	3/20/52	
705	Addition to Mess Hall - Fred	3/19/52	
706	Electrical - Addition to Mess Hall - Fred	3/22/52	

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
707	Plumbing & Heating Addition to Mess Hall - Fred	3/22/52	
708	Warehouse - Scrounge Materials - Elmer	3/31/52	
709	Additional Gen. Fdn. Plan & Details - Bldg. #G-1 - Gene	3/31/52	
710	Alterations to Repair Shop - Elmer	4/3/52	
711	Mono-rail Bldg. #56 - Fred	4/3/52	
712	Grounded PGM Eniwetok Lagoon - Fred	4/8/52	
713	Water Distillation Plant - Bldg. #G-5 (arch.) - Gene	4/15/52	
714	Water Distillation Plant - Bldg. #G-5 (elec.) - Gene	4/15/52	
715	Mess Hall - Soil, Waste Pipe - 40 - 41 - 42 & 38 - Gene	4/22/52	
716	Bldg. - Whse. - Arch. & Elec. Drawing - Gene	4/18/52	
717	Concrete Slab for DUKW Tent Bldg. #350 - Elmer	4/18/52	

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
718	Heavy Equip. Repair Area Slab, Bldg. #421 - Elmer	4/18/52	
719	PX & PO & Refreshment Parlor - Arch., Bldg. #44 - Gene	4/22/52	
720	PX & PO & Refreshment Parlor - Mech., Bldg. #44 - Gene	4/22/52	
721	Bldg. #96 - Carpenter Shop - Gene	4/22/52	
722	Bldg. #45 - Infirmary - Arch. & Elec. - Gene	4/22/52	
723	Bldg. #94 Rec. Hall - Arch. & Elec. - Gene	4/22/52	
724	Bldgs. #6 & #97 - Heavy Equip. Repair Shop, Arch. & Elec. - Gene	4/24/52	
725	Bldg. #38 - Open Air Theater, Arch. & Elec. - Gene	4/24/52	
726	Bldg. #95 - Barber Shop - Gene	4/24/52	
727	Bldgs. (Const. Office) & 2A (Surveyors Offices) Arch. & Elec. - Gene	4/26/52	
728	Piling Layout - Station #1 - Flora	4/28/52	
729	POL Buoys - Fred	5/1/52	

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
730	Bldg. #115 - Fire Station, Arch. & Elec. - Gene	5/2/52	
731	Bldgs. #36, 37, 82 & 83, 100-man Latrines, Arch. - Gene	5/3/52	
732	Bldgs. #36, 37, 82 & 83, Mech., 100-man Latrines - Gene	5/3/52	
733	Bldgs. #36, 37, 82 & 83, Elec., 100-man Latrines - Gene 4 & 8-man Tents	5/3/52	
734	B-50 Hanger Framing ("As-Built") Plans 4 Sheets - Fred	5/10/52	
735	Typical Targets	5/13/52	
736	Distillation Plant Revisions - Elmer	5/13/52	
737	Cross Sections Warehouse & Library ("As-Built") - Fred	5/15/52	
738	Raft - All Sites	5/21/52	
739	Main Cargo Pier - Fred	5/22/52	
740	Proposed Lighting Service, Locke Field - 250 - Elmer	5/23/52	
741	Navagation Aid	5/24/52	

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
742	Tennis Court - Elmer	5/27/52	
743	Airstrip Extension - Alice	5/27/52	
744	Fire Protection, Salt Water Lines, Bldg. #360 - Elmer	5/27/52	
745	NRLK Shed - Irene	5/31/52	
746	Bldg. #409, Gutter - Elmer	5/31/52	
747	Coral Head Photo Tower - "Mack"	6/3/52	
748	Portable Field Galley #2 - All Sites	6/5/52	
749	Rack - Elmer	6/6/52	
750	Dinghy - Elmer	6/6/52	
751	Laundry Addition, Bldg. #302 - Elmer	6/13/52	
752	Mess Hall Area Drainage - Elmer	6/16/52	
753	Table, Stations #800, 802, 805 & 840	6/16/52	
754	Shelter for Badger Units - Elmer	6/24/52	
755	Sub-Station #23, Bldg. #194 - Elmer	6/24/52	

