FINAL

FINDINGS OF SUITABILITY TO TRANSFER (FOST)

SUPER FOST II

FORT MCCLELLAN, CALHOUN COUNTY, ALABAMA

October 2002

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LIST OF ACRONYMS

ACM	Asbestos Containing Material
ADEM	Alabama Department of Environmental Management
ALDOT	Alabama Department of Transportation
BTEX	Benzene, Toluene, Ethylene and Xylenes
CAL	Corrective Action Limit
CFR	Code of Federal Regulations
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERFA	Community Environmental Response Facilitation Act
DOD	Department of Defense
DPDO	Defense Property Disposal Office
DRMO	Defense Reutilization and Management Organization
EBS	Environmental Baseline Survey
ECP	Environmental Condition of Property
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FMC	Fort McClellan
FOST	Finding of Suitability to Transfer
FWS	U.S. Fish and Wildlife Service
HUD	Department of Housing and Urban Development
JPA	Joint Powers Authority
LBP	Lead-Based Paint
MARSSIM	Multi Agency Radiological Survey and Site Investigation Manual
MCL	Maximum Contaminant Level
NEPA	National Environmental Policy Act
NRC	Nuclear Regulatory Commission
OE	Ordnance and Explosives
OSHA	Occupational Safety and Health Administration
PAH	Polyaromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
pCi/L	picocuries per liter
ppb	parts per billion
ppm	parts per million

RADIAC	Radiation Indicating an Alarm Computer
SHPO	State Historic Preservation Officer
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbon
TRPH	Total Recoverable Petroleum Hydrocarbon
TSCA	Toxic Substance Control Act
USACE	US Army Corps of Engineers
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound

FINDING OF SUITABILITY TO TRANSFER
(FOST)
SUPER FOST II
Fort McClellan, Calhoun County, Alabama
September 2002

1.0 PURPOSE

The purpose of this Finding of Suitability to Transfer (FOST) is to document the environmental suitability of the SUPERFOST No. 2 property (hereafter referred to as the Property), U.S. Army Garrison Fort McClellan (FMC), Alabama, for transferring to the Anniston-Calhoun County Fort McClellan Development Joint Powers Authority (JPA) for use of the Property consistent with Fort McClellan Comprehensive Reuse Plan and with Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) §120(h), and Department of Defense (DOD) and Army policy. In addition, the FOST identifies use restrictions necessary to protect human health and the environment as specified in the attached Environmental Protection Provisions (Attachment 1).

2.0 PROPERTY DESCRIPTION

Fort McClellan is located in Calhoun County in the foothills of the Appalachian Mountains in northeast Alabama (Figure 1). The proposed Property for transferring is approximately 314.10 acres of land with 70 facilities summarized in Table 1 and shown on Figure 2.

3.0 ENVIRONMENTAL CONDITION OF THE PROPERTY

A determination of the environmental condition of the property was made based on the review of existing environmental documents, aerial photographs and recorded chain of title documents; completing associated physical and visual inspection of the site and the properties immediately adjacent to the SUPERFOST No. 2 property; and conducting personal interviews. Documents reviewed included the Final Environmental Baseline Survey (EBS) and Community Environmental Response Facilitation Act (CERFA) Letter Report (January, 1998); U. S. Environmental Protection Agency (EPA) Region 4 and the Alabama Department of Environmental Management's (ADEM) conditional concurrence to the CERFA Report; the Disposal and Reuse Environmental Impact Statement (August 1998) and

its associated Record of Decision (June 1999); Asbestos Containing Material Survey Report (1998); Commodity Site Survey Report (March 2000); Radon Monitoring Report (December 1998); Lead-Based Paint Risk Assessment Report (1995); Lead Based Paint Surveys and Risk Assessments (Phase I) (January 2001); Polychlorinated Biphenyl (PCB) Transformer Database Files (February 1997); Biological Assessment Report (April 1998); Inventory and Evaluation of Seventeen Buildings, Fort Mcclellan, Alabama, (August 1994); The Fort McClellan Archives Search Report (July 1999); A Historic Preservation Plan for Fort McClellan, Alabama (September 1994); Final Underground Storage Tank Closure Assessment Report, (February 2001); Final Site Investigation Report, Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7), (February 2001); Final Decision Document for the Ammunition Supply Point and Building 4416, Parcels 197(7) and 199(7), (February 2001); Final Site Investigation Report, Former Motor Pool Area 1300, 4th Avenue, Parcels 148(7) and 16(7), (March 2001); Final Site Investigation Report, Former Motor Pool Area 1300, Parcels 143(7), (March 2001); Final Decision Document for Former Motor Pool Area 1300, Parcels 143(7), (May 2001); Final Site Investigation Report, Autocraft Shop/Former DPDO and Former Motor Pool Area 2100 North of DPDO, Parcels 100(7), 20(7), 47(7), 152(7), and 241(7), (June 2001); Final Decision Document for the Autocraft Shop/Former DPDO and Former Motor Pool Area 2100 North of DPDO, Parcels 100(7), 20(7), 47(7), 152(7), and 241(7), (June 2001); Final Site Investigation Report, Boiler Plant No.1, Building 3176, Parcel 26(7) and 89(7), (June 2001); Final Decision Document for Boiler Plant No.1, Building 3176, Parcel 26(7) and 89(7), (June 2001); Final Site Investigation Report, Former Incinerators, Buildings 4428 and 4430, Parcel 96(7), (June 2001); Final Decision Document for the Former Incinerators, Buildings 4428 and 4430, Parcel 96(7), (June 2001); Final Decision Document for Boiler Plant No. 4, Building 1876, Parcels 101(7) and 236(7), (June 2001); Final Site Investigation Report, Ground Scar South of Building 3134, Parcel 153(7), (June 2001); Final Decision Document for the Ground Scar South of Building 3134, Parcel 153(7), (June 2001); Final Site Investigation Report, Ground Scar Near the Ammunition Supply Point, Parcel 156(7), (July 2001); Final Decision Document for the Ground Scar Near the Ammunition Supply Point, Parcel 156(7), (July 2001); Final Site Investigation Report, Ground Scar at South End of Confidence Course, Parcel 158(7), (July 2001); Final Decision Document for the Ground Scar at South End of Confidence Course, Parcel 158(7), (July 2001); Final Site Investigation Report, Contractor Laydown Area and Former Tar Plant, Parcels 86(7), 99(7), and 32(7), (August 2001); Final Decision Document for the Contractor Laydown Area and Former Tar Plant, Parcels 86(7), 99(7), and 32(7), (August 2001); Final Site Investigation Report, Former Ordnance Motor

Repair Area, Parcels 75(7), 5(7), 6(7), 41(7), and 42(7), (September 2001); Final Decision Document for the Former Ordnance Motor Repair Area, Parcels 75(7), 5(7), 6(7), 41(7), and 42(7), (September 2001); Final Site Investigation Report, Training Aids Building (Building 267), Parcel 166(7), (September 2001); Final Decision Document for the Training Aids Building (Building 267), Parcel 166(7), (September 2001), Final Revision 1 Site Investigation Report, Ground Scar with Trenches at Littlebrandt Drive, Parcel 154(7), (January 2002); Final Revision 1 Decision Document for the Ground Scar with Trenches at Littlebrandt Drive, Parcel 154(7), (January 2002); Final Revision 1 Site Investigation Report, Ground Scar South of the Autocraft Shop, Parcel 157(7), (January 2002); Final Revision 1 Decision Document for the Ground Scar South of the Autocraft Shop, Parcel 157(7), (January 2002).

3.1 Environmental Condition of Property Categories

Table 2 summarizes the DOD Environmental Condition of Property (ECP) Categories and codes. The Property proposed for transferring to the JPA contains 194.62 acres of Category 1, 119.06 acres of Category 3, and 0.42 acres of Category 4. Parcels to be transferred are summarized in Tables 3-1, 3-2, and 3-3, and shown on Figure 3.

Between 1999 and 2001, site investigations were conducted for 5(3), 6(4), 20(4), 26(3), 32(4), 42(4), 47(3), 75(3), 86(3), 89(3), 96(3), 99(3), 100(3), 101(3), 143(3), 148(3), 152(3), 153(3), 154(3), 156(3), 157(3), 158(3), 166(3), 197(3), 236(3), and 241(3) sites. Results of the site investigations indicated that no chemicals associated with the sites present an unacceptable risk to either human health or the environment. These sites require "No Further Action". The above listed properties were previously Category 7 (areas that are not evaluated or required additional evaluation) that were reclassified to Category 3 (areas where release, disposal, and or migration of hazardous substance has occurred, but at concentrations that do not require a removal or remedial response) and Category 4 (areas where release, disposal, and or migration of hazardous substance has occurred, and all removal or remedial actions to protect human health and the environment have been taken). Parcels 6, 20, 32, and 42 were previously recorded in the Decision Documents as Category 3 properties, however, since removal actions were conducted at the sites, the parcels were appropriately reclassified to Category 4 properties in this FOST document. Copies of the site investigation reports and decision documents for the referenced sites will be provided to the JPA.

Sites adjacent to the Property are shown on Figure 3 and Table 4. Site investigations are currently ongoing or completed for the CERFA parcels adjacent to the Property to determine presence or absence of contamination.

3.2 Storage, Release, or Disposal of Hazardous Substances

Based on a review of existing records and available information, there is no evidence that hazardous substances were stored for one year or more, released, or disposed on the property in excess of the reportable quantities listed in 40 Code of Federal Regulations (CFR) Parts 373 and 302.4. Accordingly, there is no need for any notification of hazardous substance storage, release, or disposal.

3.3 Petroleum and Petroleum Products

3.3.2 Storage, Release, or Disposal of Petroleum Products

Petroleum products in excess of 55 gallons were stored on the Property at nine underground storage tank facilities; 326D and G, Parcel 5(3); 338W, Parcel 6(4); 338F, Parcel 42(4); 1800W, Parcel 20(4); 1800F, Parcel 47(3); 1876D, Parcel 101(3); 3176D, Parcel 26(3); and 4437F, Parcel 32(4).

3.3.1 Underground Storage Tanks (UST)

Underground Storage Tanks. Nine underground storage tank facilities with 13 USTs were used to store petroleum products within the property. Of the 13 tanks, seven currently remain on the property and six tanks have been removed. All tanks are registered with ADEM, except for Facility 1800F which is a heating oil tank (heating oil tanks are not required to be registered with ADEM). All UST removals were conducted in accordance with ADEM Admin Code 335-6-15, and all remaining USTs meet the technical performance standards for new UST systems in ADEM Admin Code 335-6-15.

Facilities 326D and G, Parcel 5(3). Two 500-gallon underground storage tanks, one diesel and one gasoline operated since 1975 and were removed in 1991. During tank closure, soil samples were collected and analyzed for TPH, total lead, toxicity characteristic leaching procedure (TCLP) lead, and BTEX. Concentrations of TPH ranged from 140 to 530 ppm and total lead ranged from 15 to 26 ppm. TCLP lead was below detection limits. In 1999, site investigation results indicated that no chemicals associated with the site present an

unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Facility 338W, Parcel 6(4). One 2,000-gallon waste oil underground storage tank operated since 1982 and was closed in place by filling the tank with concrete slurry in 1994. During tank closure, product piping was removed and product odor was noted from the pipe trench. Soil analytical results of a soil sample collected from the pipe trench indicated a TPH concentration of 4,100 ppm. Approximately 3 cubic yards of contaminated soils were removed and transported to the base landfill for thin spreading. A 2,500-gallon tank was installed at the location in 1994. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Facility 338F, Parcel 42(4). One 2,500-gallon heating oil underground storage tank and associated piping was removed in 1996. During tank removal, a mild product odor was found within the excavation. Soils exhibiting evidence of contamination were excavated and stockpiled. Analytical results of the stockpiled soil indicated a TPH concentration of 128 ppm. Approximately 3.5 cubic yards of stockpiled soils were treated by means of thermal volatilization. Soils not exhibiting evidence of contamination were used to backfill the excavation. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Facility 1800W, Parcel 20(4). One 600-gallon waste oil underground storage tank and associated piping was removed and replaced with a 2,500-gallon tank in 1994. During tank closure, soil samples were collected from all sides of the UST and the piping trench and analyzed for TPH and total lead. Soil analytical results indicated TPH was detected in all samples except for the northern side of the UST. The highest TPH concentration of 71,000 ppm was detected in samples collected from the piping trench. Approximately 6 cubic yards of contaminated soil was removed and transported to the base landfill for thin spreading. Four monitoring wells were installed and groundwater samples collected. Groundwater samples were analyzed for VOCs, lead and PAHs. No VOCs were found at concentrations above detection limits. Fluorene was detected in two monitoring wells and total lead was detected in one monitoring well. In 1999, site investigation results indicated that no

chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Facility 1800F, Parcel 47(3). One 2,000-gallon heating oil underground storage tank was installed in 1976 and was removed and replaced with a 2,500-gallon tank in 1996. During tank removal, product odor was not detected and the tank appeared to be in good condition. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Facility 1876D, Parcel 101(3). Two 50,000-gallon diesel underground tanks were installed in 1975 and removed in 2000. The removed tanks were observed to be in good condition. During closure activities, soil samples were collected and analyzed for TPH. Analytical results indicated that TPH was below detection limits in all samples.

One 500-gallon diesel underground storage tank was installed in 1975 and was removed and replaced in 1996. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Facility 3176D, Parcel 26(3). Two 20,000-gallon diesel underground tanks were installed in 1953 and were closed in place in 1991. During tank closure, four monitoring wells were installed. Soil samples were collected during monitoring well installation. Soil analytical results indicated TPH concentrations of up to 751 ppm. Groundwater samples were collected from the four wells and were analyzed for BTEX, PAHs and lead. Lead concentrations of 16 and 22 parts per billion (ppb) were detected in samples from two monitoring wells. Two 20, 0000-gallon tanks were installed at the location in 1991.

One 550-gallon diesel underground storage tank used to fuel a backup generator was installed in 1953 and was closed in place in 1996. One 500-gallon diesel tank was installed at the location in 1996. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Facility 4437F, Parcel 32(4). One 2,500-gallon underground storage tank was installed in 1975 and removed in 1991. During UST removal, soil samples were collected from the four walls and the bottom of the excavation. Soil samples were analyzed for TPH, total lead, TCLP lead, and BTEX. Soil analytical results indicated total lead concentrations ranged from 7.2 to 19 ppm and TCLP was below detection limits. With the exception of 1.3 ppb ethyl benzene and 3.4 ppb total xylenes detected in the sample collected from the east wall, TPH and BTEX levels were below detection limits. Contaminated soils were over excavated from the tank pit and incinerated. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Notification of petroleum product storage is summarized in Table 5.

3.4 Polychlorinated Biphenyls (PCBs)

In 1996, three PCB contaminated pole transformers located adjacent to Building 325 were removed from service and properly disposed through Defense Reutilization and Management Organization (DRMO). Based on a review of existing records and available information, there are no PCB contaminated transformers located on the Property and no evidence of releases from PCB equipment. Currently, some fluorescent light ballasts in the buildings may contain PCB in excess of 50 ppm, and would be subject to Toxic Substance Control Act (TSCA) requirements. The deed will contain the fluorescent light ballasts PCB warning and covenant provided in the Environmental Protection Provisions (Attachment 1).

3.5 Asbestos

Based on the 1998 Asbestos Containing Material (ACM) Survey Report (1998), several buildings on the Property contain friable and non-friable asbestos. Table 6-1 summarizes the asbestos survey results for buildings containing ACM on the Property. Buildings that were surveyed and were found to contain no ACM are summarized in Table 6-2. ACM survey reports are included in Attachment 2. The deed will contain the asbestos warning and covenant included in the Environmental Protection Provisions (Attachment 1).

3.6 Lead-Based Paint (LBP)

Except for four buildings (301, 780, 781, and 4460), all the facilities within the Property were built prior to 1978 and are presumed to contain lead-based paint. Table 7 summarizes LBP survey and LBP risk assessment results conducted in 1995 and 2000, respectively.

Attachment 3 contains the LBP risk assessment and survey report (1995) for the buildings on the Property. Wipe sample results from the 2000 LBP risk assessment were below either the Department of Housing and Urban Development (HUD) guidelines or DOD field guide risk assessment levels for lead dust. The deed will contain the lead-based paint notice and covenant provided in the Environmental Protection Provisions (Attachment 1).

3.7 Radiological Materials

Activities requiring radioactive materials and instruments were conducted in three facilities, Buildings 337, 338, and 339. In November 1999, the buildings were surveyed as Multi Agency Radiological Survey and Site Investigation Manual (MARSSIM) Class III areas. Based on the survey results as documented in the Commodity Site Survey Report, dated March 2000, the Nuclear Regulatory Commission (NRC) determined that no further action is required and the buildings meet the criteria for unrestricted use as documented in NRC letter dated 27 July 2000. Following is a brief description of each of the buildings.

Building 337. Building 337 was used historically as a general support vehicle maintenance shop. Prior to base closure it was used by the Alabama Army National Guard as a storage building.

Building 338. Building 338 was used historically as a general support vehicle maintenance shop. Prior to base closure it was used by the Directorate of Community Activities as the installation recycle center.

Building 339. Building 339 was used historically as a general support vehicle maintenance shop.

Copies of the Commodity Site Survey Report and the NRC letter dated July 27, 2000 will be provided to the JPA.

3.8 Radon

Between 1989 and 1995, radon surveys were conducted for Buildings 300, 324, 325, 1876, 3176, and 3339. Radon was not detected above the EPA residential action level of 4 picocuries per liter (pCi/L) in any of the buildings.

3.9 Chemical Warfare Materiel

Based on a review of existing records and available information, chemical warfare materiel was not used or disposed on the Property.

3.10 Ordnance and Explosives (OE)

Based on a review of existing records and available information, the Property is not known or suspected to contain ordnance or explosives (OE) (USACE, 1999). However, since OE has been found on adjoining property, there is a potential for OE to be present in the vicinity of the areas of the granted property, which may pose an explosive safety hazard. The U.S. Army intends to investigate the surrounding property. The investigation may have an impact on the property through use of exclusion zones (zones established to restrict specific activities in a specific geographic area surrounding any object/structure being demolished using explosives) that intersect the property. The deed will contain the potential for the presence of ordnance and explosives notice provided in the Environmental Protection Provisions and will provide for use of exclusion zones for any potential OE removals on the adjacent property (Attachment 1).

3.11 Other Hazardous Conditions

Based on a review of existing records and available information, there are no other hazardous conditions that present an unacceptable threat to human health or the environment on the Property.

4.0 REMEDIATION

There are no environmental remediation orders or agreements applicable to the property. However, in the event remedial action is found to be necessary that has not been taken by the date of the transfer, the U.S. Army will conduct the appropriate remedial action. The deed will contain a provision reserving the U.S. Army's right to conduct remediation activities as provided in Section 11.0 of this FOST.

5.0 NATURAL RESOURCES

Undeveloped areas within the Property contain jurisdictional wetlands (Figure 4). Permits must be obtained from the USACE and ADEM prior to undertaking any filling, excavation, building, land clearing or any other activity which will result in a discharge to property within the boundary of any jurisdictional wetland.

6.0 ENDANGERED SPECIES

The Property proposed for transfer contains an area that has been identified as suitable gray bat foraging habitat. Figure 5 shows the moderate quality foraging habitat on the Property. The deed will include the preservation covenant provided in the Environmental Protection Provisions (Attachment 1).

7.0 HISTORICAL PROPERTIES

The Property proposed for transfer contains eight historic buildings within the Historic Districts that are eligible for inclusion in the National Register of Historic Places as documented in the Inventory and Evaluation of Seventeen Buildings, Fort McClellan dated August 1994. Table 8 and Figure 6 shows historical buildings within the Property. The deed will include the preservation covenant provided in the Environmental Protection Provisions (Attachment 1).

8.0 REGULATORY/PUBLIC COORDINATION

The U.S. EPA Region 4, ADEM, and the public were notified of the initiation of the FOST. The comment period for this document was from 23 April to 24 May 2002. ADEM and EPA comments received during the FOST development were reviewed and incorporated as appropriate. Unresolved comments are provided as attachment 6.

