

11370
MAIN

22 Jan 90

Director, Utilities Branch

Director, Operations Branch

CONTRACT N62470-87-7169, REPLACE BOILERS 83, 84, AND 85,
BUILDING G-650, PROJECT LE802M

Ref: (a) BMO ltr 4280 MAIN dtd 23 Mar 89

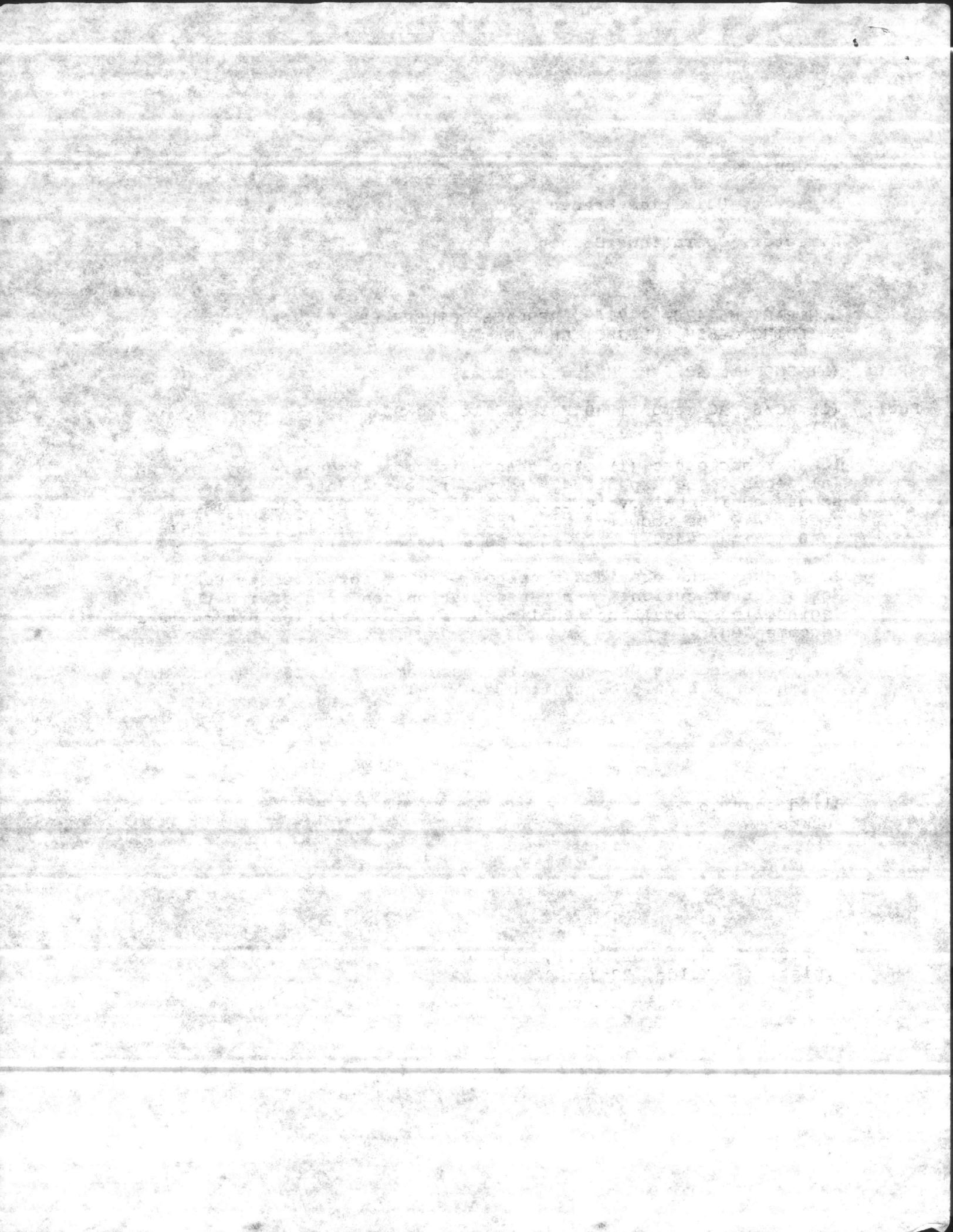
Encl: (1) AC/S FAC memo 11000 FAC dtd 11 Jan 90
(2) Scope of Work

1. Per enclosure (1), the change in scope requested by reference (a) needs to be expedited. In order to validate the change in scope, additional evaluation of boilers 83, 84, and 85 is required. The scope of work for evaluation of the boiler systems in Building G-650 is provided as enclosure (2).
2. Request the provided scope of work be forwarded to Public Works for execution. A pre-negotiation conference with the engineering consultant, Public Works, and Utilities Branch is also recommended.
3. Estimated cost of the boiler assessment is \$10,000, and M-2 design funds should be available.

C. H. BAKER

Blind copy to:
PubWks

Writer: C. H. Baker, Util, 5161
Typist: S. Kolde, 22 Jan 90



11 JAN 1990

ROUTING SLIP

	ACTION	INFO	INITIALS
BMO		✓	S
DBMO			
DIR, ADMIN			
DIR, OPS			
DIR, M&R			
DIR, UTIL	✓		
OTHER			
SECRETARY			

COMMENTS:

*Carl: Continue to
march on rehab instead
of replacement at 6650... tell
when designs can be redone
and ready! S & M.*

1001 JAN 11

Handwritten notes at the bottom of the page, including the word "Department" and other illegible text.

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

11000
FAC

JAN 11 1990

MEMORANDUM FOR THE COMMANDING GENERAL
CHIEF OF STAFF

Subj: CAMP GEIGER FUEL STORAGE AND STEAM PLANT G-650

Encl: (1) CG note of 28 Dec 1989 w/update attached
(2) CMC ltr 11019 F9002/LFF-2-nj dtd 14 Dec 1989

1. The attachment to enclosure (1) provides an update on the Geiger Fuel Farm project. As noted in enclosure (2), HQMC has said that replacement of the farm on an adjacent site is military construction; consequently, we are developing a project accordingly. However, in view of the imminent relocation of 6th Marines, as a first step, we are re-validating the requirements. I believe a scaled-down fuel facility may be adequate.

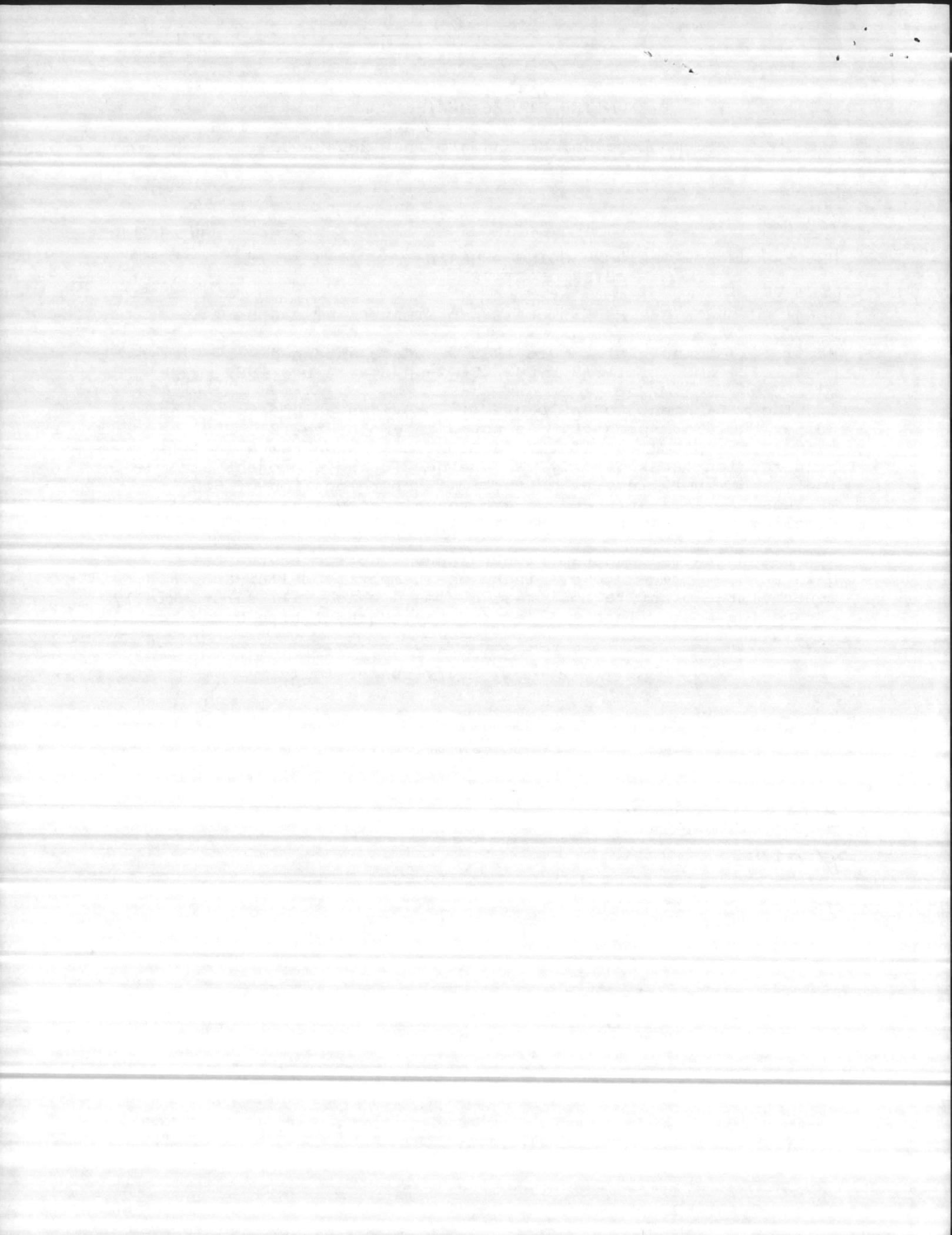
2. Regarding G-650 Steam Plant, I have instructed the Base Maintenance Officer to eliminate the temporary boiler and renovate the plant "a boiler at a time," which will substantially reduce the cost. This will extend the overhaul time but we can live with that.