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
756	Alterations to Reservoir Roof, Bldg. #166 - Elmer	6/26/52	
757	Electrical Distribution - Elmer	6/26/52	
758	Ammonia Tank for Ozalid Mach. Bldg. #208 - Elmer	6/26/52	
759	One Line - Primary Distribution - Elmer	6/26/52	
760	Proposed Machine Shop - Elmer	6/28/52	
761	Plan - Camp Layout - Yvonne	6/28/52	
762	Parry Island Development Plan - Elmer	6/30/52	
763	Cable Rack - Fred	6/30/52	
764	Modification to Warehouse, Bldg. #313 - Elmer	7/5/52	
765	Tuning Box Shelter, Bldg. #4A - Fred	7/9/52	
766	Standpipe Water Level Guage, Bldg. #349 - Elmer	7/9/52	
767	Guard Shack - Elmer	7/15/52	
768	3 Ø Power, Bldg. #118 - Fred	7/17/52	

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
769	Shelter - Bldg. #347 - Elmer	7/19/52	
770	Hot Locker "A" and "B" Single and Double - Elmer	7/23/52	
771	110-Volt Service Extension, Skeet Range - Fred	7/28/52	
772	Signs & Bulletin Boards - Elmer	7/30/52	
773	Bldg. #340-H (CMR) - Elmer	7/30/52	
774	Salt Water Strainer for Bldgs. #330 & 344 - Elmer	7/30/52	
775	Additional Boiler Capacity - Distillation Plant, Bldg. #56 - Fred	8/4/52	
776	Electric Power Distribution - Gene	8/7/52	
777	Distribution Pole Guying, CMR Area - Elmer	8/11/52	
778	Station #671 - Gene	8/13/52	
779	Area Lighting, Bldg. #344 - Elmer	8/16/52	
780	Modification of Bldg. #212-A - Elmer	8/14/52	
781	Alterations, Bldg. #211 - Elmer	8/14/52	

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
782	Alteration to Room A-16, Bldg. #209 - Elmer	8/15/52	
783	Details of Retaining Wall and Pedestals, Station #202 - Irene	8/19/52	
784	Lighting Plan, Station #202 - Irene	8/20/52	
785	Chic Sales House, Station #204	8/21/52	
786	Alterations to Personnel Office, Bldg. #176 - Elmer	4/5/52	
787	Auxiliary Compressor Shed - Arch. - Bldg. #344 - Elmer	8/27/52	
788	Auxiliary Compressor Shed - Elect. - Bldg. #344 - Elmer	10/11/52	
789	Auxiliary Compressor Shed - Mech. - Bldg. #344 - Elmer	8/25/52	
790	Proposed Door Revision, Station #804 - Bruce	8/26/52	
791	Electrical & Architectural Revisions, Infirmary - Elmer	8/28/52	
792	Modification to Barracks, Bldg. #119 - Elmer	9/24/52	

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
793	Pit Latrine - Flora (NOTE: This sketch is Job 640 dwg. 2f-994 and was given number for purposes of identification)	8/30/52	
794	Anti-Moss Screens, Bldg. #347 - Elmer	9/1/52	
795	General Plot Plan (North Portion) - Elmer	9/8/52	
796	General Plot Plan (Center Portion) - Elmer	9/8/52	
797	General Plot Plan (South Portion) - Elmer	9/8/52	
798	Synchronous Motor Wiring Diagram, Bldg. #344 - Elmer	8/30/52	
799	Panel Elevations, Bldg. #344 - Elmer	9/13/52	
800	Security Fence, F W Storage Reservoir - Elmer	9/15/52	
801	Increased Secondary Service Capacity, Bldg. #155 & 153 - Fred	9/17/52	
802	Hood & Exhaust Fan at Officer's Mess - Fred	9/20/52	
803	Pedestal for Movie Projector, Bldg #200 - Elmer	9/24/52	
804	Projection Booth Layout, Bldg. #200 - Elmer	9/24/52	

