

1. ACTIVITY (Name and Location)

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

2. PROJECT TITLE

ELECTRONICS/COMMUNICATIONS FIELD MAINTENANCE SHOP FY-89

P. NO.

P-679

| COG. SYMBOL AND FED. STOCK NO. OR OTHER SOURCE | ITEM/EQUIPMENT DESCRIPTION | QUAN- TITY | UNIT OF ISSUE | UNIT PRICE | TOTAL COST |
|--|--|---------------|---------------------|---------------|---------------|
| 1. Built In Eqpt to be MCON Funded: | *Air Conditioning, Heating & ventilating systems | | sys | | |
| | *Plumbing systems and Steam system (interior) | | sys | | |
| | *Compressed Air System | | sys | | |
| | *Sprinkler System | | sys | | |
| | *Telephone, Fire Alarm & intercom systems | | sys | | |
| | *Drinking water coolers | | ea | | |
| | *Lockers, wall mounted | | ea | | |
| | *Locker room benches, 6' long | | ea | | |
| | *Pass window, 4'W w/counter and "B" label roll down shutter (w/fusible link) | | ea | | |
| | *Exhaust System, under/over ground sys | | sys | | |
| | *Deluge Shower, w/eye wash CW | | ea | | |
| | *Acid resistant sink w/bench CW | | ea | | |
| | *Exhaust hood (over) w/frac- tional HP, 120V, 1 Phase fan | | ea | | |
| | *Grounding system, electronic 60/400 cycle elect. system w/ AC/DC power bus bar and transformer | | sys | | |
| | *Bulletin Board, wall mounted | | ea | | |
| | *Counter, dispatchers | | ea | | |
| | *Chalkboards, wall mounted | | ea | | |
| | *Blinds, venetian, light tight and window screens | | pr | | |

* Air conditioning and heating
 Ventilation systems
 * Plumbing systems and drains
 * Electrical systems
 * Sprinkler system
 * Fire alarm system
 * Drinking water cooler
 * Bookcase, wall mounted
 * Bookcase, room divider, 2' long
 * Panel window, 8'W x 6' high
 * 2' x 8' label rack
 * Antenna (VHF radio link)
 * Exhaust system, anti-over
 * Heating stove, 1/2 hp
 * Cold resistance sink system
 * Exhaust hood (over) (VAC)
 * Exhaust fan, 1/2 hp
 * Grounding system - electronic
 * 120V power bus
 * 240V power bus
 * Antenna tower, wall mounted
 * 120V power bus
 * 240V power bus
 * Antenna tower, wall mounted
 * 120V power bus
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|--|--|---------------|---------------------|---------------|---------------|
| 1. Built In (cont'd) | *Used Oil System | | sys | | |
| | *Vehicle Fueling System | | sys | | |
| | *Engine starting outlets; 12, 24 and 36 Volts | | ea | | |
| | *Tire changer, elec-air Bish- man Co., 150 PSI, compair | | ea | | |
| | *Air hose reel, 150 PSI, HD w/hose stop (ceiling, wall or pedestal mounted), provide water separator | | ea | | |
| | *Elec extension cord reel, HD w/cord stop (ceiling, wall or pedestal mounted) 120V, 1Phase | | ea | | |
| | *Water hose reel, HD w/hose control valve & hose stop (ceiling, wall/pedestal mtd) CW | | ea | | |
| | *Hose reels assembly, w/control valves, HD, overhead, automatic hose stops & meters, 150 PSI comp air, 1 chassis lube, 1 hyd. oil, provide water separator | | ea | | |
| | *Exhaust system, overhead, fractional HP, 220V, 3-phase | | ea | | |
| | *Deluge shower, w/eye wash, CW | | ea | | |
| | *Outlets for portable arc welded (grounded) | | ea | | |
| | *Lube dispensing eqpt w/ access (couplers, valves, regulators etc.) | | ea | | |
| | *Air pumps, 400 lb drums for oil (chassis, gear, motor oil, transmission & hydraulic fluid), as req'd | | ea | | |

1. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the problem and the objectives of the research. The second part of the report is a detailed description of the methods used in the study. This includes a description of the experimental design, the data collection procedures, and the statistical methods used to analyze the data. The third part of the report is a discussion of the results of the study. This includes a description of the findings and an interpretation of their significance. The final part of the report is a conclusion and a list of references.

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4. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the problem and the objectives of the research. The second part of the report is a detailed description of the methods used in the study. This includes a description of the experimental design, the data collection procedures, and the statistical methods used to analyze the data. The third part of the report is a discussion of the results of the study. This includes a description of the findings and an interpretation of their significance. The final part of the report is a conclusion and a list of references.

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|--|--|---------------|---------------------|---------------|---------------|
| | *Twin post pneumatic lifts, 1 HD, 24,000 lb cap, 150 PSI comp air | | ea | | |
| | *Air Compressor, 150 PSI, 2-stage 32 CFM), 3 phase, 3-WIRE, 220v, L5 HP | | ea | | |
| | *Twin post pneumatic lift, LD 11,000 lb cap., 150 PSI comp air | | ea | | |
| | *1 Ton overhead monorail, 1-1/4 HP, 220V, 3-phase, 60-cycle 120V power to controls & switches | | ea | | |
| Equipment with associated installation cost. | | | | | |
| Expense Items: | | | | | |
| 7110-00-149-1630 | Desk, flat top, dbl ped | 1 | ea | 234.23 | 234 |
| 7110-00-149-1628 | Desk, flat top, single ped | 2 | ea | 180.09 | 360 |
| 7110-01-016-6580 | Attachment for above desk | 2 | ea | 132.93 | 266 |
| 7110-00-082-6229 | Chair, rotary, tilting seat | 4 | ea | 66.31 | 265 |
| 7110-00-958-8044 | Chair, secretarial rotary | 2 | ea | 64.60 | 129 |
| 7110-00-685-5534 | Stand, typewriter, drop leaf | 3 | ea | 85.60 | 257 |
| 7110-00-497-2012 | Filing cabinet, 5 dwr, legal size, parchment | 2 | ea | 146.20 | 292 |
| 7125-00-764-6129 | Cabinet, storage, dbl dr. | 4 | ea | 132.78 | 531 |
| 7110-00-601-9822 | Bookcase, 2 shelves, parch. | 12 | ea | 82.92 | 995 |
| 7110-00-782-3503 | Chair, straight, w/o arms | 20 | ea | 38.34 | 767 |

*Air Comp East, 150 East
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|---|--|---------------|---------------------|---------------|---------------|
| 7195-00-004-6716 | Rack, wearing apparel, con- temporary 6 mtl hangers | 4 | ea | 49.39 | 198 |
| 7240-00-643-0133 | Trashcan 15 gal. #8160 | 12 | ea | 80.85 | 970 |
| 6230-00-682-3423 | Lamp, desk | 6 | ea | 39.00 | 234 |
| 4210-00-720-1815 | Extinguisher, fire 2-1/2 gal air expelled water, Class A stainless steel | 4 | ea | 25.98 | 104 |
| 4210-01-089-0875 | Extinguisher, fire, 20 lb Halon | 4 | ea | 74.11 | 296 |
| VIRCO | Student chairs, model 7020 | 20 | ea | 30.35 | 607 |
| 7110-00-143-0821 | Table, general purpose | 3 | ea | 164.00 | 492 |
| OP | Draperies & Hardware | 3 | pr | 90.00 | 270 |
| " | Blackout draperies | 3 | pr | 90.00 | 270 |
| 6645-00-514-3523 | Clock, wall. | 12 | ea | 8.20 | 98 |
| 7195-00-242-3503 | Costumer, wearing apparel 4 dbl hooks | 6 | ea | 55.00 | 330 |
| Federal Prison System 26-S-32850-258 | Shelving 24"x36"x87", type A | 30 | ea | 93.05 | 2,792 |
| 7125-331-8401 | Shelving 18"x108"x87" Class 3 | 26 | ea | 93.45 | 2,430 |
| 20-S-32879-152 | Doors, security, for storage shelving, w/locks & handles | 10 | ea | 38.10 | 381 |
| OP MONROE | Adding Machine | 2 | ea | 400.00 | 800 |
| OP IBM | Selectric, dual pitch | 2 | ea | 800.00 | 1,600 |
| McMaster Carr Supply Co POB 440, New Brunswick, NJ | Parts bin adjustable shelving 14" x24" deep, 54 openings, Cat 90 Model 4641T39, pg 135 | 6 | ea | 282.98 | 1,698 |

1102-00-004-0710

1210-00-013-0133

8310-00-002-0133

810-00-100-1400

1110-01-010-1877

1100-00-000-0000

1110-01-141-0131

810-00-011-1877

1100-00-013-0133

1100-01-011-0131

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| McMaster Carr | Benches, work, stationary steel top, 28"x34"x60", std #9054T12 Cat 90, pg 147 | 2 | ea | 106.65 | 213 |
| " | Revolving steel storage bins 42-1/8"H, 10 tiers, #4649T41 pg 135, Cat 90 | 6 | ea | 276.27 | 1,658 |
| " | Battery charger 12-24-36V Selenium model 7318K12, pg 1284 | 2 | ea | 473.45 | 947 |
| " | Cabinet, storage parts, 18 dwr welded 11"x5 1/2"x205.8" adj. cross dividers, #5150T14 pg 119 | 2 | ea | 101.75 | 204 |
| McMaster-Carr POB 440 New Brunswick NJ | Porta Bull parts storage cabinet for storage of mechanics tool boxes, 21 adj bins #4668T11, pg 115 | 2 | ea | 581.15 | 1,162 |
| AKRO MILS, Akron, Ohio | Storage-go-round parts bin, 31"x31"x60", 45 dwr storage 98-444 w/18-909 bins | 3 | ea | 900.00 | 2,700 |
| Pressteel Co. | 438 EN-10LP bench 96"x36"x35-1/2" #10 top 5 dwr, rt & lt lock w/ key, wired 18 AWG 400 HZ, 60 HZ, & 28 VOC on 20A circuit breakers w/pilot indicator | 3 | ea | 1484.00 | 4,452 |
| McMaster-Carr Co | Grinder, bench, 7" w/buffer #4452A70, page 1602 | 1 | ea | 462.46 | 462 |
| | Easel, chalkboard #5663T1 pg 622 | 2 | ea | 173.09 | 346 |
| | Sectional shelving 36"W #5097T34, pg 127 | 1 | ea | 295.06 | 295 |
| | Add on units for above shelving #5097T44, pg 127 | 10 | ea | 274.97 | 2,750 |

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| | 12" shelving w/adj std, 6 shelves, 24 shelf clips, 36"w #4586T11, pg 126 | 10 | ea | 53.13 | 531 |
| | Cabinet 31"H tray top acid storage for use in battery or acid areas. Acid resistant w/o eye wash #9765T3, pg 117 | 3 | ea | 493.13 | 1,480 |
| | TOTAL EXPENSE ITEMS | | | | 33,882 |
| 3. Investment Items: | None. | | | | |
| 4. APA Eqpt: | None. | | | | |
| 5. Training Eqpt. | (to be locally funded) | | | | |
| 6730-00-423-9992 | Projector, movie, Bell & Howell 16mm, real sound, Tungsten Halogen 1.2" lens focal length | 1 | ea | 467.54 | 468 |
| DA-LITE Screen Co. 3100 State Rd Box 137, Warsaw IN 46580 | Screen, movie, picture king 84"x84" glass beaded | | ea | 126.42 | 126 |
| GS-03S-81003 Model 389B | Projector, overhead Specialist, model 389B | 1 | ea | 203.00 | 203 |
| | Total Training Equipment: | | | | 797 |

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BASIC THOUGHTS / GENERAL SPECS. COMPARISON

| MECHANICAL LAB | | ELECTRONIC LAB | |
|----------------------|------------------------------------|----------------|------------------------------------|
| • SET POINT | 68°F | | 72°F |
| • CONTROL | ± 1/2°F | | ± 2°F |
| • MAX RATE OF CHANGE | NTE ± 2°F P/H | | NTE ± 2°F |
| • AIR CHANGES | 20 P/H MIN | | 20 P/H |
| • RH CONTROL | WITHIN 30 TO 45 | | WITHIN 45 TO 60% |
| • CLEANLINESS LEVEL | CLASS 10,000 | | 100,000 |
| • LIGHTING LEVEL | 125 FT CANDLES IN WORKING PLANE | | 125 FT CANDLES IN WORKING PLANE |

ADDITIONAL CONSIDERATIONS NOT SPOKEN TO IN SAMPLE SPEC.

- SPRINKLER SYSTEM
- HALON SYSTEM

Control Systems: FAULT SAFE Clean Room Controls (i.e. Compressor
FAULTS Air System ~~is~~ INTERLOCKED)

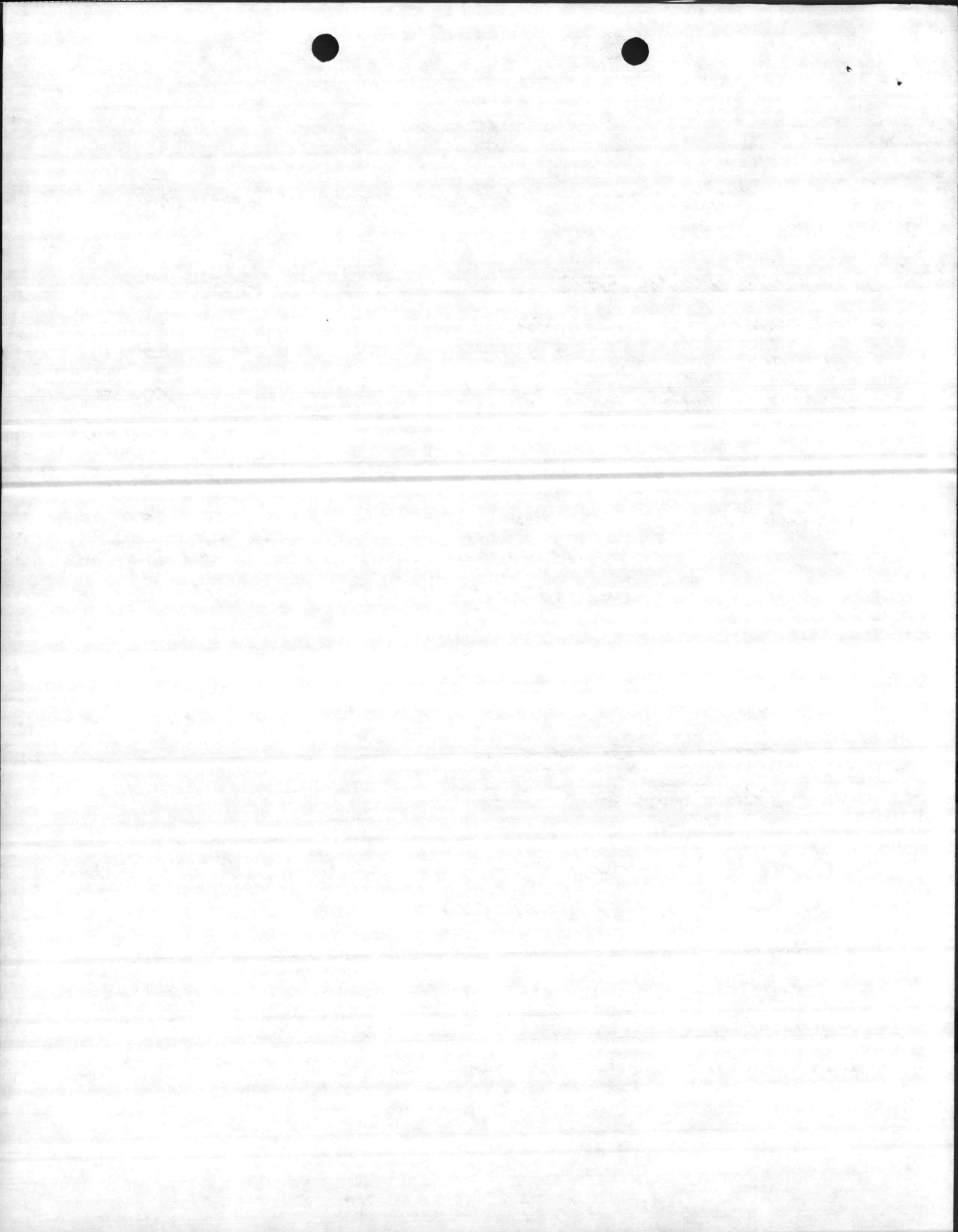
Filtered + Regulated power sources

ARMSTRONG CONDUCT TILE OF DECK OF MICRO MINO.

AIR IONIZER TO REDUCE STATIC BUILDUP

Humidity no less than 30% no greater 60% in Electronics

no Higher than 45% in Mechanical



Marine Corps Logistics Base
Albany, Georgia 31704

SPECIFICATION FOR A 24 X 63 CLASS 10,000
(FED STD NO. 209B)
ENVIRONMENTALLY CONTROLLED ENCLOSURE

1. SCOPE

- 1.1 This specification is for the purchase of one new freestanding, self-contained, Environmentally Controlled Enclosure. The contractor shall design, construct, erect in place, and fully test his equipment, in accordance with the requirements herein specified.

The enclosure is to house Precision Electronic Test and Repair Equipment which is sensitive to variations in temperature and is adversely affected by dust and uncontrolled relative humidity.

- 1.2 Repair Division Drawing Number 874:00 identifies the installation location of the Environmentally Controlled Enclosure.

- 1.3 The scope of the work performed under the conditions of this specification shall include complete installation, external duct work, plumbing, wiring, painting, and testing.