9.0 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) COMPLIANCE AND CONSISTENCY WITH LOCAL REUSE PLAN

The environmental impacts associated with the proposed transfer of the property have been analyzed in accordance with the National Environmental Policy Act. The results of this analysis have been documented in the Disposal and Reuse Environmental Impact Statement (EIS) (1998). Any encumbrances or conditions identified in such analysis as necessary to protect human health or the environment have been incorporated into the FOST. In addition, the proposed transfer is consistent with the intended reuse of the property as set forth in the Comprehensive Reuse Plan adopted by the JPA.

10.0 ENVIRONMENTAL PROTECTION PROVISIONS

On the basis of the above results from the EBS and other environmental studies and in consideration of the intended use of the property, certain terms and conditions are required for the proposed transfer. These terms and conditions are set forth in the attached Environmental Protection Provisions (Attachment 1) and will be included in the deed.

11.0 FINDING OF SUITABILITY TO TRANSFER

Based on the above information, I conclude that all DOD requirements to reach a finding of suitability to transfer the Property to the JPA have been met for the Property subject to the terms and conditions in the attached Environmental Protection Provisions (Attachment 1). In addition, the deed for this transaction will contain the following provisions:

For Category 1 Property:

- The covenant under CERCLA §120(h)(4)(D)(i) warranting that any response action or corrective action found to be necessary after the date of transfer shall be conducted by the United States.

- A clause as required by CERCLA §120(h)(4)(D)(ii) granting the United States access to the property in any case in which a response action or correction action is found to be necessary after the date of transfer for the Property, or such access is necessary to carry out a response action or corrective action on adjoining property.

For Category 3 and 4 Property:

- The covenant under CERCLA §120(h) (3) (A) (ii) (I) warranting that all remedial action necessary to protect human health and the environment with respect to any hazardous substance has been taken before the date of transfer.

- The covenant under CERCLA §120(h)(3)(A)(ii)(II) warranting that any remedial action under CERCLA found to be necessary after the date of transfer with respect to such hazardous substances remaining on the Property shall be conducted by the United States.

- The clause as required by CERCLA §120(h)(3)(A)(iii) granting the United States access to the Property in any case in which remedial action or corrective action is found to be necessary after the date of transfer.

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12.0 REFERENCES

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TABLES

Table 1
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Condition of Property
Fort McClellan, Alabama

Bldg. No.	Year Built	Area (sq.ft)	Design Use Description	CERFA Category	CERFA Parcel Label	Non-CERCLA Parcel Number	Non-CERCLA Issues					Remarks/Remedial Action
							A	L	R	P	X	
267	1942	18728	TRAINING AIDS CENTER	3	166(3)HS/HR(P)		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. A "No Further Action" is required for the site.
300	1917	3149	UNACCOMPANIED OFFICER QUARTER TRANSIENT	3	75(3)HS/HR(P)/PS/PR(P)		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
301	1993		LOAD/UNLOAD DOCK RAMP	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
305	1942	9000	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
308	1941	9000	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
309	1941	9360	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Table 1
Finding of Suitability to Transfer
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Condition of Property
Fort McClellan, Alabama

Bldg. No.	Year Built	Area (sq.ft)	Design Use Description	CERFA Category	CERFA Parcel Label	Non-CERCLA Parcel Number	Non-CERCLA Issues					Remarks/Remedial Action
							A	L	R	P	X	
310	1941	9360	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
311	1941	9000	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
312	1947		LOAD/UNLOAD DOCK/RAMP	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
313	1947		LOAD/UNLOAD DOCK/RAMP	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
314	1941	9360	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
315	1941	9360	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Table 1
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Condition of Property
Fort McClellan, Alabama

Bldg. No.	Year Built	Area (sq.ft)	Design Use Description	CERFA Category	CERFA Parcel Label	Non-CERCLA Parcel Number	Non-CERCLA Issues					Remarks/Remedial Action
							A	L	R	P	X	
316	1941	9360	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
317	1948	9360	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
318	1941	9000	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
319	1941	9000	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
320	1941	9000	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
321	1941	9360	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Table 1
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Condition of Property
Fort McClellan, Alabama

Bldg. No.	Year Built	Area (sq.ft)	Design Use Description	CERFA Category	CERFA Parcel Label	Non-CERCLA Parcel Number	Non-CERCLA Issues					Remarks/Remedial Action
							A	L	R	P	X	
322	1941	9360	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
323	1941	9360	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
324	1941	2482	ANNUAL TRAINING ENLISTED BARRACKS	3	75(3)HS/HR(P)/PS/PR(P)		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
325	1941	6227	ADMIN GENERAL PURPOSE	3	75(3)HS/HR(P)/PS/PR(P)		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
326	1941	216	STORAGE GROUP INSTALLATION	3	75(3)HS/HR(P)/PS/PR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
328	1941	11616	ACCESS FACILITY	3	75(3)HS/HR(P)/PS/PR(P)		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
337	1941	9640	MAINTENANCE STORAGE	3	75(3)HS/HR(P)/PS/PR(P)		X					A radiological survey was conducted and based on the results, the building was released for unrestricted reuse. Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Table 1
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Condition of Property
Fort McClellan, Alabama

Bldg. No.	Year Built	Area (sq.ft)	Design Use Description	CERFA Category	CERFA Parcel Label	Non-CERCLA Parcel Number	Non-CERCLA Issues					Remarks/Remedial Action
							A	L	R	P	X	
338	1941	18240	REFUSE/GARBAGE BUILDING	3	75(3)HS/HR(P)/PS/PR(P)		X					A radiological survey was conducted and based on the results, the building was released for unrestricted reuse. Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
338W	1994		WASTE POL STORAGE	4	6(4)PS/PR							In 1994, during tank closure, product piping was removed and product odor was noted from the pipe trench. Soil analytical results from the pipe trench indicated a TPH concentration of 4,100 ppm. Approximately 3 cubic yards of contaminated soils were removed and transported to the base landfill for thin spreading. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
339	1943	10540	MAINTENANCE STORAGE	3	75(3)HS/HR(P)/PS/PR(P)		X					A radiological survey was conducted and based on the results, the building was released for unrestricted reuse. Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
546	1952		WASH PLATFORM ORGANIZATION	1	161(1)							
780	1981	600	COVERED TRAINING AREA	1	161(1)							

Table 1
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Condition of Property
Fort McClellan, Alabama

Bldg. No.	Year Built	Area (sq.ft)	Design Use Description	CERFA Category	CERFA Parcel Label	Non-CERCLA Parcel Number	Non-CERCLA Issues					Remarks/Remedial Action
							A	L	R	P	X	
781	1981	120	SEPARATE TOILET SHOWER	1	161(1)							
782	1981	120	SEPARATE TOILET SHOWER	1	161(1)							
783	1981	1	COMBAT IN CITY FACILITY	1	161(1)							
852	1941	1144	COMPANY HEADQUARTERS BLDG	1	161(1)		X					

Table 1
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Condition of Property
Fort McClellan, Alabama

Bldg. No.	Year Built	Area (sq.ft)	Design Use Description	CERFA Category	CERFA Parcel Label	Non-CERCLA Parcel Number	Non-CERCLA Issues					Remarks/Remedial Action
							A	L	R	P	X	
853	1941	1144	COMPANY HEADQUARTERS BLDG	1	161(1)		X					
854	1941	1144	COMPANY HEADQUARTERS BLDG	1	161(1)		X					
1270	1980	3500	OPEN STORAGE INSTALLATION	1	161(1)							
1800	1976	8,064	AUTO SKILL CENTER	3	100(3)HS/PS		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. A “No Further Action” is required for the site.
1800F	1996		HEATING FUEL UNDERGROUND STORAGE TANK	3	47(3)PS							In 1996, during tank removal, product odor was not detected and the tank appeared to be in good condition. In 1999, Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. A “No Further Action” is required for the site.

Table 1
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Condition of Property
Fort McClellan, Alabama

Bldg. No.	Year Built	Area (sq.ft)	Design Use Description	CERFA Category	CERFA Parcel Label	Non-CERCLA Parcel Number	Non-CERCLA Issues					Remarks/Remedial Action
							A	L	R	P	X	
1800W	1994		WASTE OIL STORAGE	4	20(4)PS/PR							In 1994, during tank closure, soil samples were collected from all sides of the UST and the piping trench. Soil analytical results indicated TPH was detected in all samples except for the northern side of the UST. The highest TPH concentration of 71,000 ppm was detected from the piping trench. Approximately 6 cubic yards of contaminated soils were removed and transported to the base landfill for thin spreading. Four monitoring wells were installed and groundwater samples collected. Fluorene was detected in two monitoring wells and total lead was detected in one well. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. A "No Further Action" is required for the site.
1830	1976	144	FLAMABLE MATERIAL STORAGE INSTALLATION	3	100(3)HS/PS							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
1831	1976		WASH PLATFORM ORGANIZATION	3	100(3)HS/PS							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
1876	1977	6,607	HEATING PLANT ORGANIZATION	3	236(3)PS/PR(P)		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
1876D			DIESEL UNDERGROUND STORAGE TANK	3	101(3)PS							Two 50,000-gallon diesel underground tanks were installed in 1975 and were removed in 2000. During tank removal, the removed tanks were observed to be in good condition. One 500-gallon diesel underground storage tank was installed in 1975 and removed and replaced in 1996. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Table 1
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SUPERFOST No. 2 Transfer
Condition of Property
Fort McClellan, Alabama

Bldg. No.	Year Built	Area (sq.ft)	Design Use Description	CERFA Category	CERFA Parcel Label	Non-CERCLA Parcel Number	Non-CERCLA Issues					Remarks/Remedial Action
							A	L	R	P	X	
2099	1941	3096	PICKUP POINT	1	161(1)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. “No Further Action” is required for the site.
2115	1941	3,956	TRAINING AIDS CENTER	3	152(3)HS/HR(P)		X					Currently paint is chipping on the outside of the building. Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. “No Further Action” is required for the site.
2116	1941	10576	TRAINING AIDS CENTER	3	152(3)HS/HR(P)		X					Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. “No Further Action” is required for the site.
2117	1940	225	FLAMMABLE MATERIALS STORAGE INSTALLATION	3	152(3)HS/HR(P)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. “No Further Action” is required for the site.
2203	1954	11,817	ADMIN GENERAL PURPOSE	1	161(1)	35Q-A/L(P)						
3176	1954	10351	HEAT PLANT BUILDING	3	89(3)PS/PR(P)		X					Currently paint is chipping on the outside of the building. Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. “No Further Action” is required for the site.
3176D	1991		DIESEL UNDERGROUND STORAGE TANK	3	26(3)PS/PR							In 1991, during tank closure, four monitoring wells were installed. Soil samples were collected during monitoring well installation. Soil analytical results indicated TPH concentrations of up to 751 ppm. Groundwater samples were collected and analyzed for BTEX, PAHs, and lead. Lead concentrations of 16 and 22 ppb were detected in samples from two monitoring wells. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the

Table 1
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Condition of Property
Fort McClellan, Alabama

Bldg. No.	Year Built	Area (sq.ft)	Design Use Description	CERFA Category	CERFA Parcel Label	Non-CERCLA Parcel Number	Non-CERCLA Issues					Remarks/Remedial Action
							A	L	R	P	X	
												environment. "No Further Action" is required for the site.
3339	1958	3209	FAMILY HOUSING COMMISSIONED OFFICER/WARRANT OFFICER	1	161(1)	41Q-A/L		X				In 2000 a lead based paint risk assessment was conducted. Wipe sample results were below either HUD guidelines or DOD field guide risk assessment concentration levels for lead dust.
4310	1958	75	PEDESTRIAN BRIDGE	1	161(1)							
4334	1972	41	PEDESTRIAN BRIDGE	1	161(1)							
4401	1917	1232	HIGH EXPLOSIVE MAGAZINE INSTALLATION	3	197(3)							Currently paint is chipping on the outside of the building. Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4402	1917	390	HIGH EXPLOSIVE MAGAZINE INSTALLATION	3	197(3)							Currently paint is chipping on the outside of the building. Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4405	1941	1440	HIGH EXPLOSIVE MAGAZINE INSTALLATION	3	197(3)							Currently paint is chipping on the east side of the building. Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4406	1917	80	HIGH EXPLOSIVE MAGAZINE INSTALLATION	3	197(3)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4410	1941	976	HIGH EXPLOSIVE MAGAZINE INSTALLATION	3	197(3)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Table 1
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Condition of Property
Fort McClellan, Alabama

Bldg. No.	Year Built	Area (sq.ft)	Design Use Description	CERFA Category	CERFA Parcel Label	Non-CERCLA Parcel Number	Non-CERCLA Issues					Remarks/Remedial Action
							A	L	R	P	X	
4411	1941	976	HIGH EXPLOSIVE MAGAZINE INSTALLATION	3	197(3)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4412	1941	480	HIGH EXPLOSIVE MAGAZINE INSTALLATION	3	197(3)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4413	1941	968	HIGH EXPLOSIVE MAGAZINE INSTALLATION	3	197(3)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4420	1960	4032	HIGH EXPLOSIVE MAGAZINE INSTALLATION	3	197(3)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4421	1941	54	HIGH EXPLOSIVE MAGAZINE INSTALLATION	3	197(3)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4424	1995	10000	FLAMMABLE MATERIAL STORAGE INSTALLATION	3	197(3)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4425	1995	1500	IGLOO STORAGE INSTALLATION	3	197(3)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4426	1995	1500	IGLOO STORAGE INSTALLATION	3	197(3)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4427	1995	1500	IGLOO STORAGE INSTALLATION	3	197(3)							Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Table 1
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Condition of Property
Fort McClellan, Alabama

Bldg. No.	Year Built	Area (sq.ft)	Design Use Description	CERFA Category	CERFA Parcel Label	Non-CERCLA Parcel Number	Non-CERCLA Issues					Remarks/Remedial Action
							A	L	R	P	X	
4437	1956	480	ENGINEERING /HOUSING MANAGEMENT	3	99(3)PS/PR		X					Currently paint is chipping on the outside of the building. Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4460	1982	288	STORAGE SHED GROUP INSTALLATION	3	86(3)HS/HR(P)/PR(P)	60Q-P 216Q				X		Site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

A – Asbestos

L – Lead-based Paint

R – Radon

P – PCB

X - Ordnance and explosives

Table 2
Community Environmental Response Facilitation Act Categories and Codes
Environmental Condition of Property
Fort McClellan, Calhoun County, Alabama

Category	Description
Category 1	Areas where no storage, release, or disposal of hazardous substance or petroleum products has occurred (including no migration of these substances from adjacent areas)
Category 2	Areas where only release or disposal of petroleum products has occurred
Category 3	Areas where release, disposal, and or migration of hazardous substance has occurred, but at concentrations that do not require a removal or remedial response
Category 4	Areas where release, disposal, and or migration of hazardous substance has occurred, and all removal or remedial actions to protect human health and the environment have been taken
Category 5	Areas where release, disposal, and or migration of hazardous substance has occurred, and removal or remedial actions are underway, but all required remedial actions have not yet been taken
Category 6	Areas where release, disposal, and or migration of hazardous substance has occurred, but required actions have not yet been implemented
Category 7	Areas that are not evaluated or require additional evaluation
CERCLA Codes for Categories 2 through 7	
HS	indicates hazardous substance storage
HR	indicates hazardous substance release and/or storage
PR	indicates petroleum substance release and/or storage
PS	indicates petroleum substance storage
(P)	indicates possible release or disposal, unverified by sampling or analysis

Table 3-1

Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Category 1 Parcels
Fort McClellan, Alabama

Parcel No.	Site Name
161(1)	CERFA Parcel, Main Post

Table 3-2
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Category 3 Parcels
Fort McClellan, Alabama

Parcel No.	Site Name
5(3)	UST Former OMRA, Building 326
26(3)	UST Boiler Plant No. 1, Building 3176
47(3)	UST Autocraft Shop, Building 1800
75(3)	Former Ordnance Motor Repair Area
86(3)	Contractor Laydown Area
89(3)	Boiler Plant No. 1, Building 3176
96(3)	Former Incinerators, Buildings 4428 and 4430
99(3)	Former Tar Plant/ Former Transformer Storage Facility, Building 4437
100(3)	Autocraft Shop, Building 1800
101(3)	UST Boiler Plant No. 4, Building 1876
143(3)	Former Motor Pool at Area 1300
148(3)	Former Motor Pool at Area 1300
152(3)	Former DPDO
153(3)	Ground Scar south of Building 3134
154(3)	Ground Scar /Trenches off of Littlebrandt
156(3)	Ground Scar south of the ASP
157(3)	Ground Scar south of Autocraft Shop
158(3)	Ground Scar south end of Confidence Course
166(3)	Training Aids, Building 267
197(3)	Ammunition Supply Point
226(3)	Boiler Plant No. 2, Building 2278
236(3)	Boiler Plant No. 4, Building 1876
241(3)	Former Motor Pool Area 2100

Table 3-3
Finding of Suitability to Transfer
Superfost No. 2 Transfer
Category 4 Parcels
Fort McClellan, Alabama

Parcel No.	Site Name
6(4)	UST Recycling Center, Building 338
20(4)	UST Autocraft Shop, Building 1800
32(4)	UST Former Tar Plant/Transformer Storage, Building 4437
42(4)	UST Recycling Center, Building 338

Table 4

Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Adjacent Properties
Fort McClellan, Alabama

Parcel No.	Site Name
16(3)	UST Former Gas Station, Building 1394
21(7)	UST Base Service Station, Building 2109
22(7)	UST Base Service Station, Building 2109
23(3)	UST Boiler Plant No. 2
40(4)	UST Noble Army Hospital, Building 292
41(4)	UST Building 303
43(4)	UST Building 796
44(4)	UST Building 1201
66(7)	Former Small Weapons Repair Shop
73(7)	Washrack Building 3142
76(1)	Consolidated Maintenance Facility, Building 350 and 351
78(6)	Landfill No. 1
79(6)	Landfill No. 2
80(6)	Landfill No. 3
81(5)	Landfill No.4
83(3)	Golf Course Storage and Mixing Facility
87(4)	Waste Chemical Storage Area, Building 598
92(1)	Noble Army Hospital, Building 292
93(7)	Former decontamination Complex, Building 1271
95(3)	Former Hospital
97(3)	Former Sandel Flame Thrower Range
125(3)	Old Incinerator, Building 5710
130(3)	Quartermasters Gasoline Storage Area
135(3)	Former Gas Station, Building 594
139(3)	Former Gas Station, Building 1094
140(7)	Former Gas Station, Building 1294
143(3)	Motor Pool Area 1300
146(7)	Motor Pool Area 3100
148(3)	Former Motor Pool at Area 1300
150(3)	Former Motor Pool at Area 1000

Table 4

Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Adjacent Properties
Fort McClellan, Alabama

Parcel No.	Site Name
162(3)	Printing Plant, Building 3183
164(3)	Motor Pool Area 800
170(3)	Consolidated Maintenance Facility, Building 351
175(5)	Industrial Landfill
178(3)	Golf Course
183(6)	Training Area T-6
186(6)	Training Area T-38
188(7)	Old Toxic Training Area
189(7)	Reported CWM Spill/Burial Site
199(3)	Building 4416 at the ASP
226(3)	Boiler Plant No. 2, Building 2278
227(7)	Fill Area east end of Reilly Air Field
229(7)	Fill Area NW of Reilly Air Field
230(7)	Fill Area North of Landfill No. 2
236(3)	Boiler Plant No. 4, Building 1876
510(7)	Cane Creek Training Area
514(7)	Old Burn Pit
517(7)	CBR Proficiency Area

Table 5
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Notification of Petroleum Product Storage, Release and Disposal
Fort McClellan, Calhoun County, Alabama

Facility No.	Parcel No.	Name of Petroleum Product	Date of Storage, Release, or Disposal	Remedial Actions
326D	5(3)	Diesel	One 500-gallon underground storage tank operated since 1975 was removed in 1991.	During tank closure, soil samples were collected. Concentration of TPH ranged from 140 to 530 ppm and total lead ranged from 15 to 26 ppm. TCLP lead was below detection limits. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
326G		Gasoline	One 500-gallon underground storage tank operated since 1975 was removed in 1991.	