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
805	Power Revisions, Bldg. #64 - Fred	9/27/52	
806	Projection Booth Alterations - Elmer	9/29/52	
807	Shelters, Stations #331.08 - 331.09 - Flora	9/29/52	
808	Plans & Details, Stations #331.08 - 331.09 - Flora	9/29/52	
809	Area Floodlighting, Cargo Unloading - Elmer	10/2/52	
810	Camp Site - As-Built - Yvonne	10/3/52	
811	Detail of Wireguard & Warning Signal, Station #301 & 805 - Elmer	10/6/52	
812	Revisions to Portable Field Galley - All Sites	10/6/52	
813	20-ft Tower on Station #1 - Flora	10/8/52	
814	Operation Easy, Bldg. #72, 135, 507, 508 Fred	10/14/52	
815	Station #603 - Electrical - Mary	10/14/52	
816	Station #1000.09 - Electrical - Mary	10/14/52	

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
817	Building Guy Details, Bldg. #341 - Elmer	10/16/52	
818	Electrical Plan As-Built, Station #1001.02 - Ursula	10/17/52	
819	Dehumid. & Elect., Station #1300.01 - Janet	10/17/52	
820	Elect. Layout, Station #1000.07 - Kate	10/20/52	
821	Elect. Layout, Station #800, 802 - Janet - Tilda	10/23/52	
822	Form Jacks for Station #602 - Kate	10/24/52	
823	Alterations in Telephone Exchange Room, Bldg. #208	10/25/52	
824	Yvonne Camp - Electrical Distribution	10/28/52	
825	Latrine Mess Hall - Elmer	11/6/52	
826	Bldg. #347, Pump Shelter - Elmer	11/7/52	
827	Telephone Trunking - All Islands (2 Sheets)	11/8/52	
828	Shelter – Speaker Assembly, Theatre - Elmer	11/17/52	

FIELD SKETCHES

NO.	DESCRIPTION	DATE OF SKETCH	SITE
829	Latrine, Warehouse Bldg. #501 - Elmer	11/18/52	
830	Power Distribution & Telephone - Elmer	11/19/52	
831	Flashing Attach., Whse. 501, 502 & 503 - Elmer	11/28/52	
832	Oil Purifier, Bldg. #56 - Fred	12/3/52	
833	Electric Layout - Warehouses 501 - 502 - Elmer	12/30/52	
834	Modification, Non-Multiple to Multiple, Kellogg Masterbuilt, Jr., - Elmer	1/6/53	

