

ENERGY AND UTILITIES

1. COMPONENT MARINE CORPS	FY 19 ⁸⁷ MILITARY CONSTRUCTION PROJECT DATA			2. DATE 15 Oct 1985
3. INSTALLATION AND LOCATION MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		4. PROJECT TITLE BLOWN-IN INSULATION, VARIOUS BUILDINGS BASEWIDE		
5. PROGRAM ELEMENT	6. CATEGORY CODE VARIOUS	7. PROJECT NUMBER LE717R	8. PROJECT COST (\$000) 168	
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
FILL CONCRETE BLOCK WALLS WITH INSULATION				153.3
CONTINGENCIES - 10%				15.3
TOTAL CONTRACT COST				168.6
DESIGN COST -6%				10.1
TOTAL FUNDS REQUESTED				178.7
10. DESCRIPTION OF PROPOSED CONSTRUCTION Fill concrete block air cells in walls with zonolite or styrene foam beads for insulation. Work to include site preparation and cleanup.				
11. REQUIREMENT <u>PROJECT.</u> Fill concrete block air cells in exterior and interior facility walls with zonolite or styrene foam beads to better insulate the facilities. The insulation material must have a resistance or "R" factor or at least 5.0. The installation of the insulating beads must not damage the facility structure in any way. Attached is a list of the facilities to be treated. <u>REQUIREMENT.</u> To increase the amount of wall insulation in heated and/or air conditioned spaces. This will help in reducing energy loss by infiltration. <u>CURRENT SITUATION.</u> Various walls in the listed facilities are constructed of 8" or 12" concrete block, as noted. The air cells in the blocks provide minimal insulation for the buildings. This project was identified in a FEP study accomplished by LANTNAVFACENCOM. <u>IMPACT IF NOT PROVIDED.</u> Continued energy loss/waste due to infiltration of outside air and humidity. Approximately 4,660 MBTU's of energy will be lost per year due to insufficient insulation.				



1. COMPONENT

FY 19⁸⁷ MILITARY CONSTRUCTION PROJECT DATA

2. DATE

MARINE CORPS

15 Oct 1985

3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE

BLOWN-IN INSULATION, VARIOUS BUILDINGS BASEWIDE

5. PROJECT NUMBER

LE717R

LIST OF FACILITIES

<u>BUILDING NUMBER</u>	<u>WALL AREA (SF)</u>	<u>BLOCK THICKNESS (IN)</u>
<u>Camp Geiger</u>		
TC-307 (A)	281	8
TC-307(B)	823	8
TC-1064	2,818	8
TC-1065	2,818	8
TC-1067	2,818	8
TC-1068	2,818	8
TC-1069	2,818	8
TC-1160	2,818	8
	<u>18,012</u>	
<u>Courthouse Bay</u>		
BB-48	9,520	8
BB-49	9,520	8
BB-50	9,592	8
	<u>28,632</u>	
<u>Industrial Area--Exterior Walls</u>		
1015 (Dry Storage)	2,131	12
1015 (Club System Area)	1,148	8
1041 (First Floor)	4,778	8
1104	4,826	8
1105	4,757	8
1202 (Annexes)	40,209	12
1202 (First Floor Office)	2,165	12
1202 (Second Floor Office)	1,960	12
1202 (Misc. Areas)	683	12
1403	3,549	8
1403 (Warehouse Area)	940	8
1404 (Office)	814	8
1404 (Warehouse Area)	8,218	8
1407 (Office)	1,038	8
1407	2,716	8
1410 (Storage)	2,038	8
1500 (28.3' X 35' office)	559	8
1500 (17' X 22.83' office)	177	8
1500 (20.5' X 35' office)	501	8
1500	<u>22,361</u>	8
	<u>105,523</u>	



1. COMPONENT MARINE CORPS	FY 1987 MILITARY CONSTRUCTION PROJECT DATA	2. DATE 15 Oct 85
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3. INSTALLATION AND LOCATION
MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE BLOWN-IN INSULATION, VARIOUS BUILDINGS BASEWIDE	5. PROJECT NUMBER LE717R
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LIST OF FACILITIES (Cont'd)

<u>BUILDING NUMBER</u>	<u>WALL AREA (SF)</u>	<u>BLOCK THICKNESS (IN)</u>
<u>Industrial Area--Interior Walls</u>		
903 (Warehouse Office)	1,075	8
904 (Office Area)	1,200	8
906 (20' X 30' office)	1,200	8
906 (20' X 20' office)	900	8
915 (26' X 21.5' office)	1,036	8
916 (26' X 21.5' office)	1,036	8
916 (30' X 30' office)	900	8
1012 (26' X 21.5' office)	690	8
1012 (20' X 20' office)	900	8
1108 (first floor office)	2,700	8
1117 (26' X 21.5' office)	1,036	8
1117 (13' X 11' office)	555	8
1118 (26' X 21.5' office)	1,036	8
1118 (20' X 30' office)	1,050	8
1212 (26' X 21.5' office)	1,036	8
1500 (28.3' X 35' office)	633	8
1500 (17' X 22.83' office)	554	8
1500 (20.5' X 35' office)	556	8
	18,093	



COST ESTIMATE

DATE PREPARED
15 Oct 85

SHEET 1 OF 1

ACTIVITY AND LOCATION
MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

CONSTRUCTION CONTRACT NO.

IDENTIFICATION NUMBER
LE717R

PROJECT TITLE
BLOWN-INSULATION, VARIOUS BUILDINGS, BASEWIDE

ESTIMATED BY
P. ENGLE

CATEGORY CODE NUMBER
VARIOUS

STATUS OF DESIGN
 PED 30% 100% FINAL Other (Specify) Project

JOB ORDER NUMBER

ITEM DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		ENGINEERING ESTIMATE	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL
FILL AIR CELLS WITH ZONOLITE OR STYRENE FOAM BEADS:								
CAMP GEIGER	18,012	SF	.40	7,204.80	.25	4,503.00		11,707.80
COURTHOUSE BAY	28,632	SF	.40	11,452.80	.25	7,158.00		18,610.80
INDUSTRIAL AREA (EXTERIOR WALLS)	105,523	SF	.40	42,209.20	.25	26,380.75		68,589.95
INDUSTRIAL AREA (INTERIOR WALLS)	18,093	SF	.40	7,237.20	.25	4,523.25		11,760.45
SUBTOTAL				68,104.00		42,565.00		110,669.00
OVERHEAD -15%								16,600.35
INS., TAXES, S.S., ETC. 18% OF LABOR								7,661.70
SALES TAXES 4.5% OF MATERIAL								3,064.68
SUBTOTAL								137,995.73
PROFIT - 10%								13,799.57
SUBTOTAL								151,795.30
BOND 1%								1,517.95
TOTAL CONTRACT COST								153,313.25
CONTINGENCY -10%								15,331.32
SUBTOTAL								168,644.57
DESIGN 6%								10,118.67
TOTAL FUNDS REQUESTED								178,763.24



N 312,000

N 310,000

N 300

USE	NUMBER	LOCATION	USE
DIAMOND	BB-89	18-N	ACD/GEN INSTR BLDG
DRYING BLDG	BB-90	18-N	
	BB-91	18-N	
	BB-92	18-N	
	BB-93	18-N	
TANK	S-BB-94	00-L	LUBRICATION FACILITY
DRYING BLDG	BB-95	18-N	ACD/GEN INSTR BLDG
	BB-96	18-N	TOILET
HE EXCHANGE BUILDING	BB-97	18-N	PUMP HOUSE
STORAGE AND PUMP ISLAND	BB-98	18-N	TOILET
INSTRUCTION BUILDING	S-BB-99	18-N	POLICE DET OFF
	BB-100	18-L	ACD/GEN INSTR BLDG

SITE LOCATION MAP

LE717R

BLOW-IN INSULATION, VARIOUS BUILDINGS, BASEWIDE



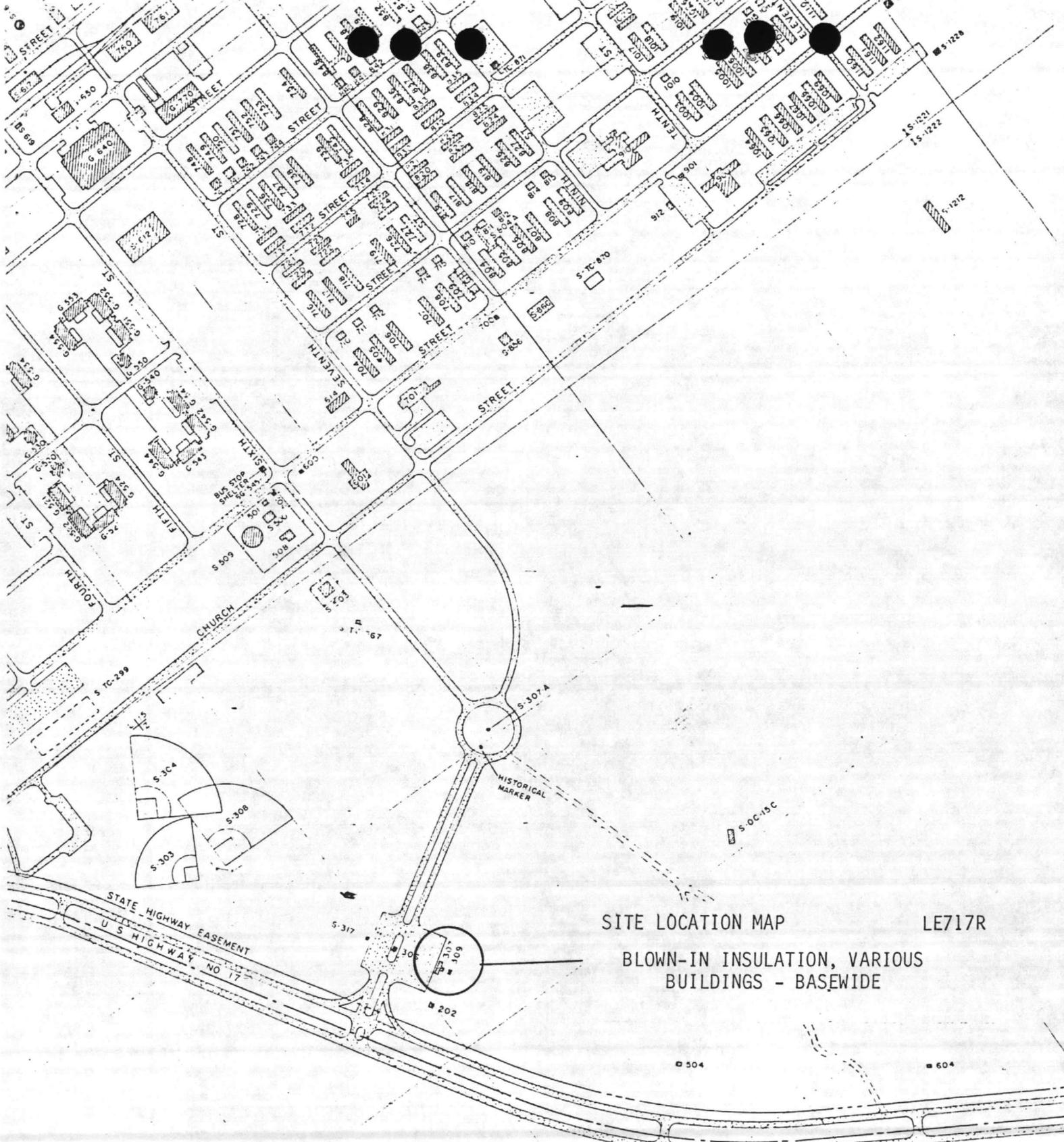
A-9
A-10
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S-A-31
S-A-32
A-33
S-A-34
S-A-35
S-A-36
A-37
S-A-38

NUMBER	LOCATION	USE	NUMBER	LO
S-BB-135	18-N	BASIS BALL DIAMOND	S-BB-173	
BB-136	15-L	ACADEMIC & GENERAL INSTR. BLDG.	BB-174	
BB-137	15-L	ADMN BLDG.	BB-175	
BB-138	14-J	ACD/GEN INSTR BLDG.	BB-176	
BB-139	14-J		BB-177	
S-BB-140	12-L	BRIDGE STOR BMD	S-BB-178	
BB-151	12-L	TOILET	S-BB-179	
S-BB-155	17-U	MAGAZINE	S-BB-180	

ENGINEER AND
 AMPHIBIAN TROOPS AREA
 COURTHOUSE BAY
 CAMP LEJEUNE, NORTH CAROLINA







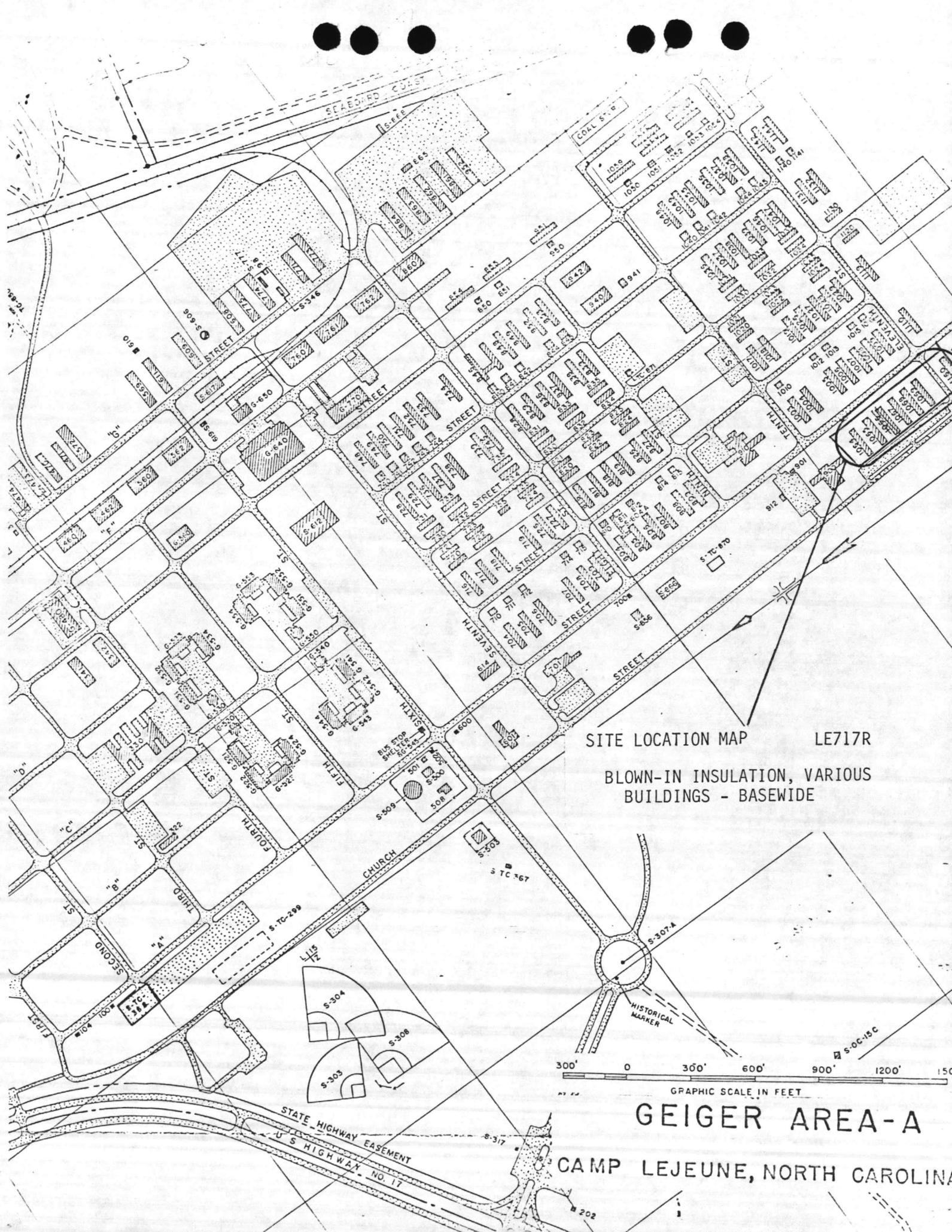
SITE LOCATION MAP LE717R
 BLOWN-IN INSULATION, VARIOUS BUILDINGS - BASEWIDE

GEIGER AREA-A
 CAMP LEJEUNE, NORTH CAROLINA

NOTE: EXISTING BUILDINGS AND STRUCTURES IN THE GEIGER AREA ARE PREFIXED BY "TC" EXCEPT ITR COMPLEX WHICH HAS A PREFIX OF "G".