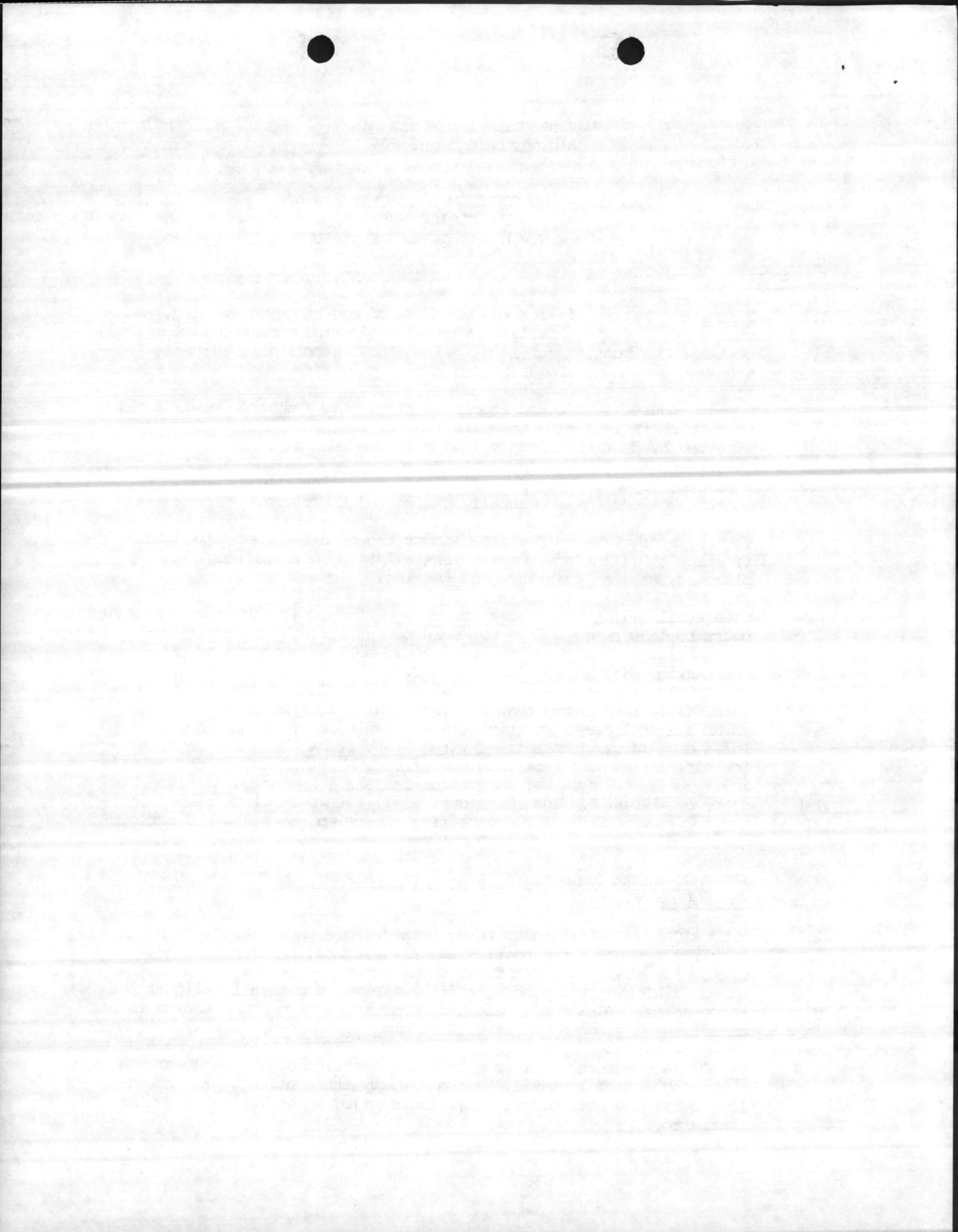
Site availability where work is to be performed is normally from 0800 hours to 1630 hours 5 days per week Monday through Friday. Site availability other than mentioned above must be approved by the Contracting Officer at time of award.

- 1.4 It shall be understood that the intent of this specification is to cover all equipment, materials, workmanship, etc., as may be required for a complete and operating system. Any items which may be necessary to fulfill the intent of this specification but which are not specifically called for in this specification shall be included in the bid price of the unit. The contractor shall assume complete responsibility for the satisfactory engineering, erection, testing, and performance of all equipment furnished.

2. THE MARINE CORPS LOGISTICS BASE (MCLB), ALBANY, GEORGIA, WILL PROVIDE THE FOLLOWING:

- 2.1 ELECTRICAL: 208/120 volt, three phase/single phase, 60 Hz AC power as required for the air conditioning unit, lights, and receptacles. Contractor shall supply a fusible disconnect as required, for air conditioning unit and circuit breakers and panels for lights and receptacles. MCLB shall make all connections from power source to air conditioning disconnect, circuit breakers, and power panels.

- 2.2 FLOOR: A concrete floor as a base for erection of the enclosure. Smoothing and filling will be required by the contractor to ensure long serviceability of the vinyl floor tile, to be installed by the contractor.

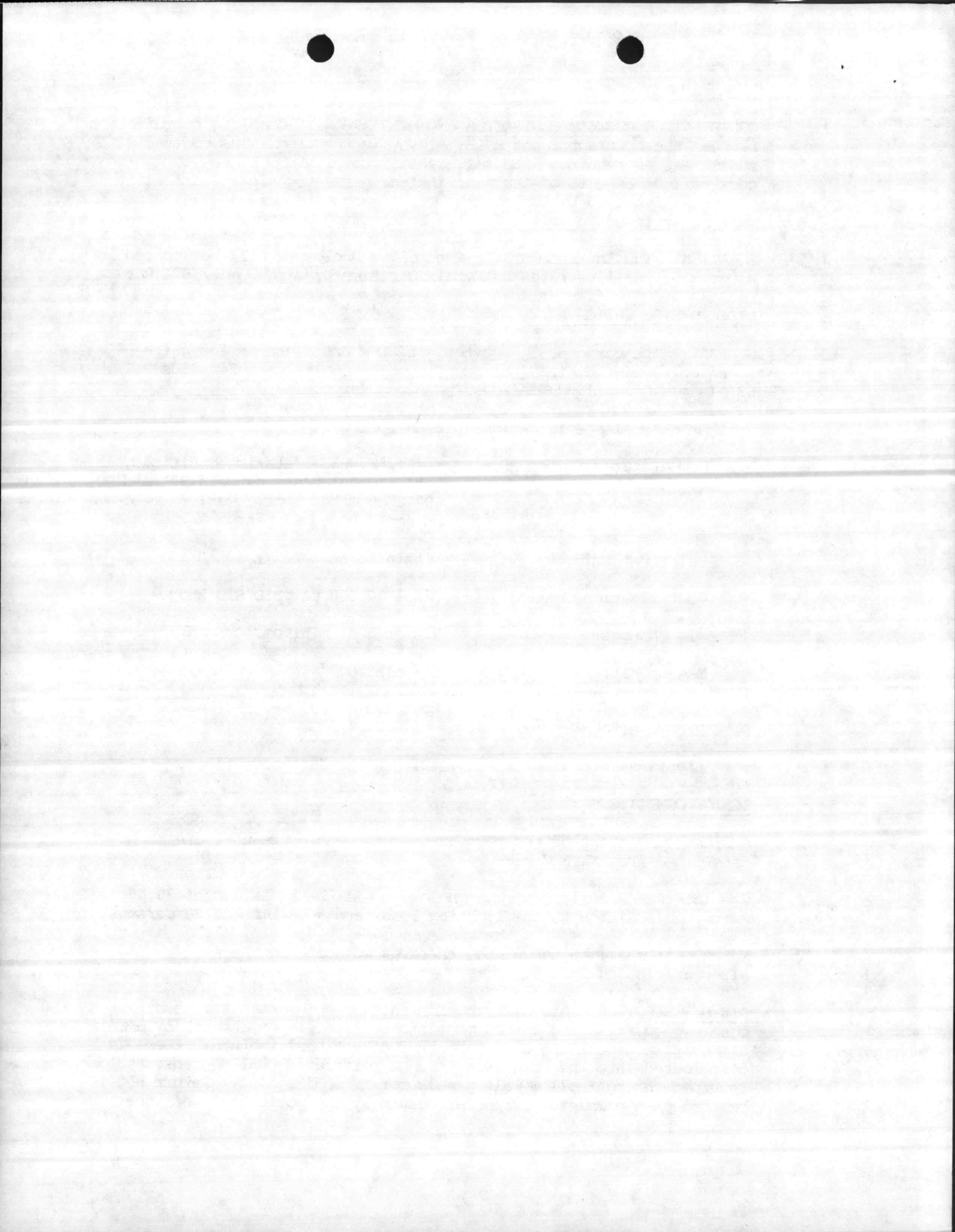


- 3. COORDINATION BETWEEN CONTRACTOR AND MCLB ALBANY: Complete coordination between the contractor and MCLB, Albany is required. The contractor shall meet as required with representatives of MCLB, Albany to discuss various aspects of the job, including the technical feasibility of the design used by the contractor. Changes to this specification must be approved in writing by the Contracting Officer.
- 4. LOCATION: The Environmentally Controlled Enclosure will be located in Bldg. 2200 as illustrated on Repair Division Drawing Number 874:00.
- 5. BASIC DESIGN CRITERIA
- 5.1 GENERAL: The basic design criteria of the enclosure is for a free-standing, self-contained, air-conditioned modular unit 24' wide x 63' long, 10' ceiling, inside dimensions (approximate).

Further general specifications are as follows:

| | |
|------------------------|--|
| Temperature: | 74°F±2°F, under static conditions, in a horizontal plane between 30" and 60" above the floor. Max. rate of change 2.0 degree p/hr. |
| Relative Humidity: | Within 45 to 60% |
| Contamination Control: | Class 10,000 per FED STD 209B. |
| Air Changes: | 20 per hour minimum. |
| Makeup Air: | 15% minimum. |
| Encl. Static Pressure: | Positive - 0.05" - 0.10" W. G. |
| Lighting: | 125 F.C. at 36" above floor. |

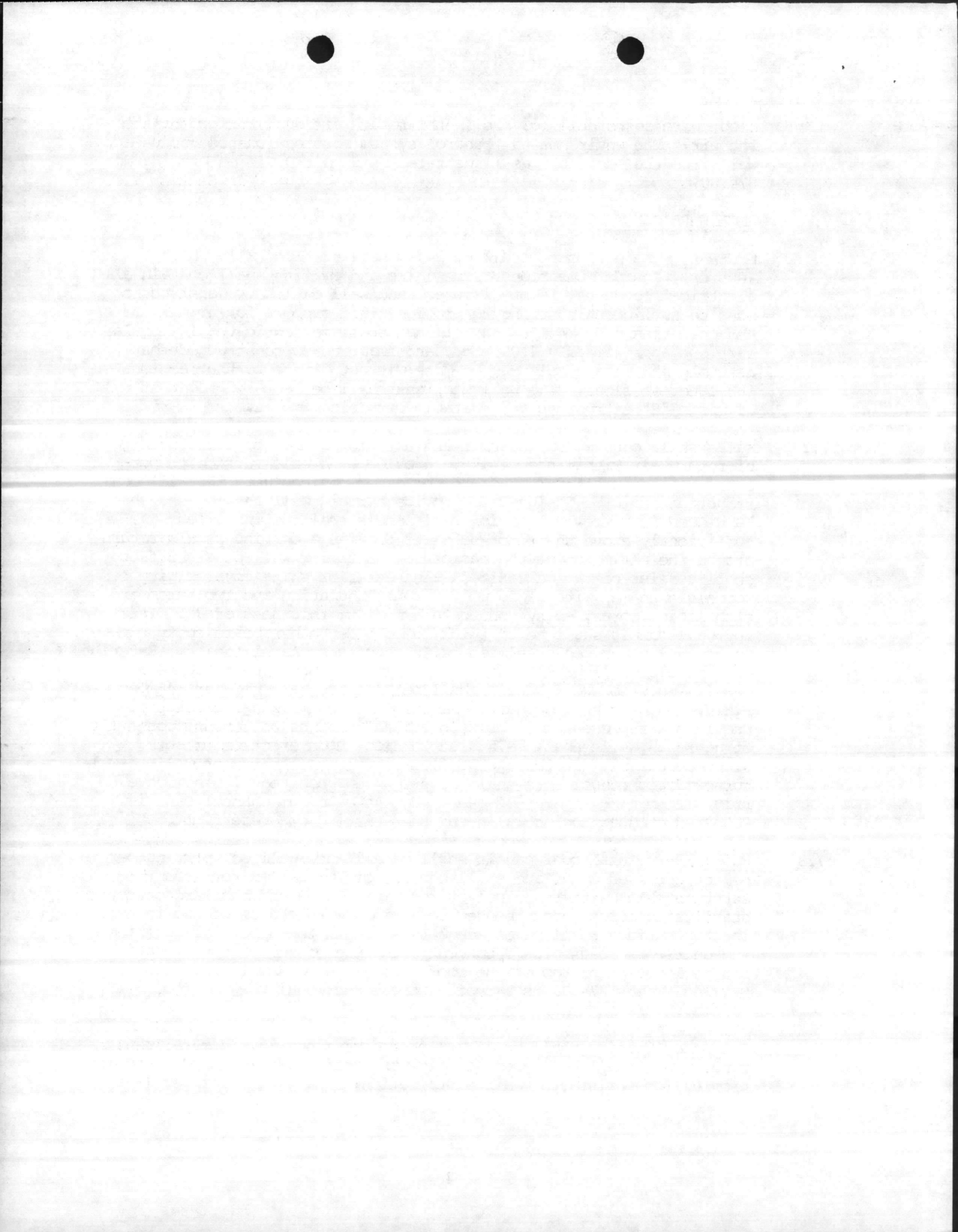
- 5.1 DESIGN CONDITIONS
- 5.2.1 Ambient conditions of the room housing the enclosure unit are to be determined from NAVFAC P-89.
- 5.2.2 The internal heat load of the enclosure will be a maximum of 30,000 watts, in addition to the lighting load, and a maximum of 20 persons.
- 5.2.3 Makeup air shall be taken from the area adjacent to the air-conditioning unit.
- 6. AIR DISTRIBUTION: Air distribution in the enclosure shall be by conditioned air being introduced into ceiling plenum chamber by a main air duct incorporating adjustable and directional features, then distributed into the work area through perforated ceiling pans, and returned through hollow wall panels for reconditioning. Return shall be through a complete peripheral return system positioned near the



floor with adjustable louvers in the return air duct work to balance the air. The environmental control system must be located across a wall from the enclosure as illustrated on Repair Division Drawing No. 874:00.

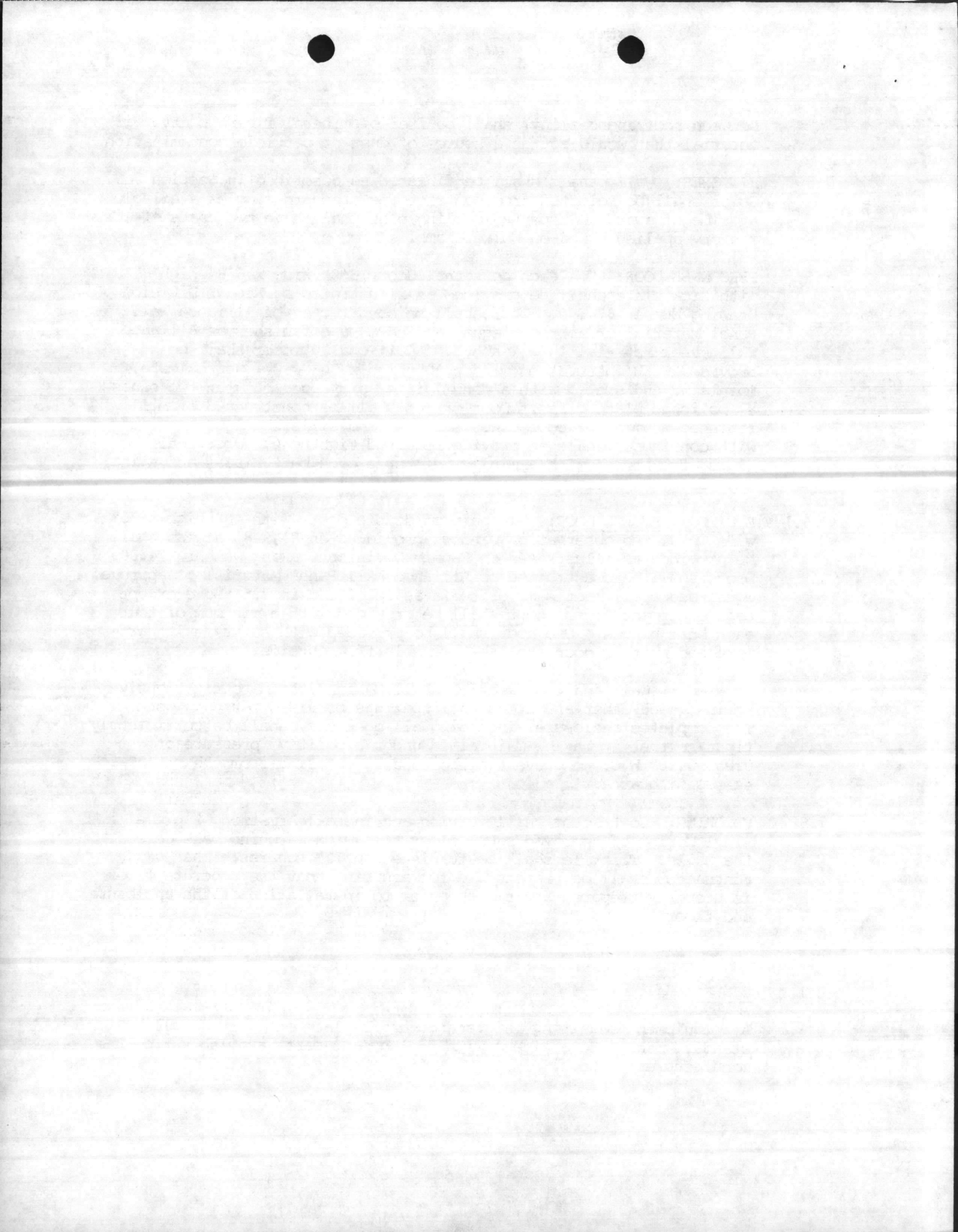
7. ENCLOSURE CONSTRUCTION

- 7.1 GENERAL: The enclosure shall be 24' wide x 63' long x 10' high (approx), inside dimensions. The walls and ceiling shall contain all electrical conduits, light fixtures, and wall outlets. Construction must be sufficiently strong to provide rigid support for normal loads and operating use. Walls and ceilings shall be fabricated in modular sections approximately 4'0" wide, and shall be so constructed that assembly and disassembly may be done without damage to the sections or the concrete floor. The wall sections shall be fastened together by aluminum "H" extrusions and suitable mechanical means.
- 7.2 Walls shall consist of interior and exterior panels to allow passage of return air within the walls to provide even wall surface temperature. Bracing, studs, brackets, or other devices used for wall construction shall be designed to provide a rigid wall section and shall be hidden from view. Interior wall panels shall be installed sufficiently above the floor so as to provide a continuous air return around the perimeter of the enclosure. Exterior wall panel surfaces shall consist of two galvanized steel exterior skins covered with porcelain enamel with rigid polystyrene insulation and two hardboard stabilizing cores, epoxy bonded to a minimum thickness of 2". Interior wall panels shall be ½" thick, smooth dense hardboard epoxy bonded to 28 ga. galvanized steel face with porcelain enamel finish. Exterior wall panels shall be Alliance Wall Co. part number 40P or approved equal. Interior wall panels shall be Alliance Wall Co. part number P.H.F. 250 or approved equal. Repair Division Drawing Number 874:00 provides a representative cross sectional view of wall panel construction. Walls shall be sealed to floor upon erection on both sides to prevent air leakage at floor level. All interior wall-to-wall corners of the enclosure shall have rounded anodized aluminum cove trim with minimum radius of one inch. An aluminum channel base is required at junction of walls and the existing concrete floor.
- 7.3 ROOF: Structural roof panels shall be Alliance Wall Co. part number 40S or approved equal and shall consist of two galvanized steel exterior skins with rigid polystyrene insulation and two hardboard stabilizing cores, epoxy bonded to a minimum thickness of two inches. The top surface shall be of adequate strength to support all ceiling and duct work loads plus a concentrated load of 400 pounds at any single location on top of the roof. Provided on Repair Division Drawing Number 874:00 is a typical cross sectional view of roof panels.
- 7.4 Suspended Ceiling shall be of perforated aluminum lay-in metal pan type. Pans shall be suspended below the roof a sufficient distance to provide for satisfactory air distribution. The plenum chamber (area



between roof and ceiling) shall be free of mineral fiber or any material that would act as a source of dust or particle contamination.