HOLMES & NARVER, INC.
ENGINEERS - CONSTRUCTORS

SUMMARY - COST REPORT - WORK IN PROGRESS

As of December 31, 1952

Contract AT-(29-2)-20

Cont. Sect.	Description	Total F/Y 1952	Total F/Y 1953	Total	Revised Total Estimate	Official Estimate Date 11-3-52 Amended #10
A.	CONSTRUCTION & ENGINEERING - JOB I					
	AEC Permanent - Project No. 2039:					
1.	Elmer - Bldg. No. 338 (Title I & II Only)	13,035.78	4,806.68	17,842.46	26,395.00	
2.	" - " " 339	747,887.68	138,396.67	886,284.35	886,284.00	889,685.00
3.	" - " " 340	46,027.24	35,151.65	81,178.89	81,179.00	78,080.00
4.	" - " " 341	172,986.44	20,021.84	193,008.28	193,008.00	243,025.00
6.	" - " " 343		75.31	75.31	75.00	
7.	" - " " 344	438,327.07	102,751.35	541,078.42	541,078.00	473,930.00
8.	" - " " 345	12,184.61	340.47	12,525.08	12,525.00	15,165.00
9.	" - " " 346 (Title I Only)	1,688.81	1,595.12	3,283.93	Incl. in Item #1	
15.	" - Deep Water Dock (Title I & II Only)	2,744.31	1,817.16	4,561.47	" " " "	
29.	" - Bldg. No. 347	116,347.64	10,170.22	126,517.86	126,518.00	139,560.00
30.	" - " " 348 (Title I & II Only)	386.91	(247.13)	139.78	Incl. in Item #1	
31.	" - Modifications to Bldgs. 329 & 330	70,373.04	20,648.94	91,021.98	91,022.00	80,000.00
35.	All Sites - Construction Change Orders	100,031.94	(1,031.64)	99,000.30	99,000.00	136,825.00
37.	Elmer - JTF Recreation Bldg. (Title I & II Only)	482.51	84.98	567.49	Incl. in Item #1	
	Total Project No. 2039	1,722,503.98	334,581.62	2,057,085.60	2,057,084.00	2,056,270.00
	AEC Permanent - Project No. 3028:					
5.	Elmer - Bldg. No. 342	53,096.74	37,111.88	90,208.62	90,209.00	85,890.00
12.	" - Pave CMR Areas	47,863.72	26,145.40	74,009.12	74,009.00	66,000.00
13.	" - Protective Fencing & Security Ltg. -CMR	17,156.15	10,255.36	27,411.51	27,412.00	34,115.00
14.	" - Utility Connections & Extensions	207,114.73	162,251.18	369,365.91	369,366.00	224,405.00
32.	" - Modifications to Building 222	13,644.18	1,190.34	14,834.52	14,835.00	15,070.00
33.	" - Bldg. No. 349	29,442.85	(496.44)	28,946.41	28,946.00	30,155.00
34.	" - " " 194	42,434.19	49,971.53	92,405.72	92,406.00	64,185.00
35.	All Sites - Construction Change Orders	8,468.28	266,431.73	274,900.01	274,900.00	131,635.00
38.	Elmer - Warehouse Construction - (3 Bldgs.)	4,287.22	231,100.03	235,387.25	259,690.00	259,690.00
40.	Equip. Not Included in Construction Projects	62,485.27	40,510.28	102,995.55	102,996.00	100,000.00
90.	Long Range Improvement		15,542.90	15,542.90	15,543.00	
	Planning and Reconnaissance		9,381.09	9,381.09	9,381.00	
	Total Project No. 3028	485,993.33	849,395.28	1,335,388.61	1,359,693.00	1,011,145.00
	Total AEC Permanent	2,208,497.31	1,183,976.90	3,392,474.21	3,416,777.00	3,067,415.00

HOLMES & NARVER, INC.
ENGINEERS - CONSTRUCTORS

SUMMARY - COST REPORT - WORK IN PROGRESS

As of December 31, 1952

Contract AT-(29-2)-20

Cont. Sect.	Description	Total F/Y 1952	Total F/Y 1953	Total	Revised Total Estimate	Official Estimate Date 11-3-52 Amended #10
A.	CONSTRUCTION & ENGINEERING - JOB I (Continued)					
	AEC Expendable:					
10.	Elmer - Protection Earth Berms (Deleted)				Deleted	
11.	" - Blast Protection Measures for Bldgs.	1,161.17	89,686.57	90,847.74	90,848.00	63,000.00
16.	Fred - " " -Buildings	1,161.17	43,856.36	45,017.53	45,018.00	63,000.00
17.	David - " " Measures for Bldgs.				Deleted	
18.	Coral Head - Landing Facilities	668.54	28.17	696.71	697.00	8,000.00
19.	Yvonne - Camp Facilities	161,732.48	64,879.98	226,612.46	226,612.00	192,000.00
20.	Gene " "	635,238.22	189,784.12	825,022.34	825,022.00	800,000.00
21.	" - Airstrip	69,204.96	(13,498.93)	55,706.03	55,706.00	70,000.00
22.	" - Channel - Turning Basin & Piers	205,750.09	(16,862.38)	188,887.71	188,888.00	300,000.00
23.	Flora - Tower				Incl. in Item #28	
24.	Buffalo Bridge Crane	38,575.22	(18,057.40)	20,517.82	20,518.00	40,000.00
25.	Flora to Irene - Causeway & Coax Cover	268,873.00	41,414.81	310,287.81	} 829,799.00	1,873,125.00
25.	Construction Equipment	519,511.19		519,511.19		
26.	Flora to Janet - Submarine Cables	2,180.26	273,629.61	275,809.87	275,810.00	315,395.00
27.	Elmer - Photo Tower (75')				Incl. in Item #28	
28.	All Sites -Scientific Structures	563,252.55	3,099,743.62	3,662,996.17	3,662,996.00	2,919,575.00
35.	" " - Construction Change Orders	12,759.60	18,817.29	31,576.89	31,577.00	10,085.00
36.	David - Remove & Store Buildings		Included in Job V E-3			
39.	All Sites - Two Portable Distillation Units				20,000.00	20,000.00
40.	Equipment Not Included in Constr. Projects	130,488.81	90,156.01	220,644.82	1,950,000.00	150,000.00
43.	Temporary Camp - Rojoa		428,961.68	9,311.84	412,700.00	
51.	Temporary Camp - Tare		428,961.68	428,961.68	1,839,530.00	
52.	Airstrip - Tare		65,470.28	65,470.28	910,300.00	
53.	Pier - Tare		56,019.40	56,019.40	122,175.00	
54.	Causeway - Tare				807,585.00	
55.	Surveys - Hydrography and Topography - Tare		21,809.10	21,809.10		
56.	Surveys - Triangulation - Tare		3,124.01	3,124.01		
	Total AEC Expendable	2,610,557.26	4,448,274.14	7,058,831.40	12,315,781.00	6,824,180.00
	TOTAL JOB I - CONSTRUCTION & ENGINEERING	4,819,054.57	5,632,251.04	10,451,305.61	15,732,558.00	9,891,595.00