Very respectfully,


H. E. LUTTRELL
AC/S, Facilities

Blind copy to:
→ BMO

Encl (1)



SUBJ: G-650 FUEL OIL STORAGE TANKS



⑦
J

DATE: 12/28

FROM: Commanding General, Marine Corps Base

FOR: A C/S FAC

Howard,

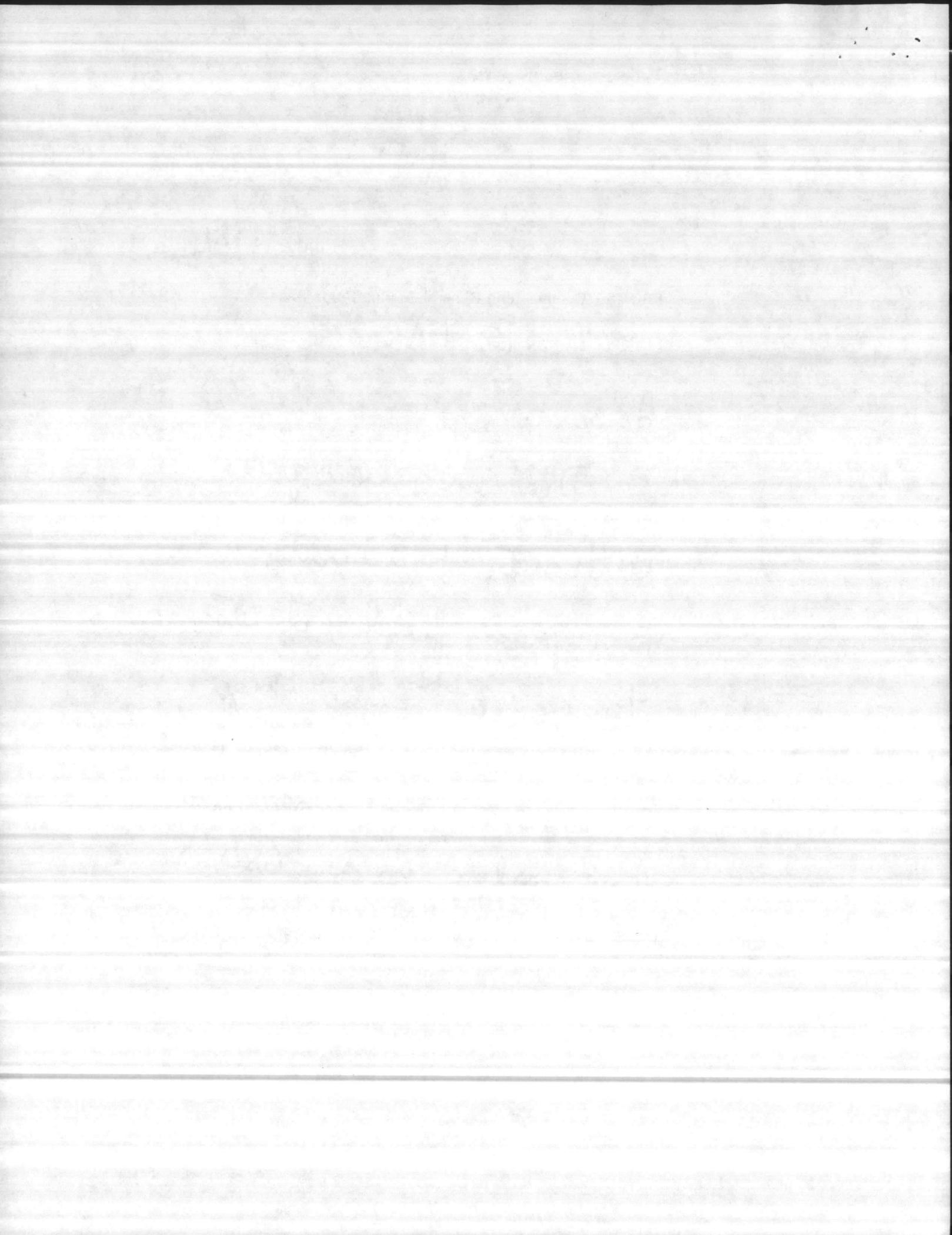
Did we ever get
authority to advertise
to replace fuel oil storage
tanks at Camp Meigs?
How about the Sec Nav

approval on replacing
the boilers in G-650. Service
life will run out someday.

"EXCELLENT INSTALLATIONS . . . THE FOUNDATION OF DEFENSE"

VIZ B

Encl (1)



UPDATE ON CAMP GEIGER FUEL FARM

The design for complete replacement of the Geiger fuel farm is complete. CWE is \$1.4 million. The project was originally validated as an M2 major repair project which would have been funded this fiscal year. However, a recent interpretation by HQMC determined that the project must be submitted for MILCON funding (see attached letter). This decision will obviously delay the project. Although the existing tanks are above ground, fuel leaks have occurred in the underground piping in the past. The existing site will require remediation/cleanup. Due to operational and environmental concerns, we are currently holding discussions with HQMC personnel regarding funding alternatives for the project.

UPDATE ON G650 BOILER PLANT

Design of complete renovation of the boiler plant is complete. The CWE is \$3.1 million (a significant portion of which involves construction of a temporary steam plant for use while renovating the existing plant). However, Base Maintenance is continuing to discuss various alternatives with HQMC and LANTDIV regarding the extent of repairs to be accomplished. Additional testing of the boilers is planned by Maintenance. Probable action will be to reduce the scope of the repair project as currently designed.



DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, D.C. 20380-0001

IN REPLY REFER TO

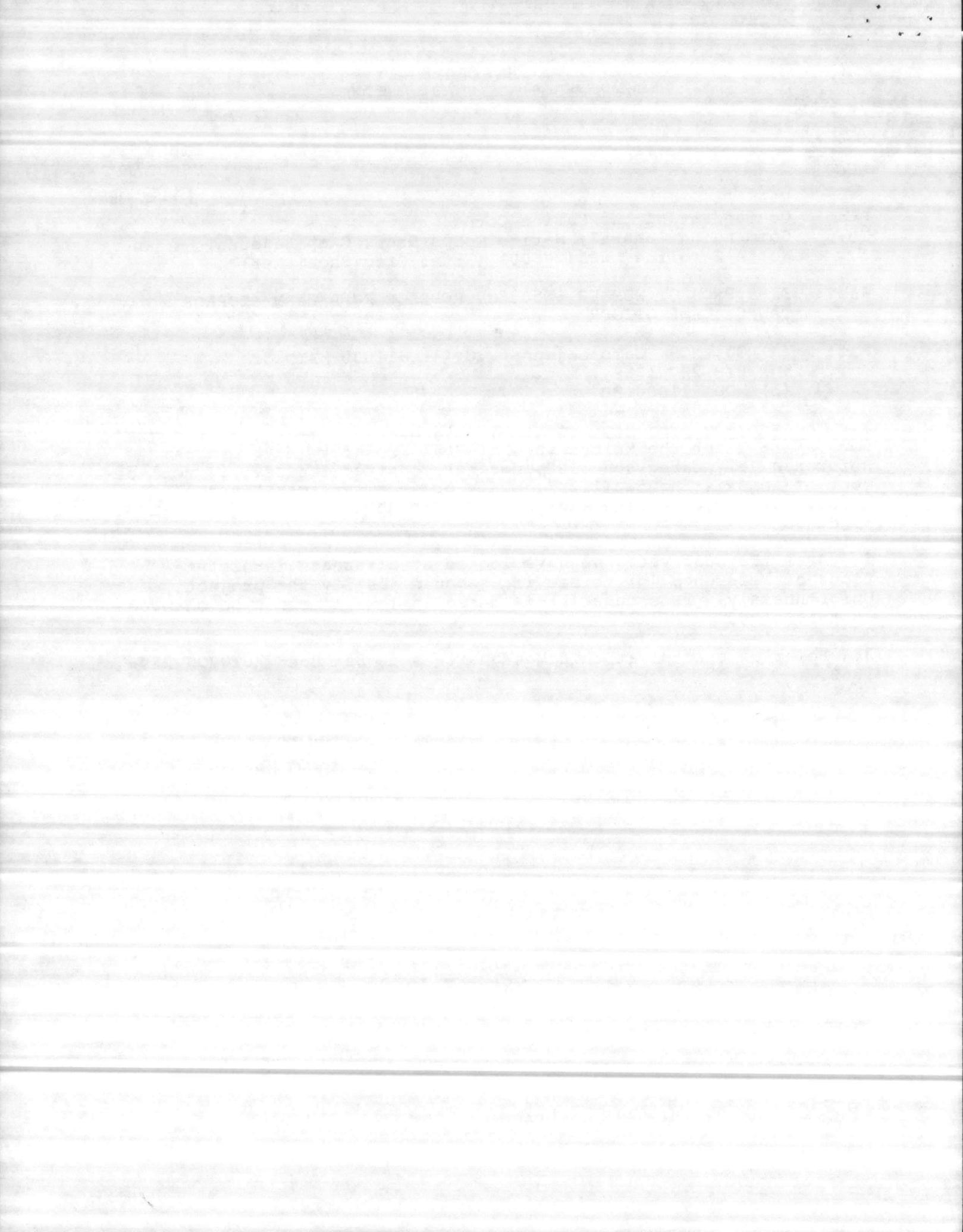
11019
F9002/LFF-2-nj
14 DEC 1989

From: Commandant of the Marine Corps
To: Commanding General, Marine Corps Base, Camp Lejeune,
North Carolina 28542-5001 (Attn: Greg Shoemaker)
Subj: FY89 PROJECT NUMBER LE5030M, REPLACE FUEL FARM STORAGE
TANKS, CAMP GEIGER
Ref: (a) CG, MCB, Camp Lejeune N.C. ltr 11000 MAIN of
Sep 28, 1988
(b) MCO P11000.5F

1. The subject project, reference (a), does not meet the criteria for repair under the Maintenance of Real Property (MRP) program. Reference (b), paragraph 3100, defines construction as..... replacement of an existing facility". This project replaces the fuel farm at Camp Geiger on an adjacent site. Consider submitting for MILCON funding.
2. Over the past year, we have looked at alternate interpretations of reference (b) to see if we could justify the project. Unfortunately, reference (b) is based in law and can't be changed at this time.
3. Point of contact at this Headquarters is Ben Bond AUTOVON 224-1369.

S. A. Vines
S. A. VINES
BY DIRECTION

Encl (2)



SCOPE OF WORK

Perform a complete assessment of Boilers 83, 84, and 85 in Building G-650 to determine if boilers should be rehabilitated or replaced completely as currently identified in Contract N62470-87-B-7169, Replace Boilers 83, 84, and 85, Bldg. G-650.

1. The assessment of each boiler shall include the following items: tubes, drums, casings, tile, brick, refractory, short circuitary of flue gas passes, burners, combustion controls, feedwater controls, steam flow meters, fan, breeching, stacks, and other appurtances to insure a complete assessment.
2. The following boiler auxilary equipment shall be inspected and included in the assessment:
 - a. Fuel oil pumping system.
 - b. Compressed air system including compressors, controls and piping.
 - c. Main electric panels, wiring and breakers.
 - d. Header stop, non-return, and feedwater valves.
 - e. Chemical feed system.
 - f. Bottom blowdown, continuous or top blowoff valves.
 - g. Water softners, brine tank, piping and drains from backwash softners.
 - h. Fuel off-loading station including pumps, valves, piping, heaters and tanks.
3. The assessment shall include scope of work for repair/replacement of boilers and other equipment including cost estimates.



SCOPE OF WORK

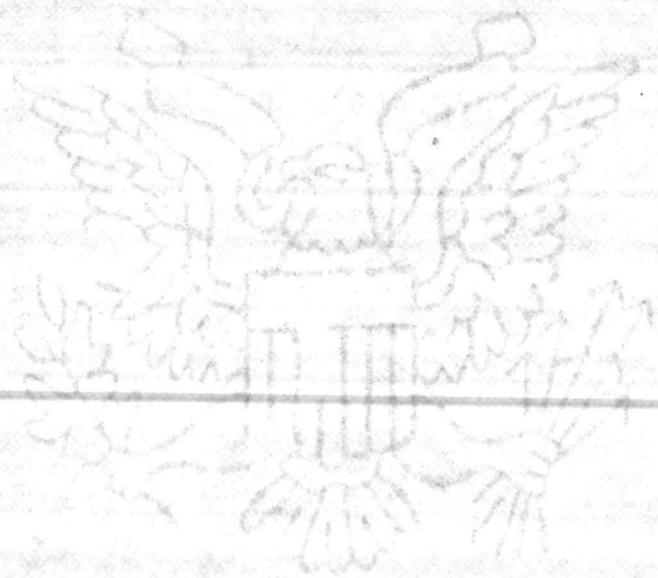
perform a complete assessment of boilers 83, 84, and 85 in Building G-520 to determine if boilers should be rehabilitated or replaced completely as currently identified in Contract W62470-87-B-7169, Replace Boilers 83, 84, and 85, Bldg. G-520.

1. The assessment of each boiler shall include the following items: tubes, drums, casings, fire, brick, refractory, short circuiting of flues, gas passages, burners, combustion controls, feedwater controls, steam flow meters, fan, breeching, stacks, and other appliances to insure a complete assessment.

2. The following boiler auxiliary equipment shall be inspected and included in the assessment:

- a. Fuel oil pumping system.
- b. Compressed air system including compressors, controls and piping.
- c. Main electric panels, wiring and breakers.
- d. Header stop, non-return, and feedwater valves.
- e. Chemical feed system.
- f. Bottom blowdown, continuous or fog blowoff valves.
- g. Water softeners, brine tank, piping and drains from backwash softeners.
- h. Fuel oil-loading station including pumps, valves, piping, heaters and tanks.

3. The assessment shall include scope of work for repair/replacement of boilers and other equipment including cost estimates.



MAR 23 1989

4280
MAIN

12/8

Base Maintenance Officer, Marine Corps Base, Camp Lejeune

Public Works Officer, Marine Corps Base, Camp Lejeune

7/69 per Ope
CONTRACT #N62470-87-B-7619, REPLACE BOILERS #83, #84, AND #85, *(Proj. L 580am per Ope)*
BUILDING G-650

Encl: (1) Work Request B045 #39-89 dtd 27 Feb 89

1. Request that an Engineering Service Request (ESR) be submitted to LANTDIV to revise the scope of work for subject contract.
2. Due to a condition assessment of the boilers and pending replacement of the deaerator tank, the original scope of work is no longer accurate. The estimated cost of work has decreased from \$3,000,000 to \$1,500,000.
3. Point of contact is Projects Coordinator, x5794.

T. D. JEWELL
By direction

Blind Copy to:
Wk Recpt
Dir Util



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MAY

MAR 2 1950

Base Maintenance Officer, Marine Corps Base, Camp Lejeune
Public Works Officer, Marine Corps Base, Camp Lejeune

Handwritten: (Project E 802) 6-10-50

CONTRACT #32840-21-B-1015 PUBLIC WORKS #21 #24 LAM #23
BUILDING 2-370

Work Request 8043 #32-23-414 BY E-3 20

Request that an Engineering Service Request (ESR) be
submitted to LANTIV to review the scope of work for subject
contract.

2. Due to a condition assessment of the boilers and handling
equipment of the heating plant, the original scope of work is
no longer adequate. The estimated cost of work has increased
from \$2,000.00 to \$15,000.00.