- 7.5 FINISHES: Wall panels shall be finished as described in Section 7.2. Color shall be selected from contractor's standard samples available at time of award. Suspended ceiling pans shall have two coats of factory applied baked-on white enamel.
- 7.6. PERSONNEL DOOR: One each personnel door (3'0" wide x 6'8" high) with kick plate shall be provided as illustrated on Repair Division Drawing Number 874:00. Door shall be constructed of Alliance Wall Panel Material or approved equal and have same finishes as Alliance Wall Panel Material in 7.2 above. Additionally, door shall be provided with observation window 40" high x 36" wide, approximate, insulated and sealed with a dehumidified air space between two panes ¼" polished plate glass. Door frames shall be constructed of mill finished aluminum. Door edges, frames, and sills shall be provided with continuous seals to provide required tightness. Door shall be hinged from frame with a minimum of three each butt hinges and swing away from the Enclosure.
- 7.6.1 EQUIPMENT ACCESS DOOR: One pair of double doors with 40" high x 36" wide insulated observation windows providing an 8' x 8' access shall be provided as illustrated on Repair Division Drawing Number 874:00. Doors shall be constructed of Alliance Wall Panel Material or approved equal and shall meet same criteria as specified in 7.6 above except each equipment access door shall be provided with a minimum of four each butt hinges. One door shall be provided with safety exit hardware and neither door shall be operable from outside.
- 7.7 OPENINGS: Wall and roof section shall be fabricated to fit tightly against each other and around all openings provided for duct work. The completed enclosure, including all openings, shall be sufficiently tight so that it may be maintained under a positive pressure of 0.05"-0.10" W.G. to prevent airborne dust entering from the surrounding area.
- 7.8 FLOORING: Contractor shall furnish and install Armstrong Supreme Vinyl Corlon or approved equal floor tile with matching base cove at the walls. The tile shall be furnished in 12" squares. The contractor shall be responsible for assuring that the concrete floor is properly prepared and smooth prior to installation of the enclosure and floor tiles.
8. MECHANICAL
- 8.1 GENERAL
- 8.1.1 All equipment requiring maintenance and replacement parts shall be standard manufactured items with replacement parts available from the manufacturer's stock.



- 8.1.2 All mechanical and electrical installations and equipment shall meet the following standards:

American Society of Heating, Refrigeration and Air Conditioning Engineers - ASHRAE

National Electrical Code - NEC

Air Moving and Conditioning Association - AMCA

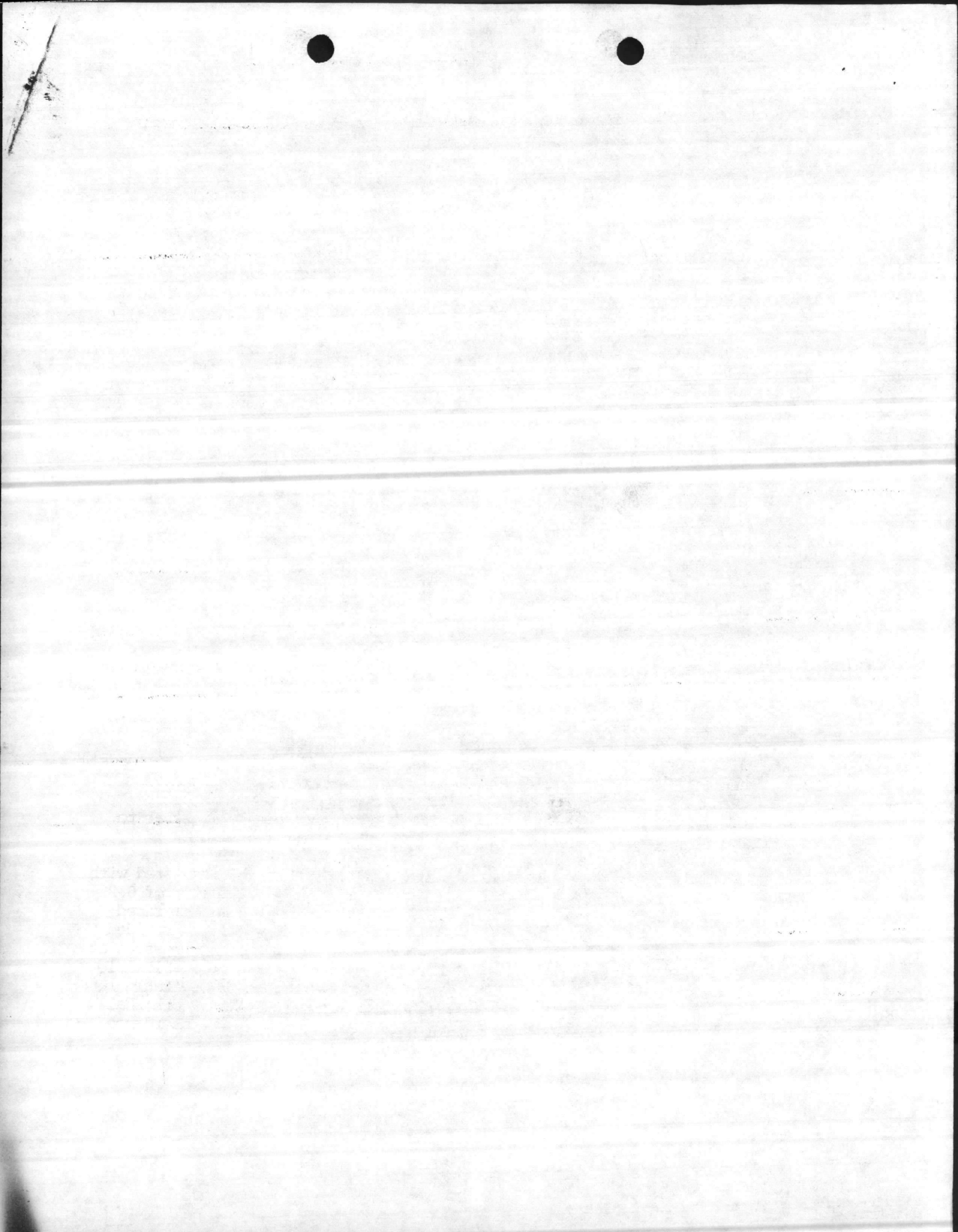
National Plumbing Code

- 8.1.3 All equipment tending to produce vibration shall be precision balanced. This specifically includes all motors, pulleys, sheaves, air blowers, fans and similar equipment. All belts shall be of the "V" type and matched sets. All exposed rotating parts shall have complete removable guards provided. All guards shall have openings opposite the end of rotating shafts to permit the use of a tachometer or revolution counter for measuring shaft speeds. Vibration isolators shall be supplied under the air handling unit, reciprocating compressor, and all piping.

8.2 AIR FILTERING SYSTEM

- 8.2.1 Throw-away type 38% (per NBS test) prefilters shall be located in the fan coil unit, and in the make-up air stream in front of the adjustable louver.
- 8.2.2 Prefilters to be arranged so that they can be serviced without disturbing the seals of the final filters.
- 8.2.3 Final filters shall be dry replaceable, cartridge type and shall withstand 80% humidity air at 100°F for 8 hours. Filters shall have a minimum efficiency of 95% on particles 0.3 microns in diameter or larger, based on the DOP test (MIL-F-0051068D). Filters shall be of the separatorless type with pre-moulded filter media separators. Each filter cartridge shall be rated at 1500 CFM at 1" differential pressure.
- 8.2.4 The filter bank holding frame shall be metal sections joined together with mechanical fasteners and castings. The filter cartridge to framework seal shall be achieved by the penetration of an integral flange of the metal framework into a routed groove on the upstream edge of the filter cartridge frame, or by the penetration of an integral flange of the metal framework into a rubber seal on the upstream edge of the filter frame. The filter cartridge shall be held in place with simple thrust plates and bolts for easy removal and service. The filter bank holding frame shall be Flanders Filters Design or equal.

- 8.2.5 An in-place filter test shall be made to determine that the filter does not leak. Tests should be made to determine leaks in (1) the filter media itself, (2) the bond between the filter media and the interior of the filter frame, and (3) the filter frame gasket and filter bank supporting frame.
- 8.2.6 CLEANLINESS: All cleanliness within the enclosure shall meet or exceed the requirements for Class 10,000 Clean Room (FED STD 209B). These conditions shall be maintained without personnel present. A particle count shall be made to certify the room. The counting devices shall be of the forward light scattering type with its own calibration system.
- 8.3 ENVIRONMENTAL CONTROL SYSTEM: The environmental control system shall be factory assembled and wired, including air handling unit, compressor, and air cooled condenser, plus the linear power controller and the electric cabinet (containing all control units), and shall be located on a common frame. Environmental control system shall be Carrier Brand, or approved equal, of sufficient size to meet specifications contained herein.
- 8.3.1 Refrigeration system shall consist of a semi-hermetic compressor and air cooled condenser unit packaged for continuous operation. Vibration isolators shall be provided for mounting the compressor, air handling unit, and all piping. The unit shall be factory assembled and tested before shipment.
- 8.3.2 Air handling unit shall be sufficient size to provide 30 air changes minimum per hour. Vibration isolators shall be provided for mounting this unit. Contractors to supply and install drain piping as required. The unit shall be selected for a minimum 3" static pressure to allow filter contamination buildup and extended life. The air handling unit shall be interlocked with the compressor unit to prevent operation when the compressor is not running.
- 8.3.3 Reheat system shall be an electric duct heater located in the supply duct with complete modulation (full on to full off) to provide sufficient capacity to handle the maximum and minimum indicated loads. All duct heaters shall be constructed of aluminized steel for resistance to oxidation. An overheat safety device is required. System shall be interlocked with air handling unit motor starter to prevent operation when fan is not operating.
- 8.3.4 DUCT SYSTEM: Ducts, including filter plenums, shall be insulated with a minimum of 1" thick spun glass duct board with a "K" factor of 0.22 maximum at 75°F mean temperature and reinforced aluminum foil-faced vapor barrier. Manually adjustable volume dampers shall be provided before the secondary filter plenums to maintain a constant pressure at the blower independent of the pressure drop at the filters. Flexible duct connections shall be provided at the fan coil unit. Suitable access shall be provided for all filter plenums. All duct work shall be galvanized steel sheet, with gages and construction in accordance



with ASHRAE Guide to provide an air tight system. Adequate dampers shall be provided to completely balance all portions of the duct system.

9. ELECTRICAL

9.1 LIGHTING: Sufficient fluorescent lighting fixtures shall be provided to produce a uniform illumination in the enclosure of 125-foot candles at 36" above floor, in accordance with Illumination Engineering Society Handbook. Lighting fixtures shall be rapid start type with low brightness lens and Class "A" sound rated ballast. The ballasts shall be dry fill, 2 lamps per ballast. The lighting shall operate on 120-volt 60-cycle, single phase power. All conduits shall be furnished for connecting fixtures and receptacles, and extended to the lighting panel inside the enclosure for connection to power supply. All circuits shall terminate in circuit breaker panel board.

9.2 RECEPTACLES: The enclosure shall have wired into every four foot wall panel, on the center line, twenty-four inches from bottom of panel a duplex receptacle, 115 volt, 20 amp, single-phase. Three each duplex receptacles shall be terminated to a 20 amp circuit breaker in the breaker panel with no two successive receptacles being terminated to the same breaker. Separate ground wires shall be provided for each duplex receptacle. Additionally, one each duplex 115-volt service receptacle shall be provided in the area of the air-conditioning equipment.

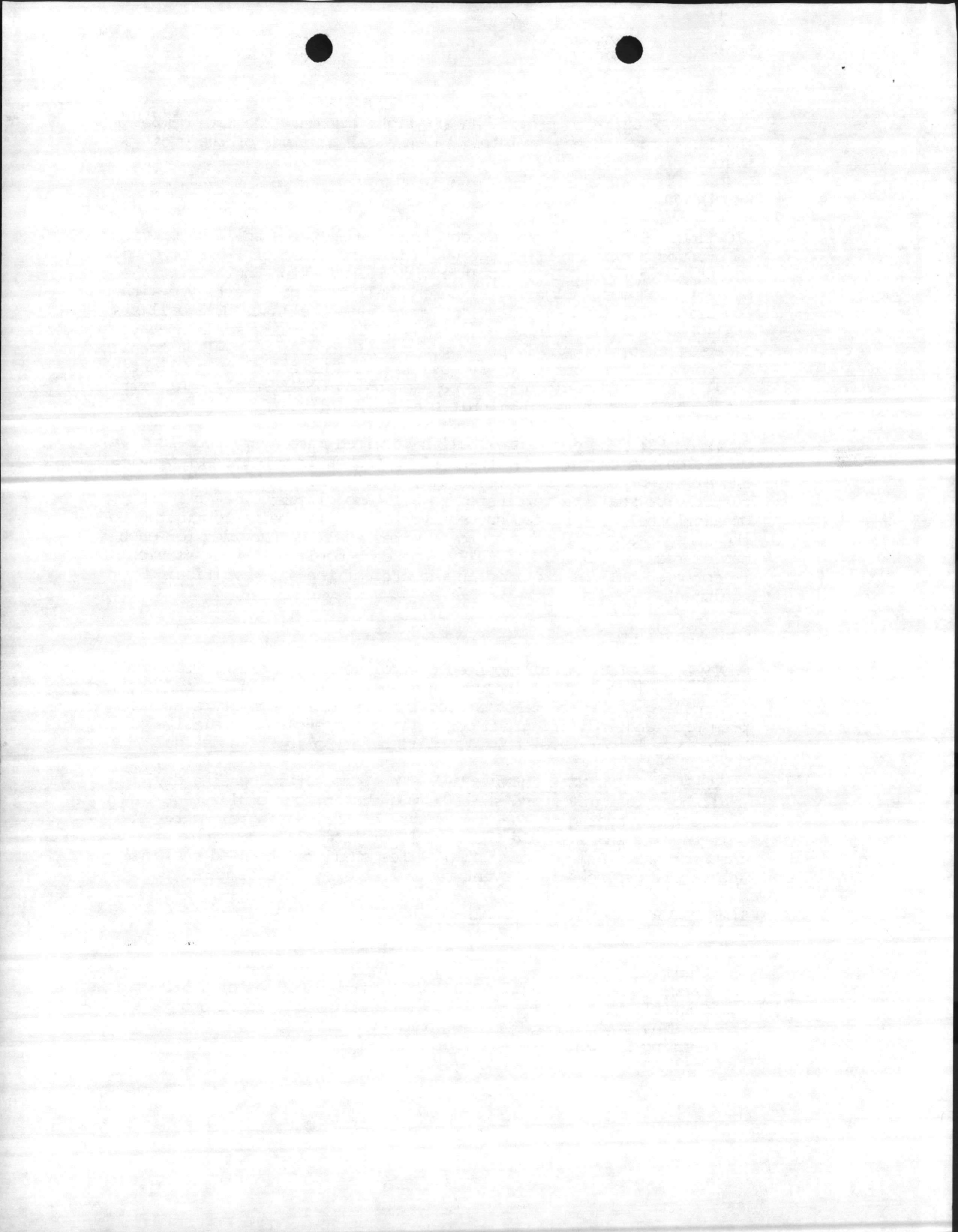
10. CONTROL SYSTEM

10.1 CONTROL CONSOLE: A wall mounted control console shall be provided for the enclosure which includes a means of indicating, recording, and controlling the space temperature, indicating the enclosure static pressure, and indicating and controlling the enclosure relative humidity. Temperature controls shall be of solid state design.

10.2 TEMPERATURE SENSING ELEMENT MOUNT: The temperature sensing device shall be a thermistor and shall be mounted in four equidistant parts of the room, averaging the temperature at the sensing element. The unit housing shall shield the thermistor from all radiation interference. All sensor control wires shall be shielded cable, adequately grounded to prevent radio frequency interference.