HOLMES & NARVER, INC.
ENGINEERS - CONSTRUCTORS

SUMMARY - COST REPORT - WORK IN PROGRESS

As of December 31, 1952

Sheet 3 of 4
Contract AT-(29-2)-20

Cont. Sect.	Description	F/Y 1952	F/Y 1953	Total	Revised Total Estimate	Official Estimate Date 11-3-52 Amended # 10
B.	TOTAL CAMP OPERATION & MANAGEMENT	2,498,309.83	3,233,648.97	5,731,958.80		
	Camp Operation & Management - Job II					
1.	Support of Personnel Other than H&N	242,132.79	1,826,276.54	2,068,409.33	2,268,409.00	2,921,900.00
	Total Costs - Job II	242,132.79	1,826,276.54	2,068,409.33	2,268,409.00	2,921,900.00
C.	MAINTENANCE SERVICES - JOB III	1,639,286.84	1,446,684.16	3,085,971.00	4,276,000.00	4,276,000.00
D.	SUPPORT SERVICES - JOB IV					
1.	Lay Coaxial Cable	7,118.99	70,421.75	77,540.74	77,541.00	32,790.00
2.	Install CMR Equipment	187,852.26	151,689.44	339,541.70	339,542.00	226,900.00
3.	Labor Pool & Instrumentation	123,897.20	349,321.17	473,218.37	473,218.00	1,250,000.00
	Total Costs - Job IV	318,868.45	571,432.36	890,300.81	890,301.00	1,509,690.00
E.	ROLL-UP SERVICES - JOB V					
1.	Clean Up & Store Construction Equipment		643.55	643.55		319,000.00
2.	" " " " Marine Equipment		14,683.54	14,683.54		56,000.00
3.	Warehouse Construction Materials	55,933.90	77,020.59	132,954.49		332,000.00
4	Clean Up Generators - Stills - Pumps		10,313.27	10,313.27		60,000.00
5.	General Clean Up					126,000.00
6.	Protective Maintenance - Bldgs. & Structures		41,829.99	41,829.99		152,000.00
7.	Clean Up & Store Camp Equipment		23,409.62	23,409.62		150,000.00
	Total Costs - Job V	55,933.90	167,900.56	223,834.46	423,834.00	1,195,000.00
	TOTAL DISTRIBUTED COSTS - JOBS I, II, III, IV & V	7,075,276.55	9,644,544.66	16,719,821.21	23,591,102.00	19,794,185.00

