

11370
MAIN

28 Aug 87

Director, Utilities Branch

Director, Operations Branch (Attn: Greg Shoemaker)

PROJECT 8M33CN

1. The low pressure drip tank in Building 1700 included in the subject project will be replaced by in-house forces due to immediate need. All related piping, traps, and pumps should remain in the project and will not be affected by the drip tank replacement.

C. H. BAKER

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June 87

FY/86 ENERGY/UTILITIES ENGINEERING SUPPORT STUDY REQUIREMENTS
CAMP LEJEUNE MARINE CORPS BASE

1. Purging of Boilers on Natural Draft, Central Heating Plant, Building 1700. A study is required to determine the safe purge time for firing four 3000 HP boilers on natural draft located at the Central Heating Plant, Building 1700. During electrical power failures, insufficient generation capacity is available to run the required blowers for purging even though the boilers have the capability of switching dampers that start natural draft purging. The study shall include the following: determination of purge time, identification of complete purge conditions, and elimination of combustible gases left by channeling effect.

Estimated Cost: \$10,000

2. Installation of Variable Speed Drives on EMCS Controlled Mechanical Equipment. A study is required to determine mechanical equipment, which is currently controlled by the existing EMCS, which can be retrofitted with variable speed drives. This will allow a more graduated shed schedule for controlling the equipment. Energy and maintenance savings should be calculated and the required project documentation completed.

Estimated Cost: \$40,000

3. Installation of Steam Plants and Distribution System Efficiency Measuring System. A study is required to determine the work required to install a steam plant and distribution efficiency measuring system. This will allow accurate rating of the existing steam system and precise project documentation for improvement projects. The study should include steam production, steam distribution and condensate return systems. Any energy, maintenance or cost savings should be calculated and the required project documentation completed.

Estimated Cost: \$40,000

4. Installation of Small Package Cogeneration Systems to Control Peak Demand Charges. A study is required to determine the feasibility of procuring small cogeneration package equipment to assist in controlling peak demand. This will allow energy controlling without resulting in facility occupant discomfort. Energy, maintenance and cost savings should be calculated and the required project documentation completed.

Estimated Cost: \$30,000

5. Installation of a Waste Oil Boiler. A study is required to determine the feasibility of burning waste oil/fuel to provide a steam/hot water system. This will assist in the Energy Conservation Program and eliminate an environmental hazard. Boiler is

Handwritten notes on a white sticky note:
D.O.C.
1 - Tom Shepard
2 - Steven Forberg
3 - Tom Carl Baker
4 - Steven Forberg

ENGINEERING STUDY REPORT

1. Purpose of Study on Motor Drive System
The study is intended to determine the feasibility of using a motor drive system for the Central Heating Plant, during electrical power failure, to provide generation capacity in available to the required power for running even though the boiler has the capability of switching motors and other electrical equipment. The study will include the following: determination of peak loads, identification of critical loads, and elimination of non-essential loads by changing effect.

Estimated Cost: \$10,000

2. Installation of Variable Speed Drive on Motor Controlled Mechanical Equipment
A study is required to determine the feasibility of installing variable speed drive on existing motor equipment which is currently controlled by a fixed speed drive. This will allow a more gradual speed reduction for controlling the equipment. The study should include a cost estimate and the preparation of a preliminary report.

Estimated Cost: \$6,000

3. Installation of Load Shedding and Distribution System
A study is required to determine the feasibility of installing a load shedding and distribution system. This will allow a more gradual speed reduction for controlling the equipment. The study should include a cost estimate and the preparation of a preliminary report.

Estimated Cost: \$8,000

4. Installation of Heat Recovery System
A study is required to determine the feasibility of installing a heat recovery system. This will allow a more gradual speed reduction for controlling the equipment. The study should include a cost estimate and the preparation of a preliminary report.

Estimated Cost: \$5,000

5. Installation of a Water Treatment System
A study is required to determine the feasibility of installing a water treatment system. This will allow a more gradual speed reduction for controlling the equipment. The study should include a cost estimate and the preparation of a preliminary report.