10.3 TEMPERATURE INDICATOR-RECORDER-CONTROLLER

| | | |
|-----------------|---|---|
| Accuracy | - | ½ of 1% of full scale |
| Chart | - | 30 day linear strip chart |
| Range | - | 70 - 78°F with divisions of 0.5°F or less |
| Control | - | 3-mode: proportional, reset and rate action |
| Sensing Element | - | Thermistor type |

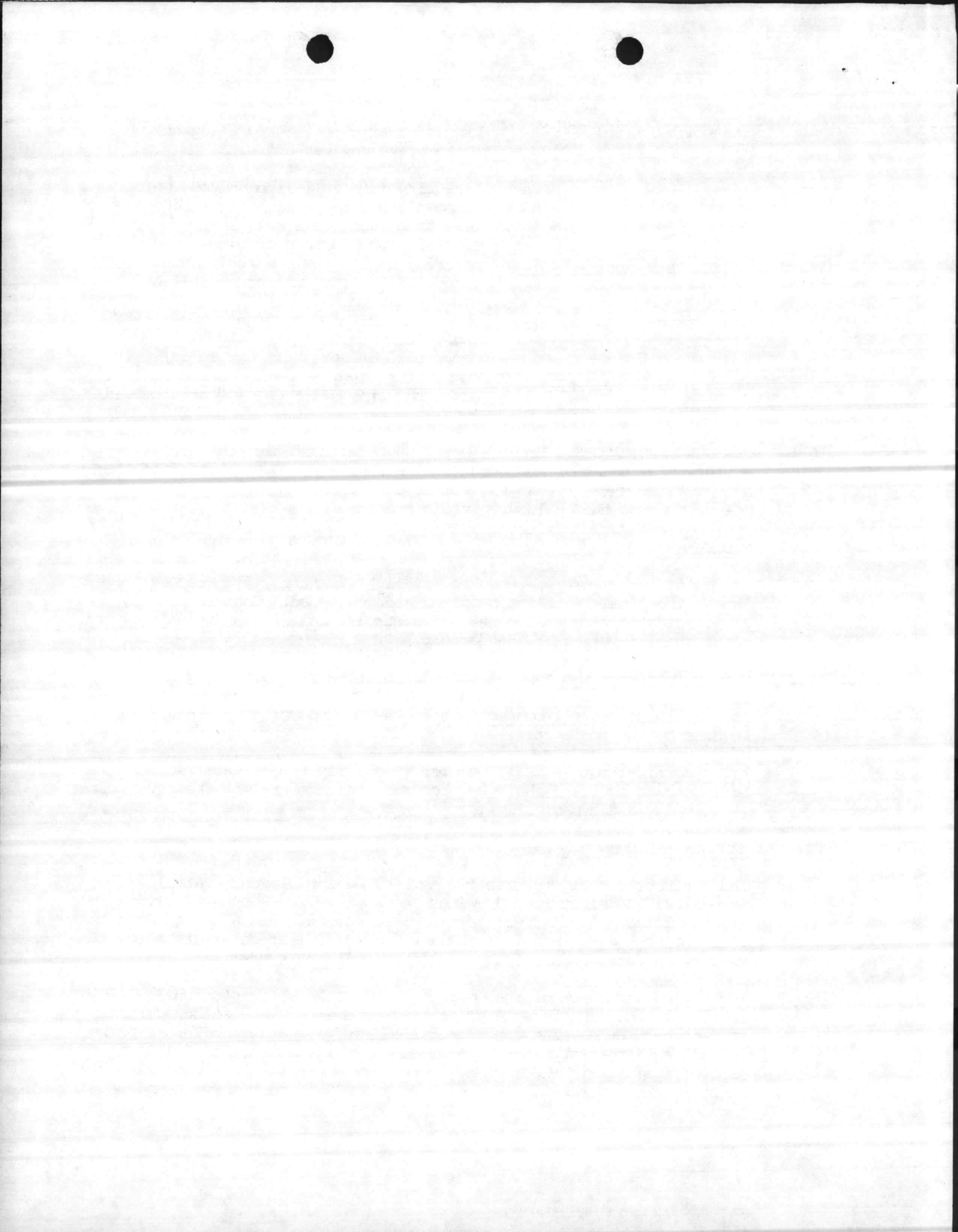


Final Control

-

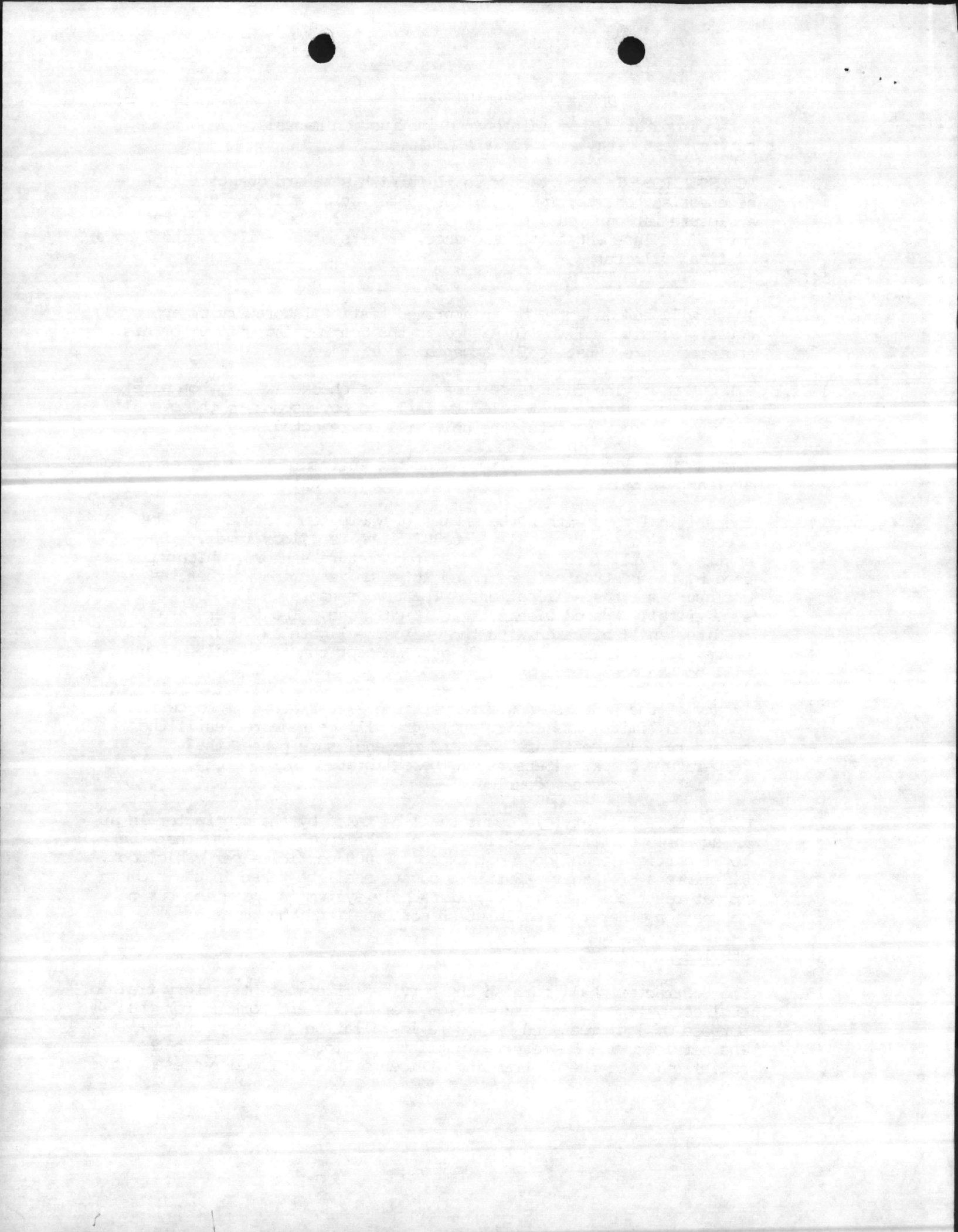
Linear power type incorporating only solid state devices and with a sub-second response time and complete linearity from full-line voltage output to complete cut-off with power factor no less than .95. This unit shall control electric duct heaters of nichrome material with a maximum resistance change of 6% from full on to full off. (Note: this unit is capable of any 6°F range and the entire range between 66°F and 76°F without any additional components except chart and scale). The temperature indicator-recorder-controller shall be Honeywell Model 112 or approved equal.

- 10.4 PRESSURE INDICATORS: Provide Dwyer Magnehelic static pressure differential gages or approved equal across the blower section of the air handling unit, across the filter plenum sections, and to allow measurement of the enclosure static pressure.
11. MISCELLANEOUS
- 11.1 All conduits, raceways, receptacles, light fixtures, fluorescent lamps, and panels shall be supplied and connected. Console panels, air-conditioning control panel and controls, and air-conditioning units shall be wired at the factory.
- 11.2 Connections from the control console to the air-conditioning units, from sensors to the control consoles, all wiring of lighting fixtures and switches, and all connections to the main power supply panel shall be done by the contractor.
- 11.3 All electrical motors shall be open type, drip-proof, antifriction ball bearing type and shall be precision balanced at the factory (statically and dynamically).
12. MANUALS AND DRAWINGS
- 12.1 The contractor shall furnish two sets of design, layout, detail mechanical and electrical drawings for approval as soon as drawings are completed and prior to start of fabrication. See attached Form 1423 for schedule. Drawings shall be of sufficient detail to allow complete understanding of the enclosure unit and system.
- 12.2 After final approval of the completed work, the contractor shall furnish three complete sets of as built drawings. See attached Form 1423 for schedule. The contractor shall furnish a list of spare parts for all equipment supplied under these specifications, as well as a list of spare parts recommended to be carried in stock to properly maintain the equipment. The contractor shall furnish three complete

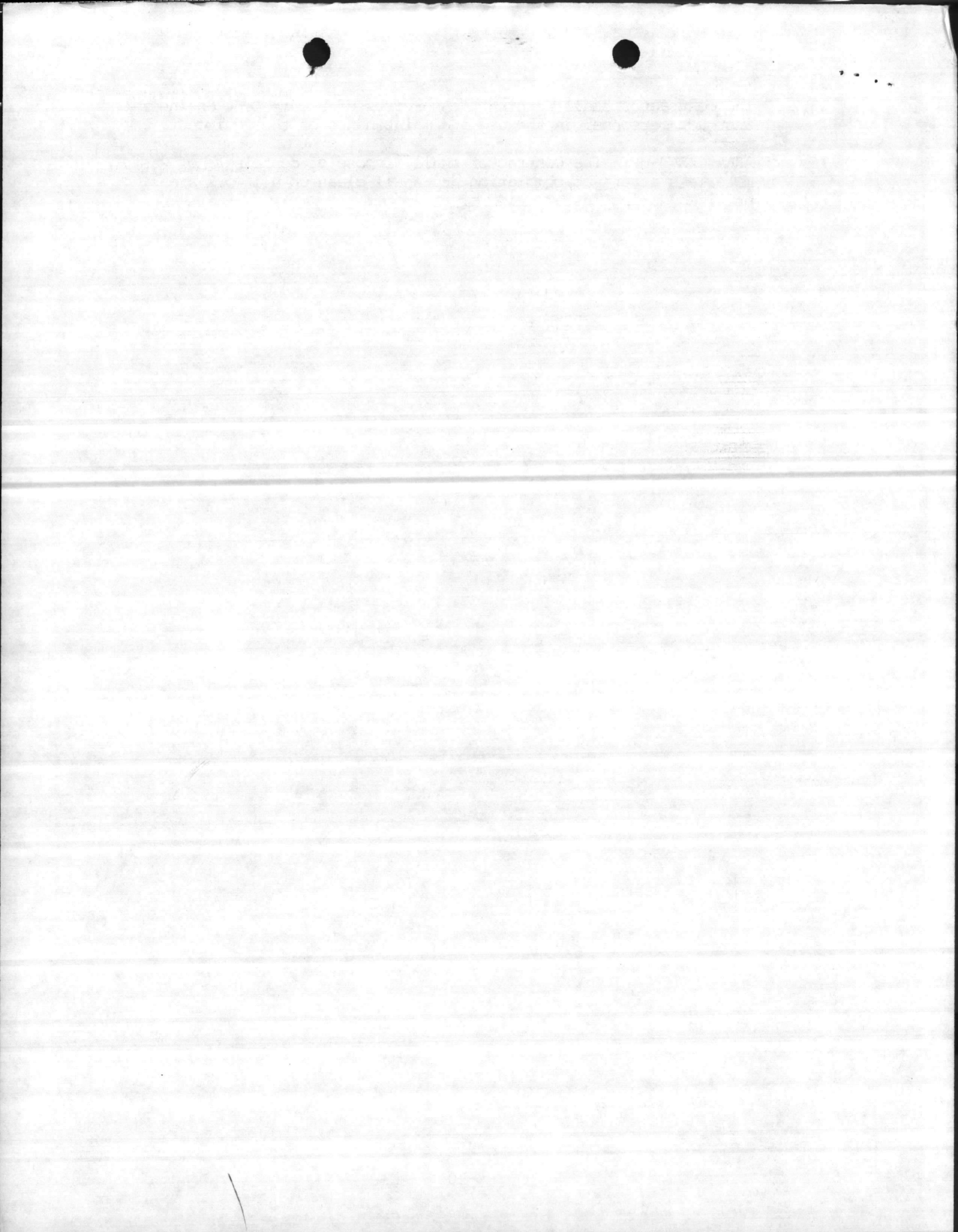


sets of operating and maintenance instruction manuals, performance curves, test data, etc. for the equipment.

13. ACCESSORIES: The contractor shall furnish standard quantities of accessories, charts, ink, etc. for installation and operation of the enclosure for one year, plus two full sets of V belts and two full sets of replacement filter elements, (2 sets of pre-filters and 2 sets of final filters).
14. INSPECTION AND TESTS
 - 14.1 Tests will be conducted by an approved testing laboratory or approved equal. Results will be furnished to the Contracting Officer or his approved representative for acceptance or rejection.
 - 14.1.1 AIR CHANGES: The duct velocities shall be checked with a hot wire anemometer. If the duct velocity fails to correspond to the overall minimum air requirements, the unit will be rejected.
 - 14.2 TEMPERATURE: Temperature limits for the enclosure shall be tested for at least 72 hours under the following conditions:
 - 14.2.1 The critical zone within the enclosure where temperature shall be checked is on a horizontal plane 30" above the floor level. The contractor will furnish calibrated temperature sensors, which will be used by the contractor's representative to determine whether the enclosure meets specifications. The five sensors shall be symmetrically spaced within the critical zone. The temperature readings shall be taken with the enclosure lights on, equipment in place, adjacent areas occupied, etc., except that the enclosure unit will not be occupied.
 - 14.2.2 If any of the sensors show a temperature either above or below the specified limits, the entire enclosure will be rejected until the necessary adjustments are made and the enclosure passes the temperature check. (Sensors may be calibrated thermometers, thermistors, or thermocouples.)
 - 14.2.3 CONTAMINATION: Particle count shall be taken by the contractor in at least three different locations within the room to certify that the total particle count does not exceed 10,000 particles per cubic foot, 0.5 microns or larger. Particle counts shall be taken in the room in an "at rest" condition; i.e., air supply system in operation but no occupation other than calibration personnel and equipment.
 15. SERVICES
 - 15.1 The contractor shall furnish the services of competent factory trained engineers, technicians, supervisory personnel, and workmen for the purpose of equipment and enclosure installation, testing, and startup. The services will be required until the enclosure operates to the satisfaction of the Contracting Officer or his approved representative.



- 15.2 The contractor shall furnish the services of a competent engineer to instruct personnel in the use and maintenance of the equipment.
16. AREA CLEAN-UP: The contractor shall dispose of containers of waste materials after job completion and shall clean up all work areas utilized during installation of the room.