HOLMES & NARVER, INC.
ENGINEERS - CONSTRUCTORS

SUMMARY - COST REPORT - WORK IN PROGRESS

As of December 31, 1952

Sheet 4 of 4
Contract AT-(29-2)-20

	Total F/Y 1952	Total F/Y 1953	Total	Revised Total Estimate	Official Estimate Date 11-3-52 Amended # 10
OTHER COSTS:					
Undistributed and Deferred Labor, Material and Indirect Costs			314,961.13		
Inventories as of December 31, 1952:					
Construction			1,850,779.84		
Stores			1,808,698.59		
Less: Inventory Received from Contract AT-(29-1)-507			3,100,824.46		
Total			558,653.97		
Material Recovered from Salvage and Roll-Up			⟨ 121,710.10⟩		
Total Other Costs		751,905.00	751,905.00		
GRAND TOTAL	7,075,276.55	10,396,449.66	17,471,726.21		
Equipment furnished from Prior Operations					
Job I - Project 2039			12,834.00		
" I - Project 3028			101,950.00		
" I - Expendable			225,612.00		
Total			340,396.00		
Total Reimbursable Costs					
Job I - Expendable Construction	⟨17,146.93⟩	⟨948,192.55⟩	⟨965,339.48⟩		
" III - Maintenance Services	⟨ 1,632.94⟩	⟨ 11,325.00⟩	⟨ 12,957.94⟩		
" IV - Support Services	⟨78,465.87⟩	⟨118,812.51⟩	⟨197,278.38⟩		
Total	⟨97,245.74⟩	⟨1,078,330.06⟩	⟨1,175,575.80⟩		

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...le Construction			Equipment					
Other Costs	Credits	Total Expendable	Payroll	Material	Other Costs	Credits	Total Equipment	Grand Total
			36,152.00	3,036,435.00	517,847.00	1,391,324.00	2,199,110.00	7,277,554.00
2,590,874.00		3,568,816.00			323,641.00		323,641.00	7,176,617.00
399,165.00		674,096.00						674,096.00
746,149.00		1,173,922.00						1,173,922.00
10,005.00		15,111.00						15,111.00
111,938.00		171,140.00						171,140.00
24,182.00		33,549.00						33,549.00
1,358.00		2,198.00						2,198.00
107,266.00		161,187.00						161,187.00
524.00		832.00						832.00
3,991,461.00		5,800,851.00			323,641.00		323,641.00	9,408,652.00
98,111.00		150,000.00						150,000.00
1,618.00		2,779.00						2,779.00
11,342.00		20,538.00						20,538.00
12,102.00		17,572.00						17,572.00
87,102.00		120,846.00						120,846.00
3,459.00		4,924.00						4,924.00
35,593.00		51,245.00						51,245.00
234,499.00		342,810.00						342,810.00
45,582.00		64,672.00						64,672.00
10,221.00		16,426.00						16,426.00
5,573.00		8,391.00						8,391.00
11,888.00		17,889.00						17,889.00
15,238.00		21,816.00						21,816.00
13,498.00		14,710.00						14,710.00
6,997.00		11,470.00						11,470.00
92,523.00		102,004.00						102,004.00
28,362.00		43,985.00						43,985.00
713,708.00		1,012,077.00						1,012,077.00
								5,318.00
2,064.00		3,179.00						3,179.00
								22,080.00
22,080.00		22,080.00						30,577.00
24,144.00		25,259.00						
737,852.00		1,037,336.00						1,042,654.00

CAPITAL COSTS

As of December 31, 19
(CUMULATIVE)

Description	Code Number	Permanent Construction: Payroll	Material	Other Costs	Credits	Total Permanent	Exper: Payroll	Material
A. E. C. CONSTRUCTION:								
Completed Plant		995,969.00	3,331,268.00	4,434,207.00	3,683,000.00	5,078,444.00		
Construction Work In Progress	TU-11	614,549.00	591,059.00	2,078,552.00		3,284,160.00	563,226.00	414,716.00
	TU-4						111,469.00	163,462.00
	299.6						226,669.00	201,104.00
	3.8						4,214.00	892.00
	399.6						35,154.00	24,048.00
	5.2						6,970.00	2,397.00
	9.1						693.00	147.00
	10.1						20,798.00	33,123.00
	10.2						267.00	41.00
Total AEC Construction W. I. P.		614,549.00	591,059.00				969,460.00	839,930.00
REIMBURSABLE CONSTRUCTION:								
D. O. D:	399.6						30,811.00	21,078.00
	4.4						831.00	330.00
	499.6						3,726.00	5,470.00
	5.1						5,182.00	288.00
	5.2						25,108.00	8,636.00
	5.3						1,397.00	68.00
	5.4a						13,924.00	1,728.00
	6.1						74,647.00	33,664.00
	6.2						15,255.00	3,835.00
	6.3						3,634.00	2,571.00
	6.5						2,010.00	808.00
	6.9						4,938.00	1,063.00
	8.1						5,866.00	712.00
	8.3						1,122.00	90.00
	8.4						2,819.00	1,654.00
	899.6						14,853.00	(5,372.00)
	11.2						11,808.00	3,815.00
Total D. O. D.							217,931.00	80,438.00
OTHER:								
Additions To "Que" House	ECO-261	2,236.00	571.00	2,511.00		5,318.00		
Replace Navigational Beacons	ECO-268						933.00	182.00
Buffalo Bridge Crane-Contract Item #24								
Total Other		2,236.00	571.00	2,511.00		5,318.00	933.00	182.00
Total Reimbursable Construction		2,236.00	571.00	2,511.00		5,318.00	218,864.00	80,620.00