Estimated Cost: \$7,000

Jul 87

FY/86 ENERGY/UTILITIES ENGINEERING SUPPORT STUDY REQUIREMENTS
CAMP LEJEUNE MARINE CORPS BASE

1. Purging of Boilers on Natural Draft, Central Heating Plant, Building 1700. A study is required to determine the safe purge time for firing four 3000 HP boilers on natural draft located at the Central Heating Plant, Building 1700. During electrical power failures, insufficient generation capacity is available to run the required blowers for purging even though the boilers have the capability of switching dampers that start natural draft purging. The study shall include the following: determination of purge time, identification of complete purge conditions, and elimination of combustible gases left by channeling effect.

Estimated Cost: \$10,000

2. Installation of Variable Speed Drives on EMCS Controlled Mechanical Equipment. A study is required to determine mechanical equipment, which is currently controlled by the existing EMCS, which can be retrofitted with variable speed drives. This will allow a more graduated shed schedule for controlling the equipment. Energy and maintenance savings should be calculated and the required project documentation completed.

Estimated Cost: \$40,000

3. Installation of Steam Plants and Distribution System Efficiency Measuring System. A study is required to determine the work required to install a steam plant and distribution efficiency measuring system. This will allow accurate rating of the existing steam system and precise project documentation for improvement projects. The study should include steam production, steam distribution and condensate return systems. Any energy, maintenance or cost savings should be calculated and the required project documentation completed.

Estimated Cost: \$40,000

4. Installation of Small Package Cogeneration Systems to Control Peak Demand Charges. A study is required to determine the feasibility of procuring small cogeneration package equipment to assist in controlling peak demand. This will allow energy controlling without resulting in facility occupant discomfort. Energy, maintenance and cost savings should be calculated and the required project documentation completed.

Estimated Cost: \$30,000

5. Installation of a Waste Oil Boiler. A study is required to determine the feasibility of burning waste oil/fuel to provide a steam/hot water system. This will assist in the Energy Conservation Program and eliminate an environmental hazard. Boiler is

WYOMING UNIVERSITY ENGINEERING DEPARTMENT STUDY REPORT

1. Installation of Variable Speed Drive on W-200 Compressor
A study is being conducted to determine the feasibility of installing a variable speed drive on the W-200 compressor. The compressor is currently operated at a constant speed of 1750 RPM. During electrical power failures, insufficient generation capacity is available to run the required blowers for purging even though the blowers have the capability of switching between manual and automatic purging. The study will include the following: determination of pump time, identification of variable speed conditions, and elimination of compressor gas losses by changing effect.

Estimated Cost: \$10,000

2. Installation of Variable Speed Drive on W-202 Compressor
A study is being conducted to determine the feasibility of installing a variable speed drive on the W-202 compressor. The compressor is currently operated at a constant speed of 1750 RPM. During electrical power failures, insufficient generation capacity is available to run the required blowers for purging even though the blowers have the capability of switching between manual and automatic purging. The study will include the following: determination of pump time, identification of variable speed conditions, and elimination of compressor gas losses by changing effect.

Estimated Cost: \$10,000

3. Installation of Steam Plant and Distribution System
A study is being conducted to determine the feasibility of installing a steam plant and distribution system. The study will include the following: determination of steam requirements, identification of variable speed conditions, and elimination of compressor gas losses by changing effect.

Estimated Cost: \$50,000

4. Installation of Heat Recovery System
A study is being conducted to determine the feasibility of installing a heat recovery system. The study will include the following: determination of heat requirements, identification of variable speed conditions, and elimination of compressor gas losses by changing effect.

Estimated Cost: \$30,000

5. Installation of Variable Speed Drive on W-203 Compressor
A study is being conducted to determine the feasibility of installing a variable speed drive on the W-203 compressor. The compressor is currently operated at a constant speed of 1750 RPM. During electrical power failures, insufficient generation capacity is available to run the required blowers for purging even though the blowers have the capability of switching between manual and automatic purging. The study will include the following: determination of pump time, identification of variable speed conditions, and elimination of compressor gas losses by changing effect.

Estimated Cost: \$10,000

to be installed in a facility which is currently equipped with a small oil fired boiler. Energy and cost savings should be calculated and the required project documentation completed.