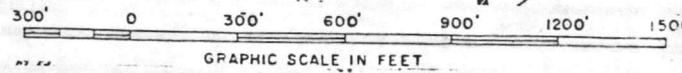
- LEGEND
-  BUILDINGS
 -  PAVED SURFACE
 -  EARTH-GRADED ROAD
 -  RAILROAD





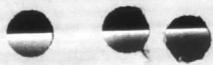
SITE LOCATION MAP LE717R

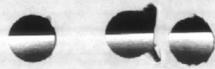
BLOW-IN INSULATION, VARIOUS BUILDINGS - BASEWIDE



GEIGER AREA-A

CAMP LEJEUNE, NORTH CAROLINA





LIFE CYCLE COST ANALYSIS SUMMARY
ENERGY CONSERVATION INVESTMENT PROGRAM (EIP)

1625/Util

LOCATION: CAMP LEJEUNE, NC

REGION NO: 4

PROJECT TITLE: Blown-In Insulation, Various Buildings LE717R

FISCAL YEAR 1986

DISCRETE PORTION NAME:

ANALYSIS DATE: 3 Sep 85

ECONOMIC LIFE 25 YEARS

1. INVESTMENT

A. CONSTRUCTION COST	\$ 168,644.57
B. SIOH	\$ -0-
C. DESIGN COST	\$ 10,118.67
D. ENERGY CREDIT CALC (1A+1B+1C)X.9	\$ 160,886.92
E. SALVAGE VALUE OF EXISTING EQUIPMENT	-\$ -0-
F. TOTAL INVESTMENT (1D-1E)	\$ 160,886.92

2. ENERGY SAVINGS (+)/COST (-)

ANALYSIS DATE ANNUAL SAVINGS, UNIT COST & DISCOUNTED SAVINGS

FUEL	COST \$/MBTU(1)	SAVINGS MBTU/YR(2)	ANNUAL \$ SAVINGS(3)	DISCOUNT FACTOR(4)	DISCOUNTED SAVING(5)
A. ELECT	\$ 2.5	937.85	\$ 2,344.63	15.23	\$ 35,708.71
B. DIST	\$		\$		\$
C. RESID	\$ 4.26	978.56	\$ 4,168.77	22.19	\$ 92,502.69
D. NG	\$		\$		\$
E. CO/DIST	\$ 2.27	2,743,80	\$ 6,228.43	20.42	\$ 127,184.54
F. TOTAL		4,660.21	\$ 12,741.83		-----> \$ 255,395.94

3. NON ENERGY SAVING (+)/COST (-).

A. ANNUAL RECURRING (+/-)

(1) DISCOUNT FACTOR (TABLE A)	11.65	\$ 2,948.01
(2) DISCOUNTED SAVING/COST (3A X 3A1)		\$ 34,344.32

B. NON RECURRING SAVING (+)/COST (-)

ITEM	SAVINGS(+) COST (-)(1)	YEAR OF OCCURRENCE(2)	DISCOUNT FACTOR(3)	DISCOUNTED SAV- INGS (+) COST (-)(4)
1.	\$			\$
2.	\$			\$
3.	\$			\$
4. TOTAL	\$			\$

C. TOTAL NON ENERGY DISCOUNTED SAVINGS (+)/COST(-) (3A2+3B2.4) \$ 34,344.32

D. PROJECT NON ENERGY QUALIFICATION TEST

(1) 25% MAX NON ENERGY CAL (2F5 X .33)	\$ 84,280.66
1. IF 3D1 IS = OR >3C GO TO ITEM 4	
2. IF 3D1 IS < 3C CALC SIR = (2F5+3D1)/1F=	
3. IF 3D12 IS => 1 GO TO ITEM 4	
4. IF 3D12 is < 1 PROJECT DOES NOT QUALIFY	

- | | |
|---|----------------|
| 4. FIRST YEAR DOLLAR SAVINGS 2F3+3A+(3B12/YEARS ECONOMIC LIFE) | \$ 15,689.84 |
| 5. TOTAL NET DISCOUNTED SAVINGS (2F5+3C) | \$ 289,740.26 |
| 6. DISCOUNTED SAVINGS RATIO (IF < 1 PROJECT DOES NOT QUALIFY) (SIR)=(5/1F)= | 1.80 |
| 7. E/C RATION (2F2/(1F/1000)= | 28.97 MBTU/K\$ |



ENERGY - UTILITIES

1. COMPONENT MARINE CORPS		FY 19 <u>87</u> MILITARY CONSTRUCTION PROJECT DATA		2. DATE 15 Oct 85	
3. INSTALLATION AND LOCATION MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA 28542			4. PROJECT TITLE BATT INSULATION, VARIOUS BLDGS. BASEWIDE		
5. PROGRAM ELEMENT	6. CATEGORY CODE VARIOUS	7. PROJECT NUMBER LE719R	8. PROJECT COST (\$000) 185		

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
TOTAL COST	ES	-	-	168.5
CONTINGENCIES - 10%	LS	-	-	16.8
TOTAL CONTRACT COST	LS	-	-	<u>185.3</u>
DESIGN COST - 6%	LS	-	-	11.1
TOTAL FUNDS REQUESTED	LS	-	-	<u>196.4</u>

10. DESCRIPTION OF PROPOSED CONSTRUCTION

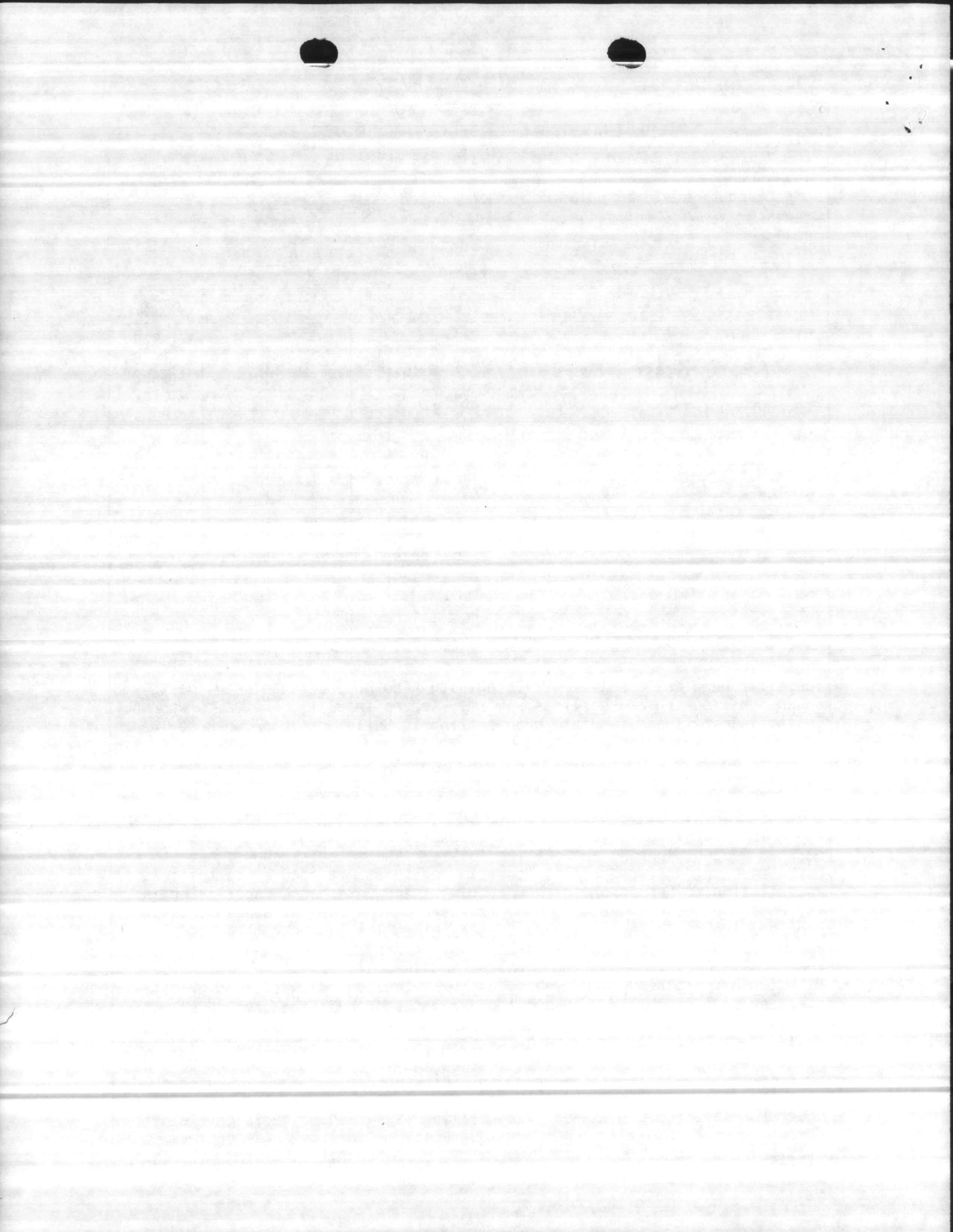
Install fiberglass insulation batting with vapor barrier, between joists on wooden flooring and ceilings. Firmly secure insulation batts to wooden joists. Install and insulate drop ceiling in Building 1103. Work to include site preparation and clean-up.

11. REQUIREMENTS:

PROJECT: Install 6" thick fiberglass insulation batting, with vapor barrier between wooden flooring and ceiling joists. The material should have a resistance or "R" factor of at least 19 and be firmly secured to the joists. Installation to be performed in the crawl space under each facility or in the attic space, so that no damage is sustained by the buildings structures. Drop ceiling to be installed and 6" fiberglass insulation batting added above ceiling. Site preparation and post construction clean-up to be included. The attached list of facilities are to be insulated as indicated.

REQUIREMENT: To reduce the energy usage at the listed facilities by decreasing the infiltration of outside air into the building envelopes. This will help to reduce the base energy consumption to 25% below FY-75 baseline by 1990.

CURRENT SITUATION: The existing flooring is tile on 3/4" thick wood planks. This is mounted on a felt covered 3/4" thick wood flooring. The platform is supported by 6" wide wooden joists. In addition, a crawl space exists under the facilities. The existing ceiling is 3/4" thick ceiling tile or corrugated metal. No insulation is currently installed in these areas.



ENERGY -- UTILITIES

1. COMPONENT MARINE CORPS	FY 19 ⁸⁷ MILITARY CONSTRUCTION PROJECT DATA	2. DATE 15 Oct 85
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3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE

BATT INSULATION, VARIOUS BUILDINGS, BASEWIDE

5. PROJECT NUMBER

LE719R

CURRENT SITUATION: (cont'd).. This project was identified in a FEP Study accomplished by LANTNAVFACENGCOM.
 IMPACT IF NOT PROVIDED: Continued energy waste due to infiltration of outside air and humidity. Approximately 2,500 MBTU's of energy will be lost per year due to insufficient insulation.