3. Point of contact is Project Coordinator #3724.

T. L. DOWELL
by direction

Public Works
Camp Lejeune

11370
MAIN

21 Sep 87

Base Maintenance Officer, Marine Corps Base, Camp Lejeune
Public Works Officer (Attn: Design Director)

CAMP LEJEUNE ESR 2E87, REPLACE BOILERS 83, 84, and 85, Bldg G-650
(CONTRACT 87-7169)

Ref: (a) PWO ltr ESR 2E87 PWO of 28 Aug 87

1. In response to the reference, the following comments are provided:

- a. Item 4a. The muffler, valve and export line should be permanent construction to provide a means for boiler testing during light loads.
- b. Item 4h. The generator should be sized to also carry oil pumps and electric heater sets.
- c. Item 5b. Lighting should be fluorescent or white mercury vapor. High pressure sodium lights have caused operators to have a false perception for accuracy when reading gauges.
- d. Item 6b. There is currently no plan to burn gas at G-650 and the oxygen trim system does not need gas firing capability.
- e. Item 6c. To facilitate instrumentation installation, it may be more practical to provide a modular office where the existing flow meters are located in lieu of locating all instrumentation in the existing office space.
- f. Recommend an economic analysis be performed regarding installation of a flash tank and heat exchanger for capturing steam from continuous blow down.
- g. Recommend steam flow meters be provided with pressure and temperature compensators and a turn down ratio to maintain accuracy during seasonal loads.
- h. Request NEESA have personnel on site to monitor ASME and efficiency tests.
- i. Existing boilers have burner preheaters for No. 6 oil and new boilers may need oil preheaters dependent upon new heater station and oil circulation.

11370
NIN

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COMMUNICATIONS SECTION, FEDERAL BUREAU OF INVESTIGATION
(COMMUNICATIONS SECTION)

IN REPLY TO THE REFERENCE, THE FOLLOWING INFORMATION IS
FURNISHED:

1. The information was obtained from the files of the
communications section of the FBI on 11/15/54.
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Subj: CAMP LEJEUNE ESR 2E87, REPLACE BOILERS 83, 84, and 85,
BLDG G-650 (CONTRACT 87-7169)

j. Building G-650 has a 20" opening around the perimeter which has to be sealed during winter months to prevent freezing of control lines and provide a tolerable working temperature for plant personnel. To alleviate the temperature control problems, request operable louvers be installed under the subject contract.

2. Due to the increased project cost, the feasibility of closing G-650, connecting the Camp Geiger distribution system into the MCAS distribution system, and adding a boiler to AS-4151 is being investigated. Currently, Dave Knight in the Utilities, Energy and Environmental Division at LANTDIV is performing a load study and economic analysis for the proposal and completion is anticipated shortly. Completion of design for replacement of Boilers 83, 84, and 85 may be delayed pending results of the feasibility study.

3. Point of contact for additional information is Carl Baker or David Southerland at extension 5161.

C. H. BAKER
By direction

Writer: C. H. Baker, Util, X5161
Typist: R. Norris, 21 Sep 87

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

PH.D. THESIS

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BY [Name]



UNITED STATES MARINE CORPS
PUBLIC WORKS DIVISION
BUILDING 1005, MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542-5001

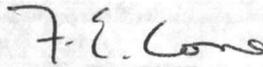
IN REPLY REFER TO:
ESR 2E87
PWO
28 Aug 87

From: Public Works Officer, Marine Corps Base, Camp Lejeune
To: Base Maintenance Officer (Attn: Utilities Director)

Subj: CAMP LEJEUNE ESR 2E87, REPLACE BOILERS 83, 84, AND 85, BLDG G-650
(CONTRACT 87-7169)

Encl: (1) Basis of Design
(2) Comment Sheet

1. Enclosure (1) is forwarded for your review and comments. Plans have previously been forwarded to you under separate cover.
2. Comments should be entered appropriately on enclosure (2) and forwarded to this office prior to 15 September 1987.
3. Point of contact is Mr. Thomas Hankins, Jr., extension 3238.

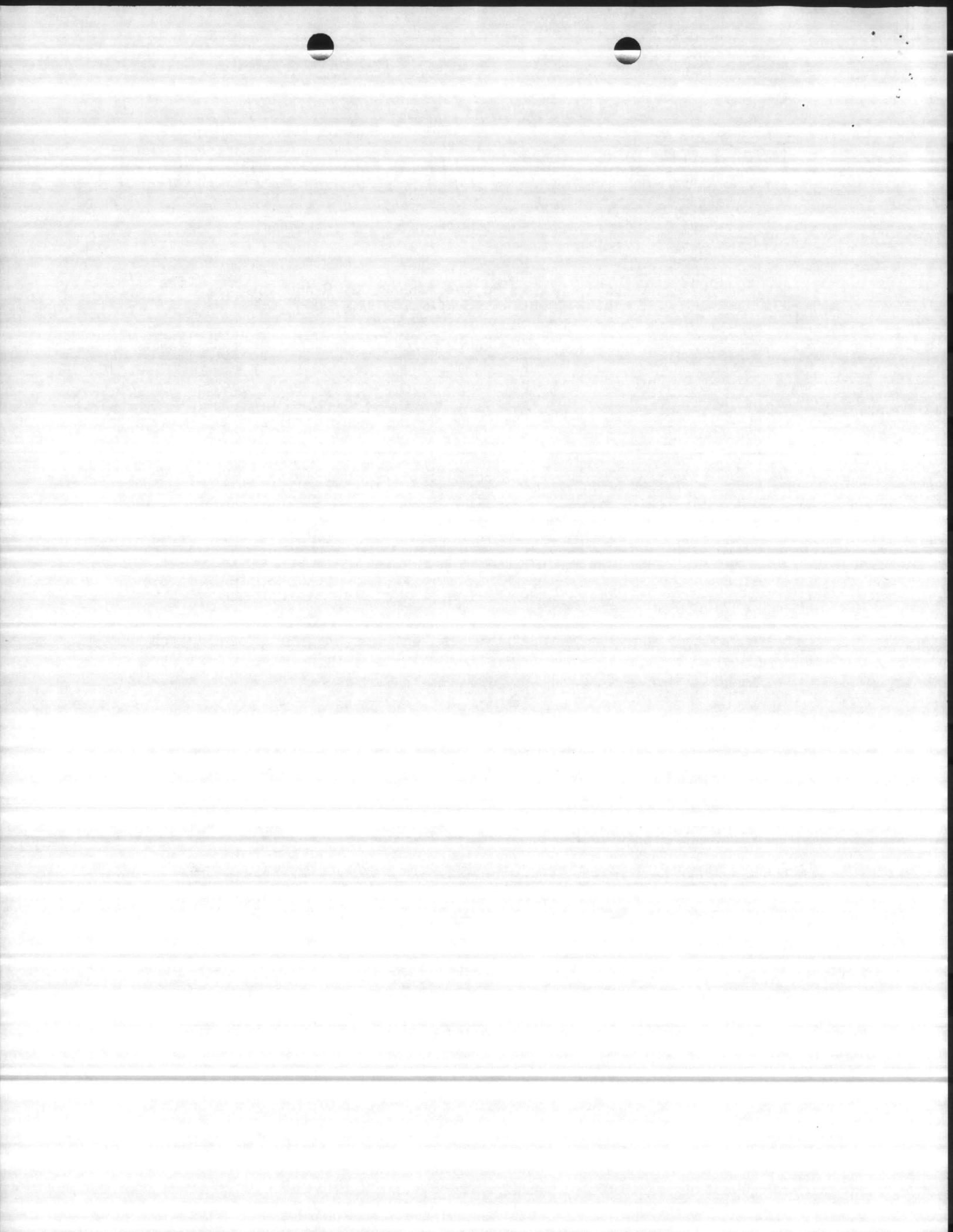

F. E. CONE
By direction

Page 10

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REPLACE BOILERS 83, 84 & 85 BLDG. G-650
MARINE CORPS BASE, CAMP LEJEUNE, NC
SPECIAL PROJECT LE802M
19 AUGUST 1987

35% SUBMITTAL



BASICS OF DESIGN

1. INTRODUCTION

a. Project Description: The project will replace three (3) existing boilers and various support equipment with 2 40,000 lb/hr and 1 25,000 lb/hr boilers and new support equipment. All asbestos in the building shall be removed. A new or existing factory refurbished control system shall be furnished and shall interface with the existing EMCS system. Full capacity backup with temporary boilers shall be provided. A diesel generator will be provided to power partial building loads under emergency conditions. The existing lighting and power distribution systems shall be removed and new provided. Existing catwalks, railings and ladders shall be removed and new furnished as necessary.