HOLMES & NARVER, INC.
ENGINEERS - CONSTRUCTORS

JOINT TASK FORCE 132 COST REPORT

As of December 31, 1952
(CUMULATIVE)

Contract AT-(29-2)-20

Description	Code Number	Operating Costs			Consumed in Operation	Total Operating Costs
		Payroll	Material	Other Costs		
AEC OPERATIONS:						
CAMP OPERATIONS & MANAGEMENT						
Support of Personnel Other Than H&N				2,068,409.00		2,068,409.00
MAINTENANCE:						
AT-(29-2)-20		766,856.00	405,169.00	1,900,988.00		3,073,013.00
AT-(29-1)-507		187,565.00	87,894.00	707,484.00		982,943.00
Total Maintenance		954,421.00	493,063.00	2,608,472.00		4,055,956.00
SUPPORT SERVICES:						
	1.3	49.00		170.00		219.00
	2.1a	18,006.00	5,552.00	47,492.00		71,050.00
	2.1b	5,184.00	799.00	11,863.00		17,846.00
	2.4	2,090.00	100.00	6,408.00		8,598.00
	3.1	1,856.00	107.00	4,274.00		6,237.00
	3.1.1	270.00		543.00		813.00
	3.3	358.00	55.00	717.00		1,130.00
	3.3 & 3.4	2,770.00	115.00	5,879.00		8,764.00
	9.1	50.00		101.00		151.00
	10.1	3,400.00	1,002.00	7,509.00		11,911.00
	10.2	183.00		325.00		508.00
	TU-1	1,128.00	9.00	2,297.00		3,434.00
	TU-2	4,076.00	57.00	9,038.00		13,171.00
	TU-3	5,409.00	713.00	11,884.00		18,006.00
	TU-4	6,557.00	237.00	15,008.00		21,802.00
	TU-6	10.00		18.00		28.00
	TU-7	322.00	18.00	617.00		957.00
	TU-8	41.00		94.00		135.00
	TU-9	485.00	41.00	985.00		1,511.00
	TU-10	562.00	51.00	1,295.00		1,908.00
	TU-11	4,634.00		12,799.00		17,433.00
	TU-1 thru 10	24.00		53.00		77.00
	TG-132.1	135,181.00	22,081.00	308,202.00		465,464.00
Total AEC Support Services		192,645.00	30,937.00	447,571.00		671,153.00
ROLL-UP SERVICES		60,519.00	2,471.00	160,844.00		223,834.00
Less: Material Recovered From Salvage			121,710.00			121,710.00
Net Roll-Up Services		60,519.00	⟨119,239.00⟩	160,844.00		102,124.00
Depreciation					2,318,889.00	2,318,889.00
Total AEC Operations		1,207,585.00	404,761.00	5,285,296.00	2,318,889.00	9,216,531.00

HOLMES & NARVER, INC.
ENGINEERS - CONSTRUCTORS

JOINT TASK FORCE 132 COST REPORT

As of December 31, 1952
(CUMULATIVE)