Table 5
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Notification of Petroleum Product Storage, Release and Disposal
Fort McClellan, Calhoun County, Alabama

Facility No.	Parcel No.	Name of Petroleum Product	Date of Storage, Release, or Disposal	Remedial Actions
338W	6(4)	Waste Oil	One 2,000-gallon underground storage tank operated since 1982 was closed in place by filling the tank with concrete slurry in 1994. A 2,500-gallon tank was installed at the location in 1994.	In 1994, during tank closure, product piping was removed and product odor was noted from the pipe trench. Soil analytical results from the pipe trench indicated a TPH concentration of 4,100 ppm. Approximately 3 cubic yards of contaminated soils were removed and transported to the base landfill for thin spreading. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
338F	42(4)	Heating Oil	One 2,500-gallon underground storage tank and associated piping was removed in 1996.	During tank removal, a mild product odor was found within the excavation. Soils exhibiting evidence of contamination were excavated and stockpiled. Analytical results of the stockpiled soil indicated a TPH concentration of 128 ppm. Approximately 3.5 cubic yards of stockpiled soils were treated by means of thermal volatilization. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Table 5
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Notification of Petroleum Product Storage, Release and Disposal
Fort McClellan, Calhoun County, Alabama

Facility No.	Parcel No.	Name of Petroleum Product	Date of Storage, Release, or Disposal	Remedial Actions
1800W	20(4)	Waste Oil	One 600-gallon underground storage tank and associated piping was removed and replaced with a 2,500-gallon tank in 1994.	During tank closure, soil samples were collected from all sides of the UST and the piping trench. Soil analytical results indicated TPH was detected in all samples except for the northern side of the UST. The highest TPH concentration of 71,000 ppm was detected from the piping trench. Approximately 6 cubic yards of contaminated soil was removed and transported to the base landfill for thin spreading. Four monitoring wells were installed and groundwater samples collected. Fluorene was detected in two monitoring wells and total lead was detected in one well. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
1800F	47(3)	Heating Oil	One 2,000-gallon underground storage tank was installed in 1976 and was removed and replaced with a 2,500-gallon tank in 1996.	During tank removal, product odor was not detected and the tank appeared to be in good condition. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Table 5
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Notification of Petroleum Product Storage, Release and Disposal
Fort McClellan, Calhoun County, Alabama

Facility No.	Parcel No.	Name of Petroleum Product	Date of Storage, Release, or Disposal	Remedial Actions
1876D	101(3)	Diesel	Two 50,000-gallon underground tanks were installed in 1975 and removed in 2000. One 500-gallon underground storage tank was installed in 1975 and removed and replaced in 1996.	During tank removal, the removed tanks were observed to be in good condition. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
3176D	26(3)	Diesel	Two 20,000-gallon underground tanks were installed in 1953, were closed in place in 1991. Two 20,000-gallon tanks were installed at the location in 1991. One 550-gallon underground UST was used to fuel a backup generator was installed in 1953, was closed in place in 1996. One 500-gallon tank was installed at the location in 1996.	During tank closure, four monitoring wells were installed. Soil samples were collected during monitoring well installation. Soil analytical results indicated TPH concentrations of up to 751 ppm. Groundwater samples were also collected and analyzed for BTEX, PAHs, and lead. Lead concentrations of 16 and 22 ppb were detected in samples from two monitoring wells. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.
4437F	32(4)	Heating Oil	One 2,500-gallon underground storage tank was installed in 1975 and removed in 1991.	During UST removal, soil analytical results indicated total lead concentrations ranged from 7.2 to 19 ppm and TCLP was below detection limits. With the exception of 1.3 ppb ethyl benzene and 3.4 ppb total xylenes detected in the sample collected from the east wall, TPH and BTEX levels were below detection limits. Contaminated soils were over excavated from the tank pit and incinerated. In 1999, site investigation results indicated that no chemicals associated with the site present an unacceptable risk to either human health or the environment. "No Further Action" is required for the site.

Table 5
Finding of Suitability to Transfer
SUPERFOST No. 2 Transfer
Notification of Petroleum Product Storage, Release and Disposal
Fort McClellan, Calhoun County, Alabama

Table 6-1
Findings of Suitability to Transfer
SUPERFOST No. 2 Transfer
Summary of Asbestos Containing Materials Building Survey
Fort McClellan, Alabama

Building Number	Year Built	Description	Description & Location of ACM	Condition
267	1942	Training Aids Center	Non-friable asbestos containing 9x9-inch floor tile and mastic	Good
300	1917	Unaccompanied Officer Quarter Transient	Friable, hand-formed, asbestos containing insulation compound is applied to the fittings of the heating water, chilled water and domestic water pipes throughout the building. Brown paper-like asbestos containing friable insulation compound is found on the straight runs of pipes located in the mechanical room. Cementitious asbestos containing material is found on straight runs of pipes located in the mechanical room. Non-friable assumed asbestos containing vinyl floor tiles in 12x12-inch size are present in the kitchen and bathrooms of the building. Black, asbestos containing mastics are present below vinyl floor tiles.	Fair to Poor Good
305	1942	Storage Group Installation	Non-friable 9x9-inch asbestos containing vinyl floor tile is found in one bathroom, the remaining 12x12-inch floor tiles is assumed.	
308	1941	Storage Group Installation	Non-friable presumed asbestos containing transite piping can be found penetrating the roof.	Good
310	1941	Storage Group Installation	Non-friable presumed asbestos containing transite piping can be found penetrating the roof.	Good
311	1941	Storage Group Installation	Non-friable presumed asbestos containing transite piping can be found penetrating the roof.	Good
314	1941	Storage Group Installation	Non-friable presumed asbestos containing transite piping can be found penetrating the roof.	Good
324	1941	Annual Training Enlisted Barracks	Non-friable presumed asbestos containing 12x12-inch floor tile and mastic.	Good
325	1941	Administration General Purpose	Non-friable presumed asbestos containing 9x9 and 12x12-inch floor tile and mastic.	Good
328	1941	Access Facility	Friable, hand-formed, asbestos containing insulation compound is applied to the fittings of pipes located in the mechanical room of the building. Non-friable black, asbestos containing mastics are present below 12x12 vinyl floor tiles throughout the majority of the building.	Fair Good

Table 6-1
Findings of Suitability to Transfer
SUPERFOST No. 2 Transfer
Summary of Asbestos Containing Materials Building Survey
Fort McClellan, Alabama

Building Number	Year Built	Description	Description & Location of ACM	Condition
337	1941	Maintenance Storage	Non-friable asbestos containing transite sheeting is found on the ceiling of one room in the building and asbestos containing 12x12-inch floor tile and mastic.	Good
338	1941	Refuse/Garbage Building	Non-friable presumed asbestos containing 12x12-inch floor tile and mastic.	Good
339	1943	Maintenance Storage	Friable, paper-like, asbestos containing insulation compound is applied to pipes located throughout much of the building.	Poor
852	1941	Company Headquarters Building	Non-friable presumed asbestos containing 12x12-inch floor tile and mastic	Good
853	1941	Company Headquarters Building	Non-friable presumed asbestos containing 9x9-inch floor tile and mastic	Good
854	1941	Company Headquarters Building	Non-friable presumed asbestos containing 9x9-inch floor tile and mastic	Good
1800	1976	Auto Skill Center	Non-friable presumed asbestos containing 12x12-inch vinyl floor tile and mastic.	Good
1876	1977	Heating Plant Organization	Non-friable asbestos containing transite sheeting is found on the chiller of one room in the building.	Good
2115	1941	Training Aids Center	Non-friable asbestos containing 9x9-inch vinyl floor tile and mastic.	Good
2116	1941	Training Aids Center	Non-friable asbestos containing 9x9 and 12x12-inch vinyl floor tile and mastic.	Good
3176	1954	Heating Plant Building	Friable, brown air-cell type pipe insulation is found on various pipes throughout the building. A white cementitious pipe fitting and straight run insulation is found on various pipes throughout the building and to boiler No. 3.	Good

Table 6-1
Findings of Suitability to Transfer
SUPERFOST No. 2 Transfer
Summary of Asbestos Containing Materials Building Survey
Fort McClellan, Alabama

Building Number	Year Built	Description	Description & Location of ACM	Condition
4437	1956	Engineering/Housing Maintenance	Thermal system insulation is located in the gas heater reflectors in the rear wall of the building.	Good

Table 6-2
SUPERFOST No. 2 Transfer
Finding of Suitability to Transfer
Buildings with No Presumed ACM
Fort McClellan, Alabama

Building No.	Design Use Description
309	Storage Group Installation
326	Storage Group Installation
2099	Pick Up Point
4405	High Explosive Magazine Installation
4420	High Explosive Magazine Installation
4424	Flammable Material Storage Installation

Table 7
Finding of Suitability to Transfer
SUPERFOST No. 2
Summary of Buildings Surveyed for the Presence of Lead-Based Paint (1995 and 2000)
Fort McClellan, Calhoun County, Alabama

Building No.	Description	LBP Present		LBP Condition/Location I - Interior E - Exterior	Lead Dust Exceed Standard (µg/ft$^{2)}$[a]	Soil Lead Exceed 400 ppm
		Interior	Exterior	Good		
3339	Avery Family Housing	Yes	Yes	I – Shelves, shelf supports, baseboards, curtain molding E – Porch ceiling, trim, column, support; wood rail, wood fences, concrete slab	None	None

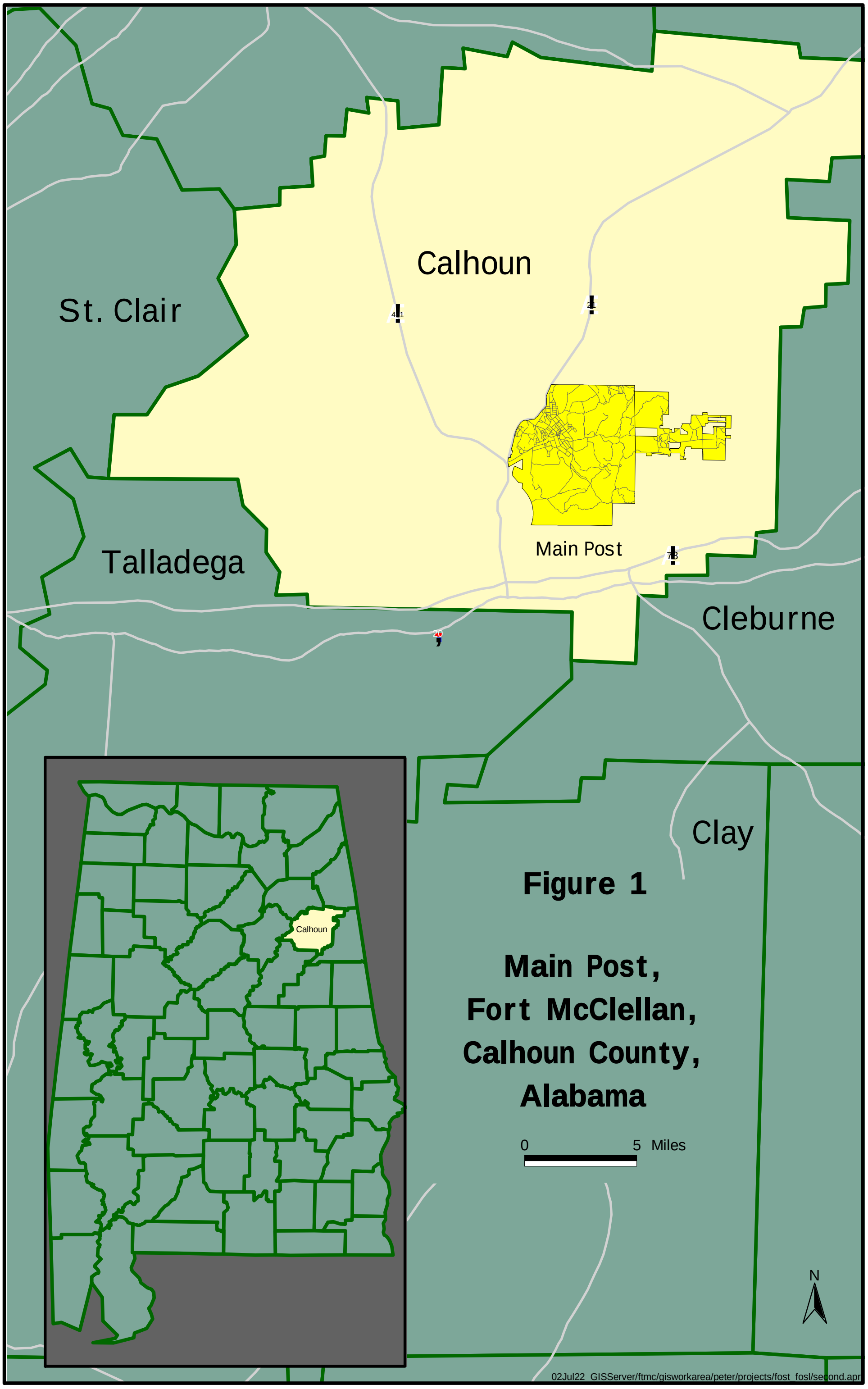
[a] Results for the 2000 LBP surveys and risk assessment Phase I, all other results are for the 1995 LBP surveys

Table 8

Findings of Suitability to Transfer
SUPERFOST No. 2
Summary of Historic Buildings
Fort McClellan, Calhoun County, Alabama

Building Number	Design Use Description	Year Built
Ammunition District		
4401	High Explosive Magazine Installation	1917
4402	High Explosive Magazine Installation	1917
4405	High Explosive Magazine Installation	1941
4406	High Explosive Magazine Installation	1917
4410	High Explosive Magazine Installation	1941
4411	High Explosive Magazine Installation	1941
4412	High Explosive Magazine Installation	1941
4413	High Explosive Magazine Installation	1941

FIGURES


St. Clair
Calhoun
Talladega
Cleburne
Clay
Main Post
411
21
20
73
Calhoun
Figure 1
Main Post,
Fort McClellan,
Calhoun County,
Alabama
0
5 Miles
N
02Jul22 GISServer/ftmc/gisworkarea/peter/projects/fost_fosl/second.apr

660000 665000 670000 675000

1180000 1175000 1170000 1165000

1270
4410
4427
4425
4426
4411
4406
4412
4405
T-4420
4437
4424
4413
4402
4401
4421
4460
546
Goode Road
Seaton Drive
4310
2203
Baltzell Gate Road
320
321
339
T-322
T-338
T-323
338W
T-318
337
T-317
326
T-312
325
T-311
T-324
T-310
T-328
T-316
301
319
T-313
T-309
267
T-308
T-314
T-315
T-305
T-300
T-781
783
T-780
T-782
T-852
T-853
T-854
3339
4334
T-2099
St. Clair Road
T-2115
2117
T-2116
3176D
Summerall Gate Road
3176
1831
1830
1800W
1800
1800F
1876
Town Center Drive

02Jul23 GISServer/ftmc/gisworkarea/peter/projects/fost_fosl/second.apr

660000 665000 670000 675000

Figure 2

Finding of Suitability to Transfer, Site Map, SUPERFOST No. 2

Legend

- Creeks
- Roads
- Non-transferred Buildings
- Buildings to be Transferred to the JPA
- Areas to be Transferred to the JPA

0 1000 2000

State Plane feet, NAD83

N

July 2002

US Army Corps of Engineers
Mobile District
Fort McClellan
Calhoun County, Alabama
Contract No. DACA21-96-D-0018

Fort McClellan
Environmental Office

660000 665000 670000 675000

1180000 1175000 1170000 1165000

229(7)
227(7)
80(6)
81(5)
175(5)
140(7)
44(4)
93(7)
Patriot Road
Goode Road
96(3)
230(7)
16(3)
148(3)
125(3)
143(3)
139(3)
79(6)
197(3)
186(6)
150(3)
99(3)
87(4)
32(4)
199(3)
135(3)
226(3)
86(3)
130(3)
23(3)
92(1)
178(3)
Baltzell Gate Road
83(3)
156(3)
40(4)
76(1)
43(4)
42(4)
6(4)
170(3)
154(3)
66(7)
75(3)
5(3)
189(7)
164(3)
41(4)
166(3)
95(3)
78(6)
St. Clair Road
22(7)
21(7)
241(3)
517(7)
152(3)
89(3)
100(3)
236(3)
26(3)
20(4)
101(3)
Summerall Gate Road
188(7)
47(3)
158(3)
162(3)
153(3)
157(3)
510(7)
73(7)
97(3)
146(7)
183(6)
514(7)
Iron Mountain Road

02Jul30 GISServer/ftmc/gisworkarea/peter/projects/fost_fosl/second.apr

660000 665000 670000 675000

Figure 3 Finding of Suitability to Transfer, Environmental Condition of Property, SUPERFOST No. 2

SUPERFOST No. 2

- Adjacent CERFA Parcels
- Main Post
- CERFA Category 1
- CERFA Category 3
- CERFA Category 4
- Roads

0 750 1500

State Plane feet, NAD83

N

July 2002

US Army Corps of Engineers
Mobile District
Fort McClellan
Calhoun County, Alabama
Contract No. DACA21-96-D-0018

Fort McClellan
Environmental Office

660000 667500 675000 682500

1177500 1170000 1162500 1155000

Reilly Lake
Reilly Lake Road
Syracuse Street
Gobbler Road
Trench Hill Road
Freemont Road
Regimental Avenue
Hanna Avenue
Minuteman Avenue
Ranger Avenue
Mout Road
United Road
Goode Road
Nautica Way
Ruskin Avenue
Freemont Road
Eglin Avenue
Castle Avenue
Baltzell Gate Road
Shipley Road
Cornwell Avenue
Remut Creek
Buckner Circle
Jimmy Parks Blvd
Cave Creek
Belman Road
Nord Street
South Branch Cave Creek
St. Clair Road
Justice Avenue
Blacman Road
Town Center Drive
Littlebrant Drive
Summerall Gate Road
BG DH Stem Avenue
Bains Gap Road
Iron Mountain Road
Yahou Lake
Iron Mountain Road

02Jul23 GISServer/ftmc/gisworkarea/peter/projects/fost_fosl/second.apr

660000 667500 675000 682500

Roads
Streams
Swamp
Lakes
Wetlands
Property to be Transferred

Figure 4

Finding of Suitability to Transfer Streams, Lakes & Wetlands, SUPERFOST No. 2

0 2500 5000

State Plane feet, NAD83

July 2002

N

US Army Corps of Engineers
Mobile District
Fort McClellan
Calhoun County, Alabama
Contract No. DACA21-96-D-0018

Fort McClellan
Environmental Office

660000 667500 675000

1177500 1170000 1162500 1155000

Reilly Lake
Reilly Lake Road
Syracuse Street
Gobbler Road
Trench Hill Road
Freemont Road
Ranger Avenue
Mout Road
Regimental Avenue
Hanna Avenue
Minuteman Avenue
United Road
Google Road
Nautica Way
Freemont Road
Ruskin Avenue
Eglin Avenue
Castle Avenue
Baltzell Gate Road
Shipley Road
Bamut Creek
Buckner Circle
Jimmy Parks Blvd
Cane Creek
Berman Road
Nord Street
Cowell Avenue
South Branch Cane Creek
St. Clair Road
Justice Avenue
Littlebrant Drive
Blacman Road
Summerall Gate Road
BG DH Stem Avenue
Town Center Drive
Bains Gap Road
Iron Mountain Road
Yahou Lake
Iron Mountain Road

02Jul23 GISServer/ftmc/gisworkarea/peter/projects/fost_fosl/second.apr

Legend

- Roads
- Creeks
- Moderate Gray Bat Habitat
- Property to be Transferred

Figure 5

Finding of Suitability to Transfer Endangered Species, SUPERFOST No. 2

0 2000 4000

State Plane feet, NAD83

July 2002

N

US Army Corps of Engineers
Mobile District
Fort McClellan
Calhoun County, Alabama
Contract No. DACA21-96-D-0018

Fort McClellan
Environmental Office

672500

675000

1175000

1172500

4410

4411

4406

4412

4405

4413

4402

4401

Seaton Drive

Waverly Road

02Jul23 GISServer/ftmc/gisworkarea/peter/projects/fost_fosl/second.apr

672500

675000

Legend

Roads

Creeks

Historical Buildings - Ammunition District

Buildings

Property to be Transferred to the JPA

Figure 6 Finding of Suitability to Transfer Historical Buildings, SUPERFOST No. 2

0 500 1000

State Plane feet, NAD83

July 2002

N

US Army Corps of Engineers
Mobile District
Fort McClellan
Calhoun County, Alabama
Contract No. DACA21-96-D-0018

Fort McClellan

Environmental Office

ATTACHMENT 1

ENVIRONMENTAL PROTECTION PROVISIONS

ATTACHMENT 1

ENVIRONMENTAL PROTECTION PROVISIONS

The following conditions, restrictions, and notifications are to be included in the deed to ensure protection of human health and the environment and to preclude any interference with ongoing or completed remediation activities at Fort McClellan.

