

## FILE FOLDER

### DESCRIPTION ON TAB:

7542/14 Rehab of Steam

Plant G650

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**\*Scanned as next image**

**OPENED:** Sep 1987

**CLOSED:**

PERM. SECNAVINST 5212.5D  
Part II, Chap 3, SSIC  
Until superseded

ROUTING SLIP

0 OCT 1987

	ACTION	INFO	INITIAL
BMO		✓	
DBMO		✓	CP/a
DIR, ADMIN			
DIR, OPS			
DIR, M&R			
DIR, UTIL	✓		CP
OTHER			
SECRETARY			

COMMENTS:

*Carl - pls see ml CP/a  
9*

1961-1962



2

1

ASSISTANT CHIEF OF STAFF, FACILITIES  
HEADQUARTERS, MARINE CORPS BASE

DATE 10-5-87

TO:

BASE MAINT O

PUBLIC WORKS O

COMM-ELECT O

DIR., NAT. RESOURCES & ENV. AFFAIRS

DIR, FAMILY HOUSING

DIR, BACHELOR HOUSING

BASE FIRE CHIEF

ATTN: Col Silley

1. Attached is forwarded for ~~info~~ action.

2. Please initial, or comment, and return all papers to this office.

3. Your file copy.

*B. Weston*  
*By dir*

"LET'S THINK OF A FEW REASONS  
WHY IT CAN BE DONE"





# DEPARTMENT OF THE NAVY

ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORFOLK, VIRGINIA 23511-6287

TELEPHONE NO.  
(804) 444-9542

11300 IN REPLY REFER TO:  
1112JWK

30 SEP 1987

From: Commander, Atlantic Division, Naval Facilities Engineering Command  
To: Commanding General, Marine Corps Base, Camp Lejeune

Subj: REHABILITATION OF STEAM PLANT G650, CAMP GEIGER

Ref: (a) Phonecon MCB Camp Lejeune Utilities Director  
(Mr. Carl Baker)/LANTNAVFACENGCOM (Mr. Dave Knight) of 17 Sep 1987

Encl: (1) Economic Analysis  
(2) Proposed Steam Line Routing  
(3) Assumptions Made  
(4) Listing of Inspection Firms

1. During reference (a), Mr. Baker indicated that the construction cost estimate of the subject project had increased by \$1,000,000 at the 30 percent design phase to a new estimate of \$2,300,000. LANTNAVFACENGCOM Code 111 was requested to evaluate the economics of repairing G650 versus adding a new 40,000 PPH boiler at the Air Station Plant AS4151 and connecting the two systems with a new steam and condensate line.

2. The economic analysis of the two options, enclosure (1), indicates that they are approximately equal. The central plant approach will provide greater operational flexibility, increased redundancy, and reduced O&M,MC cost. The addition of a 40,000 PPH boiler could be financed by O&M,MC funds as it would be considered replacement capacity for G650. The addition of the 10-inch steam and 6-inch condensate lines would require MILCON funding. The proposed routing of the lines are shown on enclosure (2). Of the assumptions listed on enclosure (3), the most critical is the assumption that the existing boilers in G650 can provide reliable steam service until the construction of the proposed steam line in the FY-95 time frame.

3. Based on the above, the following is recommended:

a. The steam drums of the existing boilers at G650 should be evaluated to determine their expected life. (Enclosure (4) lists two firms).

b. The design of the rehabilitation of G650 should continue to 100 percent.

c. If the life of the boilers, from 3.a., above is eight years or longer, projects to construct the steam and condensate lines and install an additional boiler at AS4151 should be prepared.