2. ARCHITECTURAL

a. Type of Construction and Occupancy

Type II non-combustible construction Group B occupancy

b. Energy Conservation

No additional insulation will be added to the existing pre-engineered metal building.

c. Description of Construction Materials, Exterior Finishes and Colors

The existing boiler plating is enclosed by an industrial pre-engineered metal building. Although no permanent exterior alterations are anticipated, removal of existing or installation of new boilers may require removal of siding, the siding shall be repaired to match existing adjacent surfaces.

d. Interior Finishes Floors

Locations where the existing concrete floor may be demolished will be repaired to match the exiting adjacent floor surfaces.

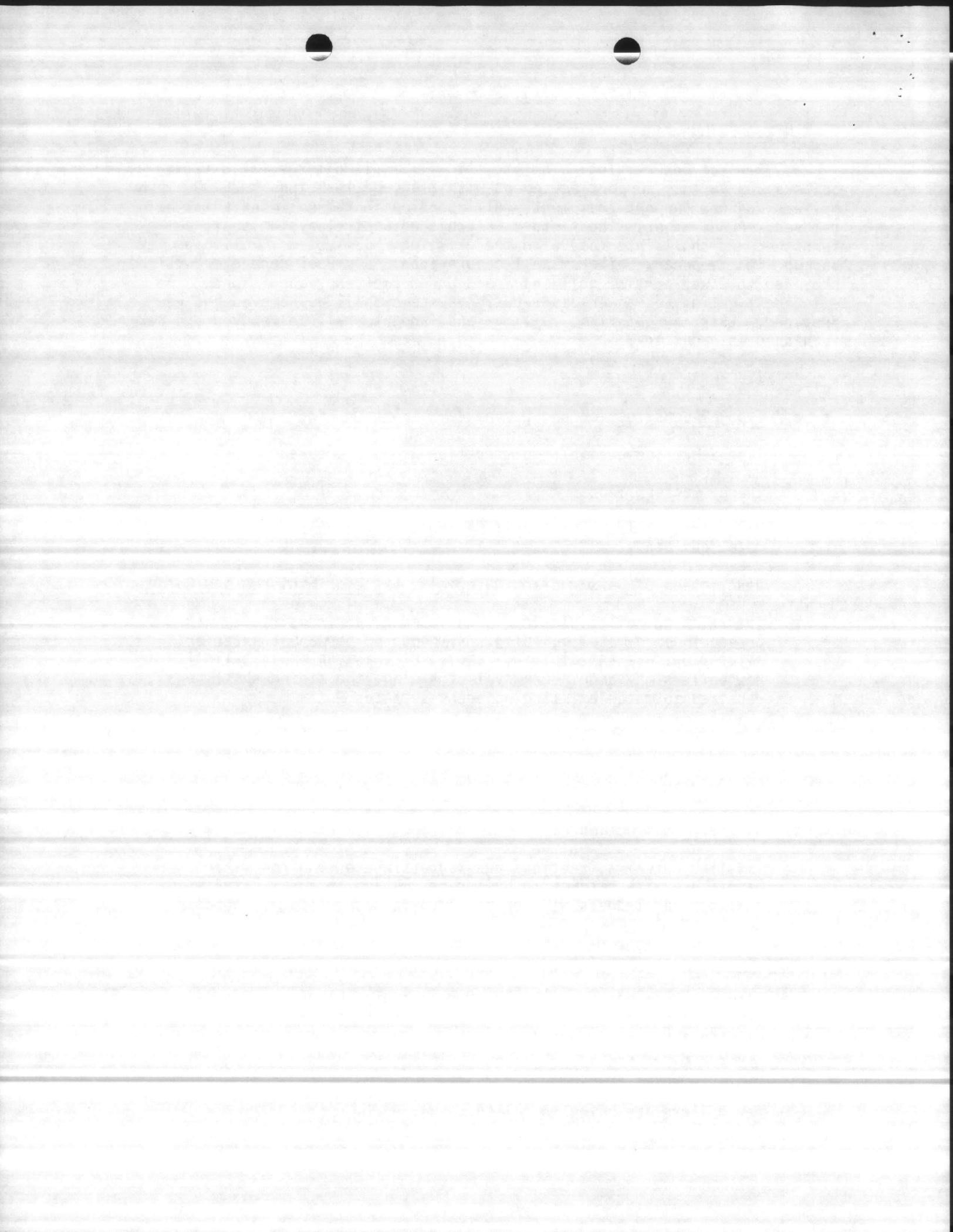
e. Special Construction

Existing catwalks, railings and ladders where required will be demolished with respect to boiler 83, 84 and 85. New catwalks, railings and ladders will be provided in accordance with OSHA regulations.

3. STRUCTURAL

a. Since the new boilers will be approximately the same weight and in the same location as the old boilers, the existing concrete boiler pads will be able to be reused.

b. New, temporary concrete foundations and pipe supports are required for the temporary boilers and steam piping which will be used while the new boilers are being installed.



- c. New catwalks and catwalk supports are required where needed per the boiler manufacturer. Some of the existing catwalks may be able to be reused.
- d. Roof opening framing for exhaust fans and boiler stacks is required.
- e. Materials:

Concrete	3,000 psi
Reinforcing Steel	60 ksi
Structural Steel	A36

4. MECHANICAL

- a. Boilers 83, 84 and 85 will be replaced with 2 40,000 lb/hr and 1 25,000 lb/hr boilers with new boiler trim, associated piping, breeching and stack. An export line with muffler for testing will be provided.
- b. The existing duplex oil pumping station/heater set and associated piping to boiler fronts shall be replaced. Heater set shall be combination electric and steam.
- c. The existing deareator tank, controls, regulators, valves and piping from make-up tank to deareator shall be replaced.
- d. Three boiler feedwater pumps and piping to boilers shall be replaced: All pumps shall be electric.
- e. The existing air compressors, air dryers and associated piping shall be replaced.
- f. All asbestos insulation in the building shall be removed and replaced with non asbestos insulation.
- g. Two feedwater transfer pumps and piping from make-up tank to deareator shall be replaced.
- h. A deisel generator sized to carry one boiler feedwater pump, one boiler, one condensate pump, one air compressor, and emergency lights shall be provided.
- i. The existing office area shall be air conditioned.
- j. See section 6 for controls description and interface with EMCS.

5. ELECTRICAL

This project consists of removing completely the existing lighting and power distribution systems within the building with the exception of the water softeners, chemical feed pumps and the fuel oil tank heaters (exterior) and wiring for same from the motor control center to the heaters at the fuel oil tanks on the exterior of the building. The scope of work also includes providing new interior electrical systems, modifying the existing and providing new diesel driven generator and associated equipment.



A. Interior distribution systems:

1) Electrical characteristics: Existing service is 12,470 V Primary, 3 phase, 3 wire, 60 Hertz, to 480/277 V, 3 phase, 4 wire, secondary and 120/208 V, 3 phase, 4 wire secondary via a 45 KVA 480 - 120/208 V Dry Type Existing Transformer which is being reused. The existing 500 KVA Primary transformer is an oil filled, pad mount type approximately 50 feet from the building which will remain as is and be reused.

2) Load Breakdown:

	<u>Conn(kva)</u>	<u>Demand Factor</u>	<u>Demand (KVA)</u>
--	------------------	----------------------	---------------------

Existing Load:

a. Lighting	16.0	0.8	12.8
b. Receptacles	3.6	0.5	1.8
c. Mech Equip	81.0	0.7	56.7
d. Pumps	160.0	0.7	112.0
e. Heaters	71.0	0.7	49.7
Subtotal:			233.0

New Conditions:

a. Lighting	15.0	0.8	12.0
b. Receptacles	3.6	0.5	1.8
c. Mech Equip	81.0	0.7	56.7
d. Pumps	170.0	0.7	119.0
e. Heaters	71.0	0.7	49.7
Subtotal:			239.2

Increase over existing load is Approximately 6.0 KVA.

3) Type of wiring system:

- a. Main Service: Existing conduits from pad mount transformer to service equipment location shall be reused. New conductors shall be provided.
- b. Branch Circuits: Branch circuit and panel feeder conduits shall be reused where possible. New conductors will be provided. Electrical Metallic Tubing (EMT) shall be used for new conduit systems.