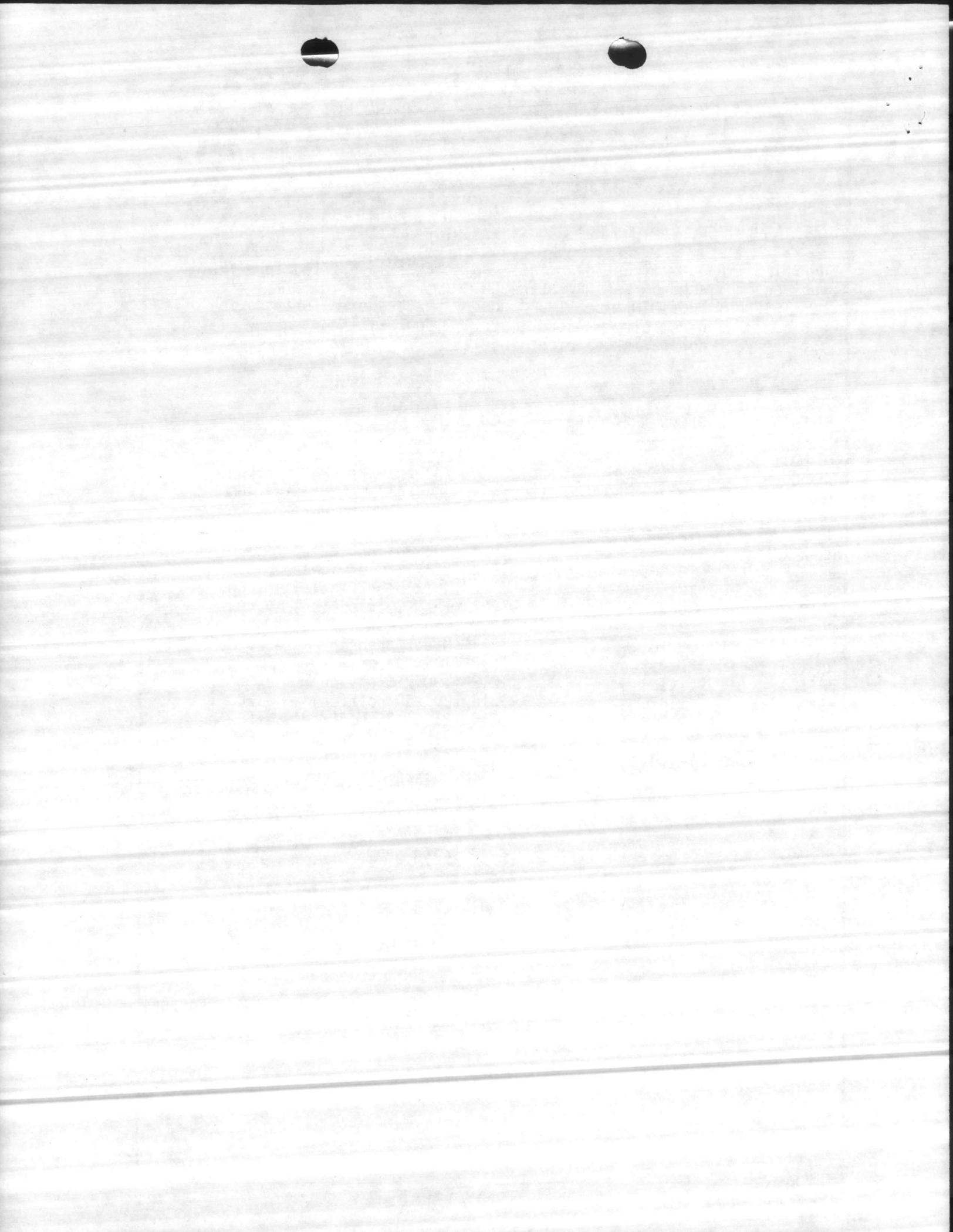
FLOOR INSULATION

CEILING INSULATION

<u>BUILDING</u>	<u>FLOOR AREA (SF)</u>	<u>BUILDING</u>	<u>CEILING AREA (SF)</u>
TC-601	5,577	905 (sm. offices)	812
BB-10	3,425	906 (30'x40' office)	1,200
BB-27	3,244	914 (30'x50' office)	1,500
BB-28	5,363	915 (12'x20' office)	240
RR-1	12,508	915 (15'x10' office)	150
RR-2	12,508	916 (30'x30' office)	900
RR-4	12,508	1012 (26'x21.5' office)	559
RR-5	12,508	1116 (40'x16' office)	640
RR-9	6,710	1202 (1st floor office)	5,404
RR-11	8,693	1202 (2nd floor office)	3,280
RR-12	3,361	1202 (Misc. areas)	2,808
BA-119	1,499	1212 (10'x30' office)	300
BA-120	1,184	1212 (130'x12' office)	1,560
BA-143	1,456	1316 (20'x60' office)	1,200
BA-144	2,913	1316 (21.5'x26' office)	559
BA-146	1,184	1317 (21.5'x26' office)	559
	<u>94,641</u>	1401 (43'x41' office)	1,763
		1401 (20'x21' office)	420
		1410 (storage)	2,814
		1500 (17'x22.8' office)	388
		1500 (20.5'x35' office)	718
		1500 (28.3'x35' office)	992
		1501 (38'x20' office)	760
		1501 (classrooms)	1,600
		1501 (Exchange)	8,507
			<u>39,633</u>

DROP CEILING

<u>BUILDING</u>	<u>CEILING AREA (SF)</u>
1103 (Auto Shop)	4,726



COST ESTIMATE

DATE PREPARED
15 Oct 85

SHEET 1 OF 2

ACTIVITY AND LOCATION
MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

CONSTRUCTION CONTRACT NO.

IDENTIFICATION NUMBER
LE719R

PROJECT TITLE
BATT INSULATION, VARIOUS BUILDINGS, BASEWIDE

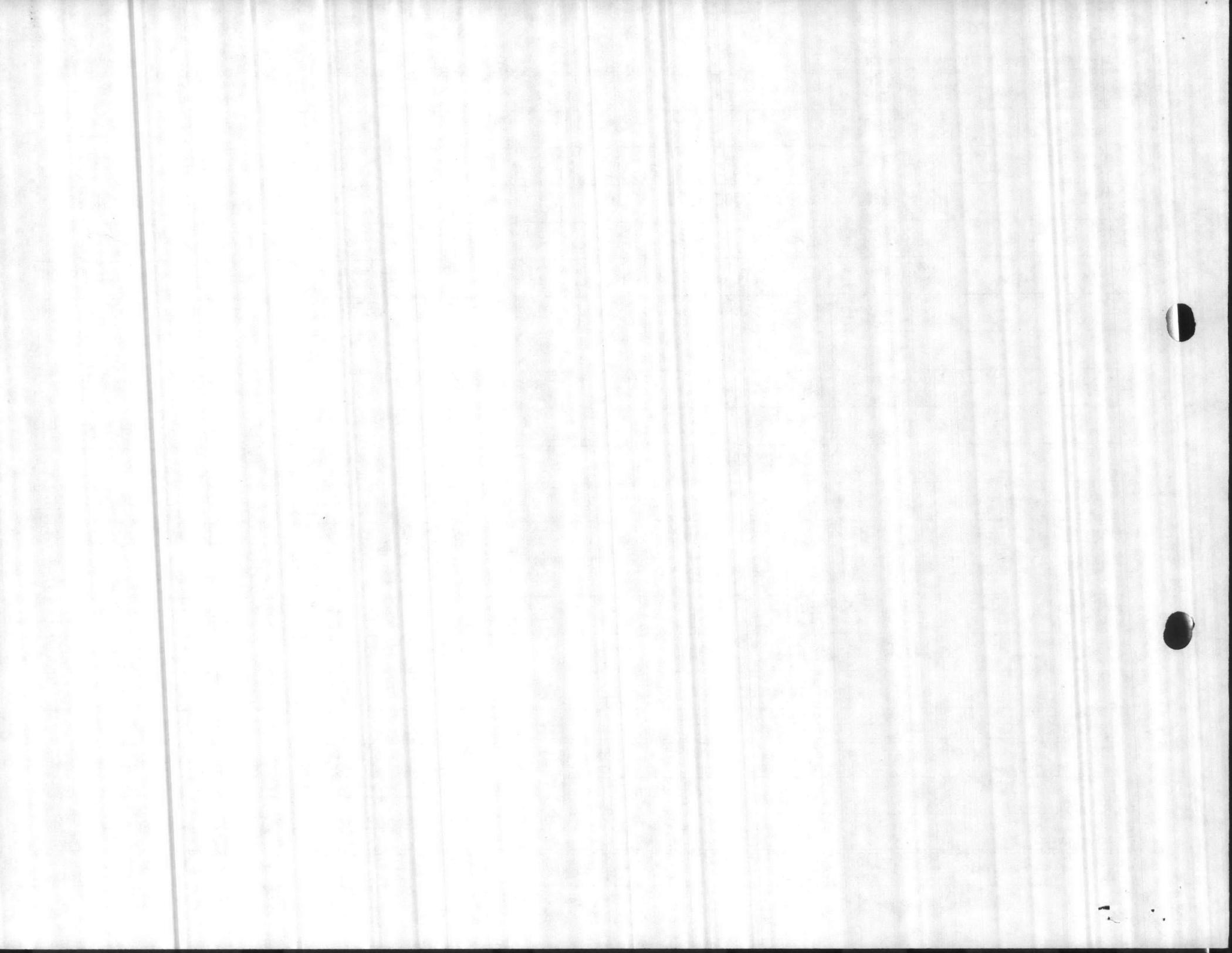
ESTIMATED BY
P. ENGLE

CATEGORY CODE NUMBER
VARIOUS

STATUS OF DESIGN
 PED 30% 100% FINAL Other (Specify) Project

JOB ORDER NUMBER

ITEM DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		ENGINEERING ESTIMATE	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL
FIBERGLASS FLOOR INSULATION - 6" THICK:								
CAMP GEIGER	5,577	SF	.24	1,338.5	.65	3,625.1		4,963.6
COURTHOUSE BAY	12,032	SF	.24	2,887.7	.65	7,820.8		10,708.5
RIFLE RANGE	68,796	SF	.24	16,511.04	.65	44,717.4		61,228.44
ONSLow BEACH	8,236	SF	.24	1,976.6	.65	5,353.4		7,330.0
TOTAL				22,713.84		61,516.7		84,230.54
CEILING FIBERGLASS INSULATION -6" THICK:								
INDUSTRIAL AREA	39,633	SF	.24	9,511.92	.40	15,853.2		25,365.12
DROP CEILING/INSULATION 6" THICK FIBERGLASS								
INDUSTRIAL AREA: FIBERGLASS CEILING BOARDS	4,726	SF	.35	1,654.1	.31	1,465.06		3,119.16
SUSPENSION SYSTEM AND GRID	4,726	SF	.35	1,654.1	.24	1,134.24		2,788.34
HANGING WIRE	4,726	SF	.01	47.26	.04	189.04		236.30
FIBERGLASS BATT INSULATION	4,726	SF	.24	1,134.24	.15	708.90		1,843.14
TOTAL				4,489.7		3,686.28		8,175.98



COST ESTIMATE

DATE PREPARED
15 Oct 85

SHEET 2 OF 2

ACTIVITY AND LOCATION
MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

PROJECT TITLE
BATT INSULATION, VARIOUS BUILDINGS, BASEWIDE

CONSTRUCTION CONTRACT NO.

ESTIMATED BY
P. ENGLE

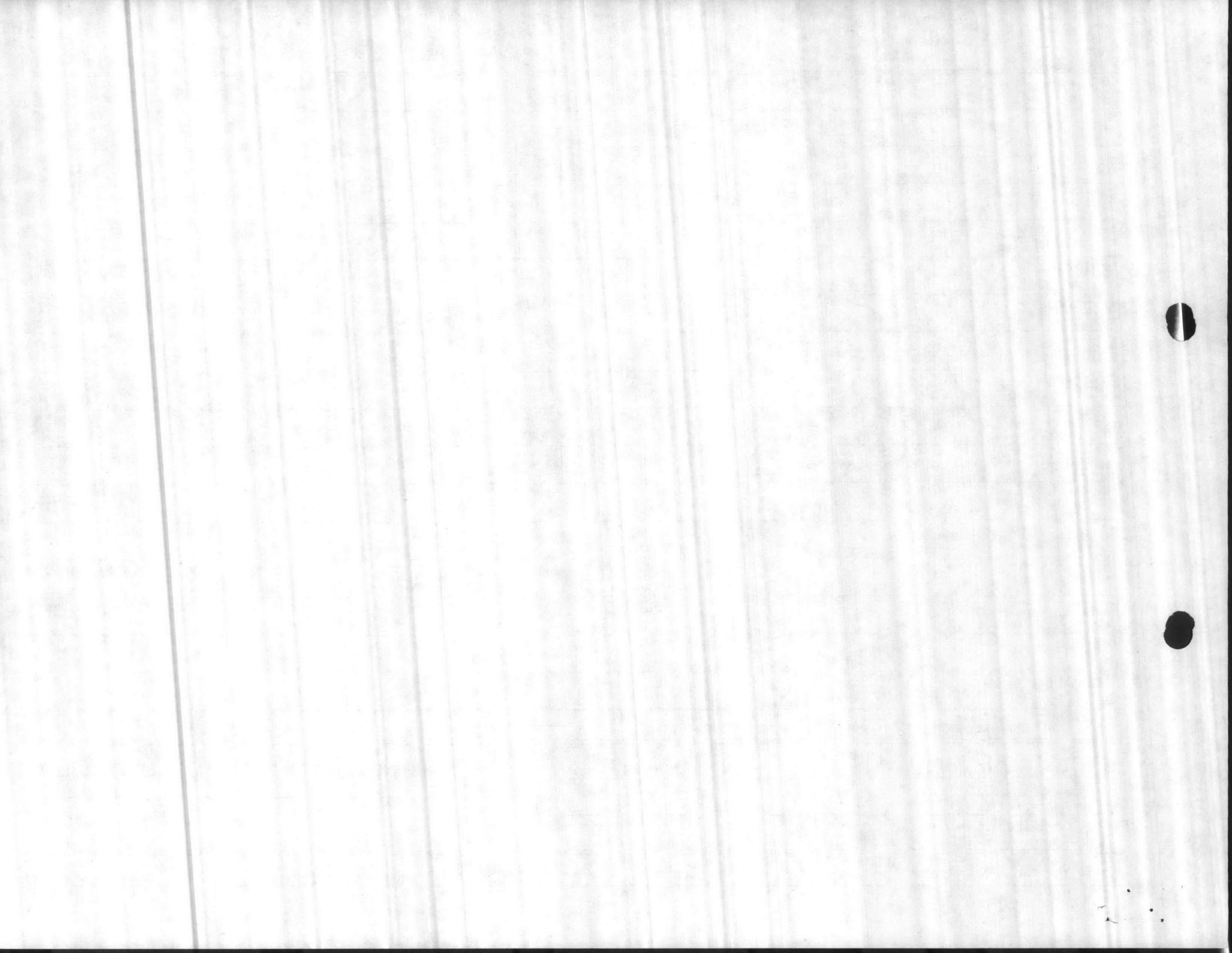
STATUS OF DESIGN
 PED 30% 100% FINAL Other (Specify) Project

IDENTIFICATION NUMBER
LE719R

CATEGORY CODE NUMBER
VARIOUS

JOB ORDER NUMBER

ITEM DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		ENGINEERING ESTIMATE	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL
SUBTOTAL				36,715.46		81,056.18		117,771.64
OVERHEAD 15%								17,665.75
TAXES, INS., S.S. 18% OF LABOR								14,590.11
SALES TAX, 4.5% OF MATERIAL								1,652.20
SUBTOTAL								151,679.70
PROFIT - 10%								15,167.97
SUBTOTAL								166,847.67
BOND 1%								1,668.48
SUBTOTAL								168,516.15
CONTINGENCIES 10%								16,851.62
TOTAL CONTRACT COST ESTIMATE								185,367.77
DESIGN COST - 6%								11,122.07
TOTAL PROJECT COST								196,489.84