Estimated Cost: \$40,000

6. Water Softening and Condensate Polishing System at Building 1700. A study is required of the water softening and condensate polishing systems at Building 1700 to determine the most efficient, safest, and least costly method for backwashing the condensate polishers and water softeners. Existing condensate polishers are backwashed using heated condensate creating a shortage of water for steam generation during peak loads. Existing water softeners are piped in a manner that insufficient backwash water is available for efficient regeneration, and during summer months the flow is insufficient to prevent channeling in the softener allowing hard water to reach the boilers. Also, installation of pumps for providing water through the softeners to the make-up tanks shall be investigated to allow ample supply of water during periods of low water pressure. The study shall include recommendations, scopes of work, and cost estimates for alleviating the problems with the Water Softening and Condensate Polishing Systems at Building 1700.

Estimated Cost: \$10,000

NOTE: Estimated Costs are rough estimates based on cost of previous studies accelerated to program year FY88.

11300
MAIN

6 May 87

Director, Utilities Branch

Director, Operations Branch (Attn: Greg Shoemaker)

UTILITIES REPAIR PROJECTS

- Encl: (1) Repairs to Utilities Buildings
(2) Repairs to Steam Plants 1700, AS-3502, AS-710, and AS-705
(3) Sewerage System Repairs
(4) Repairs to Steam Plants BA-106 and M-230

1. Enclosures (1), (2), (3), and (4) are submitted as repair projects for appropriate action.

C. H. BAKER

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15 May 41

Director, Division of Investigation

Director, Federal Bureau of Investigation

MEMORANDUM FOR THE DIRECTOR

Re: Reports of activities of the

Organization of American Scientists

and the American Friends of the

British Empire.