4) Type of Conductors:

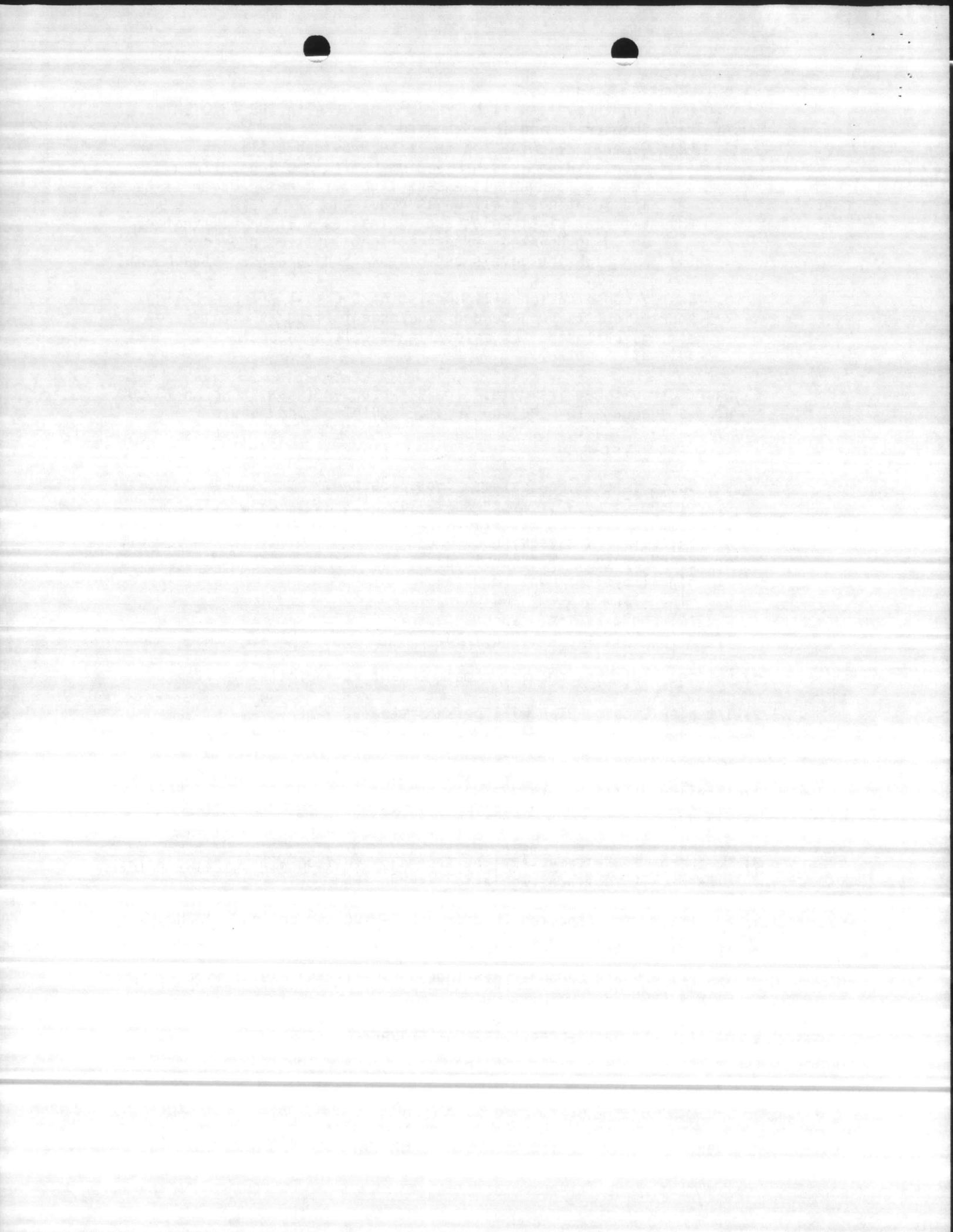
- a. Power and lighting conductors shall be copper, type THW or THWN insulation, except as otherwise required.

5) Design Standards:

- a. Voltage Drop: Limited to 5% total.
 - (1) Main Feeder Runs shall be less than 3% Voltage Drop.
 - (2) Branch Circuit Runs shall be less than 2% Voltage Drop.



- b. Lighting Standards:
 - (1) Light Levels will be in accordance with DOD 4270.1M, Chapter 7, and IES Standards.
 - (2) General Illumination shall be provided utilizing pendant mounted High Pressure Sodium Luminaires and surface ceiling mounted florescent light fixtures. Other fixtures and mountings shall be as required.
 - (3) Exterior Light Poles and luminaires will be eliminated. Building Mounted exterior lights will be provided.
 - (4) For Lighting Levels and Fixture Schedule, see attachment.
 - c. Energy conservation will consist of the most efficient light source for the purpose and fluorescent fixtures with energy savings ballasts. Exterior lights will have photo cells for automatic control.
- 6) Short Circuit Requirements; The transformer is existing an 10,000 AIC is adequate for the one service equipment and panels.
- 7) Specialty Systems:
- a. Cable Television Systems: Not required.
 - b. Closed Circuit TV Systems (CCTV): Not required.
 - c. Nurse Call: Not required.
 - d. Intercom: Not required
 - e. Sound System: Not required.
 - f. Signal System: Not required.
 - g. Fire Alarm System: No change.
 - h. Telephone System: No change.
 - i. Alarm System: Not required.
- 8) Outside Distribution will remain except as indicated in Item 3a.
- 9) Interior Lightng Plan will be submitted at 90%.
- B. Outside Distribution System:
- 1) Existing Utilities are adequate
 - 2) Existing pad mounted transformer will remain and be reused.
 - 3) No change to Primary service; Secondary voltage will be same as at present. No voltage regulation is required.
 - 4) The estimated connected load of 415 KW and demand load of 300 KW is approximately the same as existing.
 - 5) The Primary and Secondary voltages are existing and will be maintained.
 - 6) Existing Primary Conductors: No change.



7) Design Standards:

- a. Voltage drop shall be as indicated in Item A.5.a.
- b. Lighting Standards:
 - (1) Area lighting will be provided by building mounted HPS fixtures with photo cell control.
 - (2) Light Levels will be per DOD 4270.1M and LANTDIV Criteria: approximately .05 Footcandles, maintained.

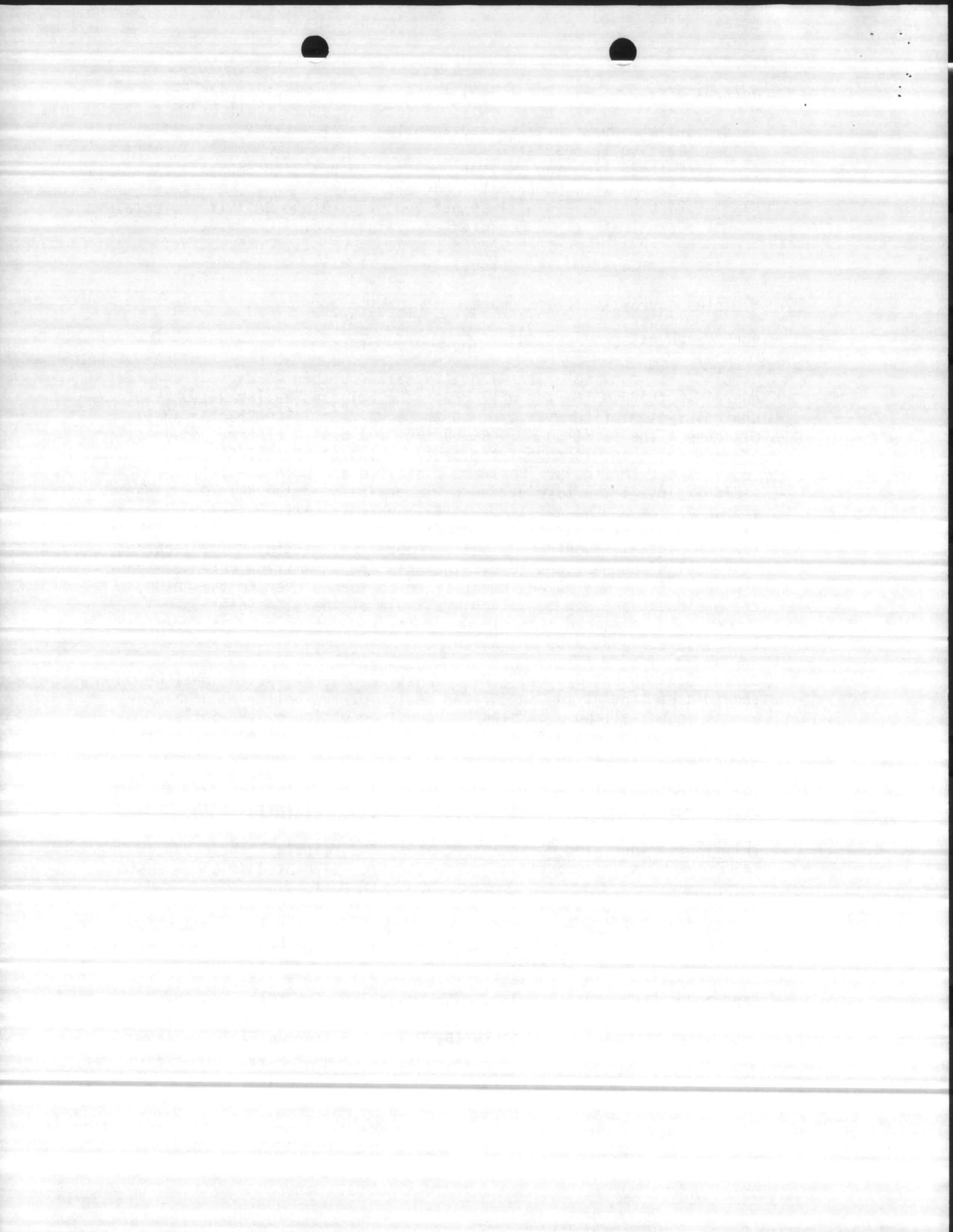
8) Fire Alarm System: No Change.