LIFE CYCLE COST ANALYSIS SUMMARY
ENERGY CONSERVATION INVESTMENT PROGRAM (ECIP)

1625/Util

LOCATION: CAMP LEJEUNE, NC

REGION NO: 4

PROJECT TITLE: Batt Insulation, Various Buildings LE719R

FISCAL YEAR 1986

DISCRETE PORTION NAME:

ANALYSIS DATE: 20 Aug 85

ECONOMIC LIFE 25 YEARS

1. INVESTMENT

A. CONSTRUCTION COST	\$ 185,367.00
B. SOH	\$ -0-
C. DESIGN COST	\$ 11,122.00
D. ENERGY CREDIT CALC (1A+1B+1C)X.9	\$ 176,840.10
E. SALVAGE VALUE OF EXISTING EQUIPMENT	-\$ -0-
F. TOTAL INVESTMENT (1D-1E)	\$ 176,840.10

2. ENERGY SAVINGS (+)/COST (-)

ANALYSIS DATE ANNUAL SAVINGS, UNIT COST & DISCOUNTED SAVINGS

FUEL	COST \$/MBTU(1)	SAVINGS MBTU/YR(2)	ANNUAL \$ SAVINGS(3)	DISCOUNT FACTOR(4)	DISCOUNTED SAVING(5)
A. ELECT	\$ 2.50	313.29	\$ 783.23	15.23	\$ 11,928.59
B. DIST	\$ 6.80	108.32	\$ 736.60	17.68	\$ 13,023.09
C. RESID	\$ 4.26	1,166.43	\$ 4968.95	22.19	\$ 110,261.01
D. NG	\$		\$		\$
E. CO/DIST	\$ 2.27	883.79	\$ 2006.20	20.42	\$ 40,966.60
F. TOTAL		2,471.83	\$ 8494.98		-----> \$ 176,179.29

3. NON ENERGY SAVING (+)/COST (-)

A. ANNUAL RECURRING (+/-)	\$ 984.81
(1) DISCOUNT FACTOR (TABLE A)	11.65
(2) DISCOUNTED SAVING/COST (3A X 3A1)	\$ 11,473.04

B. NON RECURRING SAVING (+)/COST (-)

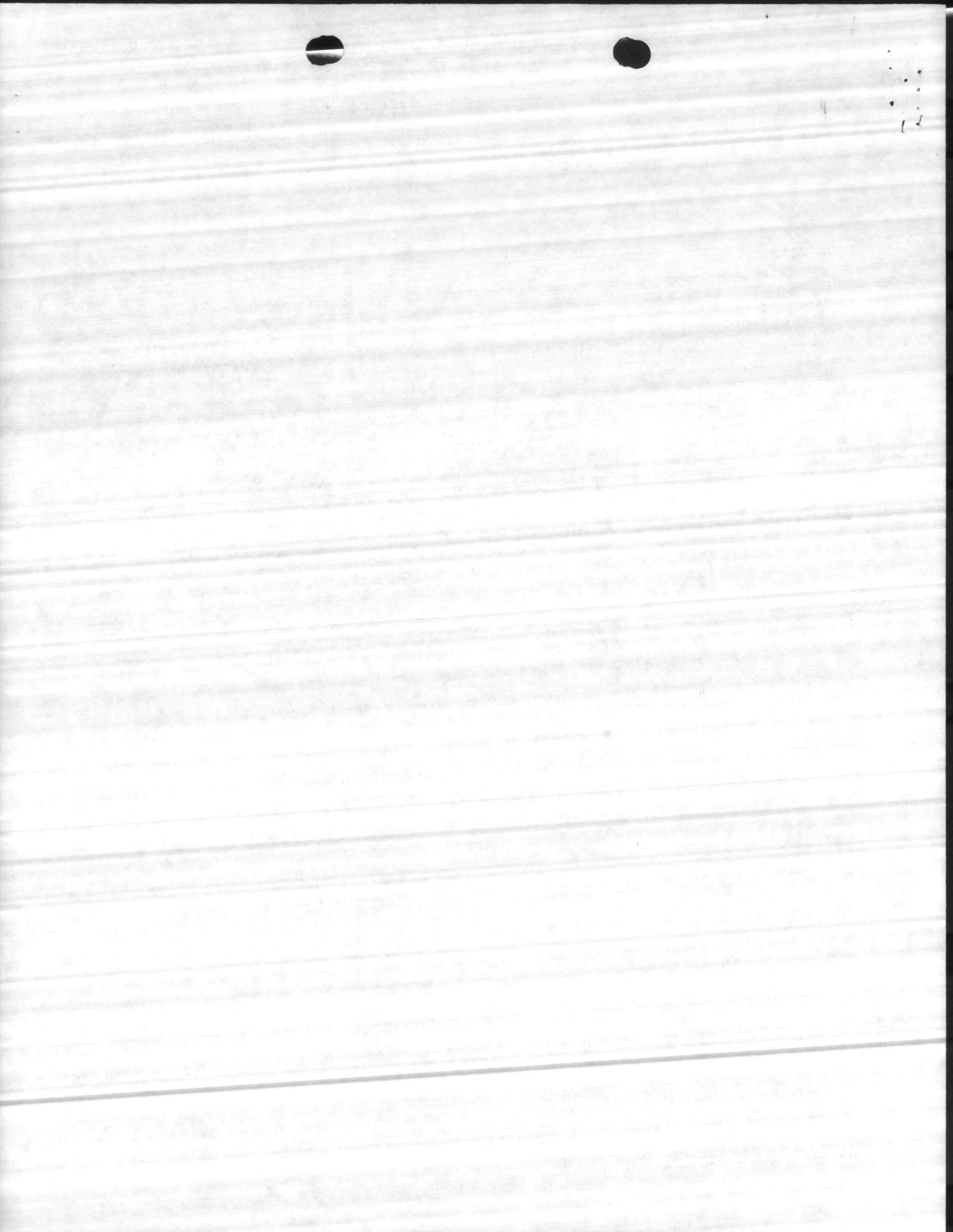
ITEM	SAVINGS(+) COST (-)(1)	YEAR OF OCCURRENCE(2)	DISCOUNT FACTOR(3)	DISCOUNTED SAVINGS (+) COST (-)(4)
1.	\$			\$
2.	\$			\$
3.	\$			\$
4. TOTAL	\$			\$

C. TOTAL NON ENERGY DISCOUNTED SAVINGS (+)/COST(-) (3A2+3B2.4) \$ 11,473.04

D. PROJECT NON ENERGY QUALIFICATION TEST

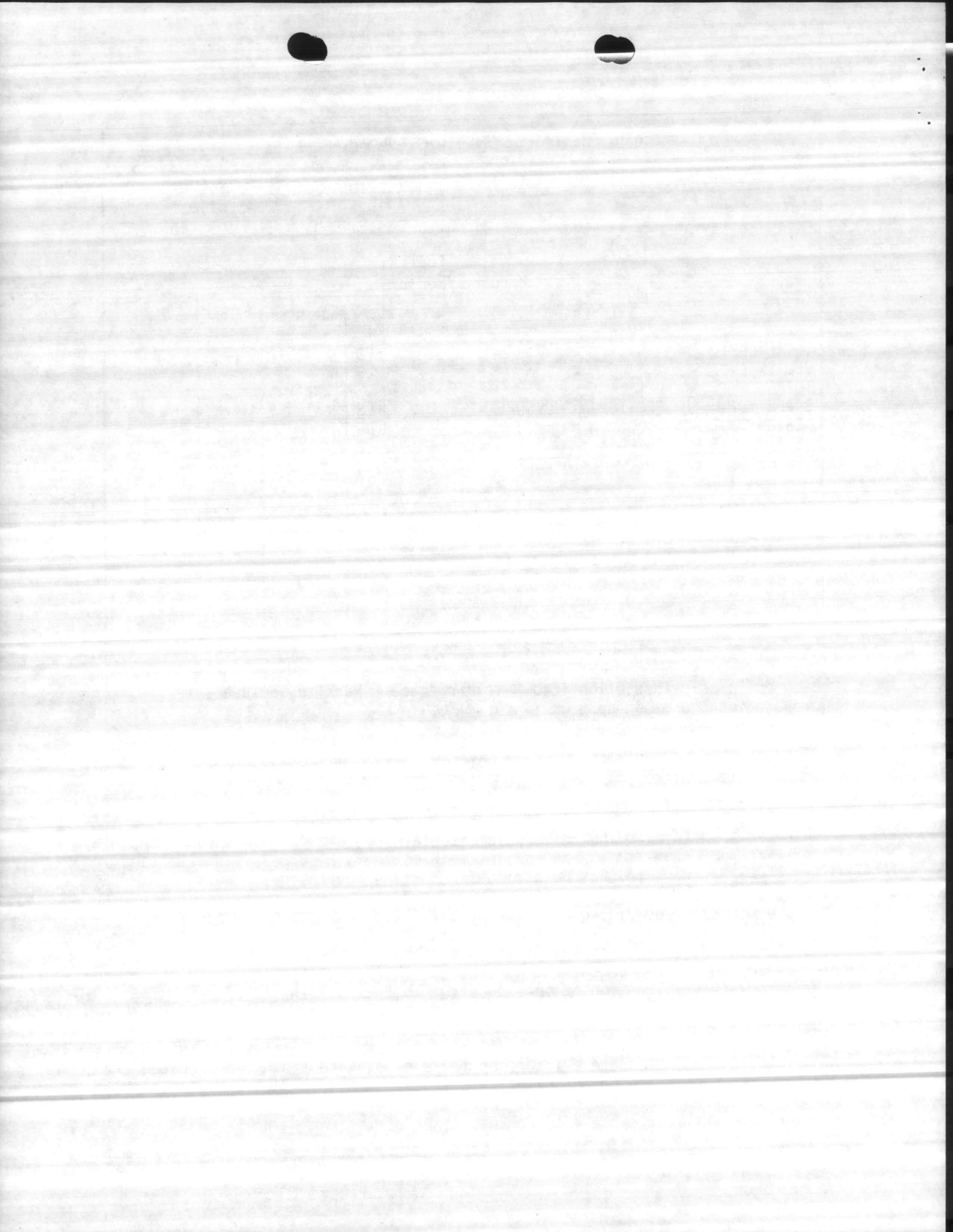
(1) 25% MAX NON ENERGY CAL (2F5 X .33)	\$ 58,139.17
1. IF 3D1 IS = OR > 3C GO TO ITEM 4	
2. IF 3D1 IS < 3C CALC SIR = (2F5+3D1)/1F=	
3. IF 3D12 IS => 1 GO TO ITEM 4	
4. IF 3D12 is < 1 PROJECT DOES NOT QUALIFY	

4. FIRST YEAR DOLLAR SAVINGS 2F3+3A+(3B12/YEARS ECONOMIC LIFE)	\$ 8,494.98
5. TOTAL NET DISCOUNTED SAVINGS (2F5+3C)	\$ 187,652.33
6. DISCOUNTED SAVINGS RATIO (IF < 1 PROJECT DOES NOT QUALIFY) (SIR)=(5/1F)=	1.06
7. E/C RATION (2F2/(1F/1000)=	13.98 MBTU/K\$



ENERGY - UTILITIES

1. COMPONENT MARINE CORPS	FY 19 ⁸⁷ MILITARY CONSTRUCTION PROJECT DATA	2. DATE 15 Oct 85		
3. INSTALLATION AND LOCATION MARINE CORPS BASE CAMP LEJEUNE, NC 28542		4. PROJECT TITLE EXTERIOR WALL INSULATION VARIOUS BLDGS., BASEWIDE		
5. PROGRAM ELEMENT	6. CATEGORY CODE VARIOUS	7. PROJECT NUMBER LE718R		
8. PROJECT COST (\$000) 225				
9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
TOTAL COST:	LS	-	-	204.9
CONTINGENCIES 10%	LS	-	-	20.5
TOTAL COST				225.4
SUPERVISION, INSPECTION AND OVERHEAD	LS	-	-	-
DESIGN COST 6%	LS	-	-	13.5
TOTAL FUNDS REQUESTED	LS	-	-	238.9
INSTALLED EQUIPMENT OTHER APPROPRIATIONS				-
10. DESCRIPTION OF PROPOSED CONSTRUCTION Blow cellulosic insulation into wall air space. Work to include site preparation and clean-up.				
11. REQUIREMENT: PROJECT: Blow cellulosic insulation into existing wall air space. Air space is 3.5" thick. The cellulosic material should have a resistance or "R" factor of at least 13 and completely fill the air space. Installation is to be performed so that no damage is sustained by the building's structures. In addition, vinyl backed fiberglass insulation is to be secured to asbestos siding at Building 901, Shop area. Site preparation and post construction clean-up to be included. The attached list of facilities outline the buildings to be affected. REQUIREMENT: To reduce the energy usage at the listed facilities by decreasing the infiltration of outside air into the building envelopes. This will help to reduce base energy consumption to 25% below the FY-75 baseline by 1990. CURRENT SITUATION: The existing wall in the listed facilities receiving cellulosic insulation are brick, asbestos siding, wood siding, corrugated metal or gypsum board on the exterior surface. A 3.5" wide air space is located between the exterior wall surface at the interior gypsum board wall covering. This air space extends the height of the entire wall. No insulation currently exists within these walls.				



1. COMPONENT
MARINE CORPS

FY 19⁸⁷ MILITARY CONSTRUCTION PROJECT DATA

2. DATE
15 Oct 85

3. INSTALLATION AND LOCATION

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE

EXTERIOR WALL INSULATION VARIOUS BUILDINGS, BASEWIDE

5. PROJECT NUMBER

LE718R

CURRENT SITUATION (cont'd): The existing wall in the listed facilities receiving fiberglass insulation are made of corrugated asbestos siding only. No insulation currently exists on these walls. This project was identified in a FEP Study accomplished by LANTNAVFACENGCOM.

IMPACT IF NOT PROVIDED: Continued energy waste due to infiltration of outside air and humidity. Approximately 5,400 MBTU's of energy will be lost per year due to insufficient insulation.