Sheet 3 of 3
Contract AT-(29-2)-20

Description	Code Number	Payroll	Material	Other Costs	Consumed in Operation	Total Operating Costs
REIMBURSABLE OPERATIONS:						
D. O. D.	4.1	2,351.00	299.00	6,124.00		8,774.00
	4.4	576.00		1,492.00		2,068.00
	5.1	185.00		465.00		650.00
	5.2	1,042.00	218.00	2,305.00		3,565.00
	5.3	759.00		1,585.00		2,344.00
	5.4a	1,096.00		2,345.00		3,441.00
	5.4b	2,268.00	169.00	4,954.00		7,391.00
	6.1	15,812.00	742.00	32,398.00		48,952.00
	6.2	1,053.00		2,149.00		3,202.00
	6.3	195.00		479.00		674.00
	6.4a	142.00		301.00		443.00
	6.4b	653.00		1,398.00		2,051.00
	6.5	340.00	10.00	689.00		1,039.00
	6.7b	2,225.00		4,232.00		6,457.00
	6.9	131.00	12.00	272.00		415.00
	6.13	868.00		1,697.00		2,565.00
	8.1	8,004.00	216.00	17,481.00		25,701.00
	8.2	130.00		281.00		411.00
	8.3	480.00	59.00	1,011.00		1,550.00
	8.4	40.00		72.00		112.00
	8.5	318.00		769.00		1,087.00
	9.3	461.00	732.00	1,452.00		2,645.00
	11.1	1,239.00	126.00	2,618.00		3,983.00
	11.2	2,406.00	31.00	6,071.00		8,508.00
	11.3	18,097.00	4,005.00	55,770.00		77,872.00
	11.4	904.00	269.00	2,074.00		3,247.00
Total D. O. D.		61,775.00	6,888.00	150,484.00		219,147.00
Other:						
Engine Tune-Up AVR 77479	EMO-142	360.00	43.00	1,089.00		1,492.00
Beaching Two Navy L. C. M.	EMO-143	33.00		108.00		141.00
Rehabilitate AVR 20987	MWO-155	3,218.00	900.00	7,207.00		11,325.00
Total Other		3,611.00	943.00	8,404.00		12,958.00
Total Reimbursable Operations		65,386.00	7,831.00	158,888.00		232,105.00
Total Reimbursable Construction (From Page 1)		221,100.00	81,191.00	740,363.00		1,042,654.00
Total Reimbursable Costs		286,486.00	89,022.00	899,251.00		1,274,759.00
Inter-Office Transfers		⟨229,187.00⟩	⟨101,611.00⟩	⟨844,776.00⟩		⟨1,175,574.00⟩
Net Reimbursable Costs		57,299.00	⟨12,589.00⟩	54,475.00		99,185.00

UNITED STATES ATOMIC ENERGY COMMISSION
SANTA FE OPERATIONS

HOLMES & NARVER, INC.

Contract No. AT-(29-2)-20

BALANCE SHEET

December 31, 1952

Special Rereview
Final Determination

ASSETS

Cash in Banks and on Hand			
AEC Advances - General Fund		2,185,163.22	
Overseas Revolving Fund		36,458.67	
Payroll Account		10,000.00	
Petty Cash Funds		71,341.33	
Trustee for Travel Fund		222,317.61	2,525,280.83
Deposits and Trust Funds			
Deposits		592.09	
Prepayments		2,000.00	2,592.09
Accounts Receivable			
Total		107,831.97	
Less: Reserve for Bad Debts		8,586.54	99,245.43
Reimbursable Work - Other Federal Agencies			28,196.00
***Inventories - Current Use and Standby**			1,808,698.59
Plant			
Completed Plant	12,171,580.70		
Less: Reserve for Depreciation	5,008,810.27	7,162,770.43	
Construction Work In Progress			
Additions:			
****Construction Inventories**		1,850,779.84	
All Others		3,329,988.94	12,343,539.21
TOTAL ASSETS			16,807,552.15

LIABILITIES AND AEC EQUITY

Liabilities			
Accounts Payable:			
Vendors	114,834.74		
D.O.D.	420,011.85	534,846.59	
Accrued Liabilities		841,325.82	
Funds held for others		224,553.97	1,600,726.38
AEC Equity			15,206,825.77
TOTAL LIABILITIES AND AEC EQUITY			16,807,552.15

*Includes $300,000 of Long Supply (Approximately)
**Includes $800,000 " " "

STATUS VERIFIED UNCLASSIFIED
OCT 6