INCLUSION OF PROVISIONS:
The person or entity to whom the property is transferred shall neither transfer the property, lease the property, nor grant any interest, privilege, or license whatsoever in connection with the property without the inclusion of the environmental protection provisions contained herein, and shall require the inclusion of such environmental protection provisions in all further deeds, transfers, leases, or grant of any interest, privilege, or license.

NO LIABILITY FOR NON-ARMY CONTAMINATION:
The U.S. Army shall not incur liability for response action or corrective action found to be necessary after the date of transfer, in any case, in which the person or entity to whom the property is transferred, or other non-Army entities is identified as the party responsible for contamination of the property.

NOTICE OF THE PRESENCE OF ASBESTOS-CONTAINING MATERIALS (ACM) AND COVENANT:

a. The Grantee is hereby informed and does acknowledge that friable and non-friable asbestos or asbestos-containing materials (collectively "ACM") have been found on the Property. The locations and conditions of ACM are as described in the EBS and referenced asbestos surveys provided to the Grantee. Except as provided in Subsection b. below, the ACM on the Property does not currently pose a threat to human health or the environment and all friable asbestos that posed a risk to human health has either been removed or encapsulated.

b. The buildings and structures identified in Table 6-1 have been determined to contain friable and non-friable asbestos that may pose a threat to human health. Detailed information is contained in the Environmental Baseline Survey (EBS) and referenced asbestos surveys (Attachment 2). The Grantor has agreed to convey said buildings and

structures to the Grantee prior to remediation of asbestos hazards, in reliance upon the Grantee's express representation and promise that the Grantee, its successors or assigns, will, prior to use or occupancy of said buildings or structures, remediate such friable asbestos or demolish said buildings or structures, or the portions thereof containing friable asbestos, and dispose of ACM in accordance with applicable laws and regulations. With respect to the friable asbestos in said buildings or structures, the Grantee, its successors or assigns, specifically agree to undertake any and all notice posting, abatement or remediation that may be required under any law or regulation. The Grantee acknowledges that the consideration for the conveyance of the Property was negotiated based upon the Grantee's agreement to the provisions contained in this Subsection.

c. The Grantee covenants and agrees that its use and occupancy of the Property will be in compliance with all applicable laws relating to asbestos. The Grantor assumes no liability for any future remediation of asbestos or damages for personal injury, illness, disability, or death, to the Grantee, its successors or assigns, or to any other person, including members of the general public, arising from or incident to purchase, transportation, removal, handling, use, disposition, or other activity causing or leading to contact of any kind whatsoever with asbestos or ACM on the Property, whether the Grantee, its successors or assigns have properly warned or failed to properly warn the individual(s) injured. The Grantee, its successors and assigns, assumes no liability for damages for personal injury, illness, disability, death or Property damage, or indemnification obligations hereunder, arising from any exposure or failure to comply with any legal requirements applicable to asbestos or ACM on any portion of the Property arising prior to the Grantor's conveyance or lease of such portion of the Property to the Grantee.

d. Unprotected or unregulated exposures to asbestos in product manufacturing and building construction workplaces have been associated with asbestos-related diseases. Both the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) regulate asbestos because of the potential hazards associated with exposure to airborne asbestos fibers. Both OSHA and EPA have determined that such exposure increases the risk of asbestos-related diseases, including certain cancers that can result in disability or death.

e. The Grantee acknowledges that it had the opportunity to inspect the Property as to its asbestos content and condition and any hazardous or environmental conditions relating thereto prior to accepting the responsibilities imposed upon the Grantee under this

section. The failure of the Grantee to inspect or to be fully informed as to the asbestos condition of all or any portion of the Property, will not constitute grounds for any claim or demand against the Grantor, or any adjustment under this Deed.

f. The Grantee further agrees to indemnify and hold harmless the Grantor, its officers, agents and employees, from and against any suits, claims, demands or actions, liabilities, judgments, costs and attorneys' fees arising out of, or in any manner predicated upon, exposure to asbestos on any portion of the Property after conveyance of the Property to the Grantee.

NOTICE OF THE POTENTIAL FOR PRESENCE OF POLYCHLORINATED BIPHENYLS (PCBs) AND COVENANT:

a. The Grantee is hereby informed and does acknowledge that equipment containing PCBs may exist on the Property to be conveyed, and is described as follows: fluorescent light ballast ("Light Ballast"). All Light Ballast has been properly labeled in accordance with applicable laws and regulations in force at the time of purchase and installation to provide notification to future users, or has been removed and disposed of off post. Any PCB contamination or spills related to such Light Ballast has been properly remediated prior to conveyance. The Light Ballast does not currently pose a threat to human health or the environment.

b. The Grantee covenants and agrees that its continued possession, use and management of any Light Ballast will be in compliance with all applicable laws relating to PCBs and PCB containing equipment, and the Grantor assumes no liability for the future remediation of the Light Ballast or damages for personal injury, illness, disability, or death to the Grantee, its successors or assigns, or to any other person, including members of the general public arising from or incident to future use, handling, management, disposition, or other activity causing or leading to contact of any kind whatsoever with the Light Ballast, whether the Grantee, its successors or assigns have properly warned or failed to properly warn the individual(s) insured.

NOTICE OF THE PRESENCE OF LEAD-BASED PAINT (LBP) AND COVENANT AGAINST THE USE OF THE PROPERTY FOR RESIDENTIAL PURPOSES:

a. The Grantee is hereby informed and does acknowledge that all buildings and Residential Real Property on the Property which were constructed or rehabilitated prior to 1978, are presumed to contain lead-based paint (LBP). "Residential Real Property" means dwelling units and associated common areas and building exterior surfaces, and any surrounding

land, including outbuildings, fences, and play equipment affixed to land, available for use by residents (but not including land use for agriculture, commercial, industrial, or other non-residential purposes, and not including paint on the pavement of parking lots, garages, or roadways) and buildings visited regularly by the same child, 6 years of age or under, on at least two different days within any week, including day-care centers, preschools and kindergarten classrooms. Lead from paint, paint chips, and dust can pose health hazards if not managed properly. Every purchaser of any interest in Residential Real Property on which a residential dwelling was built prior to 1978 is notified that such property may present exposure to lead from lead-based paint that may place young children at risk of developing lead poisoning. Lead poisoning in young children may produce permanent neurological damages, including learning disabilities, reduced intelligence quotient, behavioral problems, and impaired memory. Lead poisoning also poses a particular risk to pregnant women.

b. The seller of any interest in Residential Real Property is required to provide the buyer with any information on the LBP hazards from risk assessments or inspections in the seller's possession and notify the buyer of any known LBP hazards. Available information concerning known lead-based paint and/or lead-based paint hazards at Fort McClellan, the location of lead-based paint and/or lead-based paint hazards, and the condition of painted surfaces is contained in the EBS and (for residential properties) LBP inspections and risk assessment, which has been provided to the Grantee and is included in Attachment 3. The Grantee has also been provided with the federally approved pamphlet on lead poisoning prevention and hereby acknowledges receipt of all of the information described in this subparagraph.

c. The Grantee acknowledges that it has received the opportunity to conduct a risk assessment or inspection for the presence of lead-based paint and/or lead-based paint hazards prior to execution of this document.

d. The Grantee, its successors and assigns, covenant and agree that they shall not permit the occupancy or use of any buildings or structures on the Property as Residential Real Property, as defined in paragraph A, above, without complying with this section and all applicable federal, state, and local laws and regulations pertaining to lead-based paint and/or lead-based paint hazards. Prior to permitting the occupancy of Residential Real Property, the Grantee, its successor and assigns specifically agree to perform, at their sole expense, the Grantor's abatement requirements under Title X of the Housing and

Community Development Act of 1992 [(Residential Lead-Based Paint Hazard Reduction Act of 1992) (hereinafter Title X)].

In complying with these requirements, the Grantee, its successor and assigns, covenant and agree to be responsible for any remediation of lead-based paint or lead-based paint hazards on Residential Real Property found to be necessary after the date of conveyance to the Grantee as a result of the subsequent use of the Property as Residential Real Property. The Grantee covenants and agrees to comply with solid or hazardous waste laws that may apply to any waste that may be generated during the course of lead-based paint abatement activities.

e. The Grantee, its successors and assigns, covenant and agree that they shall not permit the occupancy or use of any buildings or structures on the Property, as Residential Real Property or Child-Occupied Facilities, as defined by 40 CFR 745-223, without complying with this section and all applicable federal, state, and local laws and regulations pertaining to lead-based paint and/or lead-based paint hazards. Prior to permitting the occupancy of the Residential Real Property or a Child-Occupied Facility, the Grantee, its successor and assigns, specifically agree to perform, at its sole expense, the abatement requirements under Title X or any other requirements pertaining to lead-based paint hazards in Child-Occupied Facilities. A Child-Occupied Facility is considered to be a building, or portion of a building, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Child-Occupied Facilities may include, but are not limited to, day-care centers, preschools and kindergarten classrooms.

f. The Grantee, its successors and assigns, shall, after consideration of the guidelines and regulations established pursuant to Title X: (1) Perform a Risk Assessment if more than 12 months have elapsed since the date of the last Risk Assessment; (2) Comply with the joint HUD and EPA Disclosure Rule (24 CFR 35, Subpart H, 40 CFR 745, Subpart F), when applicable, by disclosing to prospective purchasers the known presence of lead-based paint and/or lead-based paint hazards as determined by previous risk assessments; (3) Abate lead dust and lead-based paint hazards in pre-1960 Residential Real Property, as defined in paragraph A above, in accordance with the procedures in 24 CFR 35; (4) Abate lead soil hazards in pre-1978 Residential Real Property, as defined in paragraph A above, in accordance with the procedures in 24 CFR 35; (5) Abate lead soil hazards following demolition and redevelopment of structures in areas that will be developed as residential

real property; (6) Comply with the EPA lead-based paint work standards when conducting lead-based paint activities (40 CFR 745, Subpart L); (7) Perform the activities described in this paragraph within 12 months of the date of the lead-based paint risk assessment and prior to occupancy or use of the residential real property; and (8) Send a copy of the clearance documentation to the Grantor.

g. The Grantor assumes no liability for remediation or damages for personal injury, illness, disability, or death, to the Grantee, its successors or assigns, sublessees or to any other person, including members of the general public, arising from lead-based paint or lead-based paint hazards on the Property. The Grantee further agrees to indemnify and hold harmless the Grantor, its officers, agents and employees, from and against all suits, claims, demands or actions, liabilities, judgments, costs and attorney's fees arising out of, or in any manner predicated upon, personal injury, death or property damage resulting from, related to, caused by or arising out of lead-based paint or lead-based paint hazards on the Property. The Grantee's obligation hereunder shall apply whenever the Grantor incurs costs or liabilities for actions giving rise to liability under this section. This section and the obligations of the Grantee hereunder shall survive the expiration or termination of this instrument and any conveyance of the Property to the Grantee. The covenants, restrictions, and requirements of this section shall be binding upon the Grantee, its successors and assigns, and all future owners and shall be deemed to run with the land. Accordingly, the Grantee, its successors and assigns, covenant that they will include and make legally binding, this section in all subsequent transfers, leases, or conveyance documents. The Grantee, its successors and assigns, assume no liability for damages for personal injury, illness, disability, death or property damage, or indemnification obligations hereunder, arising from any exposure or failure to comply with any legal requirements applicable to lead-based paint on any portion of the Property arising prior to the Grantor's conveyance of such portion of the Property to the Grantee.

NOTICE OF THE POTENTIAL FOR THE PRESENCE OF ORDNANCE AND EXPLOSIVES AND COVENANT TO REMOVE ORDNANCE AND EXPLOSIVES:

Fort McClellan is a former military installation with a history of OE use and, therefore, there is a potential for OE to be present on the Property. Based on a review of existing records and available information, none of the land proposed for transfer is known to contain unexploded ordnance (UXO). In the event the JPA, its successors, and assigns, should discover any ordnance on the Property, it shall not attempt to remove or destroy it, but shall immediately notify the Calhoun County Sheriff's Department and competent

Grantor or Grantor designated explosive ordnance personnel will be dispatched promptly to dispose of such ordnance at no expense to the Grantee.

Ordnance and Explosives may be present on adjacent property. The U.S. Army intends to investigate the adjacent property and retains the right to use exclusion zones. The investigation may have an impact on the Property through use of exclusion zones (zones established to restrict specific activities in a specific geographic area surrounding any object/structure which is being demolished using explosives) that intersect the property. Due to the use of exclusion zones, temporary notices and restrictions may be issued to protect public safety, human health and the environment. These temporary restrictions and notices may include but are not limited to, the removal of unexploded ordnance on the adjacent property, temporary evacuation, limited closure of facilities and environmental cleanup. In the unlikely event that evacuation is required, all action will be carried out as expeditiously as possible to minimize inconveniences to the JPA. Upon the completion of all OE work within the exclusion zones all temporary notices and restrictions shall be eliminated. A notice will be included in the deed.

NOTICE OF THE PRESENCE OF ENDANGERED SPECIES AND COVENANT:

1. Gray bats (*Myotis grisescens*) are known to forage near Cane Creek and its tributary South Branch and are known to roost in caves and under bridges in the vicinity. Areas within the Transferred Premises that are adjacent to Cane Creek and its tributary South Branch have been identified as suitable gray bat foraging habitat (Figure 5 and Attachment 4). Gray bats are listed as endangered by the U.S. Fish and Wildlife Service (FWS) and are afforded Federal protection under the Endangered Species Act (ESA) of 1973, as amended. Section 9 of the ESA prohibits private landowners from "taking" (harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) endangered species.

2. The following measures will limit potential take of gray bats on the Transferred Premises. Failure to follow these measures could subject the violator to criminal sanctions of the ESA:

    a) Gray bats are known to use man-made structures in the vicinity of the Property. Prior to removing or altering the structure of a bridge, abandoned buildings, or cistern, the structure should be checked for the presence of gray bats. The FWS will be contacted if bats are found to be present.

b) Trees along Cane Creek and its tributary South Branch with moderate quality foraging habitat on the Transferred Premises provide protective cover and prey for foraging gray bats. Forest within 50 feet of these streams should not be removed. If removal of dead or live trees within 50 feet of these streams is necessary, the FWS should be consulted prior to cutting.

c) Gray bats primarily feed on insects with an aquatic life stage; therefore, water quality and the physical characteristics of streams affect the amount and types of insects available for these bats. State and Federal regulations pertaining to water quality and erosion control should be followed. Additionally, modification of stream banks and water flow should be avoided to maintain present water quality and physical structure.

d) Use of pesticides, particularly Malathion, should be managed according to a FWS consultation letter dated June 11, 1998. The Grantee should avoid (or eliminate or minimize) fogging in the vicinity of all moderate quality foraging habitat. FWS requested that if Malathion is used it should be sprayed only during daylight hours no earlier than one hour after sunrise and no later than one hour prior to sunset between March 15 and October 31. Use atmospheric conditions to determine appropriate timing for fogging on lands directly adjacent to foraging areas.

NOTICE OF HISTORIC PROPERTY AND PRESERVATION COVENANT

1. In consideration of the conveyance of certain real property hereinafter referred to as the SUPERFOST No. 2 Transfer, located in the Calhoun County, Alabama, the Grantee hereby covenants on behalf of itself, its heirs, successors, and assigns at all times to the Alabama State Historic Preservation Officer to preserve and maintain eight buildings in the Historic Districts including Buildings 4401, 4402, 4405, 4406, 4410, 4411, 4412, and 4413 in the Ammunition District, in accordance with the recommended approaches in the Secretary of the Interior's Standards for Rehabilitation and Illustrated Guidelines for Rehabilitating Historic Buildings (U.S. Department of the Interior, National Park Service 1992), in order to preserve and enhance those qualities that make the eight buildings in the Historic Districts eligible for inclusion in/or resulted in the inclusion of the property in the National Register of Historic Places. In addition, any design review guidelines established by a Preservation Commission with appropriate authority will be followed. If the Grantee desires to deviate from these maintenance standards, the Grantee will notify and consult with the Alabama State Historic Preservation Officer in accordance with paragraphs 2, 3, and 4 of this covenant.

2. The Grantee will notify the Alabama State Historic Preservation Officer in writing prior to undertaking any construction, alteration, remodeling, demolition, or other modification to structures or setting. Such notice shall describe in reasonable detail the proposed undertaking and its expected effect on the integrity or appearance of the eight buildings within the Historic Districts "Demolition or interior retrofit of noncontributing buildings and structures can be undertaken after thirty (30) days of written notice to the Alabama State Historical Preservation Officer without further consultation."

3. Within thirty (30) calendar days of the Alabama State Historic Preservation Officer's receipt of notification provided by the Grantee pursuant to paragraph 2 of this covenant, the Alabama State Historic Preservation Officer will respond to the Grantee in writing as follows:

   (a) That the Grantee may proceed with the proposed undertaking without further consultation; or

   (b) That the Grantee must initiate and complete consultation with the Alabama State Historic Preservation Office before it can proceed with the proposed undertaking.

   If the Alabama State Historic Preservation Officer fails to respond to the Grantee's written notice, as described in paragraph 2, within thirty (30) calendar days of the Alabama State Historic Preservation Officer's receipt of the same, then the Grantee may proceed with the proposed undertaking without further consultation with the Alabama State Historic Preservation Officer.

4. If the response provided to the Grantee by the Alabama State Historic Preservation Officer pursuant to paragraph 3 of this covenant requires consultation with the Alabama State Historic Preservation Officer, then both parties will so consult in good faith to arrive at mutually-agreeable and appropriate measures that the Grantee will implement to mitigate any adverse effects associated with the proposed undertaking. If the parties are unable to arrive at such mutually-agreeable mitigation measures, then the Grantee shall, at a minimum, undertake recordation for the concerned property--in accordance with the Secretary of Interior's standards for recordation and any applicable state standards for recordation, or in accordance with such other standards to which the parties may mutually agree--prior to proceeding with the proposed undertaking. Pursuant to this covenant, any

mitigation measures to which the Grantee and the Alabama State Historic Preservation Officer mutually agree, or any recordation that may be required, shall be carried out solely at the expense of the Grantee.

5. Alabama State Historic Preservation Officer shall be permitted upon reasonable notice at a reasonable time to inspect the eight buildings within the Historic Districts in order to ascertain its condition and to fulfill its responsibilities hereunder.

6. In the event of a violation of this covenant, and in addition to any remedy now or hereafter provided by law, the Alabama State Historic Preservation Officer may, following reasonable notice to the Grantee, institute suit to enjoin said violation or to require the restoration of the eight buildings within the Historic Districts. The successful party shall be entitled to recover all costs or expenses incurred in connection with such a suit, including all court costs and attorneys fees.

7. In the event that the eight buildings within the Historic Districts (i) are substantially destroyed by fire or other casualty, or (ii) are not totally destroyed by fire or other casualty, but damage thereto is so serious that restoration would be financially impractical in the reasonable judgment of the Owner, this covenant shall terminate on the date of such destruction or casualty. Upon such termination, the Owner shall deliver a duly executed and acknowledged notice of such termination to the Alabama State Historic Preservation Officer and record a duplicate original of said notice in the Calhoun County Deed Records. Such notice shall be conclusive evidence in favor of every person dealing with the historic buildings as to the facts set forth therein.

8. The Grantee agrees that the Alabama State Historic Preservation Officer may at his/her discretion, without prior notice to the Grantee, convey and assign all or part of its rights and responsibilities contained herein to a third party.

9. This covenant is binding on the Grantee, its heirs, successors, and assigns in perpetuity, unless explicitly waived by the Alabama State Historic Preservation Officer. Restrictions, stipulations, and covenants contained herein shall be inserted by the Grantee verbatim or by express reference in any deed or other legal instrument by which it divests itself of either the fee simple title or any other lesser estate in the Transferred Premises or any part thereof.