GENERAL INVESTIGATION DIVISION

Subj: REHABILITATION OF STEAM PLANT G650, CAMP GEIGER

4. For any additional information contact Mr. David Knight, telephone (804) 444-9542.

*J. W. Kelley*  
for  
A. J. HANSEN  
By direction

REAR VIEW OF BEAM WITH GEAR

FOR THE ADDITIONAL INFORMATION OF THE BUREAU OF THE INSPECTION OF THE NATIONAL BUREAU OF STANDARDS (NBS)

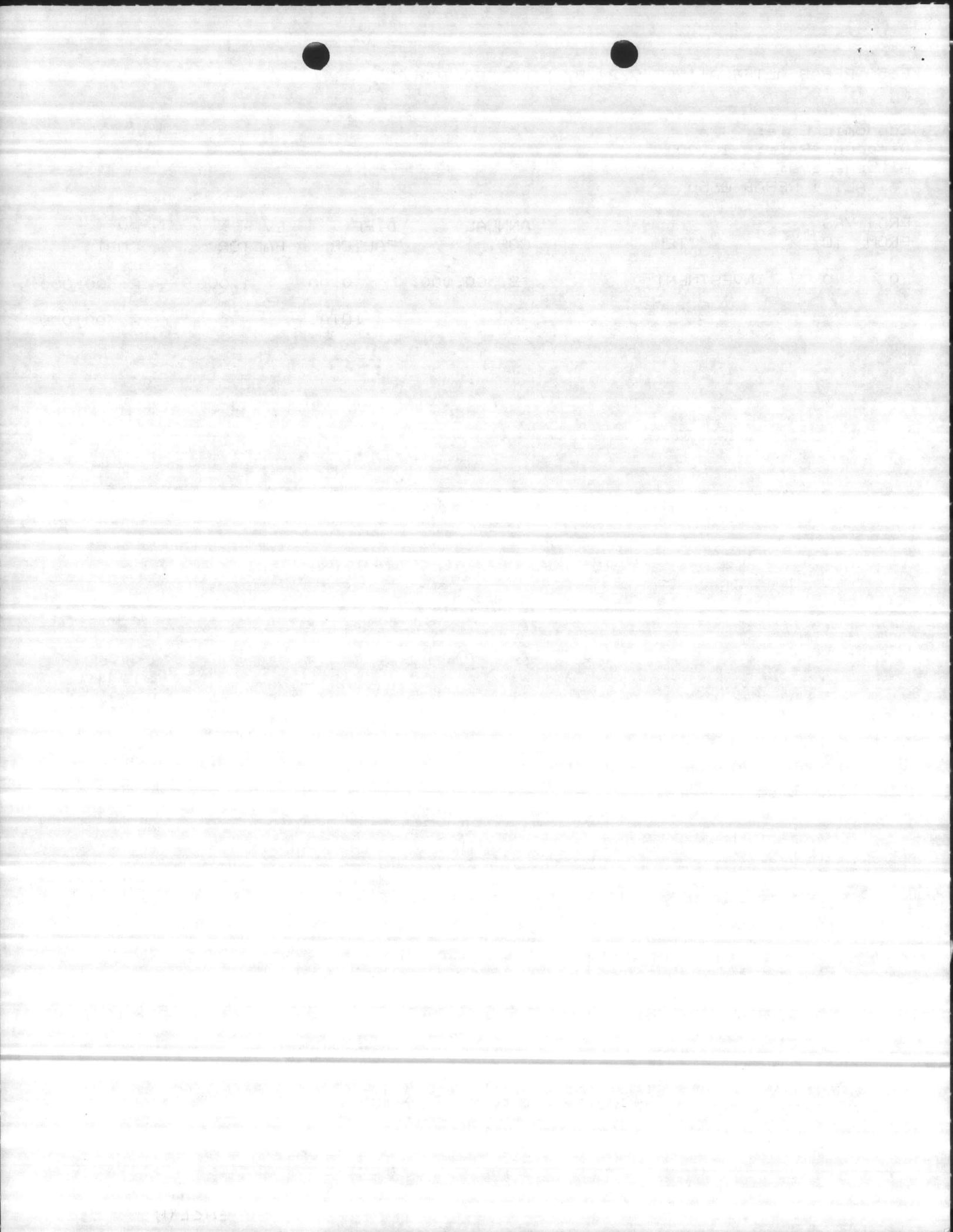
A. V. HAYDEN  
NBS



G650 REHAB ALTERNATIVES 9/24/87 DIFF. FACTOR=0%

Economic Life: 25  
Discount Rate: 10.00  
Alternative:  
ALT 1 REHAB G650

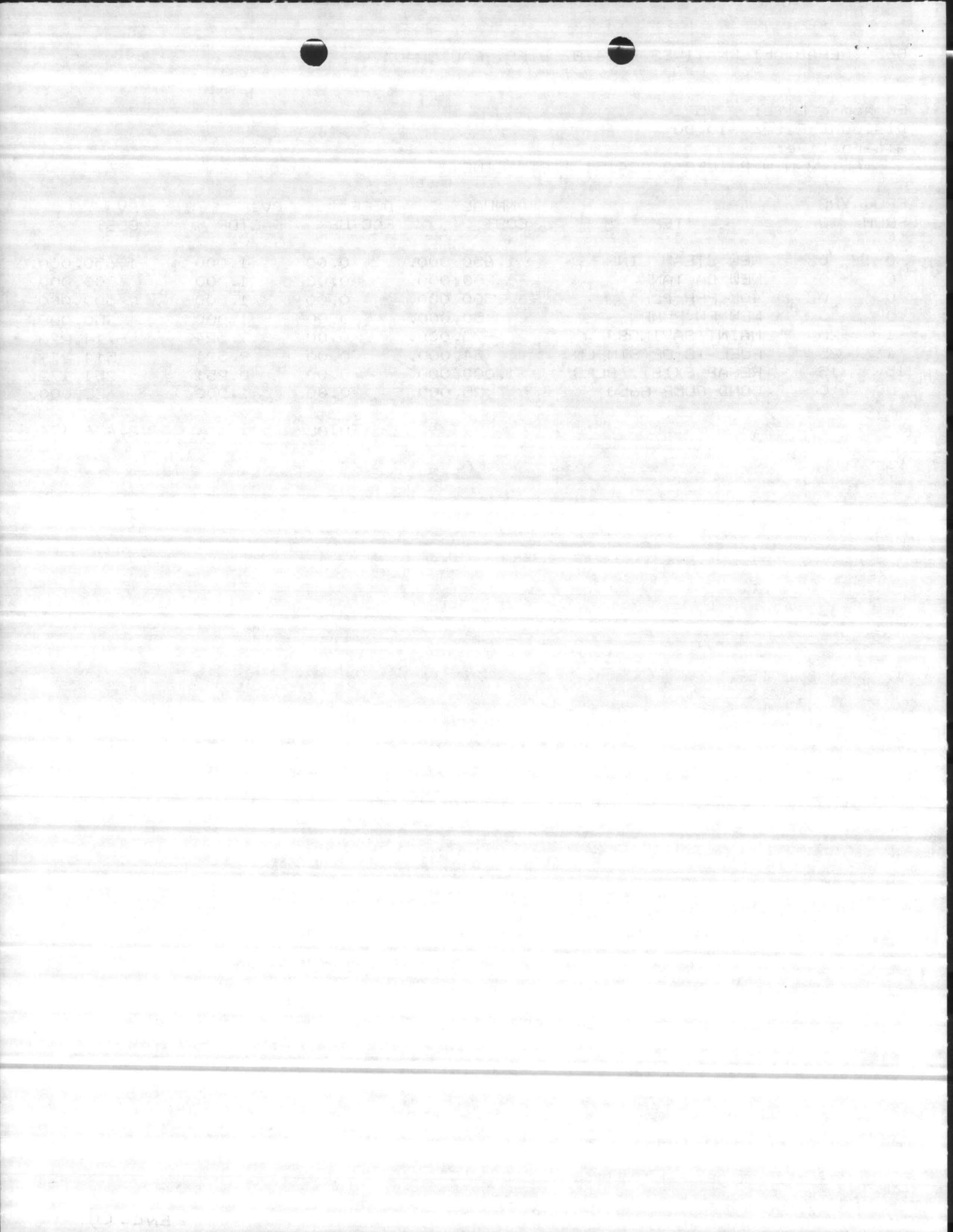
PROJ YRS FROM TO	ITEM	ANNUAL COST	DIFF FACTOR	PV FACTOR	PV COST
0 0	INVESTMENT	2,300,000.	0.00	1.000	2,300,000.
			TOTAL		2,300,000.