CELLULOSIC INSULATION

<u>FACILITY</u>	<u>WALL AREA (SF)</u>
BA-119	1,260
BA-120	1,093
BA-146	1,093
	<u>3,446</u>

COURTHOUSE BAY AREA

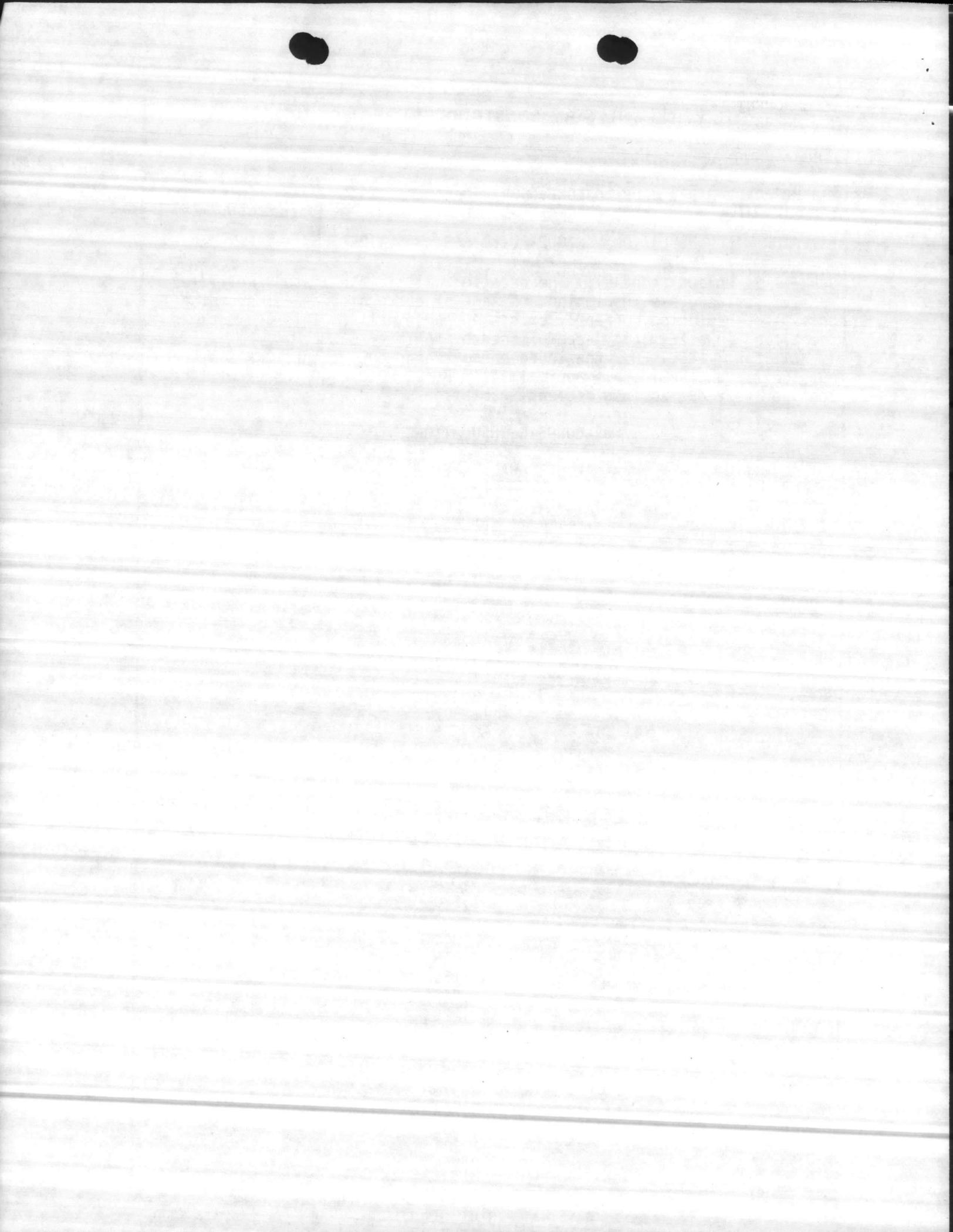
BB-2	10,537
BB-7	9,284
BB-10	1,644
BB-28	3,375
BB-45	11,507
	<u>36,347</u>

RIFLE RANGE

RR-1	15,435
RR-2	15,435
RR-4	15,435
RR-5	15,435
RR-6 (Office area)	828
RR-6 (Truck area)	1,520
RR-9	16,202
RR-10	2,044
RR-11	24,015
RR-12	2,136
RR-49	2,744
	<u>111,229</u>

CAMP GEIGER

TC-601	3,075
TC-614	3,766
TC-710	1,381
TC-740	1,381
TC-910	7,225



1. COMPONENT MARINE CORPS FY 19⁸⁷ MILITARY CONSTRUCTION PROJECT DATA NAVY	2. DATE 15 Oct 85
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3. INSTALLATION AND LOCATION
 MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

4. PROJECT TITLE EXTERIOR WALL INSULATION, VARIOUS BUILDINGS, BASEWIDE	5. PROJECT NUMBER LE718R
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CELLULOSIC INSULATION (cont'd)

INDUSTRIAL AREA - INTERIOR WALLS

902 (Tent repair office)	1,100
902 (Eng. shop office)	900
905 (Small office)	600
906 (30'x40' office)	700
907 (20'x15' office)	500
907 (30'x90' office)	2,100
914 (First floor office)	2,700
915 (12'x20' office)	396
915 (15'x10' office)	350
1012 (20'x40' office)	1,500
1012 (20'x20'N.W. office)	600
1103 (Storage area)	442
1103 (Plumbing office)	272
1201 (Office)	1,667
1202 (Misc. areas)	5,316
1202 (First floor office)	2,073
1211 (First floor office)	2,700
1301 (45'x57.5' office)	1,475
1301 (45'x60' office)	1,500
1400 (Dayroom)	410
1401 (Package Store)	1,656
1401 (20'x21' office)	620
1401 (43'x41' office)	840
1401 (First floor office)	430
1401 (Second floor office)	430
1402 (Depot offices)	1,450
1403	1,144
1501 (Exchange)	2,142
	36,013

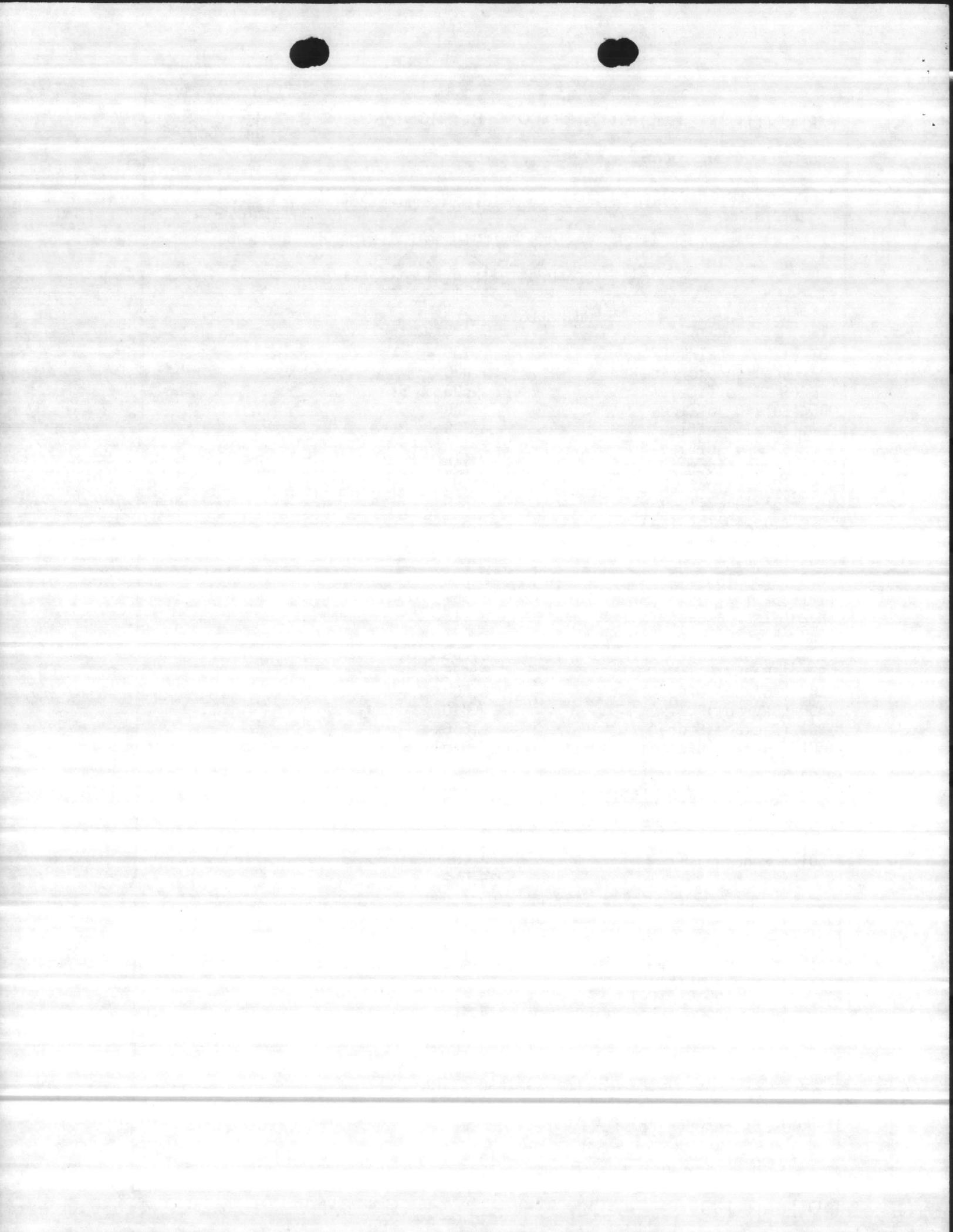
INDUSTRIAL AREA - EXTERIOR WALLS

1103 (Office)	1,195
1103 (Storage area)	741
1103 (Plumbing office)	61
1103 (Auto Shop)	4,447
1304 (First floor)	2,322
	8,766

FIBERGLASS INSULATION

INDUSTRIAL AREA-EXTERIOR WALLS

901 (Shop area)	13,667
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COST ESTIMATE

DATE PREPARED
15 Oct 85

SHEET 1 OF 2

ACTIVITY AND LOCATION
MARINE CORPS BASE
CAMP LEJEUNE, NC 28542

CONSTRUCTION CONTRACT NO.