1. The following information was

obtained from the files of the

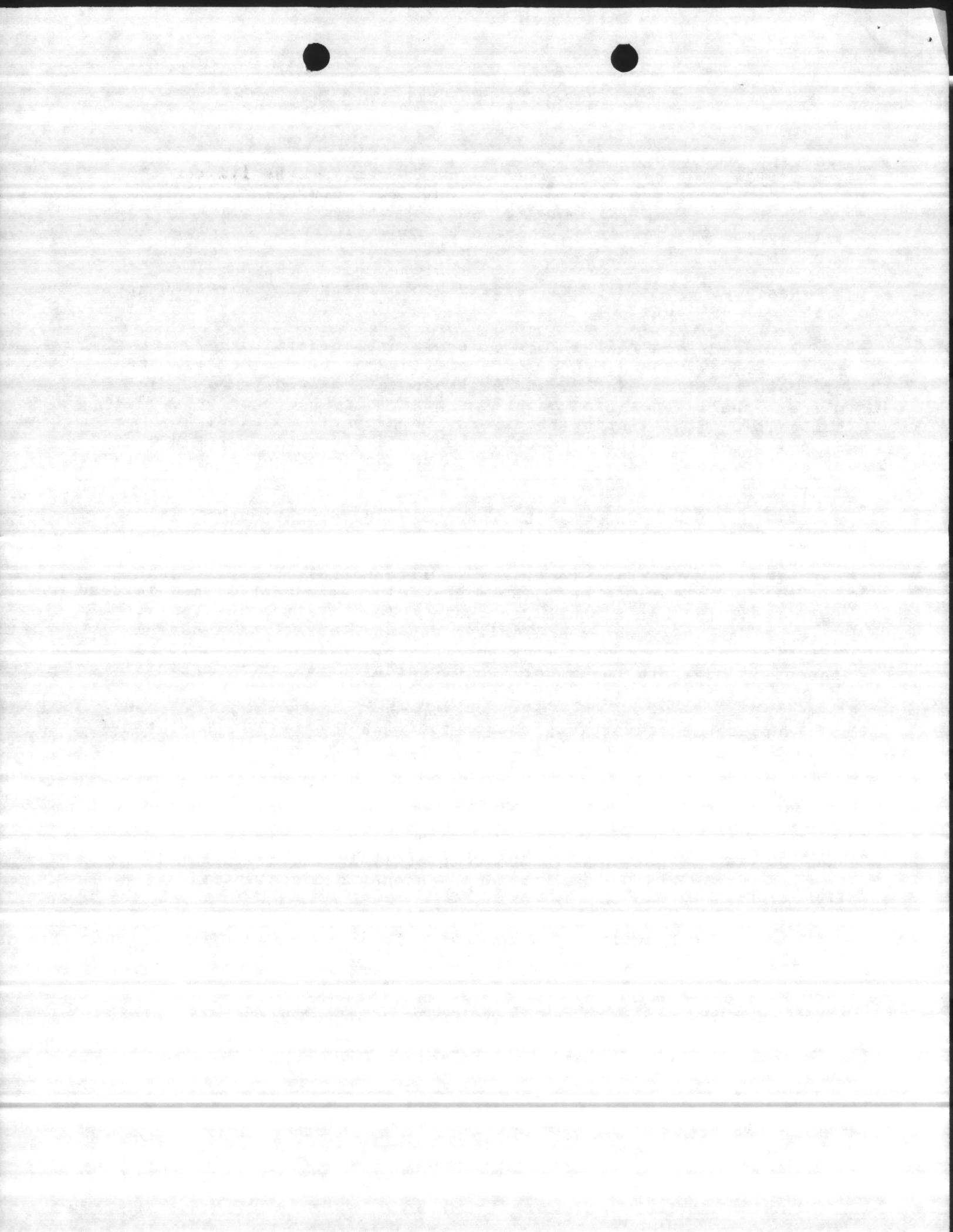
Division of Investigation

Project: Repairs to Utilities Buildings

Description of Work: Work shall include but not be limited to the following items to provide a complete and usable facility:

1. Replace windows, frames and screens with new aluminum type and replace with exterior doors and frames at Buildings 20, BA-138, RR-85, RR-15, BB-190, and TT-39A.
2. Replace removable metal panels behind boiler Nos. 46 and 47 with roll up doors.
3. Replace five Simplex flow transmitters at Building 670 for raw water, delivered water, rate of flow for filter No. 1, rate of flow for filter No. 2, and backwash rate of flow. New transmitters shall contain no hazardous materials, be connected to and compatible with existing receivers, be properly labeled, have 3-15 psi pneumatic signal output, measure differential pressure from primary devices and protected in corrosion proof housings. Existing transmitters contain mercury.
4. Replace four meters at Building BA-138 for raw water, delivered water, reservoir level, and elevated tank level. New meters shall contain no hazardous materials, have a 4-20 ma signal to receiver, and have 24-hour chart recorder. Differential pressure transmitters shall be used for flow and level measurement. The elevated tank level indicator shall use radio telemetry from the tank to water plant. Raw water and delivered water meter shall have totalized flow in 100 gallons per minute. All meters shall be housed in cabinets resistant to corrosion and water vapor infiltration.
5. Replace and rewire explosion proof light fixtures in basement of Building 22 including upper floors of three supernating rooms and in Building 32. Rewire motor starters, switch boxes, and light switches in same areas. All electrical equipment and devices shall be explosion proof.
6. Rewire sewage lift stations TT-32, TT-34, M-241, S-E-23, 2100, S-47, S-46, TC-563, and TC-565 completely including internal wiring, motor starters, H-O-A switches and automatic operation wiring and devices.
7. Replace and rewire interior and exterior lighting at BA-138. Also, replace main switch box and associated conduit.
8. Replace five control starters, eight start/stop switches and two motor disconnects presently located on the flume wall in the lower level of Building 670. Work shall include relocating the equipment to the front wall, new conduit, boxes and wiring devices and equipment shall be suitable for wet conditions.

Estimated Cost: \$192,000



Project: Repairs to Steam Plants 1700, AS-3502, AS-710, and AS-705

Description of Work: Work shall include but not be limited to the following items to provide a complete and usable facility:

1700:

1. Replace deteriorated steel ash hoppers including cyclone hoppers. Replacement includes removal of approximately 4800 square feet of asbestos insulation and replacement with calcium silicate.
2. Remove asbestos insulation from approximately 200 feet of signal line on main steam header to boiler combustion control and replace with calcium silicate.
3. Remove asbestos insulation from approximately 100 feet of 3" high pressure steam trap lines from main steam header to deaerator tank and replace with calcium silicate.
4. Replace low pressure drip tank including related piping, traps, and pumps.
5. Replace stationary vacuum cleaner system including piping and auxiliaries.
6. Clean algae and other contaminants out of 420,000 gallon No. 6 oil storage tank and repair tank as necessary after complete visual and ultrasonic testing is performed.