Economic Life: 25  
 Discount Rate: 10.00  
 Alternative:

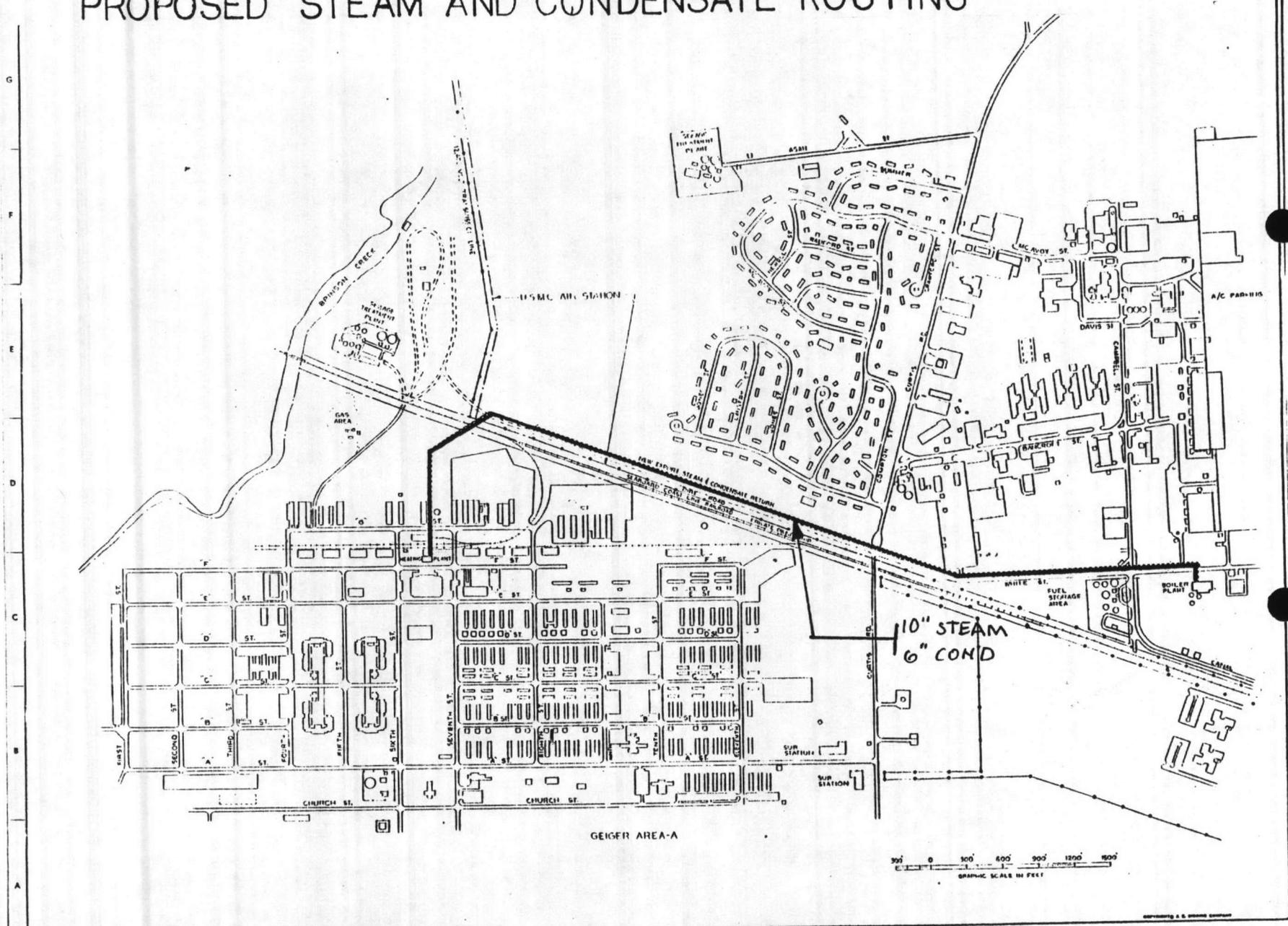
ALT 2 NEW BOILER @ AS4151 + STM LINE

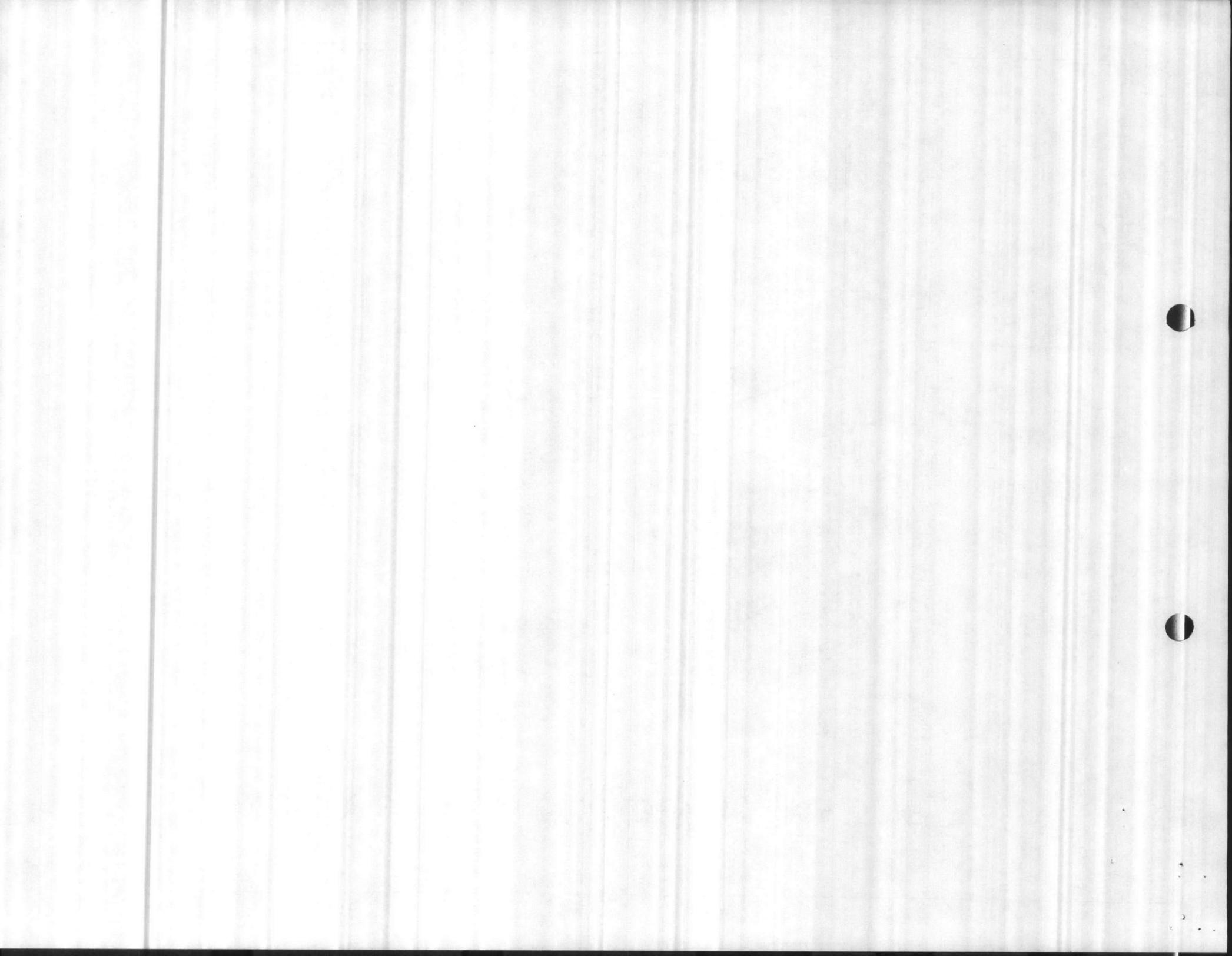
PROJ	YRS		ANNUAL	DIFF	PV	PV
FROM	TO	ITEM	COST	FACTOR	FACTOR	COST
0	0	NEW STEAM LINE	1,650,000.	0.00	1.000	1,650,000.
0	0	NEW DA TANK	200,000.	0.00	1.000	200,000.
0	0	40K PPH BLR	500,000.	0.00	1.000	500,000.
0	0	NEW FW PUMP	50,000.	0.00	1.000	50,000.
1	25	MAINT SAVINGS	-75,000.	0.00	9.524	-714,276.
1	25	FUEL TO OP STM LN	54,000.	0.00	9.524	514,279.
15	15	REHAB EXIST. BLRS	1,000,000.	0.00	0.251	251,172.
0	0	COND PUMP G650	25,000.	0.00	1.000	25,000.
TOTAL						2,476,174.