9) Telephone System: No Change.

6. CONTROL SYSTEM BASIS OF DESIGN

- a. Demolition: contractor shall notify ROICC, within 45 days of contract award, whether Contractor will reuse the existing Bailey NETWORK 90 control system or turn it over to the Government. Contractor shall disconnect the existing NETWORK 90 (NET 90) system electric power at its source, then disconnect the power cables at the NET 90 power supply input terminals. Contractor shall disconnect the existing field wiring at the termination unit terminals in the NET 90 cabinet; and shall remove the existing Digital Control Stations from the existing boiler control panel, including the cable connectors with an 18 inch pigtail. Contractor shall remove the existing NET 90 cabinet, and shall disconnect and remove the existing steam flow meters, except piping. If the NET 90 equipment is to be turned over to the ROICC, the equipment and documentation available at the site shall immediately be packed securely and delivered within a 50 mile radius to a site designated by the ROICC.
- b. Combustion Control System: the combustion control system shall be provided as part of the integrated design of the boiler manufacturer, and as such shall be a cataloged product or option by the boiler manufacturer for use with the furnished boilers. The control system components shall be cataloged products of the new control system manufacturer. The Contractor shall provide a new combustion control system and carefully remove and turnover to the ROICC the existing NET 90 control system, or shall carefully remove, refurbish at the original control manufacturer's factory, reconfigure and expand to fulfill the indicated control functions, and reinstall the expanded BAILEY NETWORK 90 combustion control system, warranted as a new system.

The control system shall be a distributed, microprocessor-based digital control system providing fully metered, lead-lag, combustion control with in-site Oxygen trim, for firing No. 6 Fuel Oil and future gas. The feedwater control shall be a three-element (steam-flow, feedwater-flow, and drum level) scheme modulating a cage-trim boiler feedwater (BFW) control valve. The control system shall provide auto/manual start/stop of the three boiler feedwater pumps and modulating BFW recirculation to the Deaerator storage tank upon low BFW flow. Deaerator (DA) control shall be by DA storage tank level



control of the makeup water (MU) transfer pumps transferring BFW from the MU tank to the DA tank, and temperature control shall be by steam control valve. Makeup tank level control shall utilize condensate return (CR) first, then Treated Water (TW), controlling the CR pumps and the CR and TW control valves.

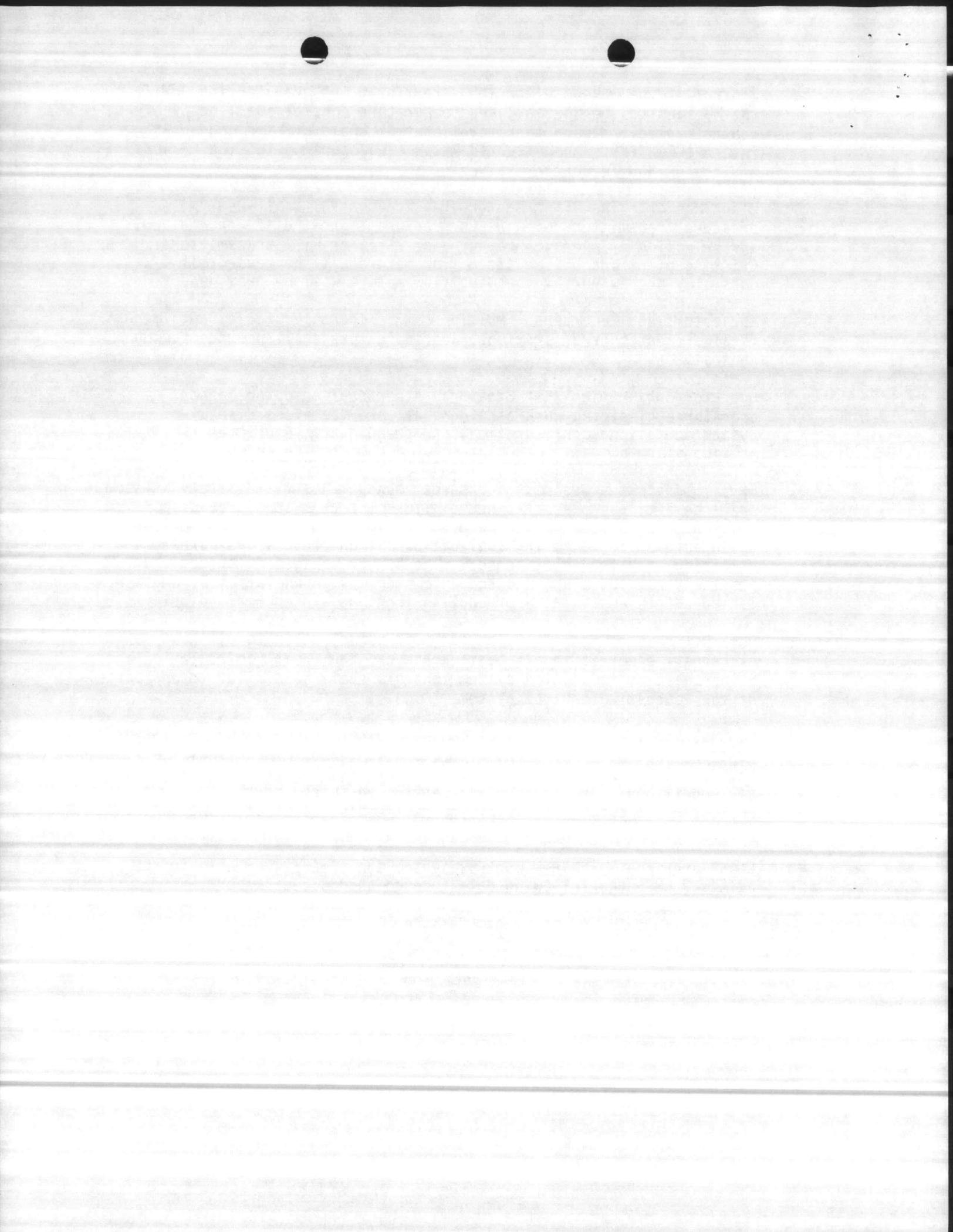
Plant Master: The Plant Master pressure control shall use two pressure transmitters with Hi/Lo pressure alarms, difference alarm, and selection of average pressure, or PT 1, or PT 2 transmitters. Existing plant and boiler steam flow meters will be reused, if possible, or new vortex-shedding flow meters will be provided.

Indicators and Recorders: Multipen strip chart recorders, auto/manual final element control stations, and indicators shall provide backup control.

Operator/Engineering Work Station: A personal computer-based operator/engineering work station shall provide video display of system operation, configuration, and trend data. A printer shall provide alarm summaries and hard copy documentation output.