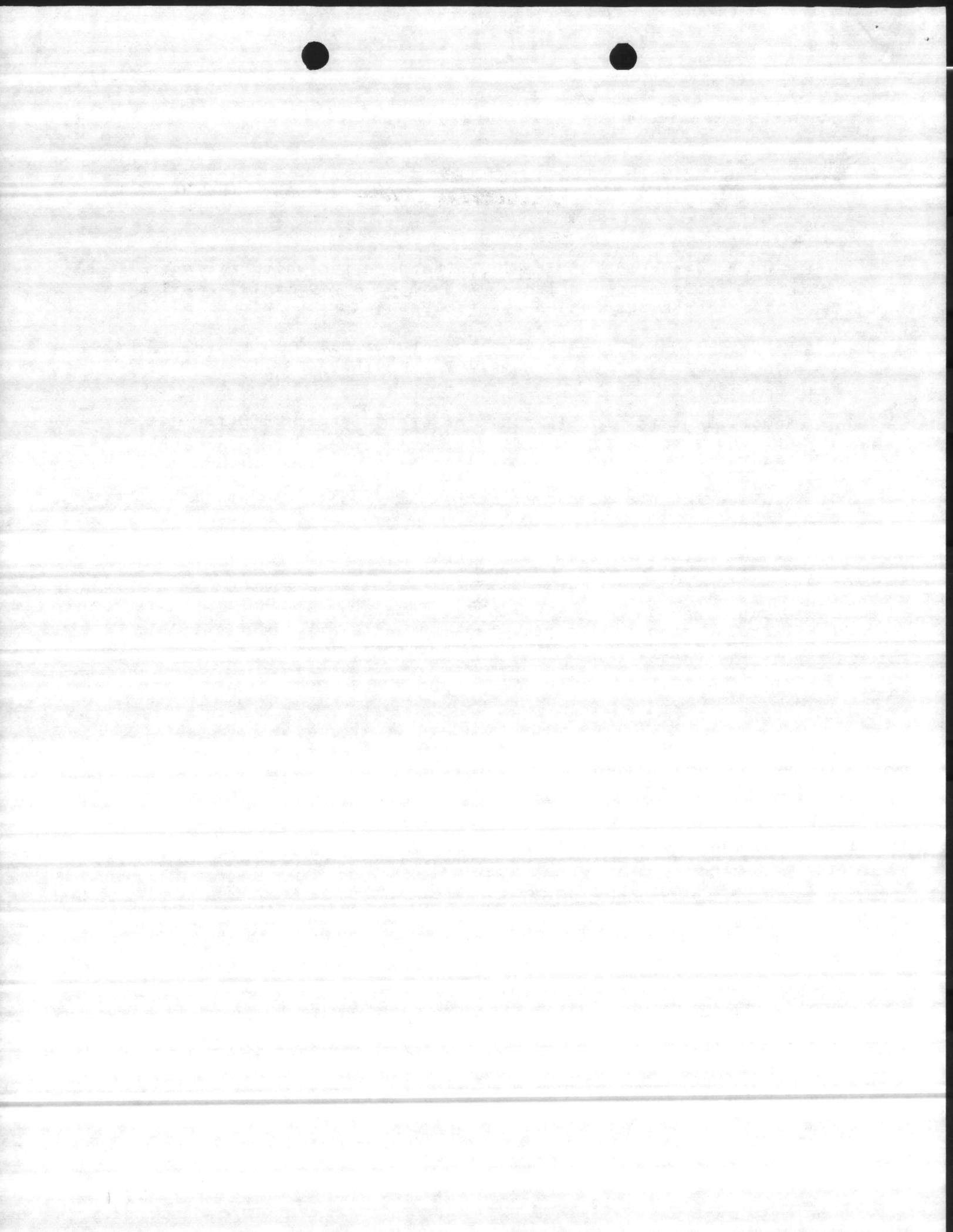
AS-705:

1. Remove deteriorated insulation, possibly asbestos, from No. 11 boiler, sand and remove rust from boiler shell, apply heat resistant rust inhibitor paint, and reinsulate with calcium silicate protected with smooth metal jacket.
2. Replace water softeners, regulators, brine tank and piping.