# PROPOSED STEAM AND CONDENSATE ROUTING





### Assumptions Made

1. The boilers in G650 can be safely operated until the estimated MILCON construction year of FY-95.
2. 8100 linear feet of 10-inch steam and 6-inch condensate line will be constructed between AS4151 and G650 at a cost of \$1,650,000.
3. Cost to maintain the steam pressure in the new steam line is based on \$0.45 per gallon fuel.
4. Based on current maintenance cost of approximately \$100,000 per year at G650 \$75,000 would be saved.
5. There would be no personnel savings.
6. Plant AS4151 would require a new DA tank and feed water pump to support the new boiler.
7. Building G650 would be used for a steam distribution and condensate receiving and pumping station.
8. The existing boilers at AS4151 will require replacement at project year 15.
9. The firm capacity required at AS4151 is 120,000 PPH which is based on the analysis of G650 and AS4151 plant logs, which were adjusted based on a previous metering study, and future growth plans at each site.

Attachment 2

1. The boiler is to be replaced with the existing 10000 horsepower boiler of 1952.
2. The boiler is to be replaced with a 10-inch steam and 6-inch condenser line which is to be replaced with a 10-inch steam and 6-inch condenser line with a cost of \$1,000,000.
3. Cost to maintain the steam pressure in the new steam line is based on \$0.15 per gallon fuel.
4. Based on current maintenance cost of approximately \$100,000 per year, \$500,000 would be saved.
5. There would be no personnel savings.
6. The new boiler would require a new BA turbine and fuel vapor line to support the new boiler.
7. Building 6030 would be used for a steam plant, water and condenser receiving and cooling section.
8. The existing boiler at 6030 will require replacement at a cost of \$1,000,000.
9. The new capacity required at 6030 is 100,000 TPA which is based on the analysis of 6030 and 6031 plant logs, which were analyzed based on a previous water study and energy growth plan of 1970.

INSPECTION FIRMS

Hartford Steam Boiler Inspection & Insurance Co.  
One State St.  
Hartford, CT 06102

Phone: 1-800-243-0090

Thielsch Engineering Associates, Inc.  
195 Frances Ave.  
Cranston, Rhode Island

Phone 1-(401)-467-6454

INSPECTION VOUCHER

Hartford Steam Boiler Inspection & Insurance Co.  
One State St.  
Hartford, CT 06103

Phone: 1-800-543-0000

Tri-State Engineering Association, Inc.  
135 Vernon Ave.  
Cranston, Rhode Island

Phone: 1-(401)-407-6434