Subj: FY-88-89 MILITARY CONSTRUCTION (MCON) PROGRAM FOR MARINE CORPS BASE
CAMP LEJEUNE, NC

(3) FY-89 Program (continued)

P-679, Electronics/Communications Field Maintenance Shop, consisting of DD Form 1391, DD 1391c dtd 1 Jul 85, and Site Location Map

P-828, Field Medical Service School Facility, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map

P-564, Electronics/Communications Maintenance Shop, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85 and Site Location Map

P-229, Electronics/Communications Maintenance Shop, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map

P-852, Child Care Center, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map

P-853, Fuel Storage Facility, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map

P-410, Alternate Access Route (Piney Green Road), consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, Site Location Map and Photographs

(4) NAVMC 11069, Request for Project Site Approval for the following Projects: P-124, P-229, P-256, P-828, P-849, P-852 and P-853 all dtd 1 Jul 85

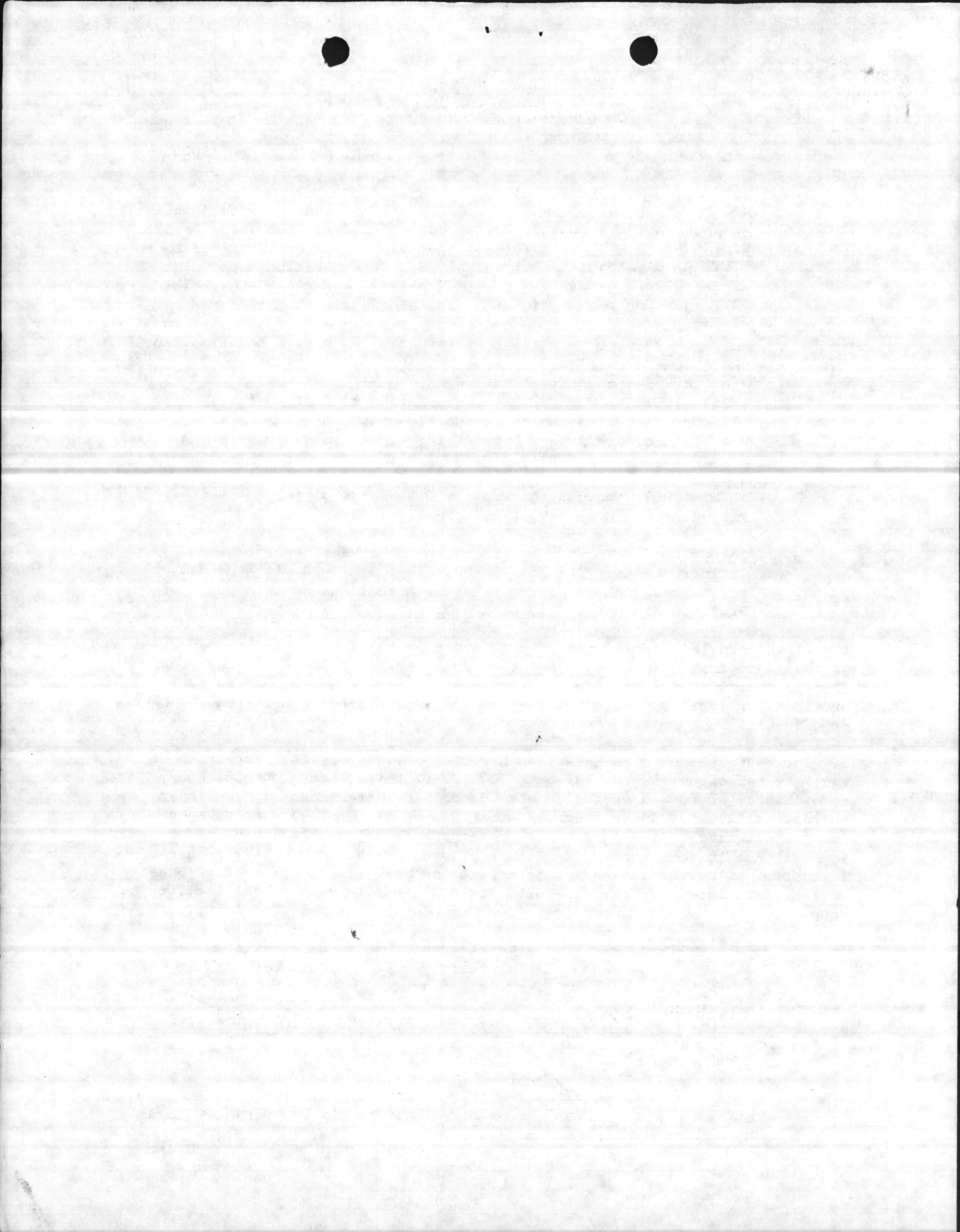
(5) NAVMC 10915 BFRL Item Determination Sheet for the following Category Codes: 123-15, 124-50, 214-51, 217-10, for the Hadnot Point Area and 730-83 for Basewide Miscellaneous in support of Projects all dtd 1 July 85

1. References (a) and (b) provided guidance in the formulation and submission of the subject program. Reference (c) submitted NAVMC 10956 for the proposed five-year program for FY-88/92 as requested by reference (b). This submission provides developed projects for FY-88 and FY-89. Subsequent increments of the program will be submitted as directed.

2. Enclosure (1) submits a revised NAVMC 10956, Summary for Correction of Facility Deficiencies, for FY-88 through FY-92 to reflect proper category code, title, scope and cost. In accordance with references (a) and (b), enclosures (2) and (3) are hereby submitted. Enclosure (4) submits requests for project site approvals for new projects and projects requiring new site approval due to relocation. Enclosure (5) submits Basic Facility Requirements in support of new or revised projects. A new BFRL Item Determination Sheet will be formulated for FY-89, P-828, Field Medical Service School Facility to support their move to Camp Geiger from Camp Johnson at Montford Point.

3. By copy of this letter, the Atlantic Division, Naval Facilities Engineering Command is requested to certify the cost of all projects to the Commander, Naval Facilities Engineering Command.

R. A. TIEBOUT
By direction





UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542-5001

IN REPLY REFER TO:

11000

PWO

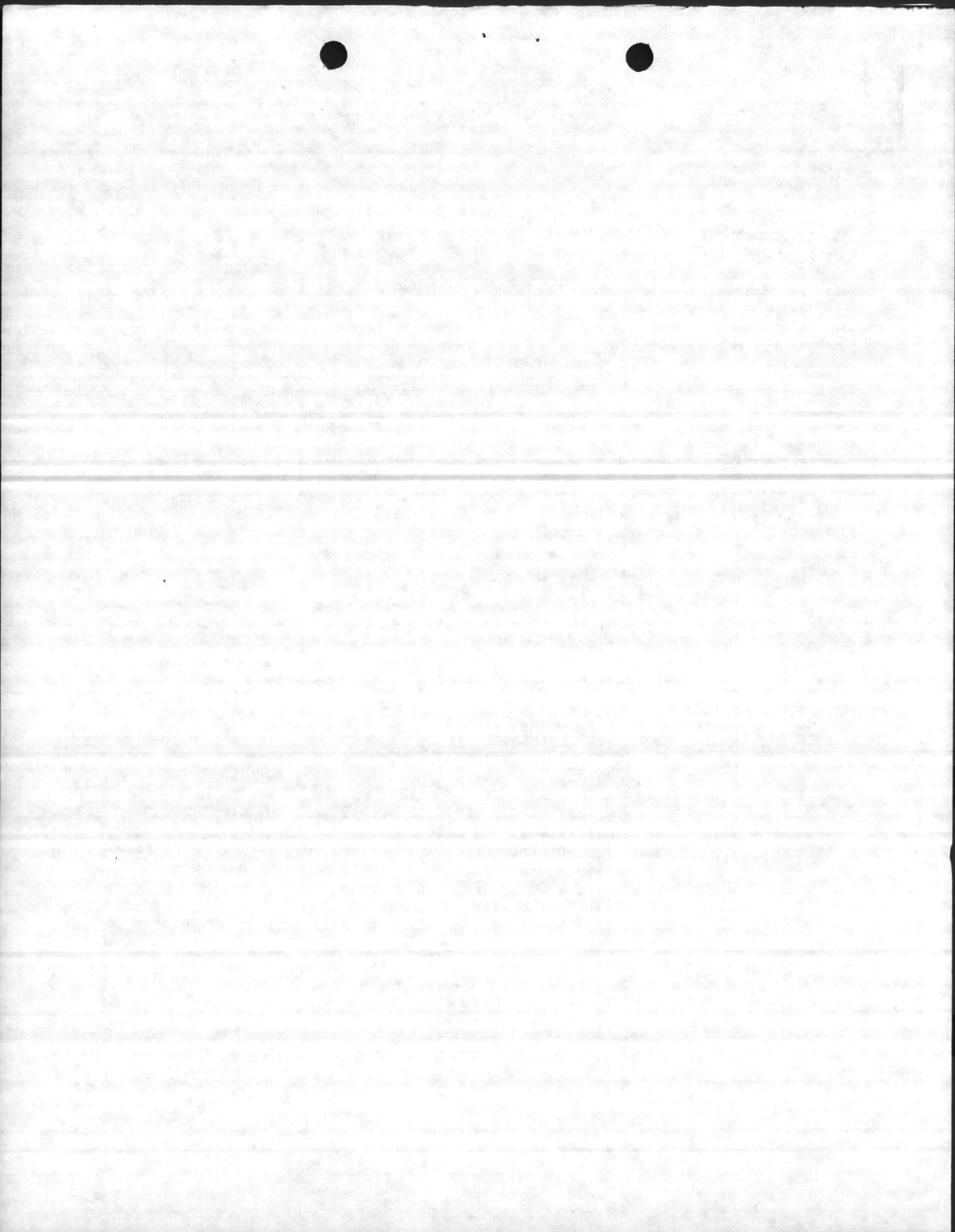
6/27/85

From: Commanding General, Marine Corps Base, Camp Lejeune
To: Commandant of the Marine Corps (LFF-1)

Subj: FY 88-89 MILITARY CONSTRUCTION (MCON) PROGRAM FOR MARINE CORPS BASE,
CAMP LEJEUNE, NC

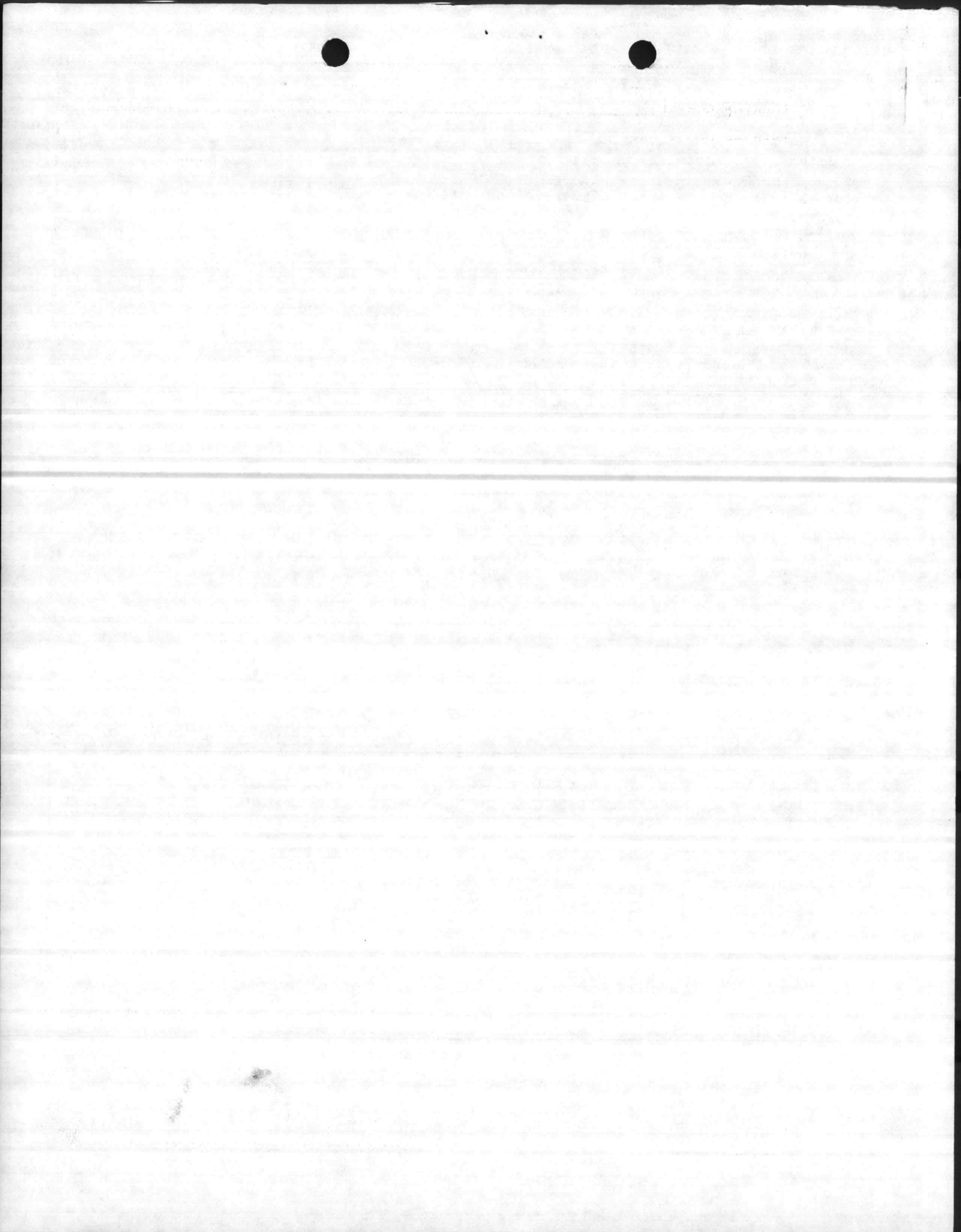
Ref: (a) MCO P11000.12A
(b) CMC ltr 11000 LFF-1 of 5 Apr 85
(c) CG, MCB ltr PWO of 6 Jun 85

- Encl: (1) Revised NAVMC 10956 Summary for Correction of Facility Deficiencies for FY-88 through FY-92 dtd 1 Jul 85
- (2) FY-88 Program:
P-846, Military Operations in Urbanized Terrain (MOUT) Training Complex, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map
P-626, Bachelor Enlisted Quarters, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map
P-057, Division Headquarters, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map
P-803, Field Maintenance Complex (Increment 2) consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, Site Location Map and NAVFAC Dwgs 1294489 and 1294492
P-841, Enlisted Dining Facility Addition, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map
P-678, Combat Vehicle Maintenance Shop, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map
P-810, Mechanics Training Building (Increment 3), consisting of DD Form 1391, DD 1391c dtd 1 Jul 85, and Site Location Map
P-256, Field Maintenance Shop, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map
P-124, Bachelor Officer Quarters, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map
P-851, Electrical Distribution Improvements, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map
P-824, Chapel (Tarawa Terrace), consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map
P-065, Gymnasium, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map
P-842, Regional Automated Service Center (RASC), consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map
- (3) FY-89 Program:
P-629, Bachelor Enlisted Quarters, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, and Site Location Map
P-849, Bachelor Officer Quarters, consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85 and Site Location Map
P-804, Field Maintenance Complex (Increment 3) consisting of DD Form 1391, DD Form 1391c dtd 1 Jul 85, Site Location Map and NAVFAC Dwgs No. 1294489, 1294491 and 1294493

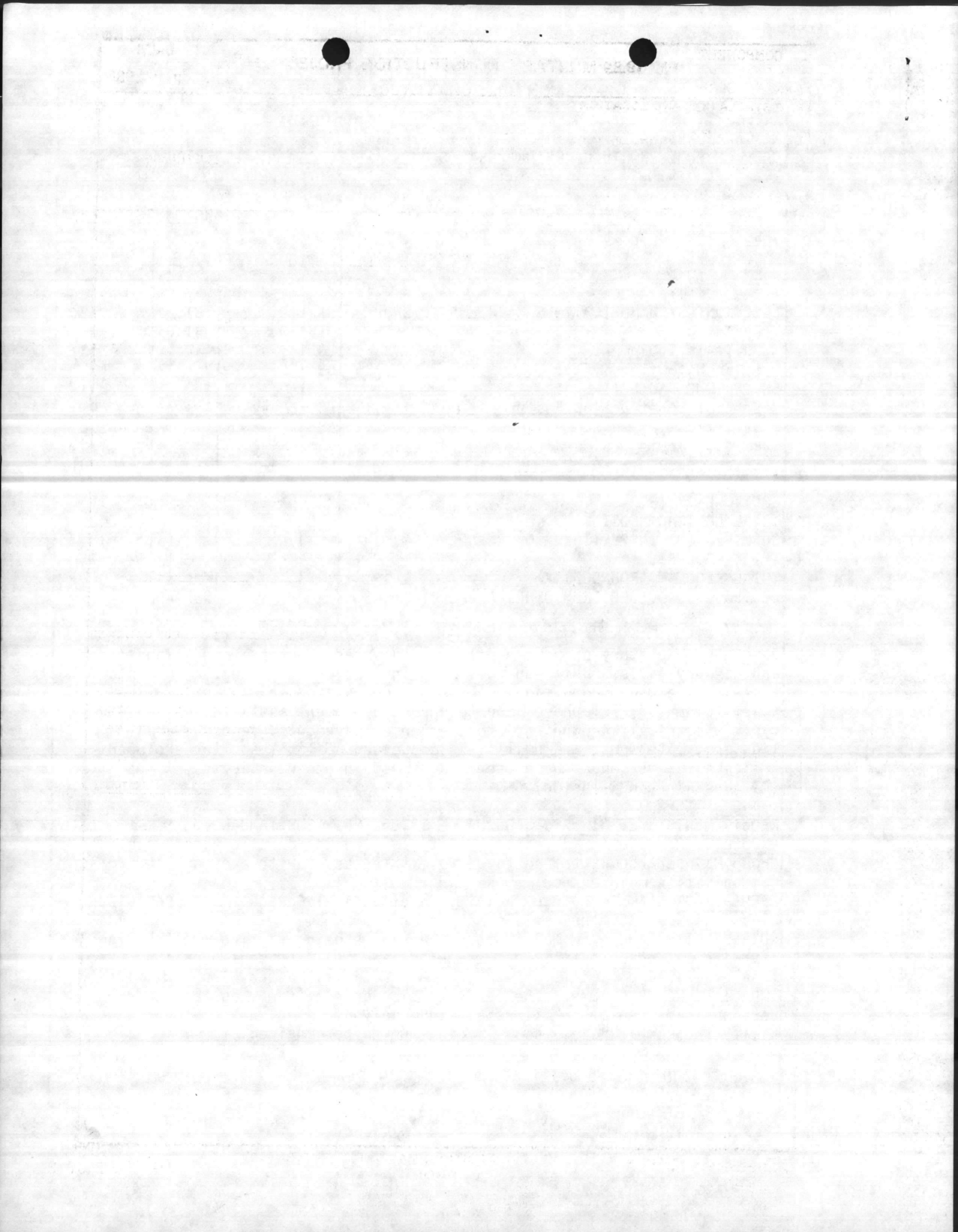


Copy to: (w/o encls (4) & (5))
COMNAVFACENGCOM
COMLANTNAVFACENGCOM (Code 09A21B3 & Code 407)
FMFLANT, Engr Div
CG, 2d MARDIV
CG, 2d FSSG

Blind copy to:
FAC (All except encl 4 & 5)
BMO (All except encl 4 & 5)
Area Comm, MCSSS (Proj. P-810, P-851 only)
Area Comm, Camp Geiger (Project 828 only)
Fld Med School (Project 828 only)