ESTIMATED BY
P. ENGLE

IDENTIFICATION NUMBER
LE718R

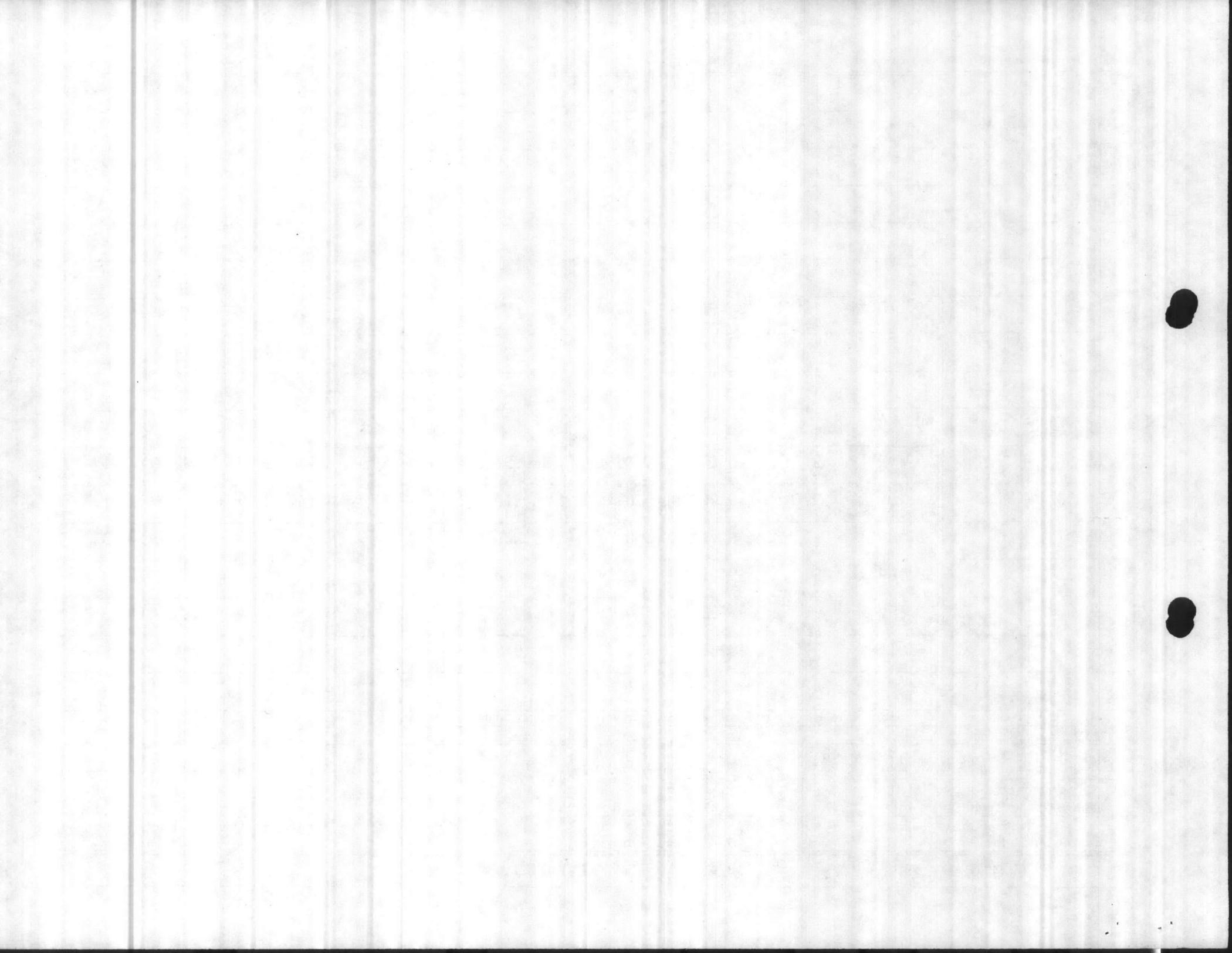
CATEGORY CODE NUMBER
VARIOUS

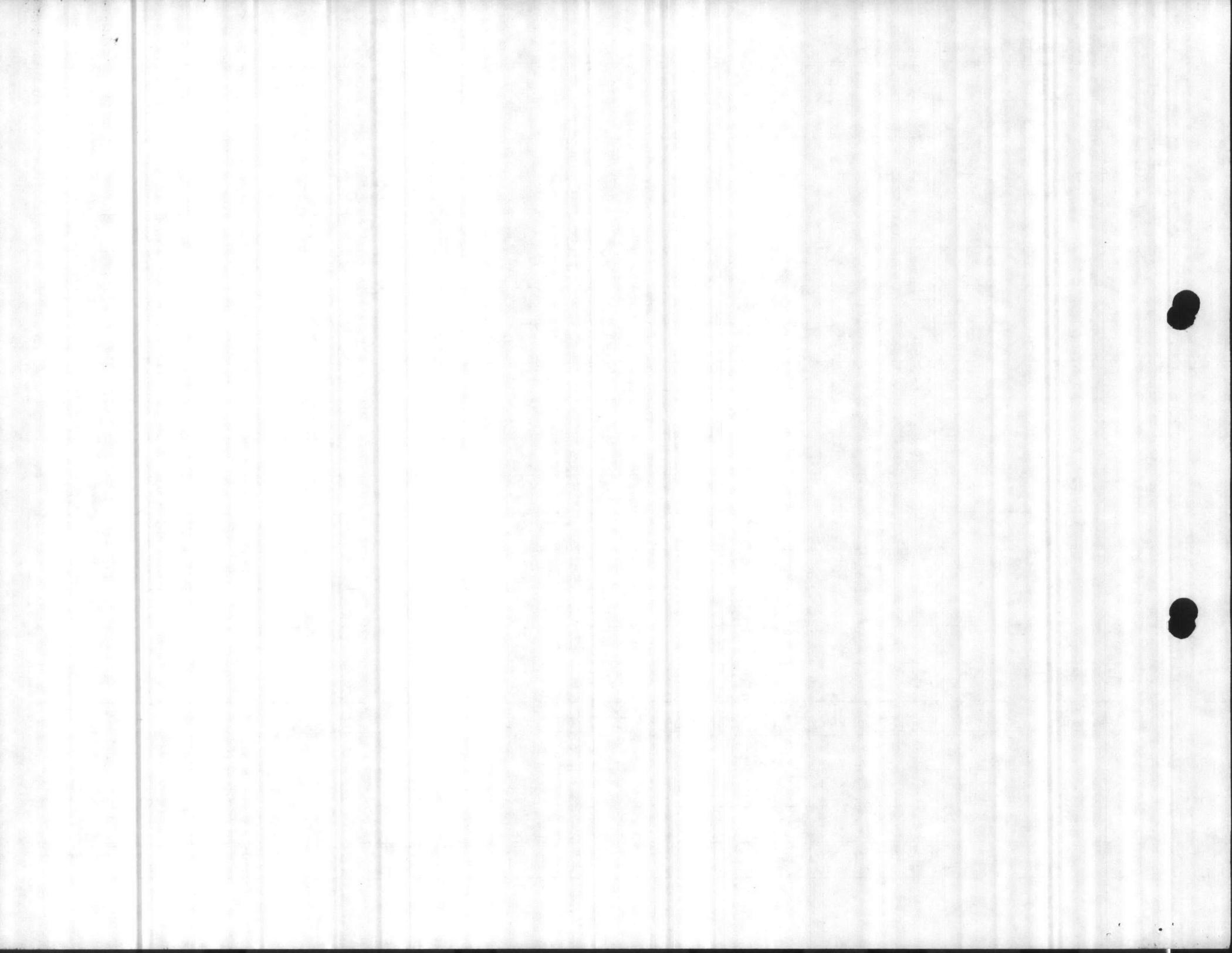
PROJECT TITLE
EXTERIOR WALL INSULATION, VARIOUS BLDGS., BASEWIDE

STATUS OF DESIGN
 PED 30% 100% FINAL Other (Specify) Project

JOB ORDER NUMBER

ITEM DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		ENGINEERING ESTIMATE	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL
BLOWN-IN INSULATION 3.5" THICK:								
Beach Area	3,446	SF	.50	1,723.0	.15	516.9		2,239.9
Courthouse Bay	36,347	SF	.50	18,173.5	.15	5,452.05		23,625.55
Rifle Range	111,229	SF	.50	55,614.5	.15	16,684.35		72,298.85
Camp Geiger	16,828	SF	.50	8,414.0	.15	2,524.2		10,938.2
Industrial Area- Interior walls	36,013	SF	.50	18,006.5	.15	5,401.95		23,408.45
Industrial Area- Exterior walls	8,766	SF	.50	4,383.0	.15	1,341.9		5,697.90
SUBTOTAL				106,314.5		31,894.35		138,208.85
ADD VINYL BACKED FIBERGLASS TO ASBESTOS SIDING (2" THICK)								
BLDG. 901 (Shop area)	13,667	SF	.25	3,416.75	1.03	14,077.01		17,493.76
SUBTOTAL								155,702.64
OVERHEAD 15%								15,570.26
LABOR 18%								8,274.84
MATERIAL 4.5%								4,937.91
SUBTOTAL								184,485.62
PROFIT 10%								18,448.56





LIFE CYCLE COST ANALYSIS SUMMARY
ENERGY CONSERVATION INVESTMENT PROGRAM (ECIP)

1625/Util

LOCATION: CAMP LEJEUNE, NC

REGION NO: 4

PROJECT TITLE: Exterior Wall Insulation, Various Buildings
LE718R

FISCAL YEAR 1986

DISCRETE PORTION NAME:

ANALYSIS DATE: 12 Sep 85

ECONOMIC LIFE 25 YEARS

1. INVESTMENT

A. CONSTRUCTION COST	\$ 225,459.87
B. SIOH	\$ -0-
C. DESIGN COST	\$ 13,527.59
D. ENERGY CREDIT CALC (1A+1B+1C)X.9	\$ 215,088.71
E. SALVAGE VALUE OF EXISTING EQUIPMENT	-\$ -0-
F. TOTAL INVESTMENT (1D-1E)	\$ 215,088.71

2. ENERGY SAVINGS (+)/COST (-)

ANALYSIS DATE ANNUAL SAVINGS, UNIT COST & DISCOUNTED SAVINGS

FUEL	COST \$/MBTU(1)	SAVINGS MBTU/YR(2)	ANNUAL \$ SAVINGS(3)	DISCOUNT FACTOR(4)	DISCOUNTED SAVING(5)
A. ELECT	\$ 2.5	1,146.00	\$ 2,865.00	15.23	\$ 43,633.95
B. DIST	\$ 6.8	70.03	\$ 476.20	17.68	\$ 8,419.22
C. RESID	\$ 4.26	2,651.11	\$ 11,293.73	22.19	\$250,607.84
D. NG	\$		\$		\$
E. CO/DIST	\$ 2.27	1,510.00	\$ 3,427.70	20.42	\$ 69,993.63
F. TOTAL		5,377.14	\$ 18,062.63		-----> \$ 372,654.64

3. NON ENERGY SAVING (+)/COST (-)

A. ANNUAL RECURRING (+/-)	\$ 3,601.35
(1) DISCOUNT FACTOR (TABLE A)	11.65
(2) DISCOUNTED SAVING/COST (3A X 3A1)	\$ 41,955.73

B. NON RECURRING SAVING (+)/COST (-)

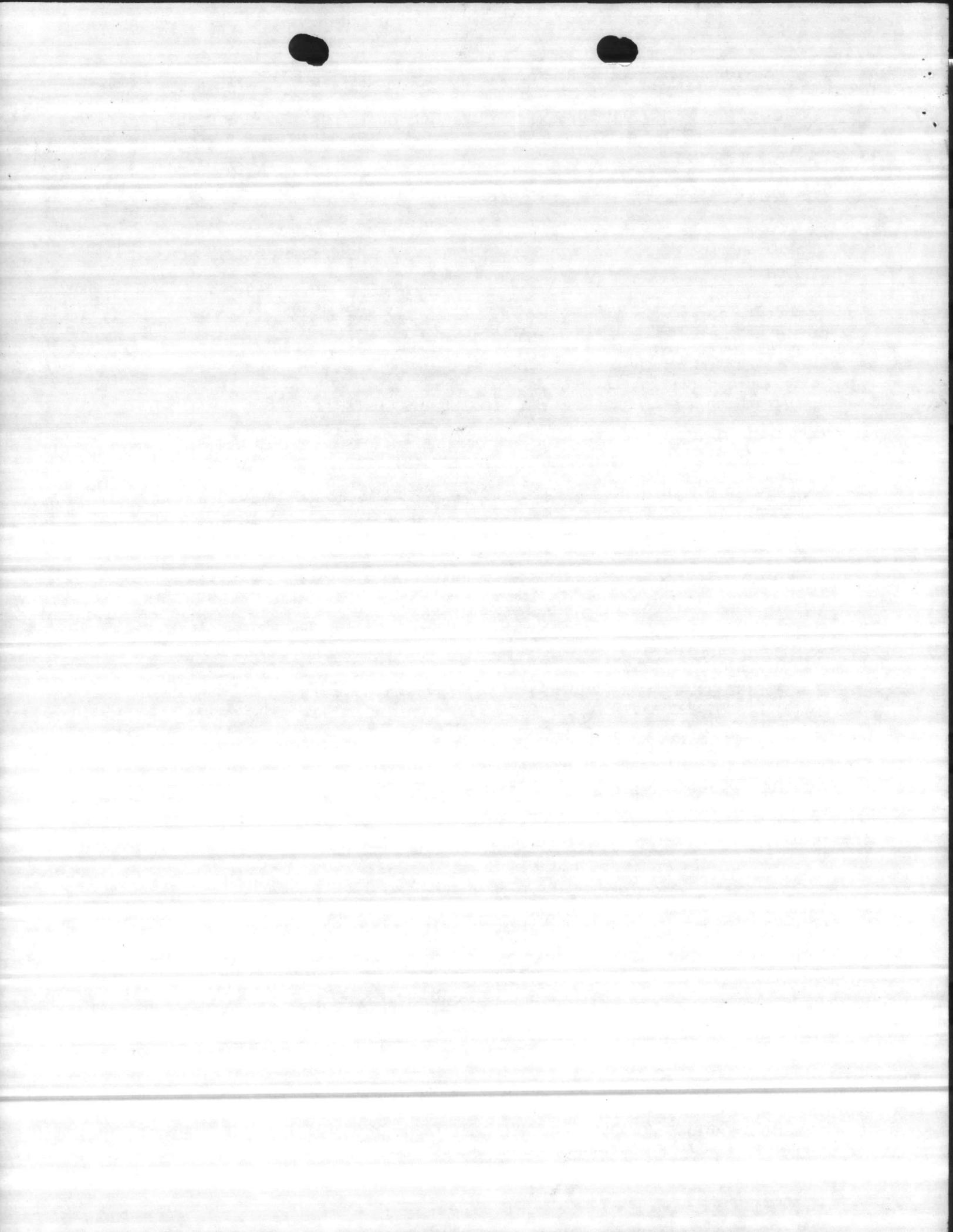
ITEM	SAVINGS(+) COST (-)(1)	YEAR OF OCCURRENCE(2)	DISCOUNT FACTOR(3)	DISCOUNTED SAV- INGS (+) COST (-)(4)
1.	\$			\$
2.	\$			\$
3.	\$			\$
4. TOTAL	\$			\$

C. TOTAL NON ENERGY DISCOUNTED SAVINGS (+)/COST(-) (3A2+3B2.4) \$ 41,955.73

D. PROJECT NON ENERGY QUALIFICATION TEST

- (1) 25% MAX NON ENERGY CAL (2F5 X .33) \$ 122,976.03
1. IF 3D1 IS = OR >3C GO TO ITEM 4
 2. IF 3D1 IS < 3C CALC SIR = (2F5+3D1)/1F=
 3. IF 3D12 IS => 1 GO TO ITEM 4
 4. IF 3D12 is < 1 PROJECT DOES NOT QUALIFY

4. FIRST YEAR DOLLAR SAVINGS 2F3+3A+(3B12/YEARS ECONOMIC LIFE) \$ 21,663.98
5. TOTAL NET DISCOUNTED SAVINGS (2F5+3C) \$ 414,610.37
6. DISCOUNTED SAVINGS RATIO (IF < 1 PROJECT DOES NOT QUALIFY) (SIR)=(5/1F)= 1.93
7. E/C RATION (2F2/(1F/1000))= 25.00 MBTU/K\$



1. COMPONENT MARINE CORPS		FY 19 ⁸⁷ MILITARY CONSTRUCTION PROJECT DATA			2. DATE 15 Oct 85	
3. INSTALLATION AND LOCATION MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA 28542			4. PROJECT TITLE INTERIOR WALL INSULATION, VAR. BLDGS, ONSLOW BEACH & COURTHSE BAY			
5. PROGRAM ELEMENT		6. CATEGORY CODE VARIOUS	7. PROJECT NUMBER LE720R	8. PROJECT COST (\$000) AREAS 188		
9. COST ESTIMATES						
ITEM			U/M	QUANTITY	UNIT COST	COST (\$000)
TOTAL COST			LS			170.9
CONTINGENCIES 10%			LS			17.1
TOTAL COST			LS			188.0
SUPERVISION, INSPECTION AND OVERHEAD			LS			
DESIGN COST 6%			LS			12.5
TOTAL FUNDS REQUESTED						200.5
INSTALLED EQUIPMENT OTHER APPROPRIATIONS						
10. DESCRIPTION OF PROPOSED CONSTRUCTION						
Install 2' X 2' furring on interior walls and insulate with 1½" polystyrene. Cover with gypsum board and paint. Work to include site preparation and clean-up.						
11. REQUIREMENT:						
<p><u>PROJECT.</u> Fur-out inside of walls with 2' X 2' wooden studs. Install 1½' thick polystyrene insulation between studs. This material must have a resistance or "R" factor of at least 6 and be firmly secured to the wooden studs. If there is an existing wall covering, it must be removed and insulation installed. No damage is to be sustained by the building's structures. The attached list of facilities outlines the buildings to be insulated. Site preparation and post construction clean-up to be included.</p> <p><u>REQUIREMENT.</u> To reduce the energy usage at the listed facilities by decreasing the infiltration of outside air into the building envelopes. This will help to reduce base energy consumption to 25% below FY-75 baseline by 1990.</p> <p><u>CURRENT SITUATION.</u> The existing walls are concrete block, brick, concrete or a combination of these materials. No insulation is currently installed on the interior of the walls. This project was identified in a FEP Study accomplished by LANTNAVFACENCOM.</p> <p><u>IMPACT IF NOT PROVIDED.</u> Continued energy waste due to infiltration of outside air and humidity. Approximately 2,250 MBTU's of energy will be lost per year due to insufficient insulation.</p>						



1. COMPONENT	FY 19 ⁸⁷ MILITARY CONSTRUCTION PROJECT DATA	2. DATE
MARINE CORPS		15 Oct 85

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

4. PROJECT TITLE	5. PROJECT NUMBER
INTERIOR WALL INSULATION, VARIOUS BUILDINGS, ONSLOW BEACH AND COURTHOUSE BAY AREAS	LE720R

<u>FACILITY</u>	<u>WALL AREA</u>	<u>4' X 8' SECTIONS</u>
BA-101	2,288	72
BA-102 (West End)	3,231	101
BA-102 (Middle)	1,536	48
BA-102 (East End)	3,231	101
BA-104 (West End)	3,231	101
BA-104 (Middle)	1,536	48
BA-104 (East End)	3,231	101
BA-105 (West End)	3,231	101
BA-105 (Middle)	1,536	48
BA-105 (East End)	<u>3,231</u>	<u>101</u>
	26,282	822
<u>COURTHOUSE BAY</u>		
A-1 (Office area)	955	30
BB-8 (Kitchen/sleeping area)	881	28
BB-16 (Chapel)	1,110	35
BB-16 (Laundry)	992	31
BB-48	10,809	338
BB-49	9,520	298
BB-50	9,592	300
BB-51 (Office area)	530	17
BB-250 (Alum., mullion const)	1,636	52
BB-255 (Alum., mullion const)	<u>1,636</u>	<u>52</u>
	37,661	1,181

FRED



111
112
113
114

COST ESTIMATE

DATE PREPARED
15 Oct 1985

SHEET 1 OF 1

ACTIVITY AND LOCATION

MARINE CORPS BASE
CAMP LEJEUNE, NC 28542

CONSTRUCTION CONTRACT NO.