10. The failure of the Alabama State Historic Preservation Officer to exercise any right or remedy granted under this instrument shall not have the effect of waiving or limiting the exercise of any other right or remedy or the use of such right or remedy at any other time.

11. The covenant shall be a binding servitude upon the Transferred Premises and shall be deemed to run with the land. Execution of this covenant shall constitute conclusive evidence that the Grantee agrees to be bound by the foregoing conditions and restrictions and to perform the obligations herein set forth.

CONDITIONS, RESTRICTIONS, AND COVENANTS BINDING AND ENFORCEABLE:

These restrictions and covenants are binding on the Grantee, its successors and assigns shall be included in subsequent deeds; and shall run with the land; are forever enforceable; shall benefit the public in general and the territory surrounding the Property, including lands retained by the Grantor; and shall further the common environmental objectives of the Grantor and the State of Alabama; and are therefore enforceable by the Grantor and the State of Alabama.

ATTACHMENT 2

ACM SURVEY REPORTS

ASBESTOS CONTAINING BUILDING MATERIALS
SURVEY REPORT

BUILDING: **267 and 337**

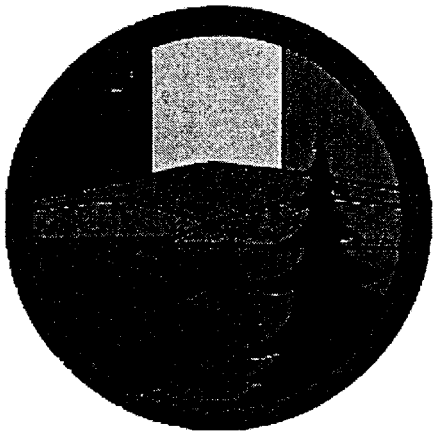
ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
MISCELLANEOUS
BUILDINGS

CONTAINING NON-FRIABLE ACM
(TESTED)

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Fort McClellan



Staying Beautiful

Conducted and Prepared by:

REISZ ENGINEERING
P.O. BOX 1349

HUNTSVILLE, ALABAMA 35807

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
MISCELLANEOUS
BUILDINGS

CONTAINING NON-FRIABLE ACM
(TESTED)

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Prepared For:

DIRECTORATE OF ENVIRONMENT
FORT McCLELLAN

APPROVED FOR TRANSMITTAL BY
JAMES R. WRIGHT

Conducted and Prepared by:

REISZ ENGINEERING

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APPENDICES

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1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this survey was to locate and identify asbestos containing building materials at multiple buildings located at Fort McClellan, Alabama. (See Appendix C for a complete list of buildings included in this document). Pursuant to the Contract, REISZ Engineering was required to provide the survey in accordance with AHERA (40 CFR Part 763 Subpart E) protocol. AHERA is applicable to interior building products installed prior to October 12, 1988. AHERA does not apply to the exterior of buildings and does not apply to non-building materials (e.g. cabinetry, special equipment and chalkboards). REISZ Engineering has included as part of the survey those readily accessible, suspect friable interior non-building materials (e.g. vibration dampers); but has not included certain items (e. g. interior linings of equipment and special supplies, some non-friable materials such as transite, etc.). Exterior building materials were not sampled as part of this contract unless those materials were suspected to be of friable nature and continuous with indoor materials (e.g. piping insulation). Specifically, REISZ Engineering was contracted to provide the following services:

1. Identify and collect samples of accessible suspect friable building materials within the referenced project area.
2. Perform a visual inspection to provide information on material condition, material quantities, material locations, and building use.
3. Analysis of all bulk samples for asbestos content utilizing Polarized Light Microscopy and Dispersion Staining Techniques performed in accordance with EPA Bulk Analysis Method
   EPA 600/M4-82-020.
4. Make recommendations as to response actions pertaining to those materials identified as asbestos containing.

5. Compilation of a final report (contained herein) which details all sample results, identifies sample locations, and provides recommendations based upon the results.

6. Preparation of a Building specific Operations & Maintenance (O&M) Plan for buildings containing friable asbestos materials.

2.0 REGULATORY STANDARDS

The National Emissions Standards for Hazardous Air Pollutants (NESHAP) requires the Owner or Operator of a facility to determine the presence or non-presence of asbestos containing materials prior to conducting renovation or demolition activities. The NESHAP Standard for asbestos (40CFR Part 61 Sub-part M) requires the use of engineered control procedures for removal of asbestos materials that are or will become friable during renovation or demolition. The removal must occur before renovation or demolition activities impact those materials.

On October 11, 1994 an OSHA promulgated regulation (29 CFR Part 1926.1101) became effective. This Standard is related to asbestos exposure in construction, renovation and building maintenance work places. Building owners are required, pursuant to the Standard, to notify employees, tenants and prospective employers (contractors) of the presence, location and quantities of ACM in the building. Implementation of the "communication of hazards" provisions in the Standard were originally to be not later than April 10, 1995 but was extended to July 10, 1995 and is now in effect. The OSHA Standard does not apply to work performed by employees of State agencies in states without state run OSHA programs (e.g. Alabama).

In October 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law. Included in this act are provisions directing E.P.A. to establish rules and regulations (40CFR Part 763) addressing asbestos-containing materials in schools. Specifically, the E.P.A. was directed to address the issues of: 1) identifying, 2) evaluating, and 3) controlling asbestos

containing materials (ACM) in schools. AHERA requires schools to perform building inspections and to prepare management plans for ACM control. Although the AHERA regulation does not specifically apply to this project it is generally accepted as the industry standard and was cited by Fort McClellan in the Asbestos Survey Request as the basis of survey methodology. The AHERA inspections must be conducted using specific guidelines that include a minimum number of samples per material type. This survey was conducted in accordance with those guidelines per the Contract requirements.

On November 28, 1992 a law became effective which extended the EPA's Model Accreditation Plan to all public and commercial buildings. Currently the rule extends the accreditation requirements of persons performing asbestos work (inspectors, project designers, abatement supervisors, and workers) in public and commercial buildings, but does not extend the other aspects of AHERA. This project was conducted utilizing EPA accredited personnel.

3.0 PROJECT CHARACTERISTICS

Reisz Engineering accredited Asbestos Inspectors performed inspections of these buildings for the purpose of identifying building materials suspected to contain asbestos. All of the buildings referenced in this survey contain only non-friable ACM. Refer to Appendix B for types and quantities of materials in individual buildings.

4.0 SURVEY METHODOLOGY

The buildings were visually inspected for the presence of material suspected to contain asbestos. Those suspect materials were identified, bulk samples were obtained and placed into individual vials for transportation to the University of Alabama in Huntsville. General areas for sample locations were selected on a random basis with a preference for exact positioning at

existing damage. Each sample location is represented by a number on the plans in Appendix C. Those numbers directly correspond with the numbers listed elsewhere in this report.

If any additional suspect materials are identified during renovation or demolition they should be analyzed for asbestos content. Materials visibly identifiable as non-asbestos (fiberglass, foam rubber, wood, etc.) were not sampled. Materials installed after October 12, 1988 (as reported by Fort McClellan staff) were not sampled.

Hazard Assessment Factors

Each time suspect ACM was sampled, it was classified as either a friable or a non-friable material. Friable material may be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is more hazardous than non-friable ACM because friable material can release airborne asbestos fibers more easily. In assessing the fiber release potential, the current condition of all ACM identified was noted. Evidence of deterioration, physical damage, water damage, erosion of ACM due to its' proximity to an air plenum, high vibration, or contact potential was also noted.

5.0 LABORATORY ANALYSIS METHODOLOGY

All bulk samples were analyzed at UAH by polarized light microscopy utilizing dispersion staining or Becke line techniques, in accordance with the EPA's "Interim Method for Determination of Asbestos in Bulk Insulation Samples" (EPA 6OO/m4-82-020). Quality control samples were taken as duplicates at a rate of 1 to 10 and were sent to a second accredited laboratory. This type of analysis requires the microscopist to take a portion of the bulk sample and treat it with an oil of specific refractive index. This prepared slide is then subjected to a variety of optical tests.

Each type of asbestos displays unique characteristics when subjected to these tests. Percentages of the identified types of asbestos are determined by visual estimation. Even though this is an estimation, any material that contains greater than one percent of any type of fibrous asbestos is considered ACM and must be handled according to OSHA and EPA regulations if disturbed during maintenance, renovation, demolition or removal.

The UAH laboratory participates in the American Industrial Hygiene Association (AIHA) quality assurance program for polarized light microscopy and is accredited by the AIHA through their voluntary program.

6.0 SUSPECT MATERIALS

The following is a general list of building materials that were suspected to contain asbestos in various buildings. A complete and more detailed description of these materials can be found in Appendix B.

Surfacing

- None

Thermal System Insulation

- Pipe fitting insulation

Miscellaneous Material

- 12x12 vinyl floor tile in various buildings
- 9x9 vinyl floor tile in various buildings
- Vinyl flooring mastics
- Transite

7.0 ASBESTOS INSPECTION AND SAMPLING RESULTS

A narrative description of all ACM identified by laboratory analysis during the survey is given below.

FRIABLE ACM

None

NON FRIABLE ACM

Four types of non-friable presumed ACM were found in the buildings. 1) transite, 2) 9x9 floor tile, 3) 12x12 floor tile, and 4) mastics associated vinyl floor tile.

1) Asbestos containing transite sheeting is found on the ceiling of one room in Building 337. A transite exhaust pipe is also located in this building.

2) Asbestos containing 9x9 inch floor tile and mastic is found in the following buildings: B256 B2102 B142 B267 B2098 B2091 B3213

3) Asbestos containing 12x12 inch floor tile and mastic is found in the following buildings: B1929 B1966 B3160 B3174 B2109 B337 B2051 B3213

INACCESSIBLE MATERIAL

Insulation and spray-on compounds associated with inaccessible crawl-space and tunnel areas should be assumed as "like" materials corresponding to materials sampled within the building.

8.0 CONCLUSIONS AND RECOMMENDATIONS

None of the materials identified within this report are damaged to the extent that significant asbestos fiber release may be likely under normal conditions. The asbestos containing materials may be subject to routine maintenance activities that could involve significant disturbance. Proper management of the material in-place may be acceptable assuming the proper precautions are taken to eliminate exposure of personnel to any airborne asbestos.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions and recommendations expressed in this report are based only on conditions that were observed during the inspections of these buildings during the period of this contract. Reisz Engineering and this report make no representation or assumptions as to past conditions or future occurrences.

Our inspection was generally non-destructive in nature. Any conditions or materials that were not visible on the surface were not inspected and may differ from those observed. It was not within the scope of this investigation to remove surface materials to investigate portions of the structure or materials that may lie beneath the surface. Our selection of sample locations and frequency is based upon our observations and the assumption that all materials in the same area are homogeneous.

This report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos abatement contractors in locating ACM. Under no circumstances is this report to be utilized as a bidding document or as a project specification document.

APPENDIX A

REPORT OF LABORATORY ANALYSIS

UAH

The University of Alabama in Huntsville

Environmental Laboratory
Kenneth E. Johnson Research Center

Huntsville, Alabama 35899
Phone: (205) 890-6391
Fax: (205) 890-6376

Re
: Bulk Asbestos Analysis
EPA 600/R-93/116
AIHA: 023601

Receipt Date 07/26/97

Client: Reisz Engineering
Building 32 Suite, A2
3322 Memorial Parkway
South Huntsville, AL
35801

Sample Date: 07/23-24/97

Microscopist Tom Carrington

Sample/Description	Asbestos Fibers (%)				Non-Asbestos Material (%)				
	Chry	Amos	Croc	Othr	Cell	Fbgl	MW	CaSO4	Othr
B142-01/ ceiling tile above Drop ceiling					75				25
B142-02/ 9 X 9 tile	5								95
B142-03/ mastic	10				10			5	70
142-04/ 12 X 12 floor tile					5				95
B142-05/ mastic					15				85
B256-01/ 9 X 9 floor tile	15								85
B256-02/ mastic from floor tile	10				10				80
B267-01/ 12 X 12 floor tile White									100
B267-02/ 9 X 9 floor tile Brown	10				5	2			83
B267-03/ 9 X 9 floor mastic	15				15				70
B267-04/ 9 X 9 floor tile black					5				95
B267-05/ 9 X 9 floor mastic	15				15				70
B267-06/ 9 X 9 floor tile Brown	15				5				80
B267-07/ 9 X 9 mastic	20				5				75
B337-01/ transite-like board On ceiling	30								70

Chry = Chrysotile
mos = Amosite
roc = Crocidolite

Othr = Other
Cell = Cellulose

MW = Mineral Wool
Ca **S04**= Calcium Sulfate Fbgl = Fiberglass

A Space Grant College
An Affirmative Action / Equal Opportunity Institution

UAH

The University of Alabama in Huntsville

Environmental Laboratory
Kenneth E. Johnson Research Center

Huntsville, Alabama 35899
Phone: (205) 890-6391
Fax: (205) 890-6376

Re : Bulk Asbestos Analysis EPA 600/R-93/116
AIHA: 023601

Receipt Date: 06/20/97

Sample Date : 06/09/97

Client: Reisz Engineering
Building 32 Suite, A2
3322 Memorial Parkway South
Huntsville, AL 35801

Microscopist: Tom Carrington

Sample/Description	Asbestos Fibers (%)				Non-Asbestos Material (%)				
	Chry	Amos	Croc	Othr	Cell	Fbgl	MW	CaSO4	Othr
B1929-01A/ (a) Floor tile 12 X 12					10				90
(b) Mastic		20			15		1		64
B1929-02A/ (a) Floor tile 12 X 12					3				97
(b) Mastic		25			15		1		59
B1966-01A/ (a) Floor tile 12 X 12									100
(b) Mastic		15			10		1		74
B1966-02A/ (a) Floor tile 12 X 12					10				90
(b) Mastic		20			20		1		59
B1966-03A/ (a) Floor tile 12 X 12					3				97
(b) Mastic		18			10				72
B2051-01/ White powder around valve							5		95
B2051-02/ (a) Floor tile		10			15				75
(b) Mastic		25			15				60
B2051-03/ (a) Floor tile		10			5				85
(b) Mastic		10			25				65
B2091-01/ 9 X 9 floor tile		2			5				93
B2091-02/ ceiling tile					85				15

ry = Chrysotile
os = Amosite
Croc = Crocidolite

Othr = Other
Cell = Cellulose

MW = Mineral Wool
Ca **S04**= Calcium Sulfate
Fbgl = Fiberglass

A Space Grant College
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UAH

The University of Alabama in Huntsville

Environmental Laboratory
Kenneth E. Johnson Research Center

Huntsville, Alabama 35899
Phone: (205) 890-6391
Fax: (205) 890-6376

Re : Bulk Asbestos Analysis EPA 600/R-93/116
AIHA: 023601

Receipt Date: 06/20/97

Sample Date : 06/09/97

Client: Reisz Engineering
Building 32 Suite, A2
3322 Memorial Parkway South
Huntsville, AL 35801

Microscopist: Tom Carrington

Sample/Description	Asbestos Fibers (%)				Non-Asbestos Material (%)				
	Chry	Amos	Croc	Othr	Cell	Fbgl	MW	CaSO4	Othr
B2098-01/ (a) 9 X 9 tile	15				15				70
B2098-01/ (b) Mastic					20				80
B2102-01/ 9 X 9 floor tile	15								85
102-02/ insul. Covering									100
B2109-01/ (a) Floor tile					25				75
(b) Mastic	15				20				65
B2109-02/ (a) Floor tile					12				88
(b) Mastic	12				25				63
B2109-03/ (a) Floor tile					10				90
(b) Mastic	1				30				69
B3160-01/ (a) 12 X 12 tile	15				10	1			74
(b) Mastic					8				92
B3174-01 (a) 12 X 12 tile					3				97
(b) Mastic	12				5				83

Chry = Chrysotile
Amos = Amosite
Croc = Crocidolite

Othr = Other
Cell = Cellulose

MW = Mineral Wool
Ca **S04**= Calcium Sulfate
Fbgl = Fiberglass

A Space Grant College
An Affirmative Action / Equal Opportunity Institution

UAH

Environmental Laboratory
Kenneth **E.** Johnson
Research Center

The University of Alabama in Huntsville

Huntsville, Alabama 35899
Phone: (205) 890-6391
Fax: (205) 890-6376

Re : Bulk Asbestos Analysis EPA 600/R-93/116

ReceiptDate :01/15/98

AIHA: 023601

Sample Date :01/12/98

Client: Reisz Engineering
Building 32 Suite, A2
3322 Memorial Parkway
South Huntsville, AL
35801

Microscopist : **Tom** Canington

Sample/Description	Asbestos Fibers (%)				Non-Asbestos Material (%)			
	Chry	Amos	Croc	Othr	Cell	Fbgl	NW	CaSO4 Othr
B3213-01/ (a) 9 x 9 tile		10			15			75
B3213-01/ (b) Mastic		30			10			60

Chry = Chrysotile
Amos = Amosite
Croc = Crocidolite

Othr = Other
Cell = Cellulose

MW = Mineral Wool
Ca **S04** = Calcium Sulfate Fbgl = Fiberglass

APPENDIX B

SUMMARY OF ACM AND COST ESTIMATES

Building Number	PACM Material	Quantity	Estimated abatement cost*
B142	9x9 floor tile and mastic	20000 sq. ft.	$46000
B256	9x9 floor tile and mastic	300 sq. ft.	$800
B267	9x9 under 12x12 floor tile and mastic	18000 sq. ft.	$51750* *increase due to multiple layers
B337	Transite board on ceiling	1600 sq. ft.	$3680
	Transite exhaust pipe (presumed)	8 ft. 12 inch dia.	$250
	12x12 floor tile and mastic	2750 sq. ft.	$6325 per bldg.
B1929	12x12 floor tile and mastic	8000 sq. ft.	$18400
B1966	12X12 floor tile and mastic	7200 sq. ft.	$16560
B2051	12x12 floor tile and mastic	17000 sq. ft.	$39100
B2091	9x9 f.t. & mastic	3800	$8740
B2098	9X9 floor tile and mastic	4400 sq. ft.	$10120
B2102	9x9 floor tile and mastic	7000 sq. ft.	$16100
B2109	12x12 floor tile and mastic	850 sq. ft.	$1955

B3160	12x12 floor tile and mastic	2000 sq. ft.	$4600
B3174	12x12 floor tile and mastic	1400 sq. ft.	$3200
B3213	12x12 floor tile and mastic	5500 sq. ft.	$12650
	9x9 floor tile and mastic	6500 sq. ft.	$14950