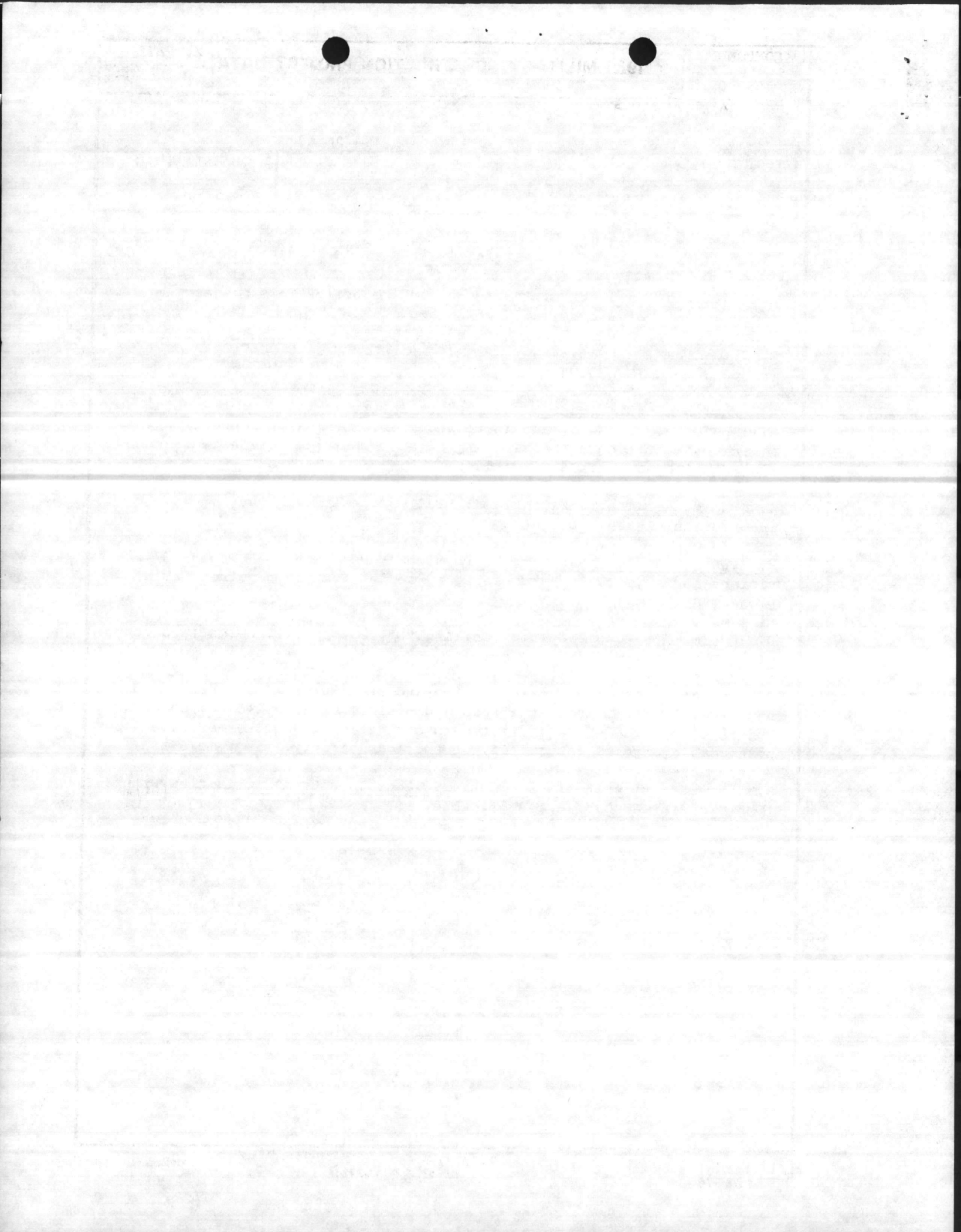
| | | | | | |
|--|----------------------------|--|--|------------------------|--|
| 1. COMPONENT MARINE CORPS | | FY 19 ⁸⁹ MILITARY CONSTRUCTION PROJECT DATA | | 2. DATE 1 July 1985 | |
| 3. INSTALLATION AND LOCATION MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA 28542 | | | 4. PROJECT TITLE ELEC/COMM MAINT SHOP | | |
| 5. PROGRAM ELEMENT | 6. CATEGORY CODE 217-30 | 7. PROJECT NUMBER P-679 | 8. PROJECT COST (\$000) 2,600 | | |
| ESCALATED TO APRIL 1989 | | 9. COST ESTIMATES | | | |
| ITEM | U/M | QUANTITY | UNIT COST | COST (\$000) | |
| ELECTRONICS/COMMUNICATIONS MAINTENANCE SHOP | SF | 19,912 | 101.04 | 2012 | |
| Building | SF | 19,912 | 81.01 | (1614) | |
| Built-in Equipment | LS | - | | (343) | |
| Solar Hot water System | LS | - | | (55) | |
| SUPPORTING FACILITIES | | | | 311 | |
| Special Construction Features | LS | - | | (41) | |
| Utilities | LS | - | | (110) | |
| Roads, Parking, Sidewalks | LS | - | | (134) | |
| Site Improvements | LS | - | | (26) | |
| SUBTOTAL | | | | 2323 | |
| CONTINGENCY (5%) | | | | 116 | |
| TOTAL CONTRACT COST | | | | 2439 | |
| SUPERVISION, INSPECTION & OVERHEAD (5.5%) | | | | 134 | |
| TOTAL REQUEST | | | | 2573 | |
| TOTAL REQUEST (ROUNDED) | | | | 2600 | |
| EQUIPMENT PROVIDED FROM OTHER APPROPRIATIONS | - | - | (NON ADD) | (0) | |
| 10. DESCRIPTION OF PROPOSED CONSTRUCTION | | | | | |
| <p>Permanent one-story shop with piles, reinforced concrete foundation, floors, and masonry walls. Built-up roof over insulation and interior support systems, i.e., air conditioning, steam, compressed air, sprinkler fire alarm, plumbing, telephones and telephone equipment installation, 60/400 cycle electrical; grounding, etc., exterior pavements, fencing, area lighting, site work, and utilities connected. Fallout shelter excluded - shelters for personnel have been programmed in other projects. (11 tons air conditioning)</p> <p>REQUIREMENTS: 26,312 SF. *ADEQUATE: 13,662 SF SUBSTANDARD: 0 SF PROJECT: Provide an adequate facility for the 2d Force Service Support Group Maintenance Battalion to perform third and fourth echelon electronic/communication maintenance. REQUIREMENT: A maintenance facility to effectively execute the prescribed Electronics and Communications Maintenance Program. CURRENT SITUATION: The maintenance program is being carried out in a facility with inadequate utilities, security, and building configuration. Location of existing facility is contrary to Facility Master Plan. IMPACT IF NOT PROVIDED: The deadline time on electronic equipment for personnel and vehicles will remain adversely affected and maintenance capability and combat readiness will continue to be impaired.</p> <p>*Bldg FC-100 will be utilized until completion of P-679 and convert back to Category Code 214-51.</p> | | | | | |



| | | | |
|---|--|-------------------|--|
| 1. COMPONENT | | 2. DATE | |
| MARINE CORPS | | 1 July 1985 | |
| 3. INSTALLATION AND LOCATION | | | |
| MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542 | | | |
| 4. PROJECT TITLE | | 5. PROJECT NUMBER | |
| ELEC/COMM MAINT SHOP | | P-679 | |

SPECIAL CONSIDERATIONS

1. Pollution Prevention, Abatement, and Control: This project will not cause additional air or water pollution.
2. Flood Hazard Evaluation: Requirements of Executive Order No. 11296 (Flood Hazards) are not applicable.
3. Environmental Impact: The project Environmental Impact Assessment will be made, reviewed, and where required, the design concepts will be given consideration to eliminating adverse environmental effects consistent with applicable directives.
4. Fallout Shelter Construction: Fallout shelter protection is not incorporated in this project.
5. Design for Accessibility of Physically Handicapped Personnel: Provisions for physically handicapped personnel are not required in this project.
6. Use of Air Conditioning: Ceiling "U" factors will be made to conform with DOD 4270.1-M.
7. Preservation of Historical Sites and Structures: This project does not directly or indirectly affect a district, site, building, structure, object or setting which is listed in the National Register or otherwise possesses a significant quality of American history.
8. "New Start" Criteria for Commercial or Industrial Activities Program (OMB Circular A-76): Not Applicable.



| | | | | | |
|---|--|--|--|----------------------------|--|
| 1. COMPONENT MARINE CORPS | | FY 1982 MILITARY CONSTRUCTION PROJECT DATA | | 2. DATE 1 July 1985 | |
| 3. INSTALLATION AND LOCATION MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542 | | | | | |
| 4. PROJECT TITLE ELEC/COMM MAINTENANCE SHOP | | | | 5. PROJECT NUMBER P-679 | |

FACILITY STUDY

1. Project: Provide 19,912 SF of Electronics/Communications Maintenance Shop to perform third and fourth echelon elec/comm maintenance.

2. Current and Planned Future Workload with Regard to this Project: The duration of need is indefinite and the facility will be utilized 100 percent of the time. An average of ten hours per day for a five-day work-week is spent in the shop. After training exercises or deployments, the maintenance workload increases; consequently, many nights and weekends are required to perform the additional maintenance. The organization is responsible for performing third and fourth echelon maintenance on all items of electronics and communications equipment authorized by the T/E. The future workload is difficult to project; however, it is expected to increase as the present equipment becomes older and new items are introduced into the system.

3. Description of Proposed Construction:

a. Type of Construction:

(1) Permanent one-story maintenance shop on pilings, reinforced concrete foundations, floors, masonry walls, built-up roofs, insulation, interior utilities, air conditioning in training and administrative areas, 60/400 cycle power with AC/DC power bus duct.

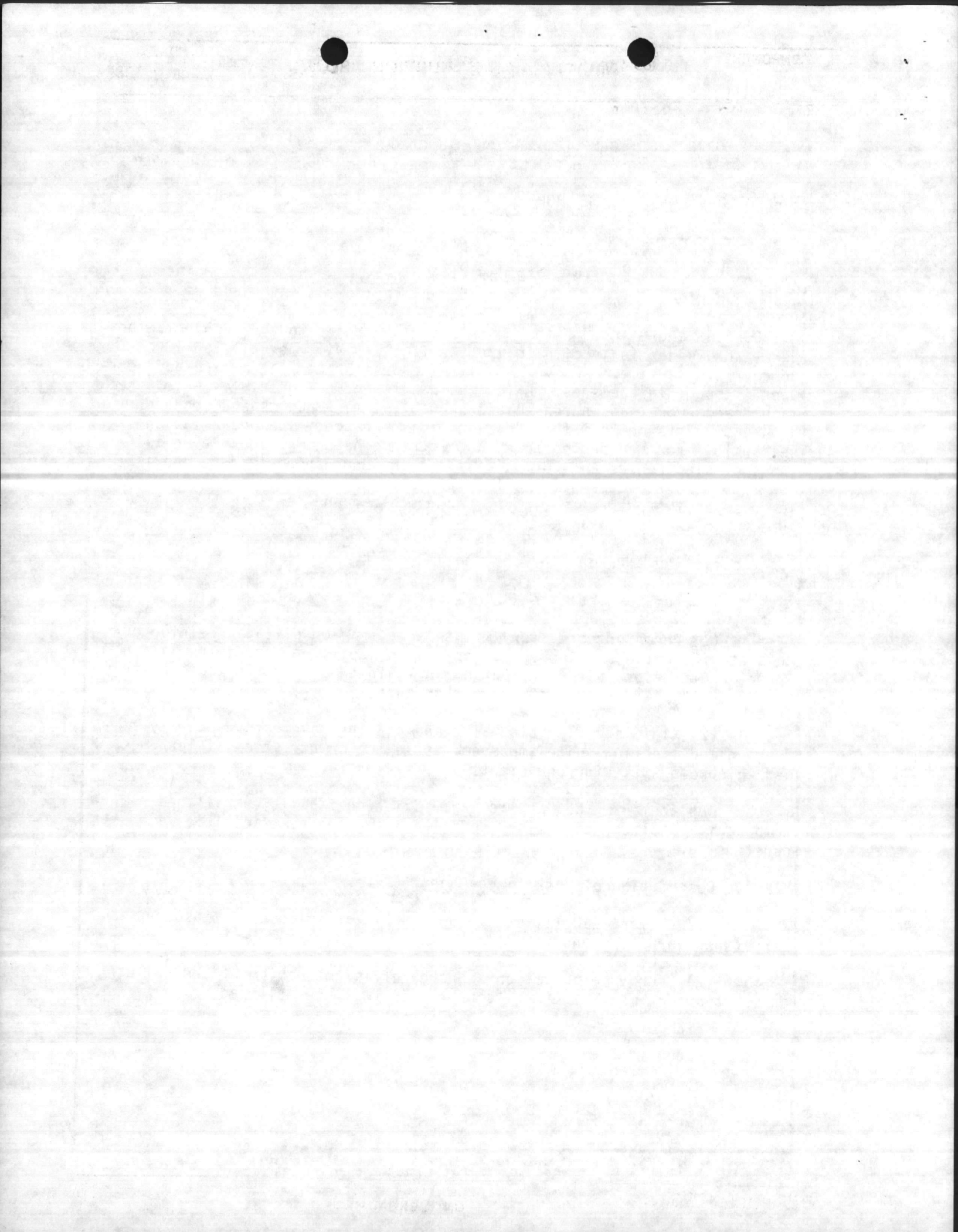
(2) Rigid and flexible walks and parking pavements, security fencing and lighting, site improvements, exterior utilities, telephones and telephone switching equipment.

b. Replacement: Not applicable. Existing facilities will be temporarily utilized to satisfy deficiencies until new facilities are constructed.

c. Description of Work to be Done:

(1) Primary Facilities: Modular reinforced concrete/masonry structures on pile foundation.

(2) Energy Conservation: Energy efficient equipment and building orientation for maximum energy conservation will be utilized.



1. COMPONENT

FY 1985

MILITARY CONSTRUCTION PROJECT DATA

2. DATE

1 July 1985

MARINE CORPS

3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE

ELEC/COMM MAINTENANCE SHOP

5. PROJECT NUMBER

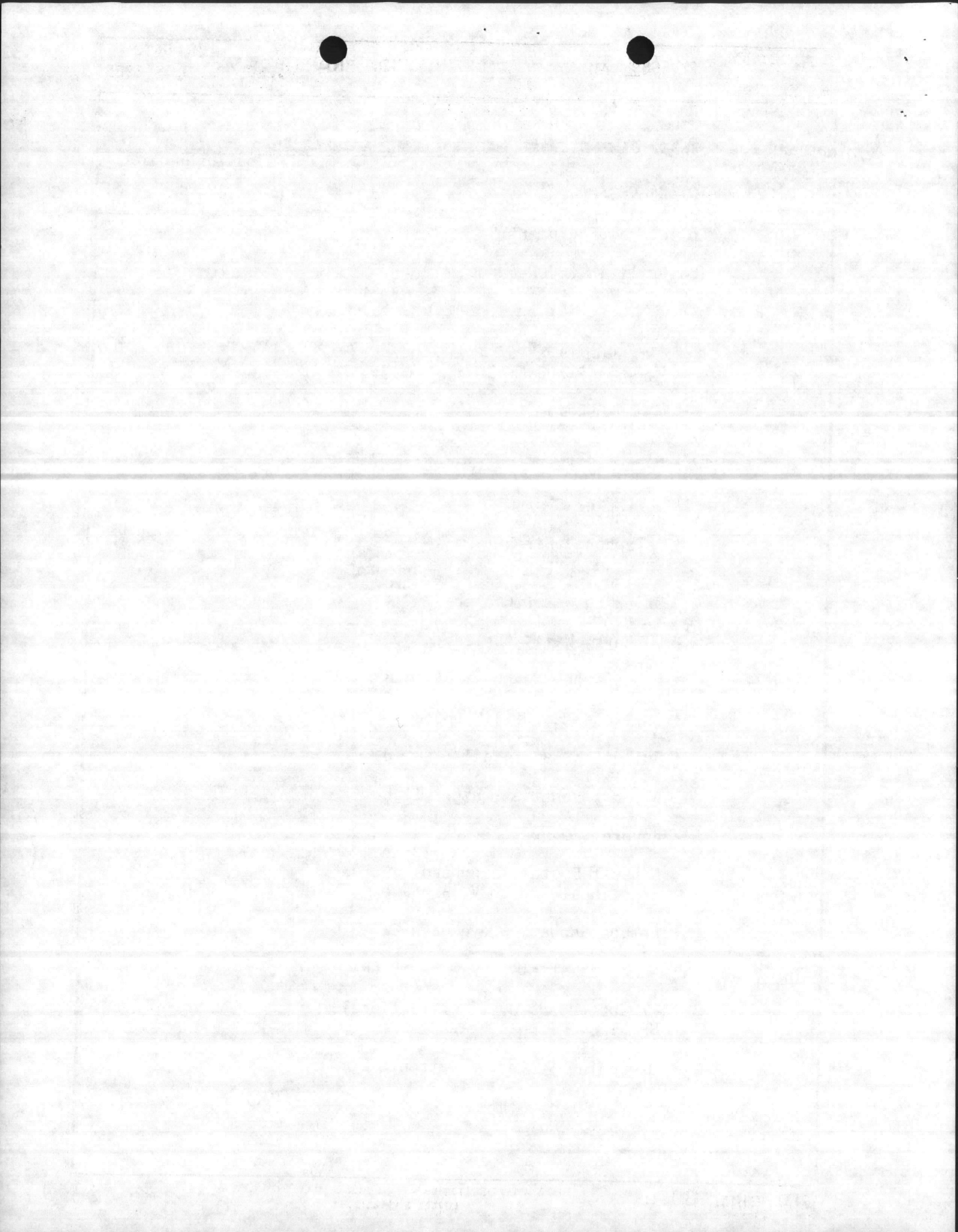
P-679

(3) Collateral Equipment:

(a) Built-in (MCON Funded):

Description

- * Air Conditioning, Heating & Ventilating Systems
- * Plumbing System & Steam System (Interior)
- * Compressed Air System
- * Sprinkler System
- * Telephone, Fire Alarm & Intercom Systems
- * Drinking Water Coolers
- * Lockers, Wall Mounted
- * Locker-room benches, 6' long
- * Chalkboards, Wall Mounted
- * Bulletin Board, Wall Mounted
- * Blinds, Venetian, Light Tight
- * Counter, Dispatchers
- * Exhaust System, overhead fractional HP, 208V, 3 phase
- * Deluge Shower, w/eye wash CW
- * Acid Resistant Sink w/bench CW
- * Exhaust Hood (over) w/fractional HP, 120V, 1 phase fan
- * Grounding System, Electronic