IDENTIFICATION NUMBER

LE720R

ESTIMATED BY

P. ENGLE

CATEGORY CODE NUMBER

VARIOUS

PROJECT TITLE

INTERIOR WALL INSULATION, VAR. BLDGS., ONSLOW BEACH AND
COURTHOUSE BAY AREAS

STATUS OF DESIGN

PED 30% 100% FINAL Other (Specify) Project

JOB ORDER NUMBER

ITEM DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		ENGINEERING ESTIMATE	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL
BEACH AREA								
1.5" THICK INSULATION	822	SH	20.8	17,097.6	4.48	3,682.56		
STUD FURRING STRIPS	3,288	EA	1.2	3,945.6	1.2	3,945.6		
GYPSUM BOARD	822	SH	15.0	12,330.0	12.0	9,864.0		
SUBTOTAL				33,372.6		17,492.16		50,864.76
COURTHOUSE BAY								
1.5" THICK INSULATION	1,181	SH	20.8	24,564.8	4.48	5,290.9		
STUD FURRING STRIPS	4,724	EA	1.2	5,668.8	1.2	5,668.8		
GYPSUM BOARD	1,181	SF	15.0	17,715.0	12.0	14,172.0		
SUBTOTAL				47,948.6		25,131.7		73,080.3
TOTAL				81,321.20		42,123.86		123,945.06
OVERHEAD 15%								18,591.76
MATERIAL 4.5%								3,659.54
LABOR 18%								7,672.29
SUBTOTAL								153,868.65
PROFIT 10%								15,386.87
SUBTOTAL								169,255.52



COST ESTIMATE

DATE PREPARED

SHEET OF

ACTIVITY AND LOCATION

MARINE CORPS BASE
CAMP LEJEUNE, NC 28542

CONSTRUCTION CONTRACT NO.

IDENTIFICATION NUMBER

LE720R

ESTIMATED BY

P. ENGLE

CATEGORY CODE NUMBER

VARIOUS

PROJECT TITLE

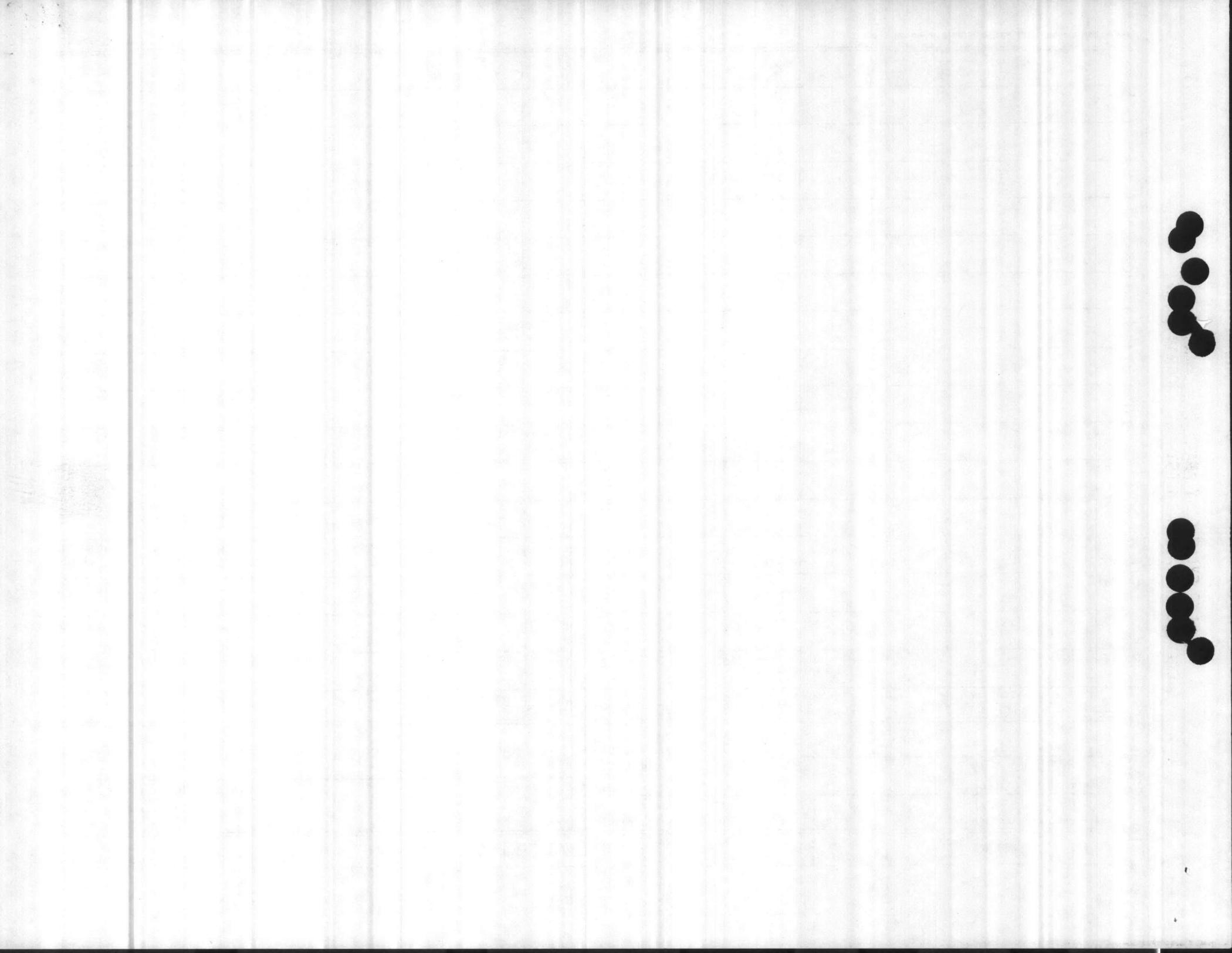
INTERIOR WALL INSULATION, VAR. BLDGS., ONSLOW BEACH AND
COURTHOUSE BAY AREAS

STATUS OF DESIGN

PED 30% 100% FINAL Other (Specify) Project

JOB ORDER NUMBER

ITEM DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		ENGINEERING ESTIMATE	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL
SUBTOTAL (carried over)								169,255.52
BOND 1%								1,692.56
SUBTOTAL								170,948.08
CONTINGENCIES 10%								17,094.81
TOTAL CONSTRUCTION COST								188,042.89
DESIGN COST 6%								12,410.83
TOTAL FUNDS REQUESTED								200,453.72



LOCATION: CAMP LEJEUNE, NC REGION NO: 4

PROJECT TITLE Interior Wall Insulation, Var. Bldgs, FISCAL YEAR 1986
 Onslow Beach & Courthouse Bay Areas LE720R

DISCRETE PORTION NAME:

ANALYSIS DATE: 11 Sep 85 ECONOMIC LIFE 25 Years

- 1. INVESTMENT
 - A. CONSTRUCTION COST \$188,042.89
 - B. SIOH \$ -0-
 - C. DESIGN COST \$ 12,410.83
 - D. ENERGY CREDIT CALC (1A+1B+1C) X .9 \$180,408.34
 - E. SALVAGE VALUE OF EXISTING EQUIPMENT \$
 - F. TOTAL INVESTMENT (1D-1E) \$180,408.34

2. ENERGY SAVINGS (+)/COST (-)
 ANALYSIS DATE ANNUAL SAVINGS, UNIT COST & DISCOUNTED SAVINGS

FUEL	COST \$/MBTU(1)	SAVINGS MBTU/YR(2)	ANNUAL \$ SAVINGS(3)	DISCOUNT FACTOR(4)	DISCOUNTED SAVING(5)
A. ELECT	\$ 2.5	679.1	\$1,697.77	15.23	\$ 25,857.04
B. DIST	\$ 6.8	423.05	\$2,876.74	17.68	\$ 50,860.76
C. RESID	\$ 4.26	1092.70	\$4,654.90	22.19	\$103,292.23
D. NG	\$		\$		\$
E. CO/DIST	\$ 2.27	50.91	\$ 115.57	20.42	\$ 2,359.94
F. TOTAL	\$	2245.77	\$9,344.98		\$182,369.97

- 3. NON ENERGY SAVING (+)/COST (-)
 - A. ANNUAL RECURRING (+/-) \$2,130.18
 - (1) DISCOUNT FACTOR (TABLE A)
 - (2) DISCOUNTED SAVING/COST (3A X 3A1) 24,816.60

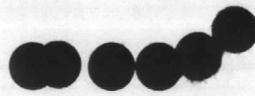
B. NON RECURRING SAVING (+)/COST (-)

ITEM	SAVINGS (+) COST (+)(1)	YEAR OF OCCURRENCE(2)	DISCOUNT FACTOR (3)	DISCOUNTED SAVINGS (+) COST (-) (4)
1.	\$			\$
2.	\$			\$
3.	\$			\$
TOTAL	\$			\$

C. TOTAL NON ENERGY DISCOUNTED SAVINGS (+)/COST(-) (3A2+3B2.4) \$24,816.60

- D. PROJECT NON ENERGY QUALIFICATION TEST
 - (1) 25% MAX ON ENERGY CAL (2F5 X .33) \$60,182.09
 - 1. IF 3D1 IS = OR 3C GO TO ITEM 4
 - 2. IF 3D1 IS 3C CALC SIR = (2F5+3D1)/1F=
 - 3. IF 3D12 IS = 1 GO TO ITEM 4
 - 4. IF 3D12 IS 1 PROJECT DOES NOT QUALIFY

- 4. FIRST YEAR DOLLAR SAVINGS 2F3+3A=(3B12/YEARS ECONOMIC LIFE) \$ 11,475.16
- 5. TOTAL NET DISCOUNTED SAVINGS (2F5+3C) \$207,186.57
- 6. DISCOUNTED SAVINGS RATIO (IF 1 PROJECT DOES NOT QUALIFY)(SIR) = 5/1F=
- 7. E/C RATION (2F2/(1F/100C))=12.48 MBTU/K\$



1. COMPONENT MARINE CORPS		FY 1987 MILITARY CONSTRUCTION PROJECT DATA		2. DATE 15 Oct 85	
3. INSTALLATION AND LOCATION MARINE CORPS BASE CAMP LEJEUNE, NC 28542			4. PROJECT TITLE INTERIOR WALL INSULATION, VAR. BLDGS, RIFLE RNG, CMP GEIGER, &		
5. PROGRAM ELEMENT	6. CATEGORY CODE VARIOUS	7. PROJECT NUMBER LE797R	8. PROJECT COST (\$000) INDUSTRIAL AREAS 97		

9. COST ESTIMATES				
ITEM	U/M	QUANTITY	UNIT COST	COST (\$000)
TOTAL COST	LS			88.2
CONTINGENCIES 10%	LS			8.8
TOTAL COST	LS			97.0
SUPERVISION, INSPECTION & OVERHEAD	LS			
DESIGN COST 6T	LS			5.8
TOTAL FUNDS REQUESTED				102.8
INSTALLED EQUIPMENT OTHER APPROPRIATIONS				

10. DESCRIPTION OF PROPOSED CONSTRUCTION
 Install 2" X 2" furring on interior walls and insulate with 1½" polystyrene. Cover with gypsum board and paint. Work to include site preparation and clean-up.

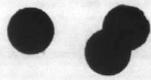
11. REQUIREMENT

PROJECT. Fur-out inside of walls with 2" X 2" wooden studs. Install 1½" thick polystyrene insulation between studs. This material must have a resistance or "R" factor or at least 6 and be firmly secured to the wooden studs. If there is an existing wall covering, it must be removed and insulation installed. No damage is to be sustained by the building's structures. The attached list of facilities outlines the buildings to be insulated. Site preparation and post construction clean-up to be included.

REQUIREMENT. To reduce the energy usage at the listed facilities by decreasing the infiltration of outside air into the building envelopes. This will help to reduce base energy consumption to 25% below FY-75 baseline by 1990.

CURRENT SITUATION. The existing walls are concrete block, brick, concrete or a combination of these materials. No insulation is currently installed on the interior of the walls. This project was identified in a FEP Study accomplished by LANTNAVFACENCOM.

IMPACT IF NOT PROVIDED. Continued energy waste due to infiltration of outside air and humidity. Approximately 1,150 MBTU's of energy will be lost per year due to insufficient insulation.



1. COMPONENT MARINE CORPS	FY 19 ⁸⁷ MILITARY CONSTRUCTION PROJECT DATA	2. DATE 15 Oct 85
3. INSTALLATION AND LOCATION MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA 28542		
4. PROJECT TITLE INTERIOR WALL INSULATION, VARIOUS BUILDINGS, RIFLE RANGE, CAMP GEIGER AND INDUSTRIAL AREAS	5. PROJECT NUMBER LE797R	
<u>FACILITY</u>	<u>WALL AREA (SF)</u>	<u>4' X 8' SECTIONS</u>
RIFLE RANGE		
RR-8	10,172	318
CAMP GEIGER		
TC-307 (a)	281	9
TC-307 (b)	823	26
TC-1064	2,818	89
TC-1065	2,818	89
TC-1067	2,818	89
TC-1068	2,818	89
TC-1069	2,818	89
TC-1160	<u>2,818</u>	<u>89</u>
	18,012	569
INDUSTRIAL AREA - INTERIOR WALLS		
907 (30' X 70' office)	1,950	61
1011 (First floor offices)	<u>2,700</u>	<u>85</u>
	4,650	146



COST ESTIMATE

DATE PREPARED
15 Oct 1985

SHEET OF

ACTIVITY AND LOCATION
MARINE CORPS BASE
CAMP LEJEUNE, NC 28542

CONSTRUCTION CONTRACT NO.