***Includes all air monitoring and design fees**

APPENDIX C

LIST OF BUILDINGS

BUILDING NUMBER

142
256
267
337
1929
1966
2051
2091
2098
2102
2109
3160
3174
3213

APPENDIX D

ACM SAMPLE LOCATION PLANS

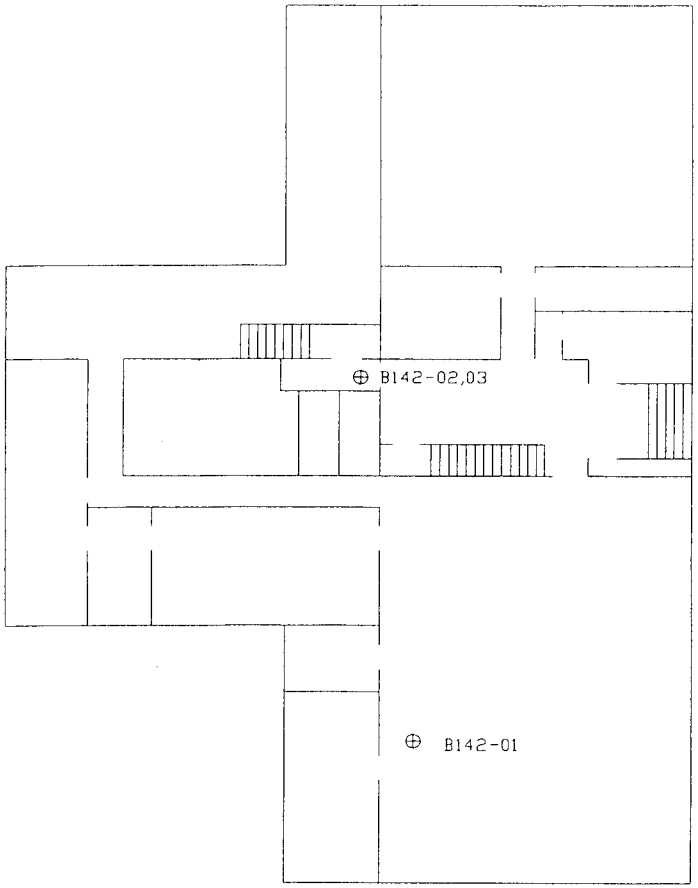


FIG. 2 FIRST FLOOR

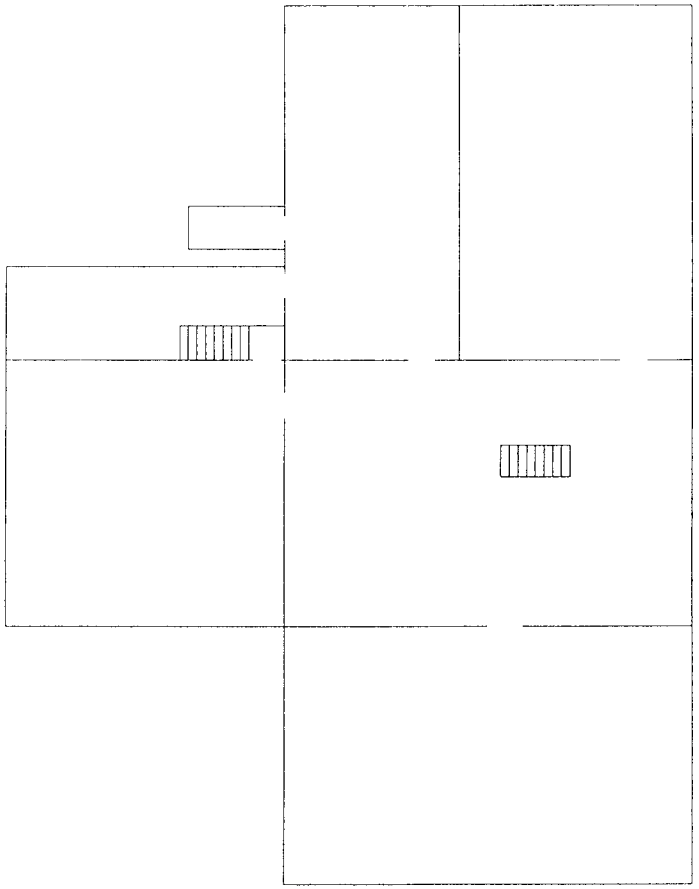


FIG. 1 BASEMET

⊕ Negative Sample Locations

⊕ Positive Sample Locations

BUILDING: 142	FIG. 1 BASEMENT FIG. 2 FIRST FLOOR	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

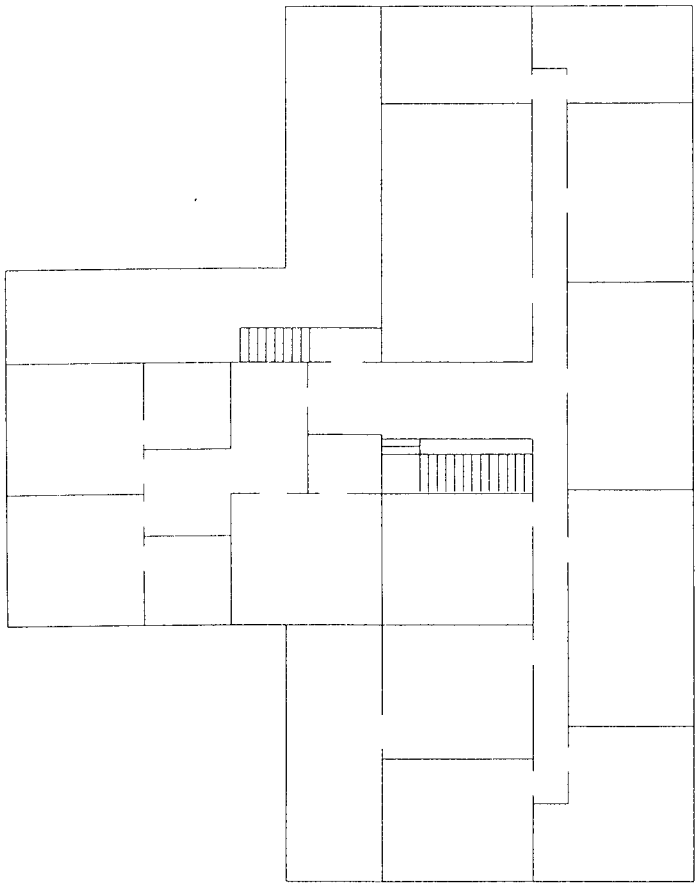


FIG. 3 SECOND FLOOR

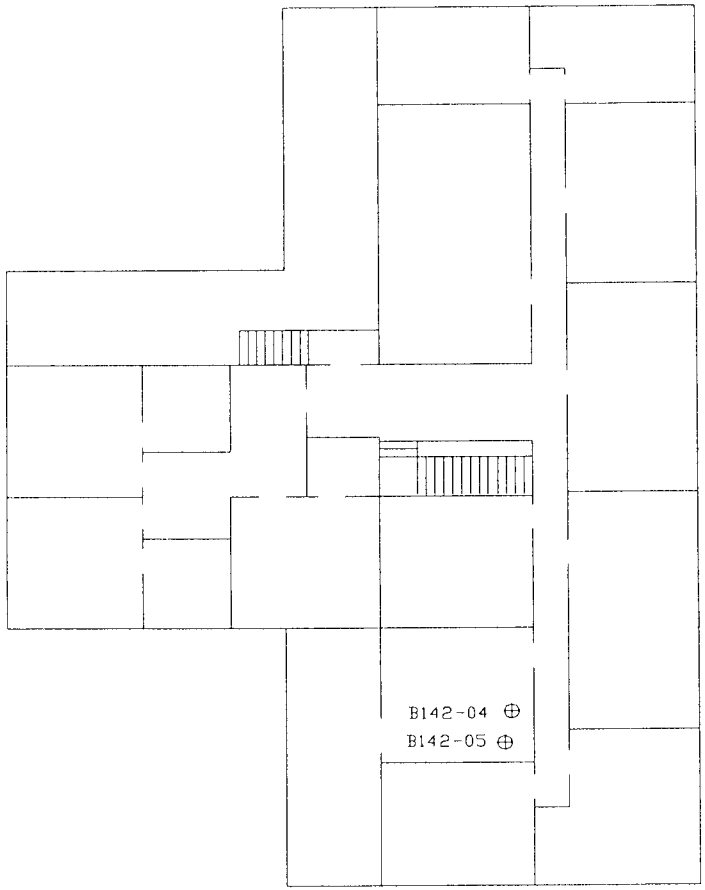
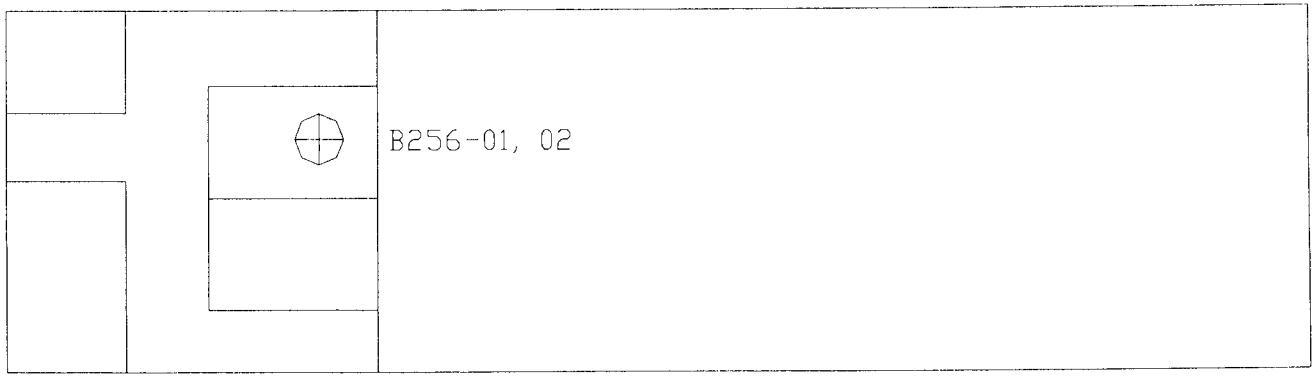


FIG. 4 THIRD FLOOR

Negative Sample Locations

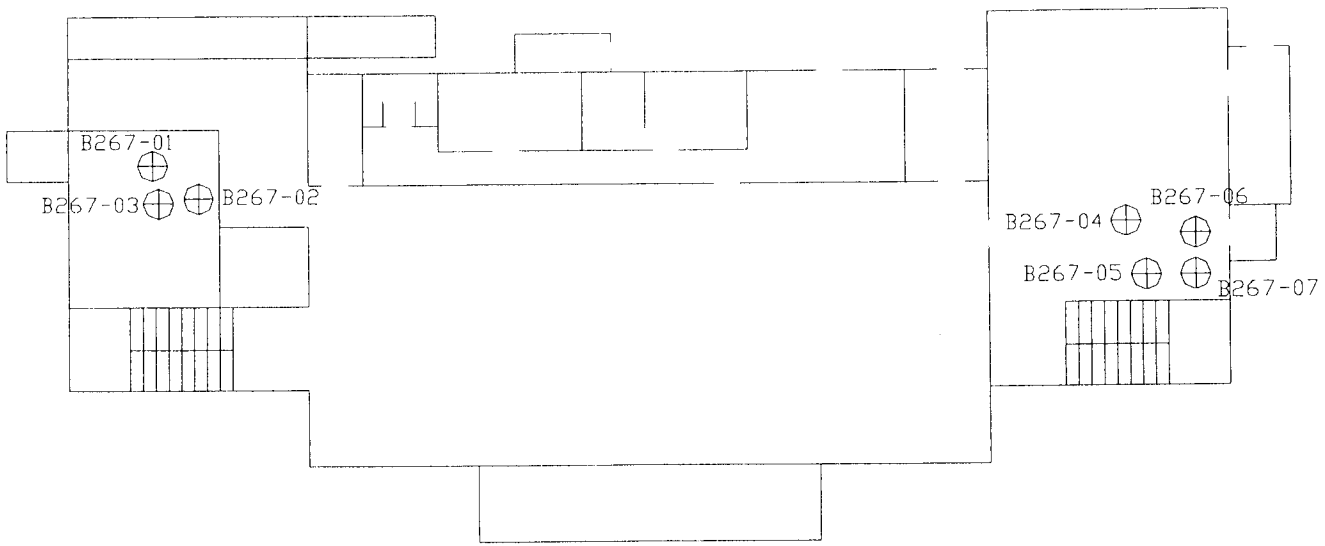
Positive Sample Locations

BUILDING: 142	FIG. 3 SECOND FLOOR FIG. 4 THIRD FLOOR	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



⊕ Positive Sample Locations

BUILDING: 256	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

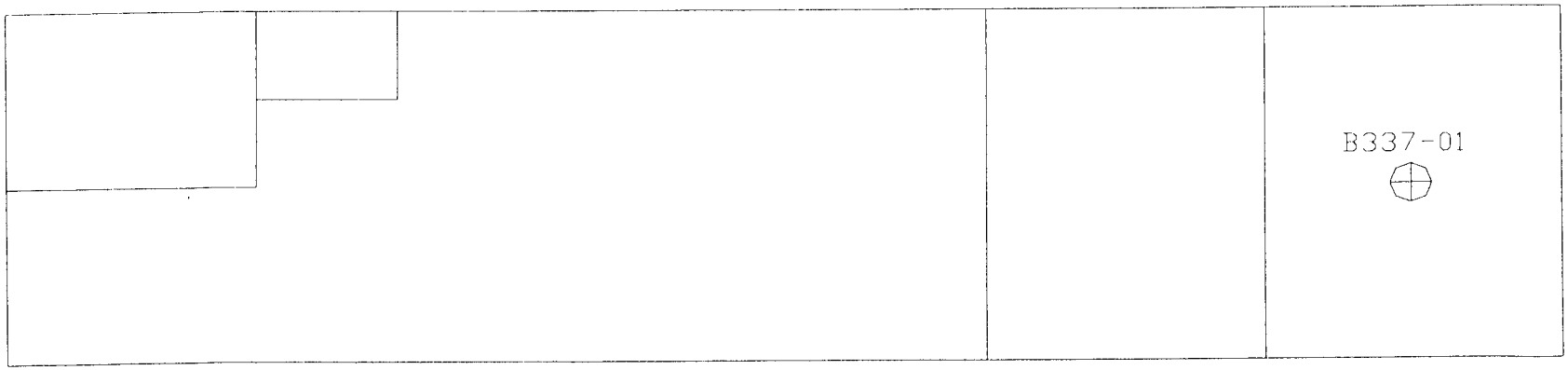


⊕ Negative Sample Locations

⊕ Positive Sample Locations

FIG. 1 LAYOUT PLAN

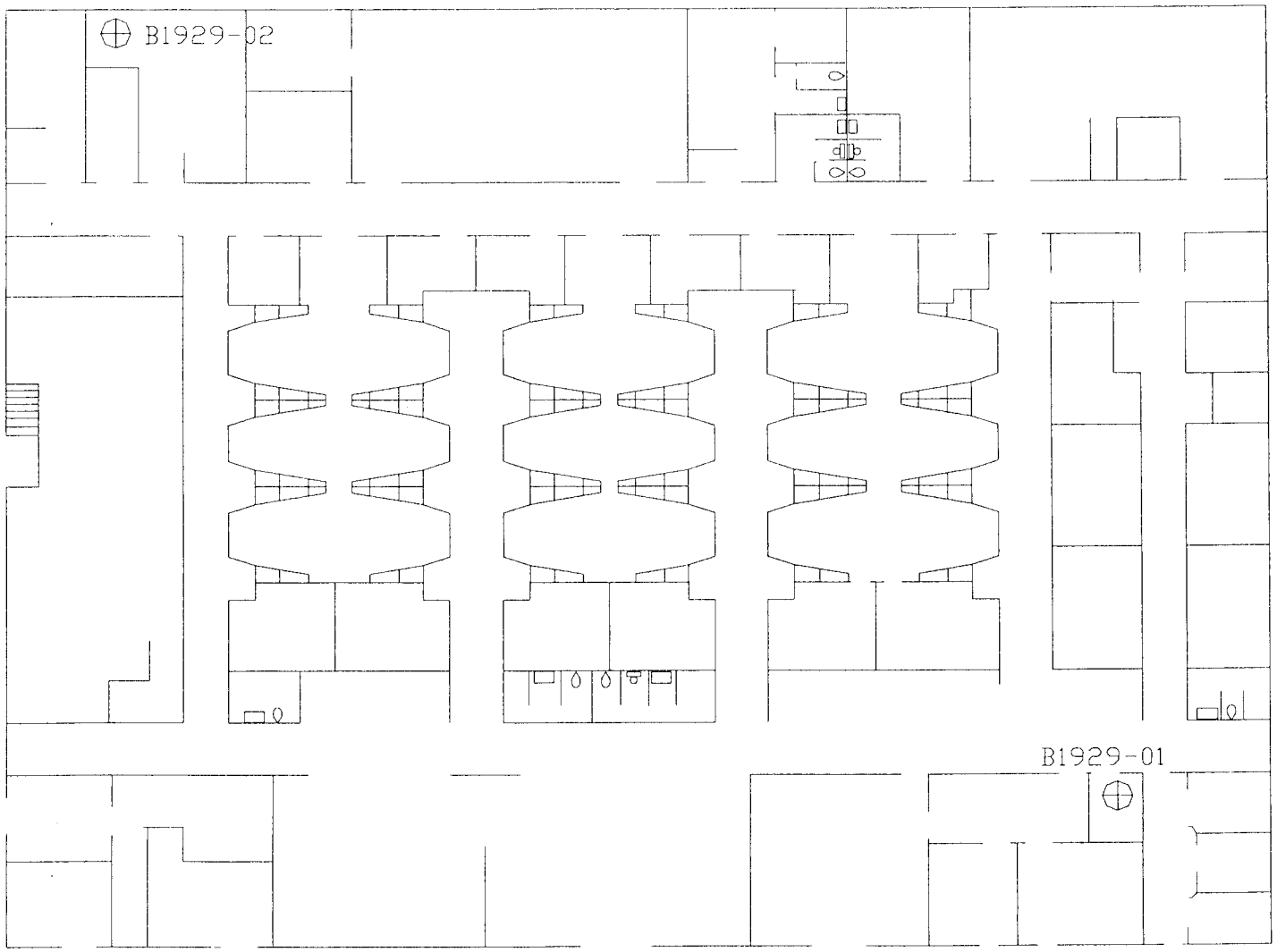
BUILDING: 267	FIG. 1 FIRST FLOOR	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



⊕ Positive Sample Locations

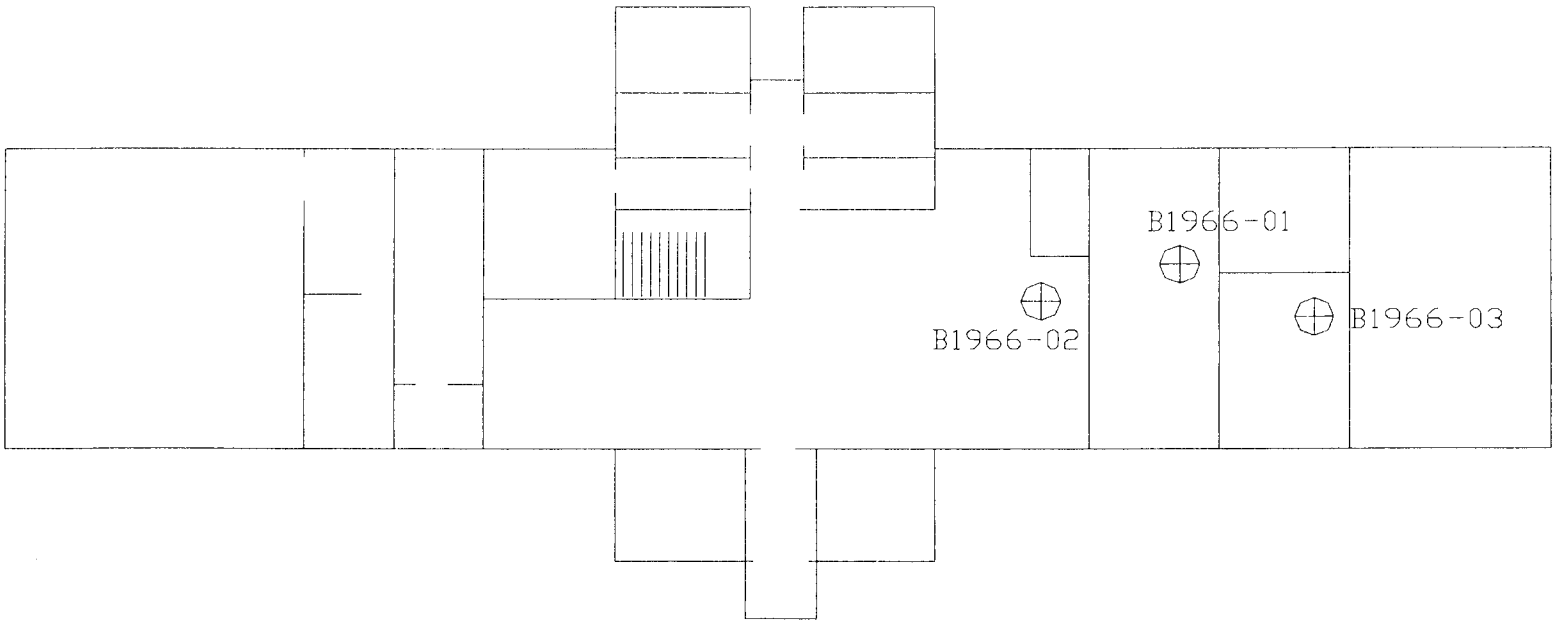
FIG. 1 LAYOUT PLAN

BUILDING: 337	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



⊕ Positive Sample Locations

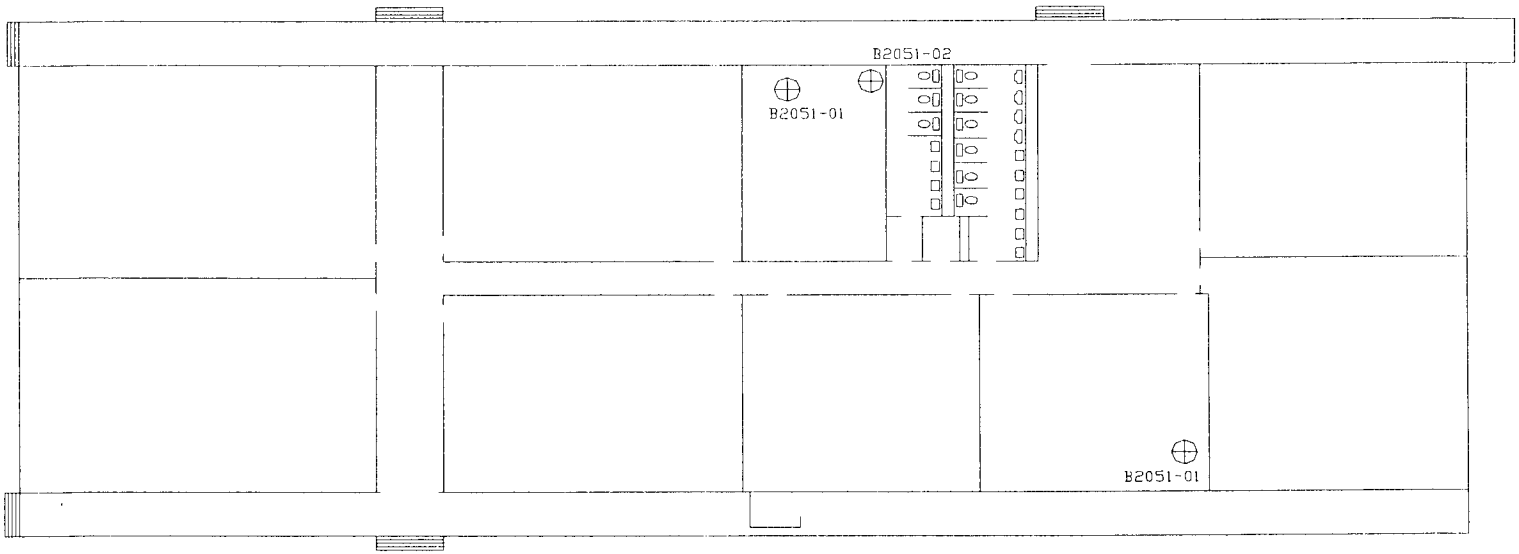
BUILDING: 1929	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