1. COMPONENT
 MARINE CORPS
 FY 1989 MILITARY CONSTRUCTION PROJECT DATA
 2. DATE
 1 July 1985

3. INSTALLATION AND LOCATION
 MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

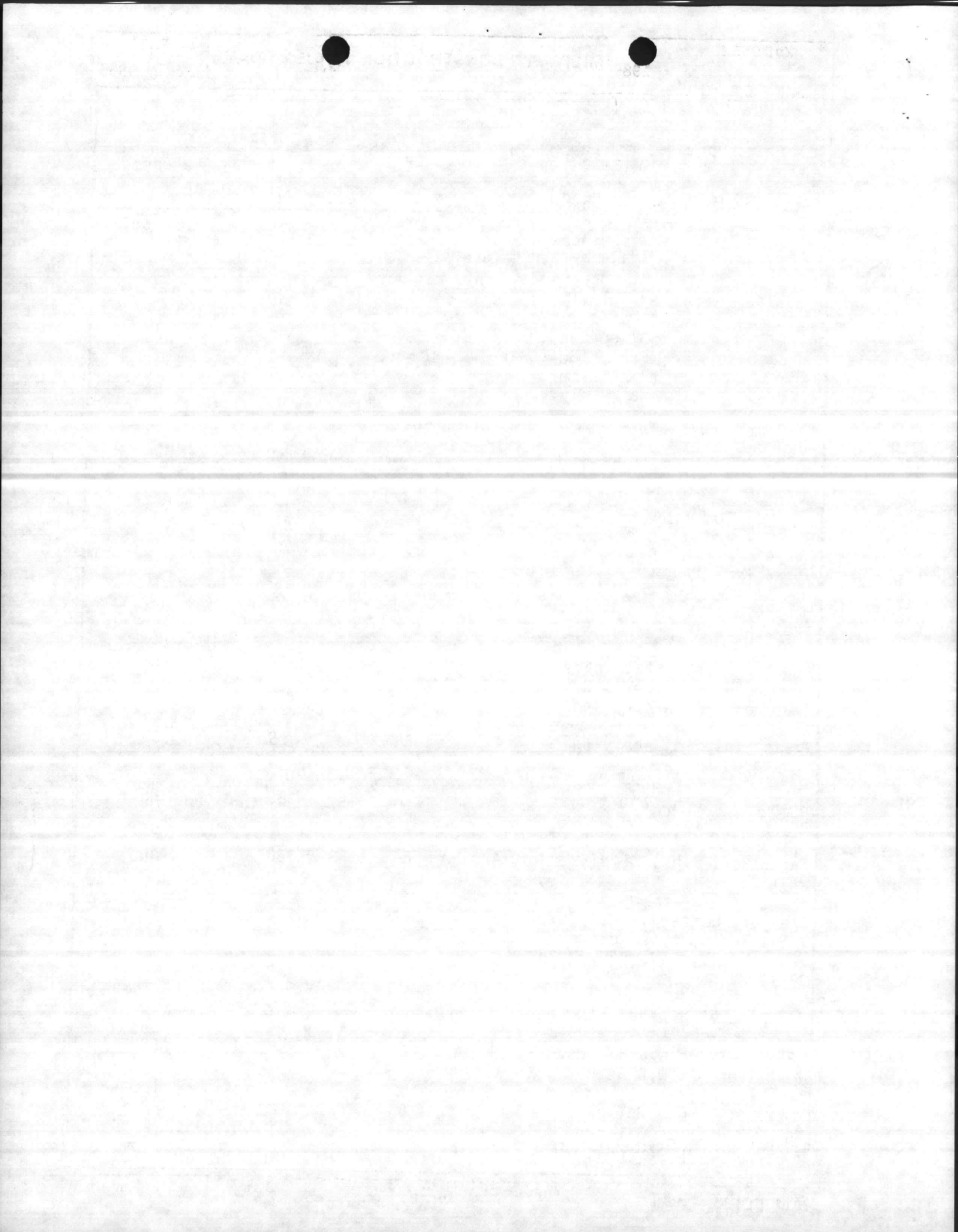
4. PROJECT TITLE
 ELEC/COMM MAINTENANCE SHOP
 5. PROJECT NUMBER
 P-679

*Pass Window, 4' wide,
 w/counter & "B" label
 roll down shutter (w/
 fusible link)
 *60/400 Cycle Electrical System
 with AC/DC Power Bus Bar and
 transformers

*Equipment with associated installation cost.

(b) Expense Items:

| Description | Qty | Unit of Issue | Unit Price | Total Cost |
|---|-----|---------------|------------|------------|
| Benches, work, portable, 48"x28"x34"H | 5 | EA | \$225 | 1,125 |
| Benches, work, portable, 72"x28"x34"H | 4 | EA | 340 | 1,360 |
| Benches, work, stationary, 28"Dx34"H, stl top, std, lead covered in btry shop | 2 | EA | 375 | 750 |
| Parts Bins, adj shelving 14"x24"D | 4 | EA | 75 | 300 |
| Grinder, bench, 7" w/ buffer wheel | 1 | EA | 385 | 385 |
| Parts Rota Bins, 3' dia. multi-bin | 4 | EA | 360 | 1,440 |
| Charger, battery, 12V, 24V, 36V selenium type; battery tester, 12V, 24V, 36V, 2.2KW, 110/220V | 2 | EA | 550 | 1,100 |
| 14"W shelving w/adj stds | 4 | EA | 120 | 480 |
| 12"W shelving w/adj stds, 6 shelves, 36"W & 84"H | 4 | EA | 90 | 360 |
| Desk, flat top, dbl ped, 60"x30", walnut pattern top, no overhang | 1 | EA | 315 | 315 |



1. COMPONENT
MARINE CORPS

FY 1989 MILITARY CONSTRUCTION PROJECT DATA

2. DATE
1 July 1985

3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

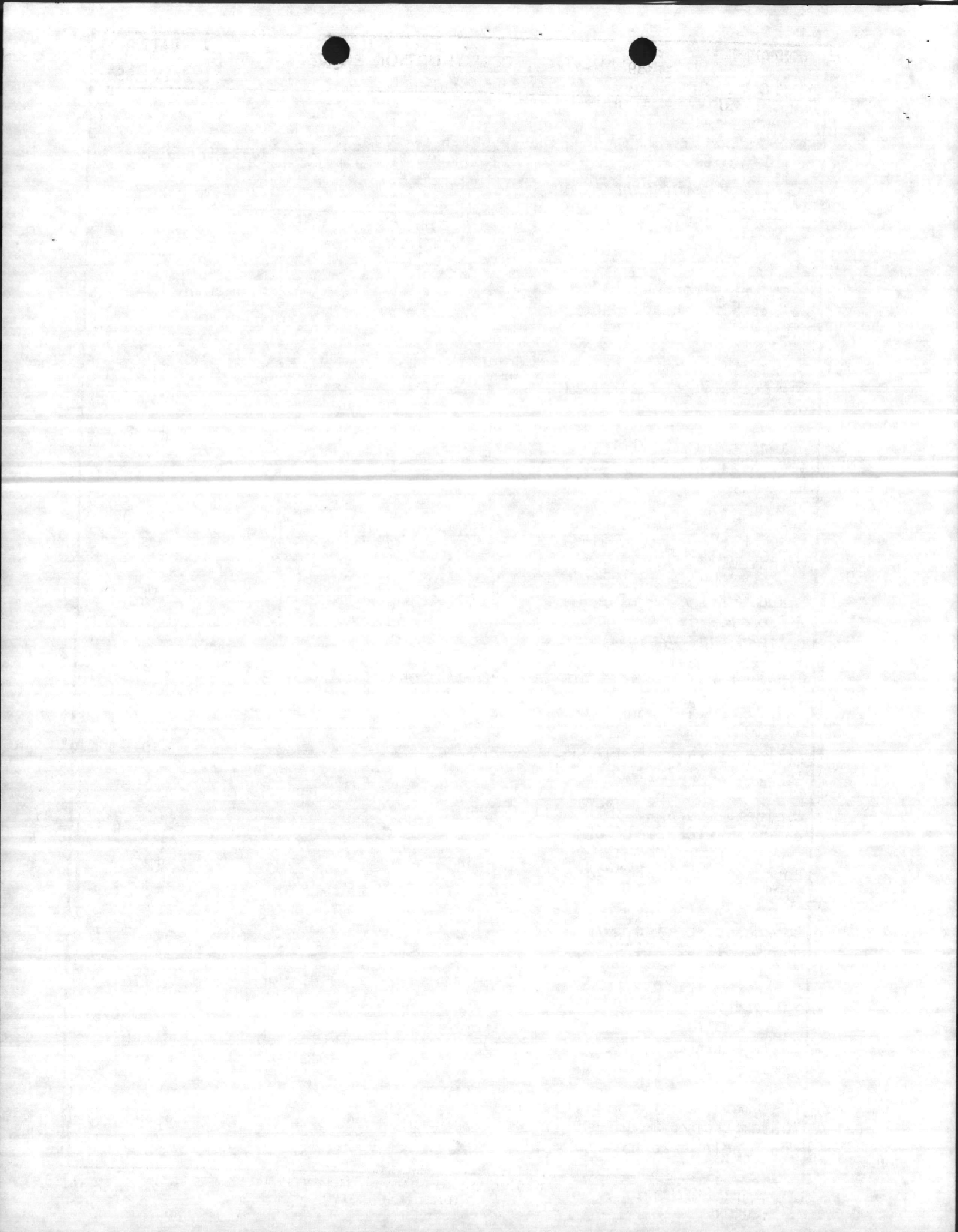
4. PROJECT TITLE

ELEC/COMM MAINTENANCE SHOP

5. PROJECT NUMBER

P-679

| Description | Qty | Unit of Issue | Unit Price | Total Cost |
|--|-----|---------------|------------|------------|
| Desk, flat top, 45"x30" walnut pattern top, no overhang | 3 | EA | 240 | 720 |
| Desk, flat top, w/attach for sec'l & gen. clerical purposes | 2 | EA | 275 | 550 |
| Chair, rotary, tilting seat & back, adj. seat height, w/arms, w/casters | 4 | EA | 94 | 376 |
| Chair, secretarial, rotary adj. seat height, w/arms, w/casters | 2 | EA | 70 | 140 |
| Stand, office machine 2 drop leaves, walnut pattern top, w/casters | 3 | EA | 66 | 198 |
| Typewriter, IBM electric 13½" carriage, carbon ribbon, 10 pitch Model 833 | 2 | EA | 710 | 1,420 |
| Filing Cabinet, 5 drawers, legal size, w/o lock | 2 | EA | 220 | 440 |
| Cabinet, storage, dbl door, 36"x18"x80-1/16"H | 4 | EA | 190 | 760 |
| Bookcase, base, 33"x13"x10"H | 6 | EA | 20 | 120 |
| Bookcase, section, w/o doors, 31"x12"x14"H | 24 | EA | 40 | 960 |
| Bookcase, top, 33"x13"x2½"H | 6 | EA | 20 | 120 |
| Chair, straight, w/o arms | 20 | EA | 70 | 1,400 |
| Costumer, wearing apparel, contemporary, 4 dbl hooks, round pole w/rd base | 6 | EA | 35 | 210 |



1. COMPONENT

MARINE CORPS

FY 1989 MILITARY CONSTRUCTION PROJECT DATA

2. DATE

1 July 1985

3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE

ELEC/COMM MAINTENANCE SHOP

5. PROJECT NUMBER

P-679

| Description | Qty | Unit of Issue | Unit Price | Total Cost |
|---|-----|---------------|------------|------------|
| Rack, wearing apparel contemporary, 6 metal hangers, 78"Hx30"Lx20"D at base | 4 | EA | 85 | 340 |
| Wastepaper Basket, dark brown, 14½"Hx13" dia top | 12 | EA | 6 | 72 |
| Draperies | 3 | PR | 74 | 222 |
| Draperies, blackout | 3 | PR | 95 | 285 |
| Desk Lamp | 6 | EA | 45 | 270 |
| Adding Machine, Monroe Model 1405 | 2 | EA | 290 | 580 |
| Bulletin Board, cork, alum frame, 4'x6' | 4 | EA | 65 | 260 |
| Table, gen. purpose, 60"x30"x29½"H | 3 | EA | 105 | 315 |
| Student Chairs, Heywood Wakefield Model HC-7730-PABS-PP | 18 | EA | 70 | 1,260 |
| Portable Easel | 2 | EA | 85 | 170 |
| Bench, work, electronic, 120/220V, 60 cycle & 400 cyc., 28V | 3 | EA | 1,450 | 4,350 |
| Rack, security, for mechanics' tool boxes, 24 openings | 1 | EA | 2,000 | 2,000 |
| Extinguisher, fire, 15 lb., CO ₂ | 4 | EA | 85 | 340 |
| Extinguisher, fire, 2½ gal. H ₂ O | 4 | EA | 40 | 160 |
| TOTAL EXPENSE ITEMS | | | | 25,653 |



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1. COMPONENT

FY 1985 MILITARY CONSTRUCTION PROJECT DATA

2. DATE
1 July 1985

MARINE CORPS

3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE

ELEC/COMM MAINTENANCE SHOP

5. PROJECT NUMBER

P- 679

(3) COLLATERAL EQUIPMENT (continued)

TOTAL EXPENSE ITEMS: 25,653

(c) Investment Items: None.

(d) APA Equipment: None.

(e) Training Equipment:

| <u>Description</u> | <u>Qty</u> | <u>Unit of Issue</u> | <u>Unit Price</u> | <u>Total Cost</u> |
|----------------------|------------|----------------------|-------------------|-------------------|
| Movie Projector | 1 | EA | 650 | 650 |
| Movie Screen | 1 | EA | 235 | 235 |
| Overhead Projector | 1 | EA | 375 | 375 |
| TOTAL TRAINING ITEMS | | | | \$ 1,260 |

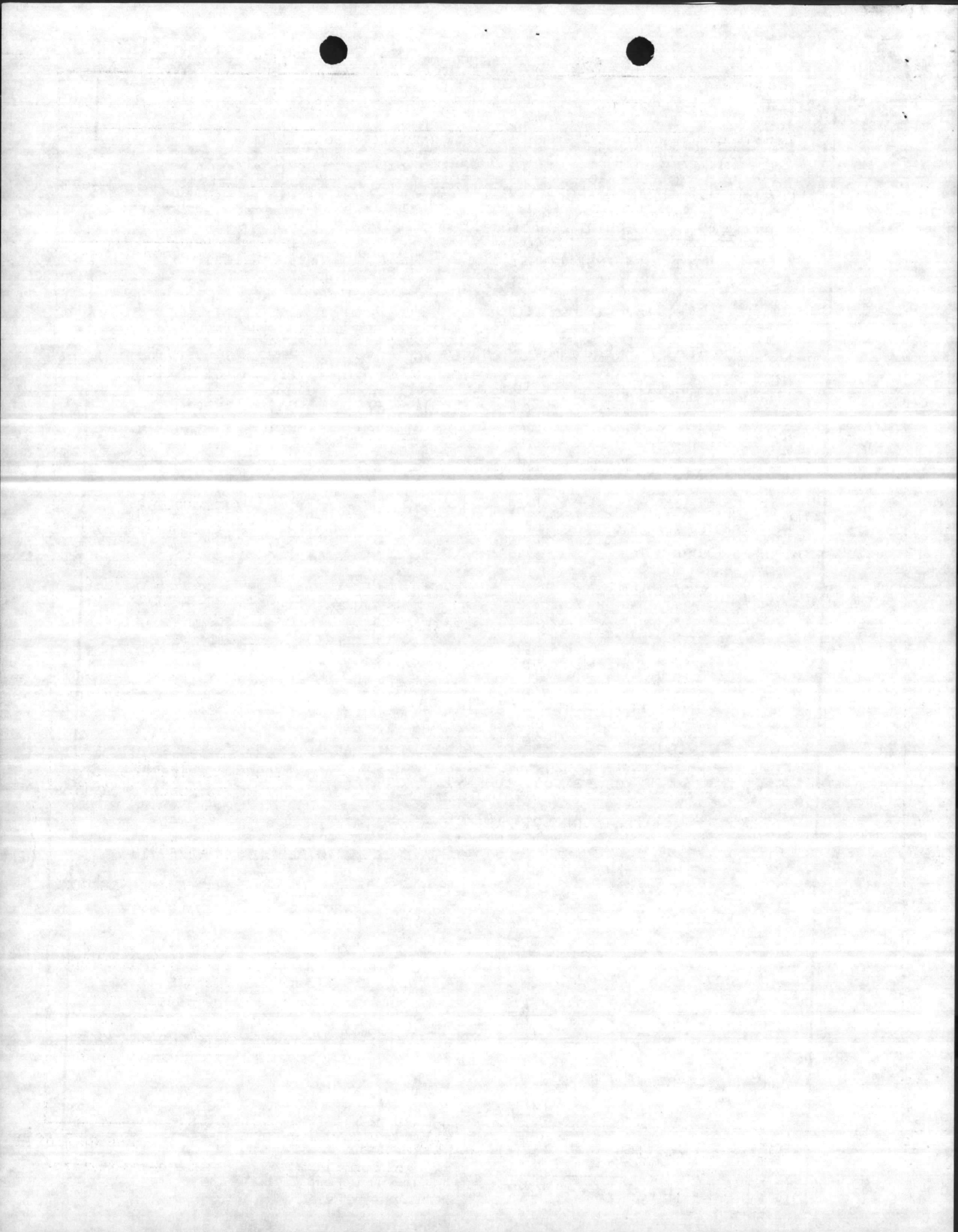
(f) Equipment on Hand: None.