Buildings AS-710 and AS-3502:

1. Replace water softeners, regulators, brine tanks and piping.

Estimated Cost: \$370,000



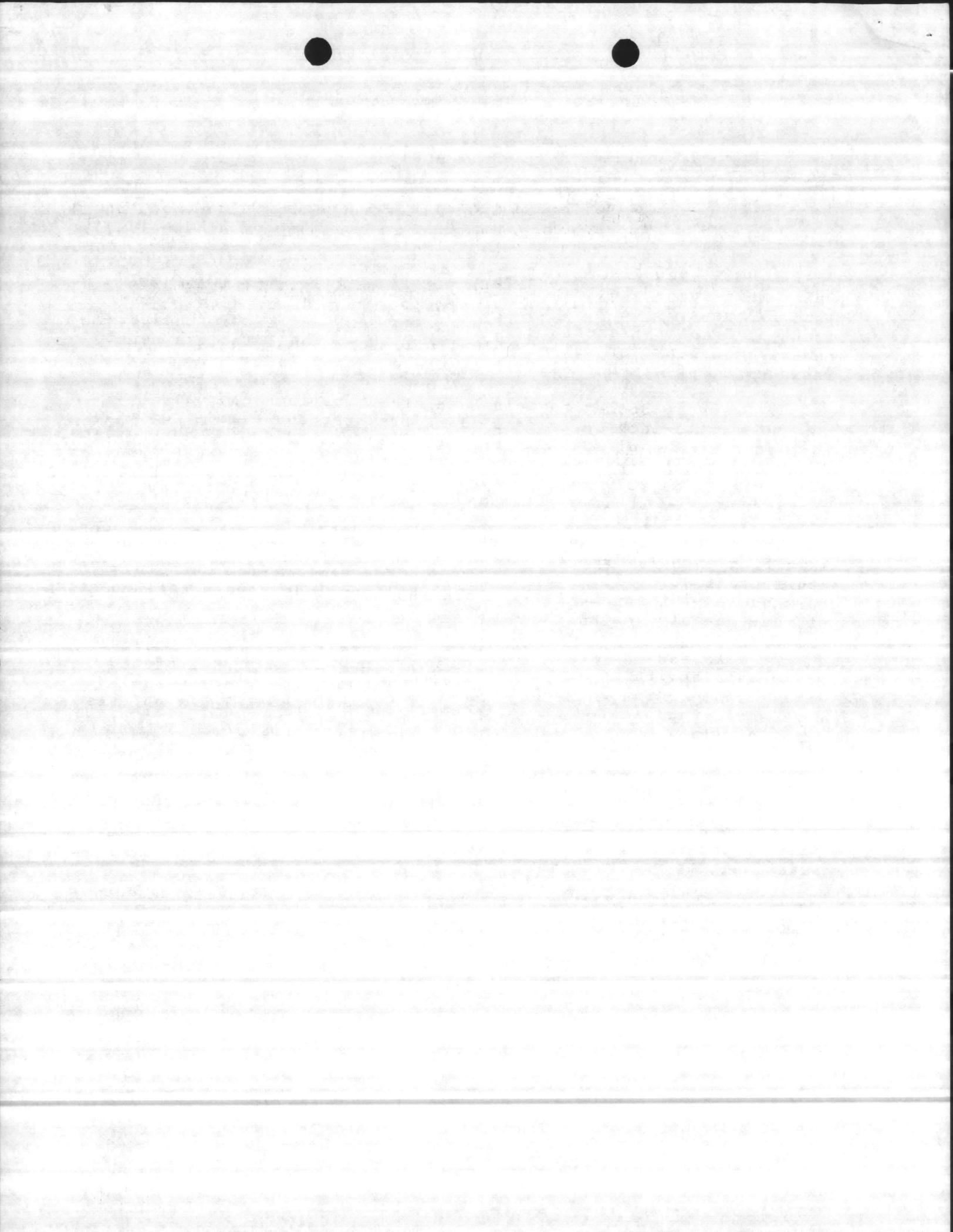
Project: Sewerage System Repairs

Description of Work:

1. At Camp Geiger Sewage Treatment Plant, replace two 170 foot diameter rotary filter distributors at structure S-687 and S-688 with new hot dipped galvanized distributors.
2. At MCAS, New River, replace approximately 650 feet of 6-inch sewer main and approximately 1,050 feet of 8-inch main with 12 inch PVC sewer pipe. Work shall begin at the sewer manhole in front of Delalio Elementary School, TC-1500, and end at the sewer manhole southeast of Building TC-1141. Work shall include repair/replacement of six manholes along the existing lines.
3. At Brewster Boulevard Main Gate areas, replace approximately 400 feet of 12-inch sewer main along Brewster Boulevard from manhole 848L through manhole 847L to manhole 275A with PVC pipe and replace 2,000 feet of 15-inch sewer main from manhole 275A through manholes 276A, 27A, 278A, 279 to manhole 280A with PVC pipe. Work shall repair/replacement of eight manholes along the existing line.
4. In Midway Park, replace approximately 350 feet of 8-inch sewer main from manhole 598L at MEQ LCH 1408 to manhole 978L at MEQ 1509 and approximately 150 feet of 10-inch sewer main from manhole 978L to manhole 979L at MEQ 1511. Work shall include repair/replacement of four manholes along the existing line.
5. At MCAS, New River, replace approximately 1100 feet of 8-inch sewer main beginning at manhole A-7.6L located southeast of MEQ AS-1173 and ending at manhole A-7L southwest pump station AS-1001. Work shall include repair/replacement of seven manholes along the existing line.
6. At MCAS, New River replace approximately 700 feet of 6-inch and 8-inch sewer main with 6-inch and 8-inch PVC beginning at manhole A-3.9L located southwest of MEQ 1257 and ending at manhole A-3.7L located west of MEQ 1269. Work shall include repair/replacement of three sewer manholes and replacement of laterals on the sewer main to be replaced.

Justification: Existing lines leak, fail, and require frequent repairs.

Estimated Cost: \$218,000



Project: Repairs to Steam Plants BA-106 and M-230

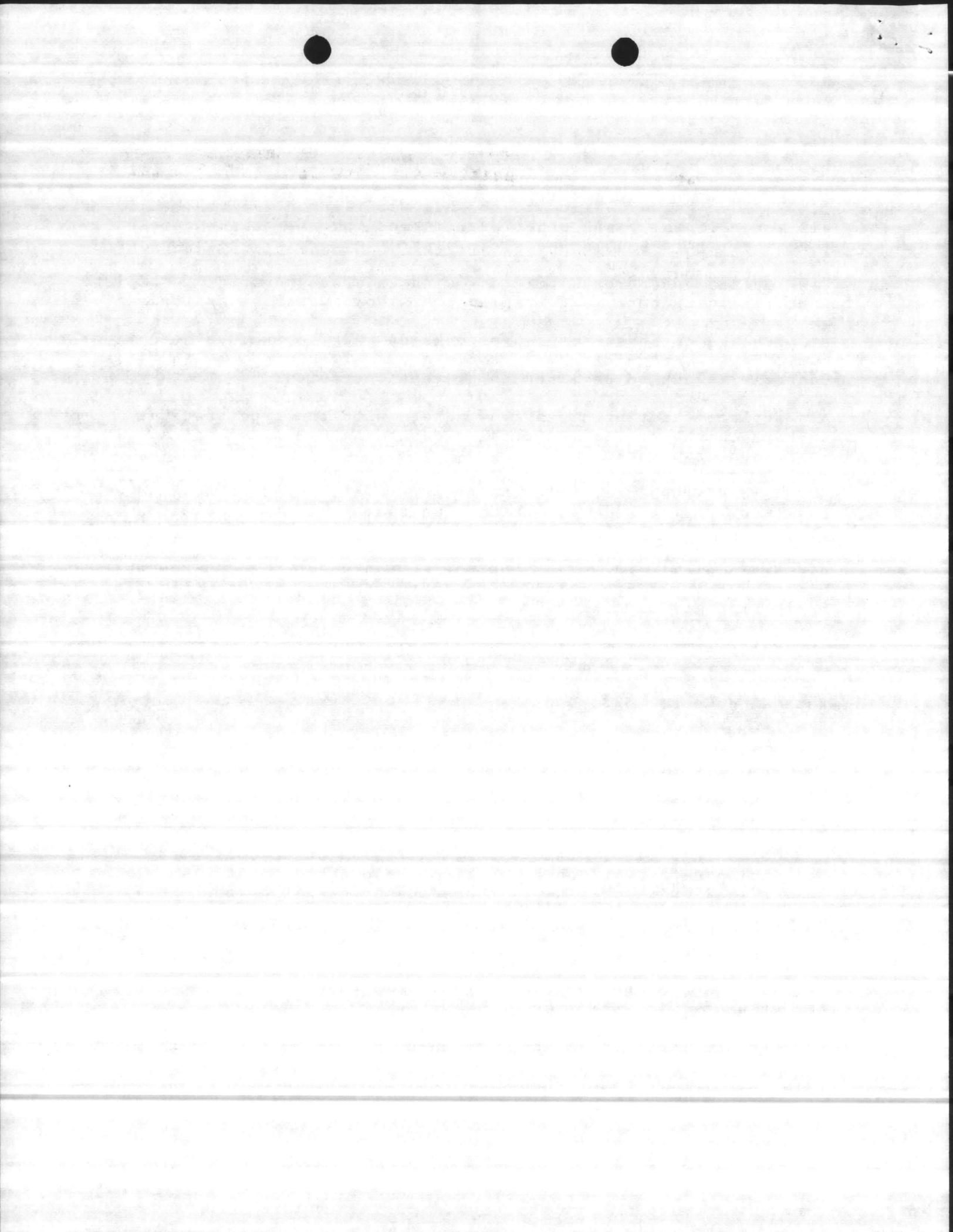
BA-106:

1. Replace No. 64 boiler to include water pumps, valves, oil pumps, oil meters, piping and other auxiliaries to make boiler completely functional for an unmanned steam plant.
2. Replace underground oil tank with an aboveground tank complete with retaining berm, off loading pumps, oil water separator, etc.
3. Replace condensate receiver/make-up tank to include steam heater coil, gauges, regulators, thermometers, valves, piping, and float controls. Tank to be lined to prevent corrosion.
4. Replace existing steam flow meters with the type that has 24-hour chart recorder, digital readout, 4-20 M.A. signal and 10 to 1 turn down ratio.
5. Remove asbestos insulation from main stem header and other auxiliary piping and replace with calcium silicate insulation with smooth metal covering.
6. Replace existing plant monitoring equipment with up-to-date minicomputer for operation of unmanned steam plant with remote monitoring at Building 1700.
7. Paint interior walls.

Estimated Cost: \$225,000

M-230:

1. Retube Nos. 38, 39, and 40 boilers to include replacing refractory and door gaskets. Replace header stop valve and nonreturn valve on each of the three boilers. Remove outer casing and insulation on each boiler. Remove rust and paint outer boiler shells and piping with rust inhibited high temperature paint. Insulate boiler shell with calcium silicate and cover with smooth metal jacket. Paint with heat resistant paint.
2. Replace existing deaerator and three boiler feedwater pumps to include piping, valves, gauges, and regulators. The new deaerator should be lowered to prevent syphoning into the steam header upon power failures.
3. Replace condensate receiver/ make-up tank, piping along with transfer pump to include controls regulators, gauges and valves. Existing transfer pump should be replaced with a duplex unit to prevent plant downtime due to the single pump failure.



4. Replace blowdown lines from each boiler to include blowdown pit and tie runoff into sanitary sewer.

5. Remove all asbestos insulation off of steam, condensate, and water lines. Reinsulate with calcium silicate with smooth metal covering.

6. Replace existing plant monitoring equipment with up-to-date minicomputer for safe operation of unmanned steam plant with remote monitoring at Building 1700.

7. Replace existing steam flow meters with the type that has 24-hour chart recorder, digital readout, 4-20 M.A. signal and 10 to 1 down ratio.

Estimated Cost: \$297,000

Total Contract Cost: \$522,000