⊕ Positive Sample Locations

FIG. 1 LAYOUT PLAN

BUILDING: 1966	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



⊕ Negative Sample Locations

⊕ Positive Sample Locations

FIG. 1 LAYOUT PLAN

BUILDING: 2051	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

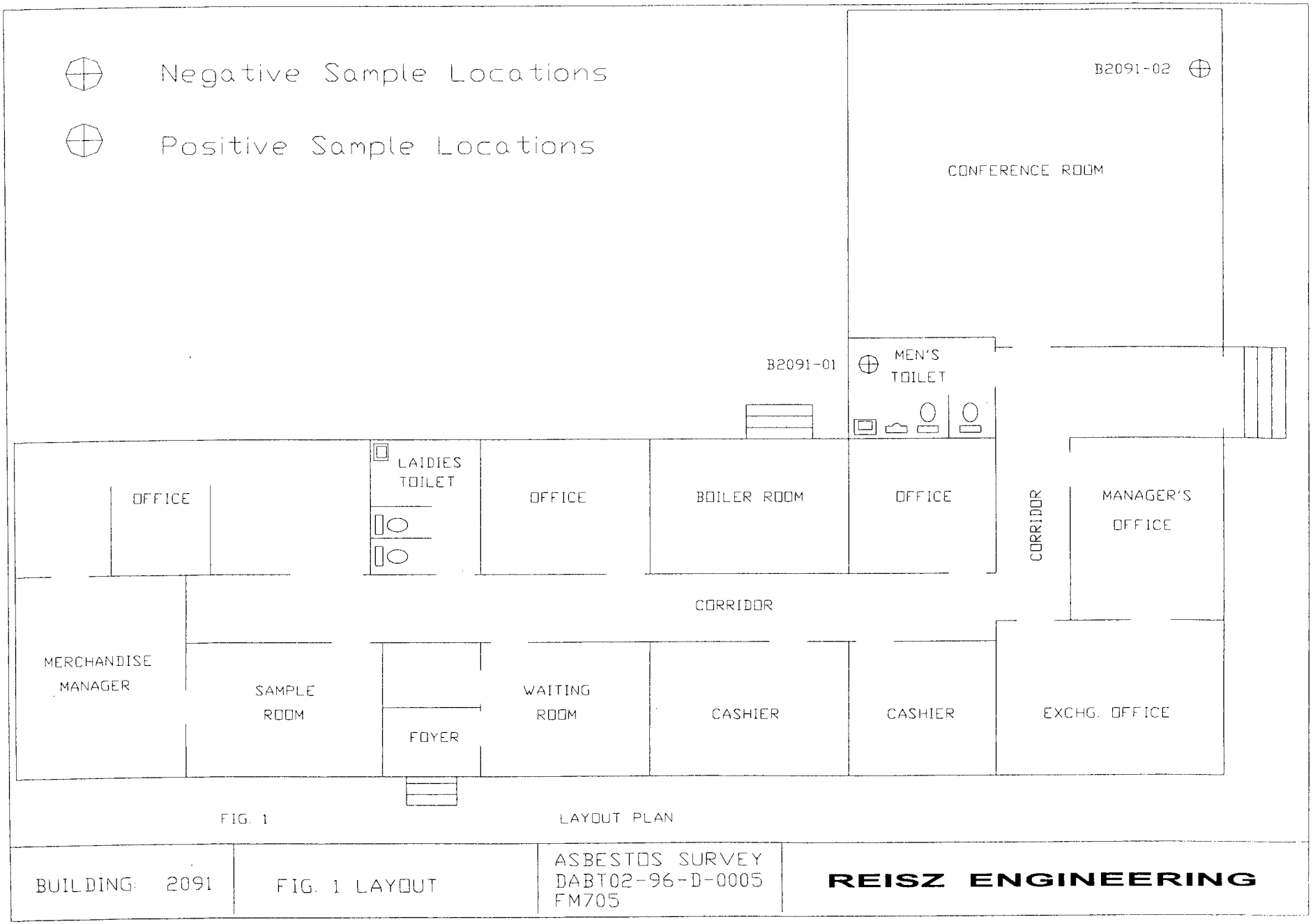
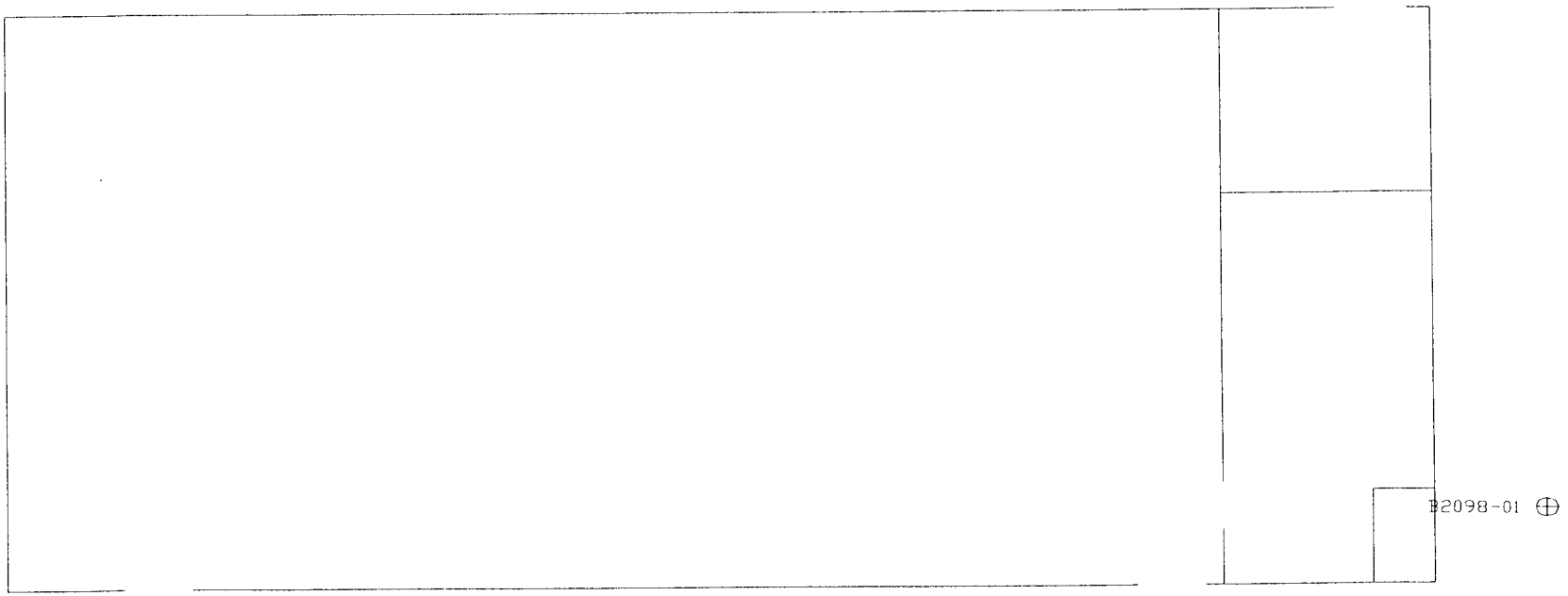


FIG. 1 LAYOUT PLAN

BUILDING: 2091	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

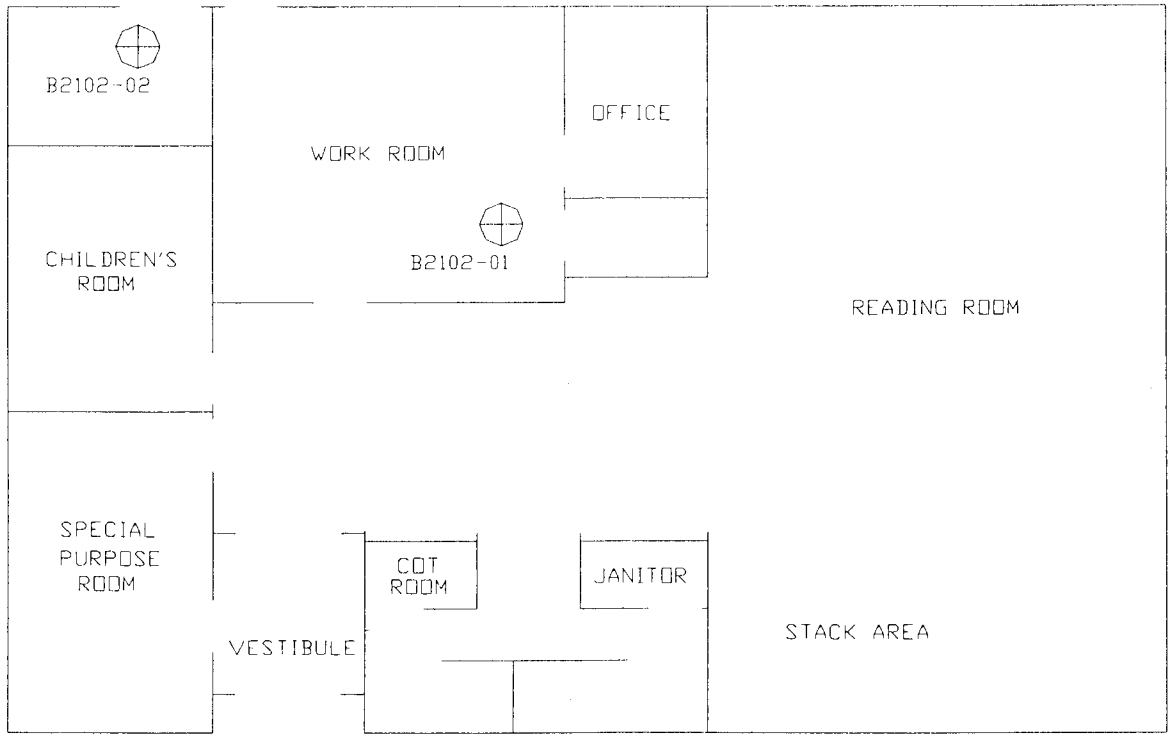


⊕ Negative Sample Locations

⊕ Positive Sample Locations

FIG. 1 LAYOUT PLAN

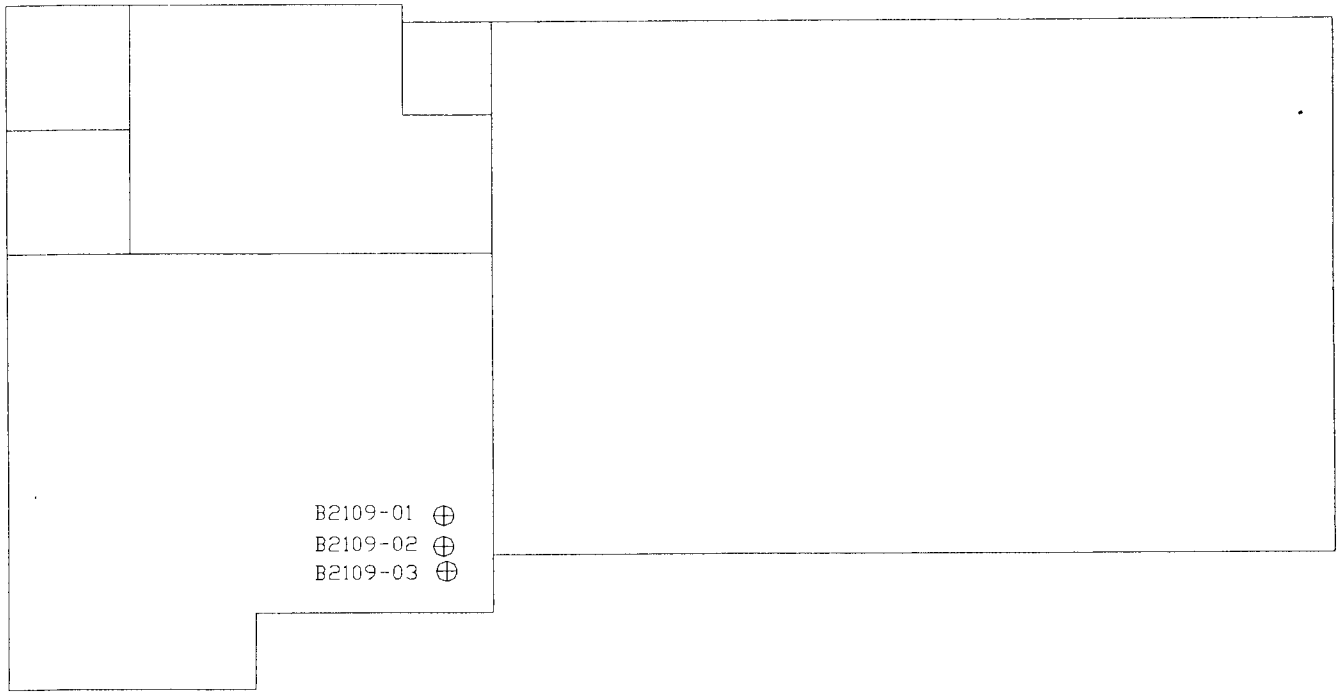
BUILDING: 2098	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



Negative Sample Locations

Positive Sample Locations

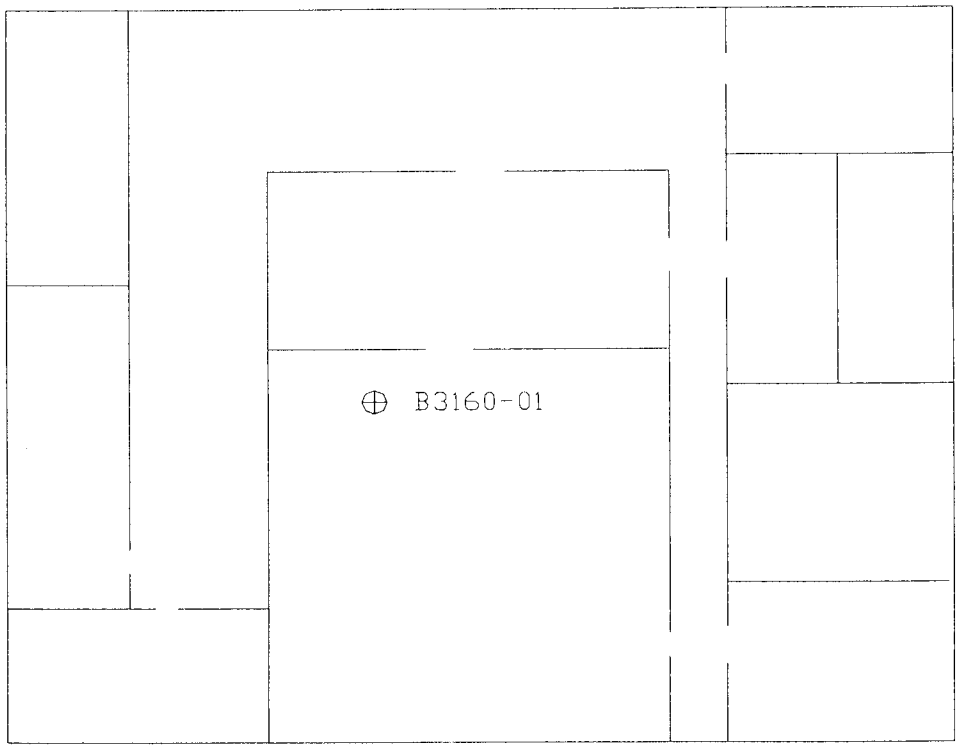
BUILDING: 2102	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