(g) Summary:

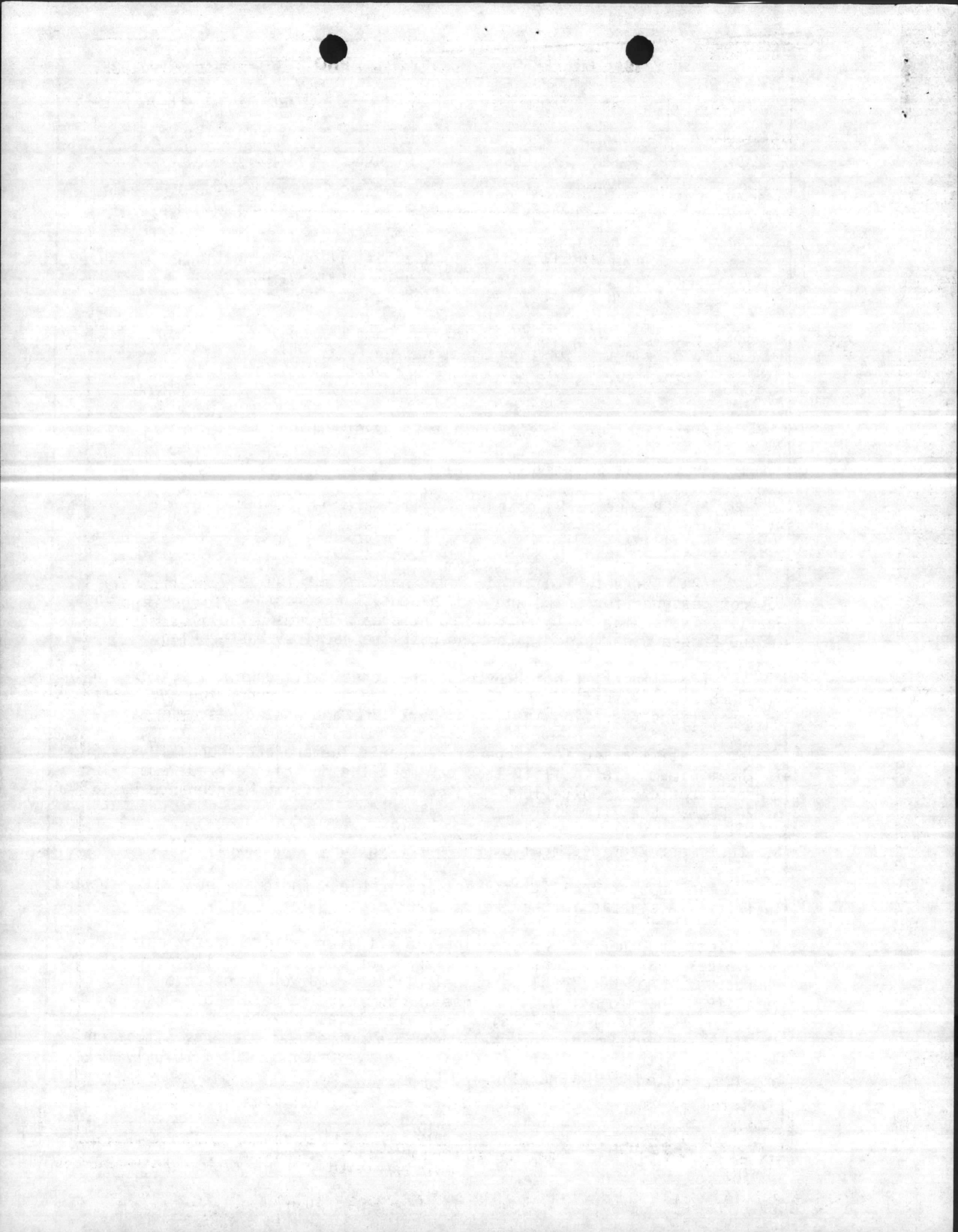
Expense Cost (O&MMC) 25,653

Training Cost (O&MMC) 1,260

TOTAL 26,913

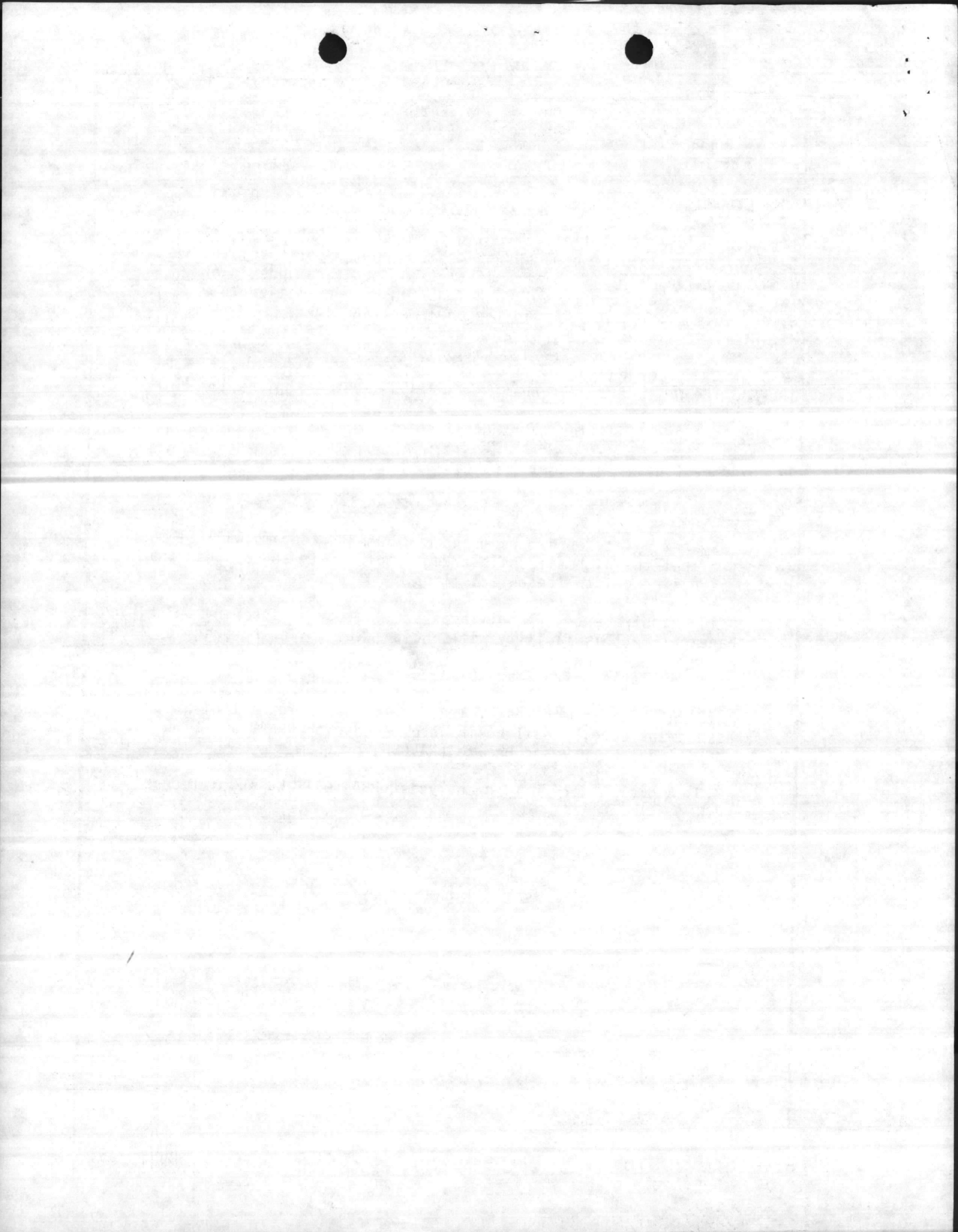


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| 1. COMPONENT MARINE CORPS | FY 19 ⁸⁹ MILITARY CONSTRUCTION PROJECT DATA | 2. DATE 1 July 1985 |
| 3. INSTALLATION AND LOCATION MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542 | | |
| 4. PROJECT TITLE ELEC/COMM MAINTENANCE SHOP | 5. PROJECT NUMBER P-579 | |
| <p>(4) <u>Supporting Facilities</u>: Special piling, foundation, solar hot water system, collateral equipment, site improvement, pollution abatement, etc. No demolition will be accomplished on this project.</p> <p>4. <u>Cost Estimate</u>: Area cost factor for Camp Lejeune, NC is 0.95. Cost data derived from the Military Construction Cost Review Guide, FY-84 (DOD 4270.1-CG) to provide for this proposed facility, and escalated to FY-89.</p> <p>5. <u>Justification for Project and for Scope of Project</u>:</p> <p>a. <u>Justification for Project</u>:</p> <p>(1) <u>Project</u>: Proposed facilities are required to provide a Maintenance Battalion adequate and secure facilities to perform electronic and communications equipment maintenance.</p> <p>(2) <u>Current Situation</u>: Personnel are working in a facility that was not designed for third and fourth echelon elec/comm maintenance. This facility is located in the Hadnot Point area. Proposed facility will be in the French Creek area in keeping with the Facility Master Plan.</p> <p>(3) <u>Impact if Not Provided</u>: Personnel will continue to work in sub-standard and makeshift facilities, resulting in time consuming and inefficient operations resulting in loss of work time and wasted energy.</p> <p>b. <u>Justification for Scope of Project</u>: The project scope, 19,912 SF, is the minimum size facility that can meet the deficiency requirement for the electronic/communications maintenance needs of the Maintenance Battalion of 2d FSSG. See Item 13.</p> <p>6. <u>Equipment Provided from Other Appropriations</u>: Not applicable.</p> <p>7. <u>Common Support Facilities</u>: Not applicable. There are no common support facilities available in the French Creek area.</p> <p>8. <u>Effect on Other Resources</u>: The project will require approximately \$6,876 per year in increased O&MMC funds for increased utility services and operations. No additional personnel will be required to operate this facility. The project will enhance and improve the morale of personnel presently working in widely dispersed facilities. Proposed construction should be responsive to the challenges presented by the energy situation and comply with the requirements of Executive Order 12003 of 20 July 1977 and implemented by NAVFACINST 4100.5A.</p> | | |



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|--|---|--|----------------------------|------------------------|
| 1. COMPONENT MARINE CORPS | | FY 1989 MILITARY CONSTRUCTION PROJECT DATA | | 2. DATE 1 July 1985 |
| 3. INSTALLATION AND LOCATION MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542 | | | | |
| 4. PROJECT TITLE ELEC/COMM MAINTENANCE SHOP | | | 5. PROJECT NUMBER P-679 | |
| <u>Utility Requirements</u> | | | | |
| a. Electricity: | Consumption | 67,830 | KWHR/yr | |
| | Peak Demand | 42 | KW | |
| | Avg Demand | 36 | KW | |
| b. Steam: | Consumption | 3,042,432 | LBS/yr | |
| | Demand | 1,092 | LBS/hr | |
| c. Coal: | | 118 | Tons/yr | |
| d. | Adequate utility requirements are available. | | | |
| 9. <u>Siting of the Project:</u> This facility will be located in the French Creek area, in keeping with the Camp Lejeune Master Plan. See enclosure (1). | | | | |
| 10. <u>Other Graphic Presentations, including Photographs:</u> None. | | | | |
| 11. <u>Economic Analysis:</u> This facility is being constructed on an undeveloped site adjacent to a developed area. Economic savings will be in nominal energy consumption savings to be realized from efficient operations. This is a military operational project in support of an operational mission located in this area. | | | | |
| 12. <u>Environmental Impact Assessment:</u> An Environmental Impact Assessment of the area has been made and will be routed through the Environmental Review Board. No adverse environmental impact is anticipated. | | | | |
| 13. <u>Quantitative Data:</u> | | | | |
| a. | UNIT OF MEASURE: "SQUARE FEET" | | | |
| b. | TOTAL REQUIREMENT: 26,312 SQUARE FEET | | | |
| c. | EXISTING SUBSTANDARD: 0 SQUARE FEET | | | |
| d. | EXISTING INADEQUATE: 0 SQUARE FEET | | | |
| * e. | EXISTING ADEQUATE: 13,662 SQUARE FEET | | | |
| f. | OTHER ASSETS, NOT IN INVENTORY: 0 SQUARE FEET | | | |
| g. | FUNDED, NOT IN INVENTORY: 0 SQUARE FEET | | | |
| * h. | ADEQUATE ASSETS: (e + f + g) 13,662 SQUARE FEET | | | |
| i. | DEFICIENCY: (b - h) 12,650 SQUARE FEET | | | |
| | TOTAL REQUIREMENT = 26,312 SQUARE FEET | | | |
| | ADEQUATE ASSETS = 13,662 SQUARE FEET | | | |
| | TOTAL DEFICIENCY = 12,650 SQUARE FEET | | | |
| *Bldg FC-100 will be utilized until completion of P-679 and convert back to Category Code 214-51. Bldg FC-100 currently utilizes 8,712 Square Feet. | | | | |

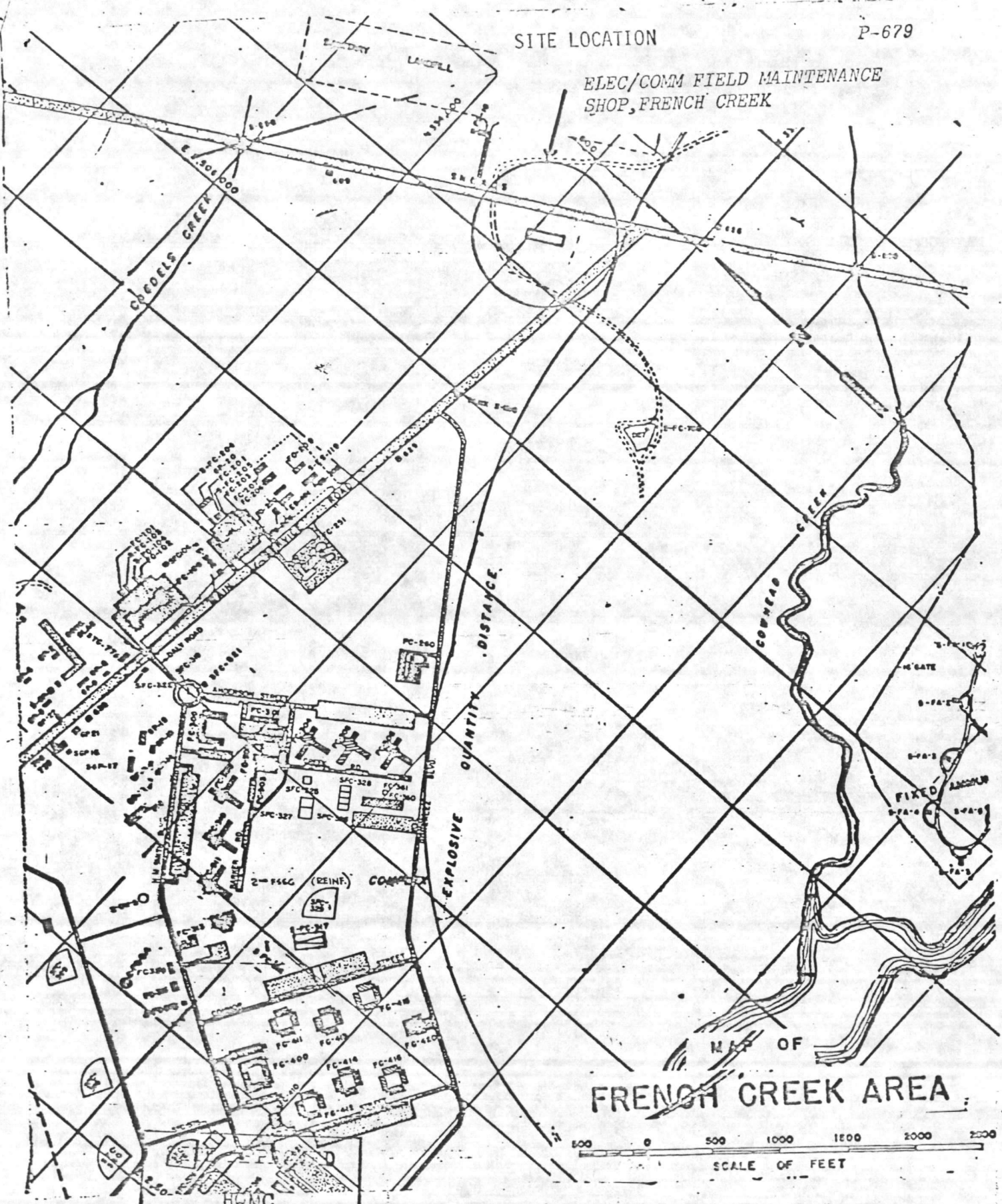
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| 1. COMPONENT MARINE CORPS | FY 1989 MILITARY CONSTRUCTION PROJECT DATA | 2. DATE 1 July 1985 |
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| 4. PROJECT TITLE ELEC/COMM MAINTENANCE SHOP | 5. PROJECT NUMBER P-679 | |
| <p>14. <u>Maintenance Facilities</u>: Planning factors have been identified in terms of quantitative workloads that have been supported by the level of utilization. This facility has certain specifications in order to satisfy the space requirements and functional capabilities to effectively store and maintain the equipment involved. The NAVFAC definitive drawing given in P-272, Part IV is NAVFAC Dwg. # 1293356, Field Maintenance Shop, Service Battalion.</p> <p>15. <u>Morale, Welfare and Recreation Facilities</u>: Not Applicable</p> <p>16. <u>Relocation Facilities</u>: Not Applicable.</p> <p>17. <u>Storage Facilities</u>: Not Applicable.</p> <p>18. <u>Hazards Identification, Assessment and Analysis</u>:</p> <p>a. System safety engineering and management programs will be used to ensure that the highest possible degree of safety and occupational health is designed into these facilities.</p> <p>b. The requirement for applying system safety engineering principles and management to this facility will include the following documentation:</p> <p>(1) A listing of primary hazards identified.</p> <p>(2) Risk assessment data, leading to the assignment of a "risk assessment code," shall be in accordance with OPNAVINST 5100.23, Navy Occupational Safety and Health (NAVOSH) program.</p> <p>(3) A preliminary hazard analysis (PHA) will be submitted as required.</p> | | |



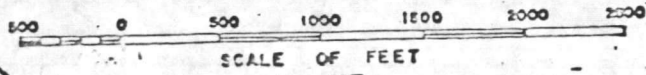
SITE LOCATION

P-679

ELEC/COMM FIELD MAINTENANCE
SHOP, FRENCH CREEK



MAP OF
FRENCH CREEK AREA



DATE 9/23/91
 BY *[Signature]*

ENCLOSURE (1)