IDENTIFICATION NUMBER
LE797R

PROJECT TITLE
INTERIOR WALL INSULATION, VARIOUS BUILDINGS, RIFLE
RANGE, CAMP GEIGER, AND INDUSTRIAL AREAS

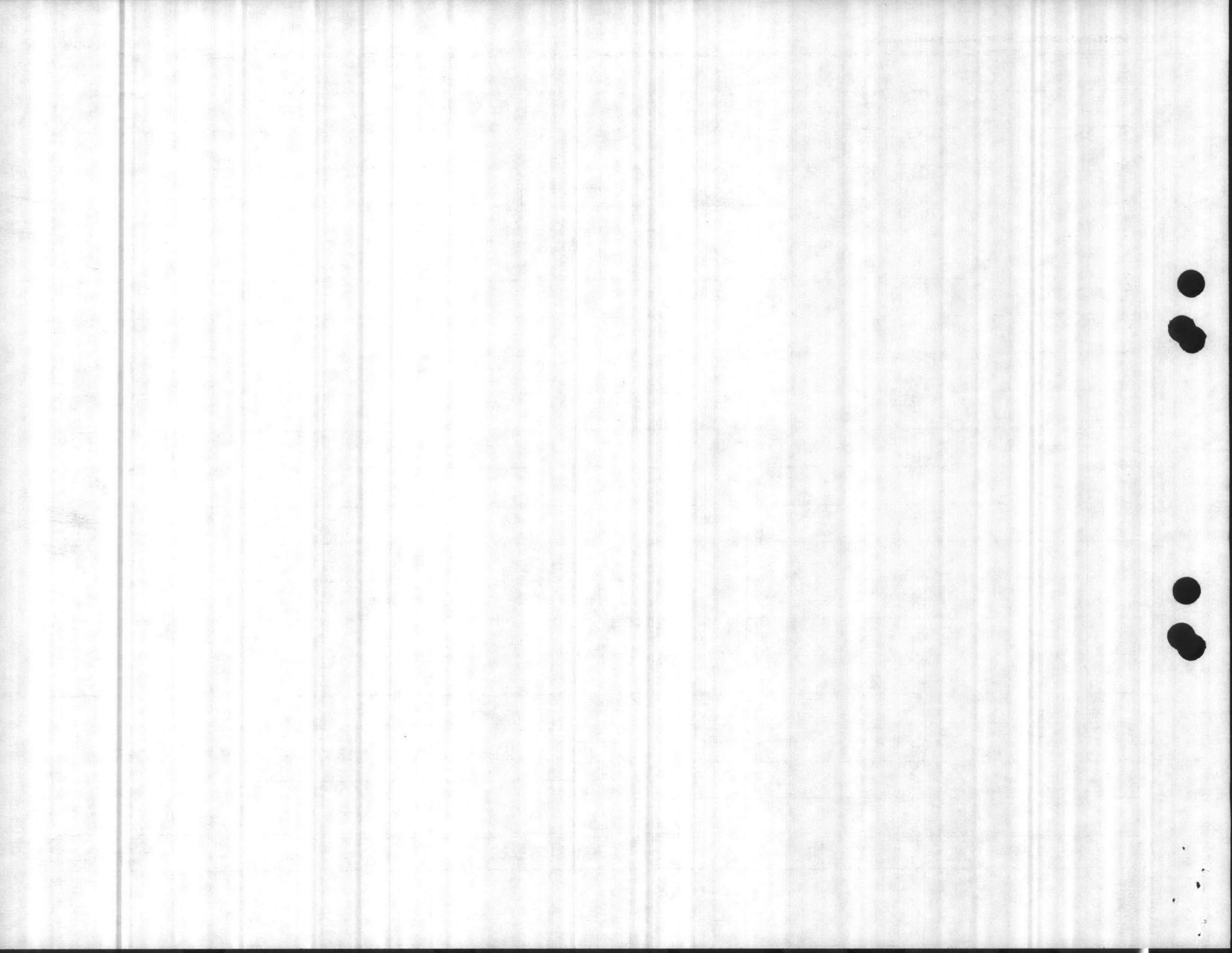
ESTIMATED BY
P. ENGLE

CATEGORY CODE NUMBER
VARIOUS

STATUS OF DESIGN
 PED 30% 100% FINAL Other (Specify) Project

JOB ORDER NUMBER

ITEM DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		ENGINEERING ESTIMATE	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL
RIFLE RANGE								
1.5" THICK INSULATION	318	SH	20.8	6,614.4	4.48	1,424.6		
STUD FURRING STRIPS	1,272	EA	1.2	1,526.4	1.2	1,526.4		
GYPSUM BOARD	318	SH	15.0	4,770.0	12.0	3,816.0		
SUBTOTAL				12,910.8		6,767.0		19,677.8
CAMP GEIGER								
1.5 THICK INSULATION	569	SH	20.8	11,835.2	4.48	2,549.1		
STUD FURRING STRIPS	2,276	EA	1.2	2,731.2	1.2	2,731.2		
GYPSUM BOARD	569	SH	15.0	8,535.0	12.0	6,828.0		
SUBTOTAL				23,101.4		12,108.3		35,209.7
INDUSTRIAL AREA - INTERIOR WALLS								
1.5' THICK INSULATION	146	SH	20.8	3,036.8	4.48	654.1		
STUD FURRING STRIPS	584	EA	1.2	700.8	1.2	700.8		
GYPSUM BOARD	146	SH	15.0	2,190.0	12.0	1,752.0		
SUBTOTAL				5,927.6		3,106.9		9,034.5
TOTAL				41,939.80		21,982.20		63,922.0
OVERHEAD 15%								9,588.3



COST ESTIMATE

DATE PREPARED
15 Oct 85

SHEET OF

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MARINE CORPS BASE
CAMP LEJEUNE, NC 28542

PROJECT TITLE
INTERIOR WALL INSULATION, VARIOUS BUILDINGS, RIFLE
RANGE, CAMP GEIGER, AND INDUSTRIAL AREAS

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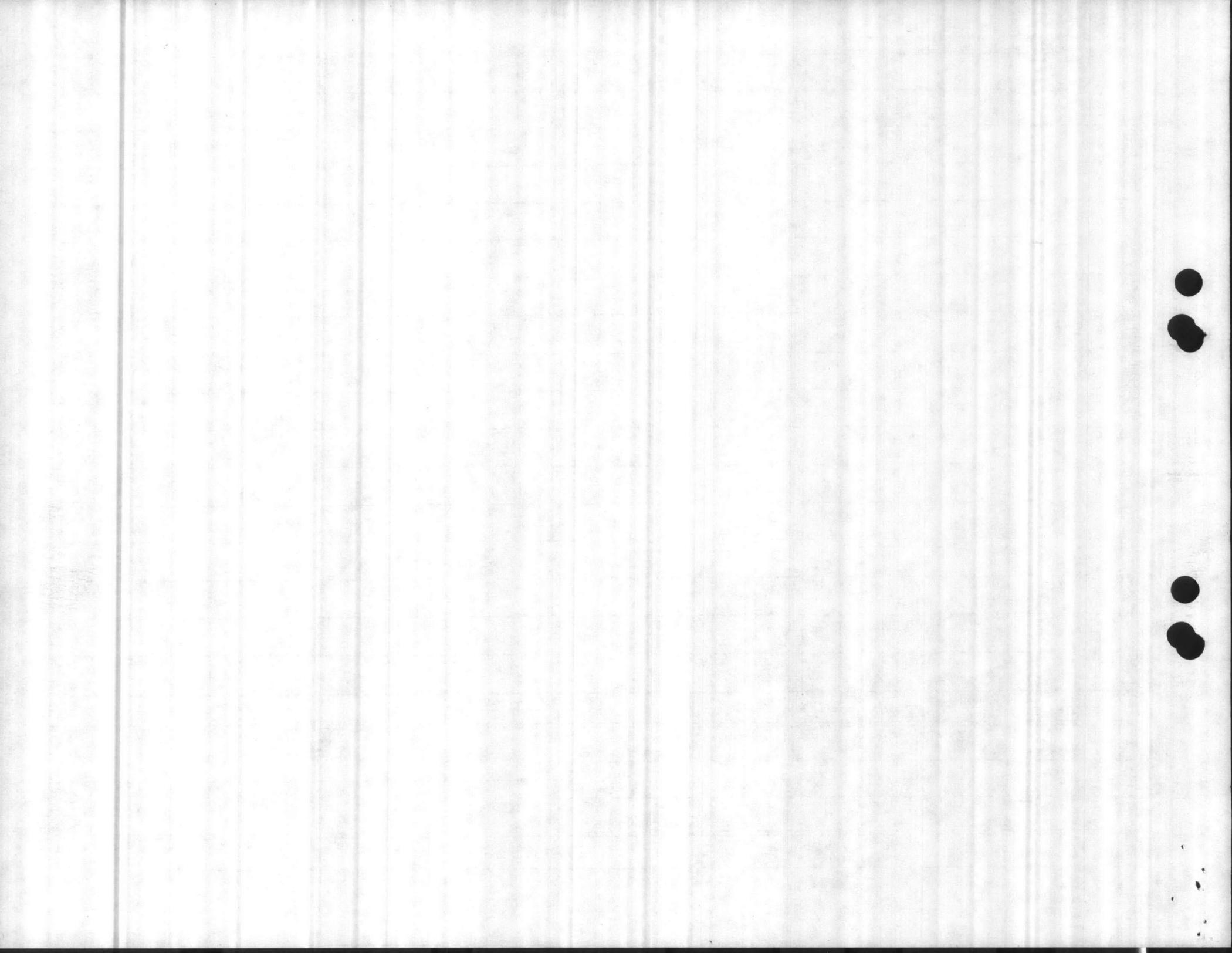
STATUS OF DESIGN
 PED 30% 100% FINAL Other (Specify) Project

IDENTIFICATION NUMBER
LE797R

CATEGORY CODE NUMBER
VARIOUS

JOB ORDER NUMBER

ITEM DESCRIPTION	QUANTITY		MATERIAL COST		LABOR COST		ENGINEERING ESTIMATE	
	NUMBER	UNIT	UNIT COST	TOTAL	UNIT COST	TOTAL	UNIT COST	TOTAL
MATERIAL 4.5%								1,877.29
LABOR 18%								3,956.8
SUBTOTAL								79,354.39
PROFIT 10%								7,935.40
SUBTOTAL								87,289.83
BOND 1%								872.90
SUBTOTAL								88,162.73
CONTINGENCIES 10%								8,816.27
TOTAL CONSTRUCTION COST								96,979.0
DESIGN COST 6%								5,818.74
TOTAL FUNDS REQUESTED								102,797.74



LIFE CYCLE COST ANALYSIS SUMMARY
ENERGY CONSERVATION INVESTMENT PROGRAM

1625/Util

LOCATION: CAMP LEJEUNE, NC

REGION NO: 4

PROJECT TITLE Interior Wall Insulation, Var. Bldgs, Rifle Range, Camp Geiger & Industrial Areas, LE797R

FISCAL YEAR 1986

DISCRETE PORTION NAME:

ANALYSIS DATE: 11 Sep 85

ECONOMIC LIFE

1. INVESTMENT

A. CONSTRUCTION COST	\$ 96,979
B. SIOH	\$ -0-
C. DESIGN COST	\$ 5,818.74
D. ENERGY CREDIT CALC (1A+1B+1C) X .9	\$ 92,517.97
E. SALVAGE VALUE OF EXISTING EQUIPMENT	\$ -0-
F. TOTAL INVESTMENT (1D-1E)	\$ 92,517.97

2. ENERGY SAVINGS (+)/COST (-)

ANALYSIS DATE ANNUAL SAVINGS, UNIT COST & DISCOUNTED SAVINGS

FUEL	COST \$/MBTU(1)	SAVINGS MBTU/YR(2)	ANNUAL \$ SAVINGS(3)	DISCOUNT FACTOR(4)	DISCOUNTED SAVING(5)
A. ELECT	\$ 2.5	349.84	\$ 874.60	15.23	\$ 13,320.16
B. DIST	\$ 6.8	217.93	\$ 1,481.92	17.69	\$ 26,200.34
C. RESID	\$ 4.26	562.91	\$ 2,398.00	22.19	\$ 53,211.62
D. NG	\$		\$		\$
E. CO/DIST	\$ 2.27	26.22	\$ 59.51	20.42	\$ 1,215.19
F. TOTAL	\$	1156.90	\$ 4,814.03		\$93,947.31

3. NON ENERGY SAVING (+)/COST (-)

A. ANNUAL RECURRING (+/-)	1,097.37
(1) DISCOUNT FACTOR (TABLE A)	
(2) DISCOUNTED SAVING/COST (3A X 3A1)	12,784.36

B. NON RECURRING SAVING (+)/COST (-)

ITEM	SAVINGS (+) COST (+)(1)	YEAR OF OCCURRENCE(2)	DISCOUNT FACTOR (3)	DISCOUNTED SAVINGS (+) COST (-) (4)
1.	\$			\$
2.	\$			\$
3.	\$			\$
TOTAL	\$			\$

C. TOTAL NON ENERGY DISCOUNTED SAVINGS (+)/COST(-) (3A2+3B2.4) \$ 12,784.36

D. PROJECT NON ENERGY QUALIFICATION TEST

(1) 25% MAX ON ENERGY CAL (2F5 X .33)	\$ 31,002.61
1. IF 3D1 IS = OR 3C GO TO ITEM 4	
2. IF 3D1 IS 3C CALC SIR = (2F5+3D1)/1F=	
3. IF 3D12 IS = 1 GO TO ITEM 4	
4. IF 3D12 IS 1 PROJECT DOES NOT QUALIFY	

4. FIRST YEAR DOLLAR SAVINGS $2F3+3A=(3B12/YEARS\ ECONOMIC\ LIFE)$ \$ 5,911.40
 5. TOTAL NET DISCOUNTED SAVINGS (2F5+3C) \$ 106,731.46
 6. DISCOUNTED SAVINGS RATIO (IF 1 PROJECT DOES NOT QUALIFY)(SIR) = $5/1F=$
 7. E/C RATION $(2F2/(1F/1000))= 12.4\ MBTU/K\$$