- c. Burner Management System: The burner management (flame safety) system shall be a microprocessor-based digital control system providing self-checking proper burner sequencing, ignition, and flame monitoring on an automatic, recycling fuel oil burner and future gas burner, utilizing an ultraviolet sensor. The burner management system shall provide first-out alarm and sequence progress annunciation by english labeled panel lamp display or english language alphanumeric display.
- d. Fuel Oil Heater Controls: The fuel oil pumps, steam to oil heat exchanger, electric to oil heat exchanger, tank heat recirculation and burner heat recirculation system controls shall be similar to and part of the combustion control system.
- c. Control Room: The new control cabinet, panels, recorders, auto/manual stations, operator/engineering work station, and printer shall be located in the existing office area. The office shall be heated and air conditioned, and outside air ventilated to reduce the temperature, dust, and corrosive effects of the firing aisle area upon the control equipment.
- f. EMCS Interface: The new control system shall make available to the existing EMCS the following data through an RS232 data port:

Plant Pressure
Plant Steam Flow
Plant Emergency Power
Plant Fuel Flow



7. SPECIFICATIONS

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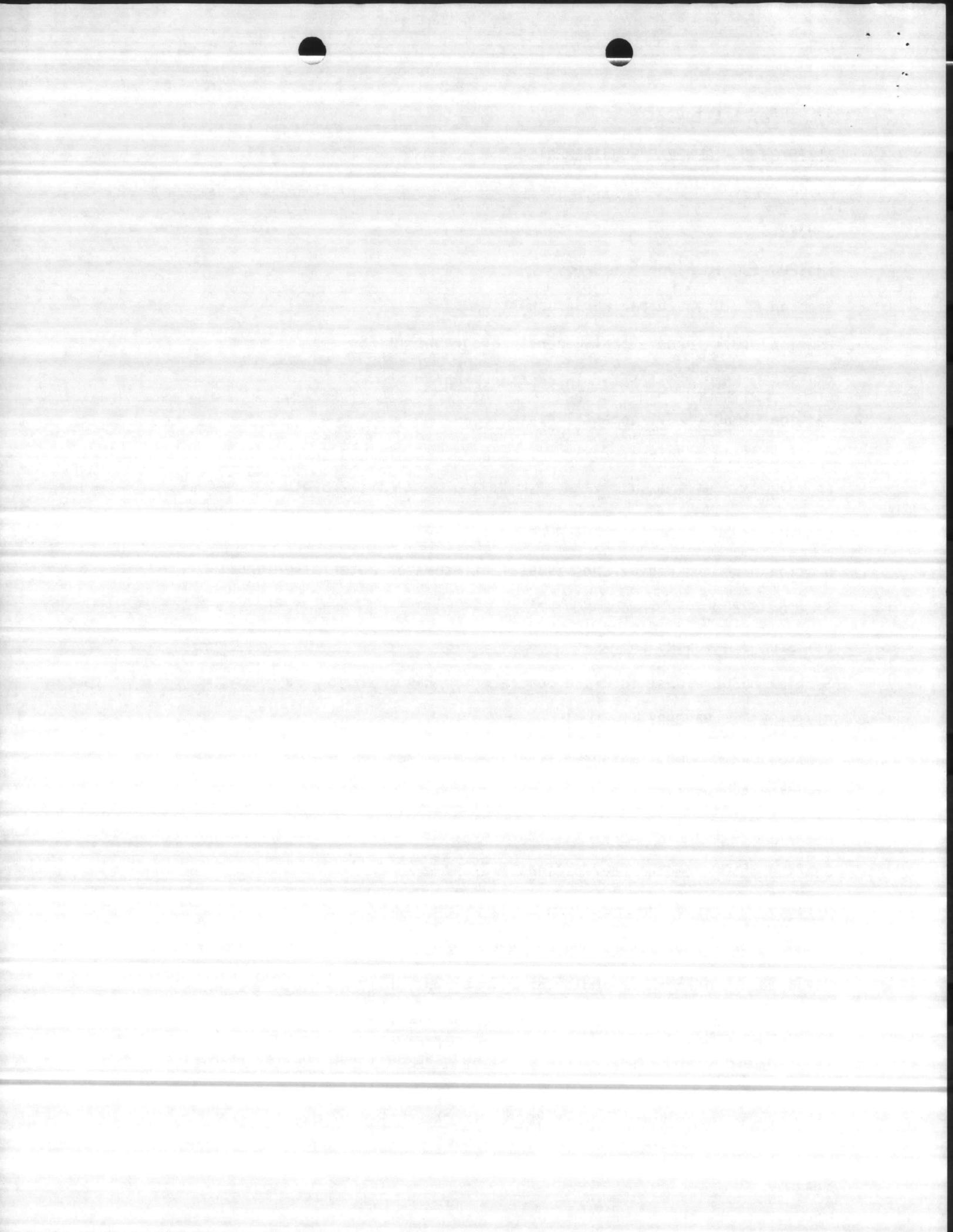
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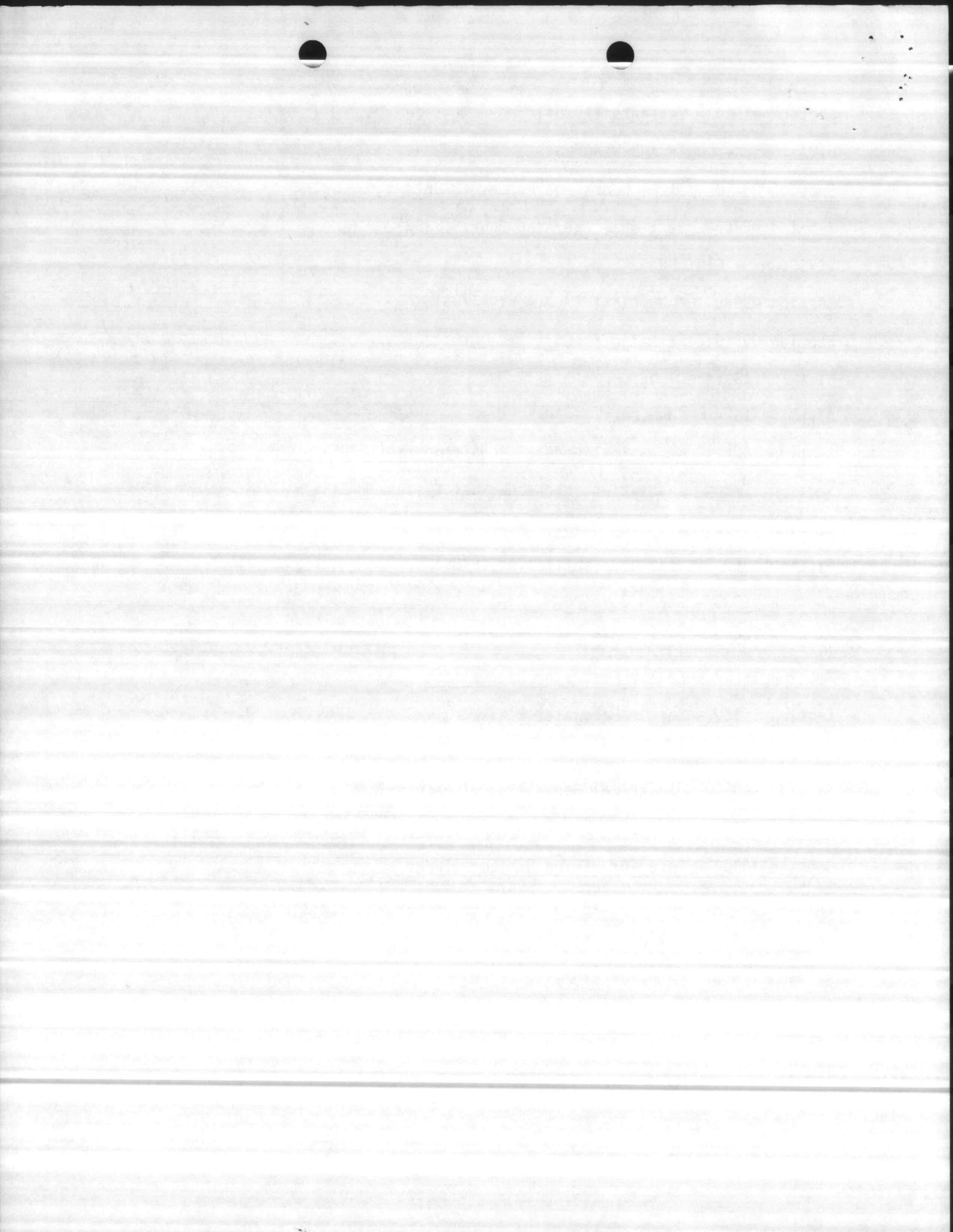
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LANTDIV DRAWING AND SPECIFICATION REVIEW COMMENT
 LANTDIV NORVA 4-4121/4 (Rev.3/82)

SHEET _____ OF _____

PROJECT.				DATE DUE LANTDIV
LOCATION				DATE RETURNED LANTDIV
ARCHITECTURAL	MECHANICAL	PRELIM.		REVIEWER
STRUCTURAL	ELECTRICAL	90% SUBMITTAL		CERTIFICATION OF CO OR OICC/ROICC
CIVIL	SPECS & ESTIMATES	100% SUBMITTAL		DATE LANTDIV RETURN

DWG. NO./ PAR. NO.	ITEM NO.	OICC/ROICC OR STATION COMMENTS (MAKE GENERAL COMMENTS ON LAST SHEET)	LANTDIV REVIEW ACTION – KEY INC. IN LANTDIV TRANS. LTR

CONSTRUCTION SCHEDULE (No. DAYS _____)

SPECIAL REQUIREMENTS (Attach if necessary)

CONCURRENCE _____

C.O. or OICC/ROICC SIGN.

SPECIAL REMARKS (For LANTDIV use only)