⊕ Positive Sample Locations

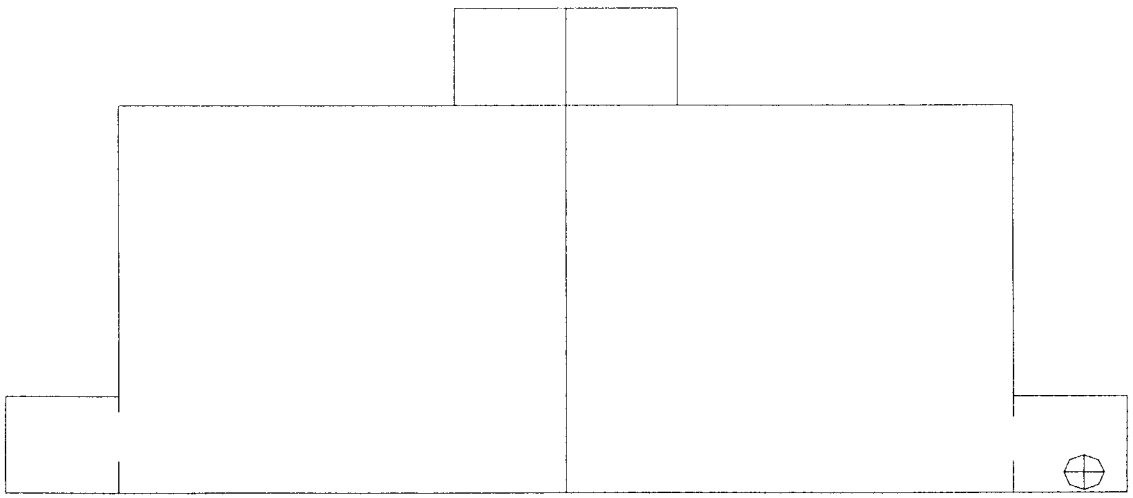
FIG. 1 LAYOUT PLAN

BUILDING: 2109	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



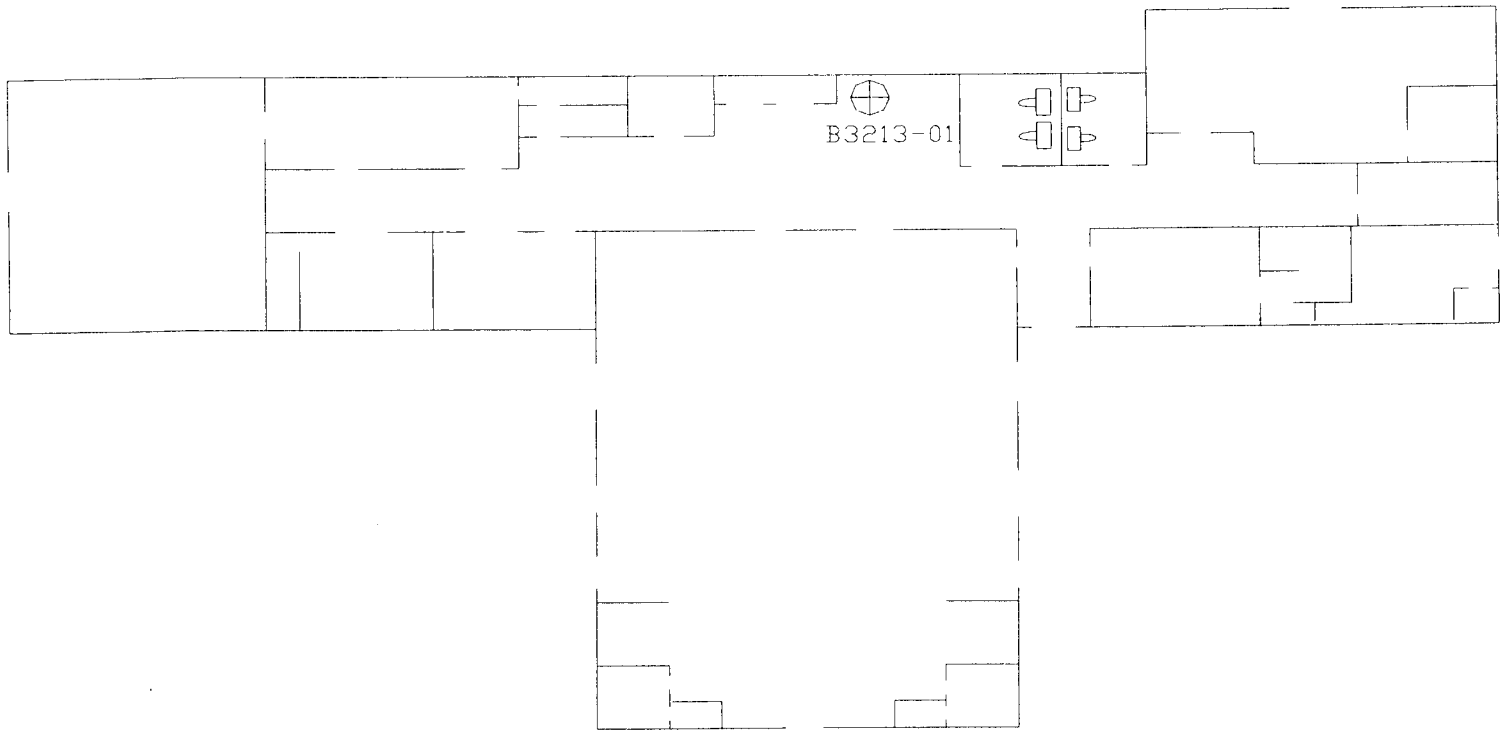
⊕ Positive Sample Locations

BUILDING: 3160		ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



⊕ Positive Sample Locations

BUILDING: 3174		ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

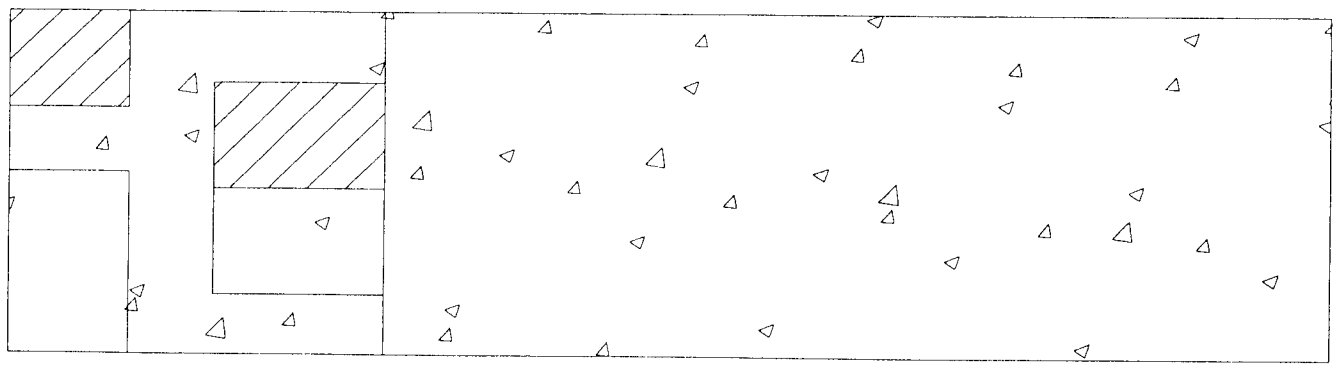


⊕ Positive Sample Locations

BUILDING: 3213		ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

APPENDIX E

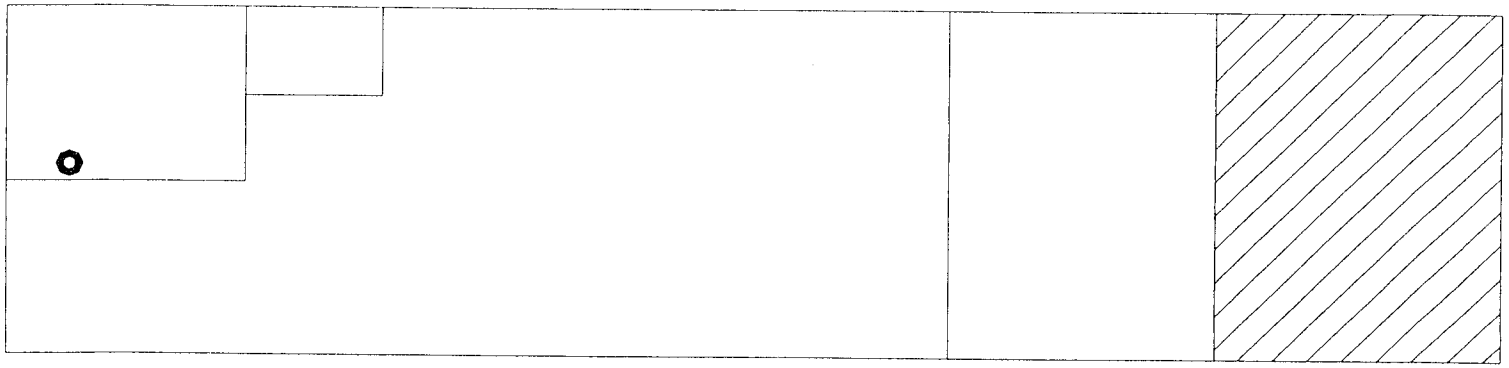
SELECTED ACM LOCATION PLANS



Cement Floors

9 x 9 Floor Tile

BUILDING: 256	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

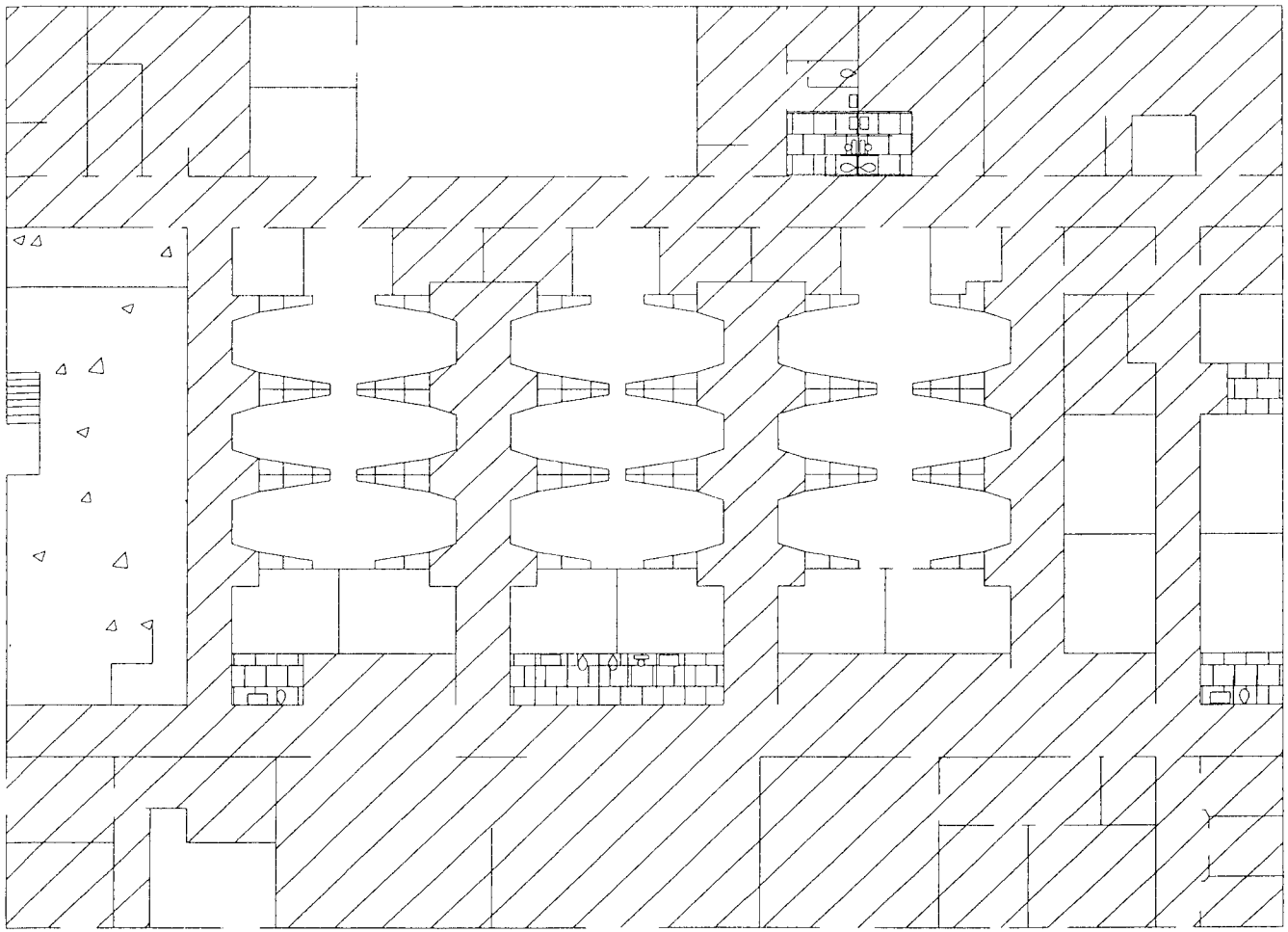


Transite Exhaust Pipe

Transite Ceiling Tile

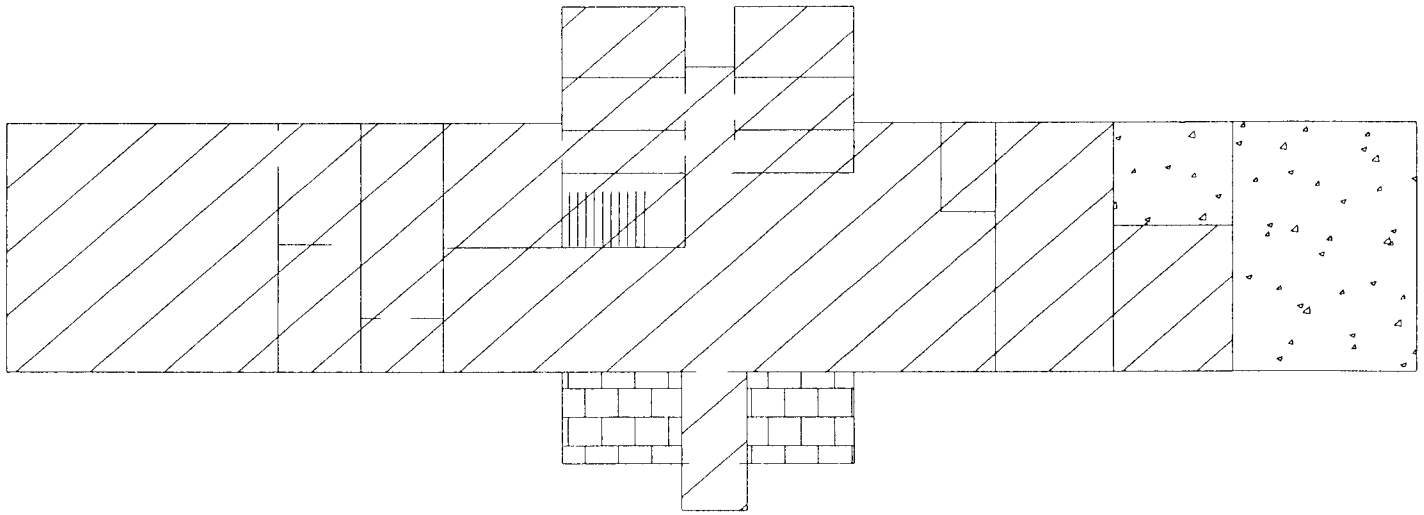
FIG. 1 LAYOUT PLAN SCALE: 1"=20'

BUILDING: 337	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



12 x 12 Floor Tile Cement Floor Ceramic Tile Floor

BUILDING: 1929	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



12 x 12 Floor Tile

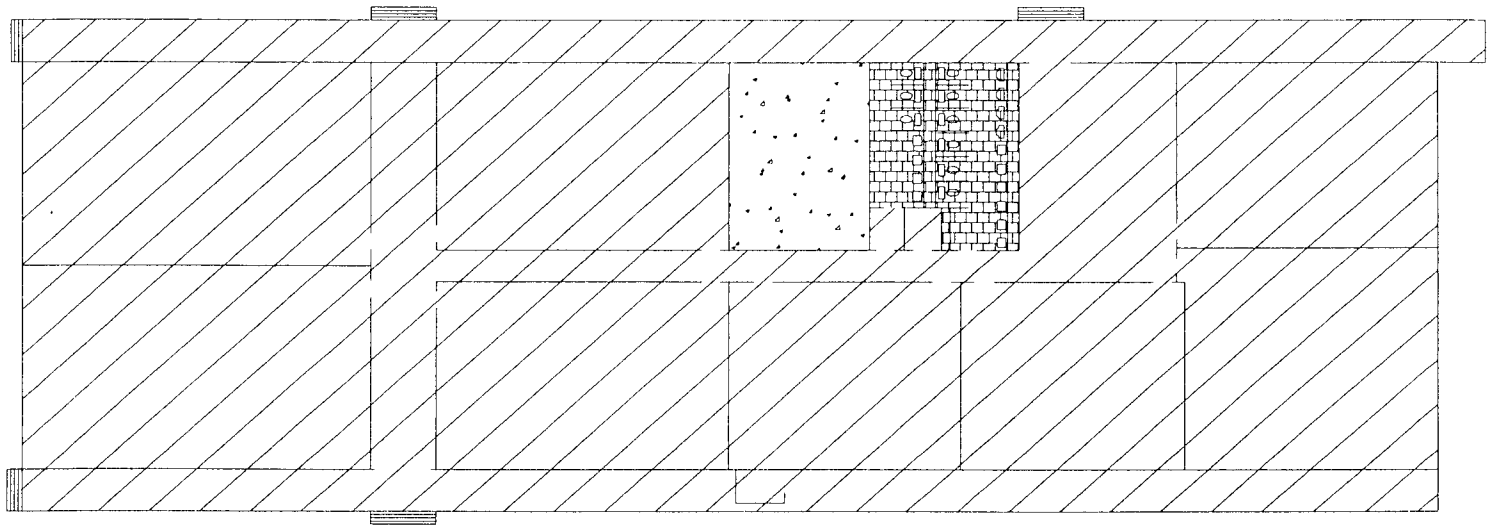
Cement Floor

Ceramic Floor Tile

FIG. 1 LAYOUT PLAN

SCALE: 1" = 10'

BUILDING: 1966	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



12 x 12 Floor Tile

Ceramic Floor Tile

Mechanical Room (cement floor)

FIG. 1 LAYOUT PLAN SCALE: 1" = 30'

BUILDING: 2051	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

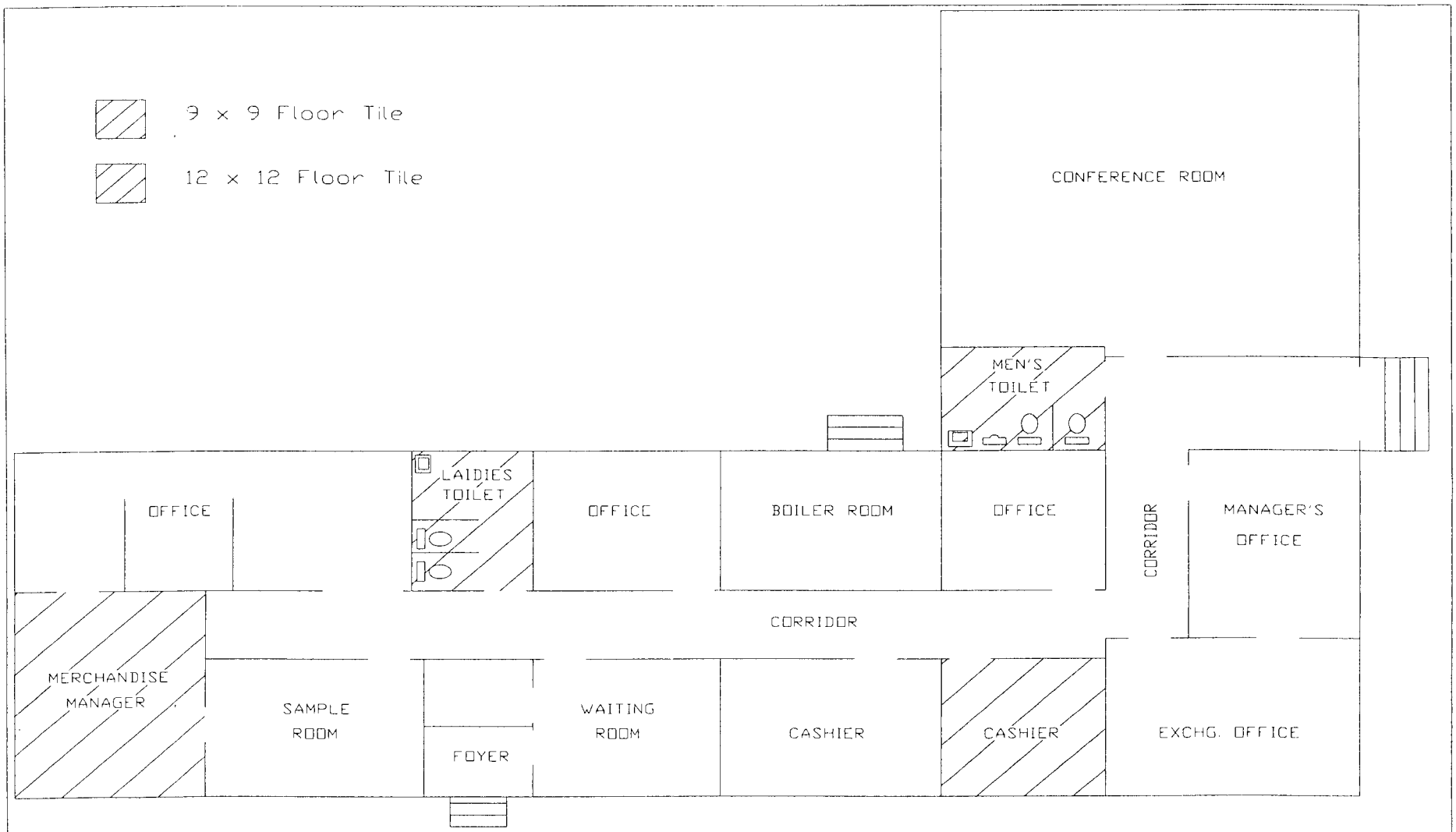
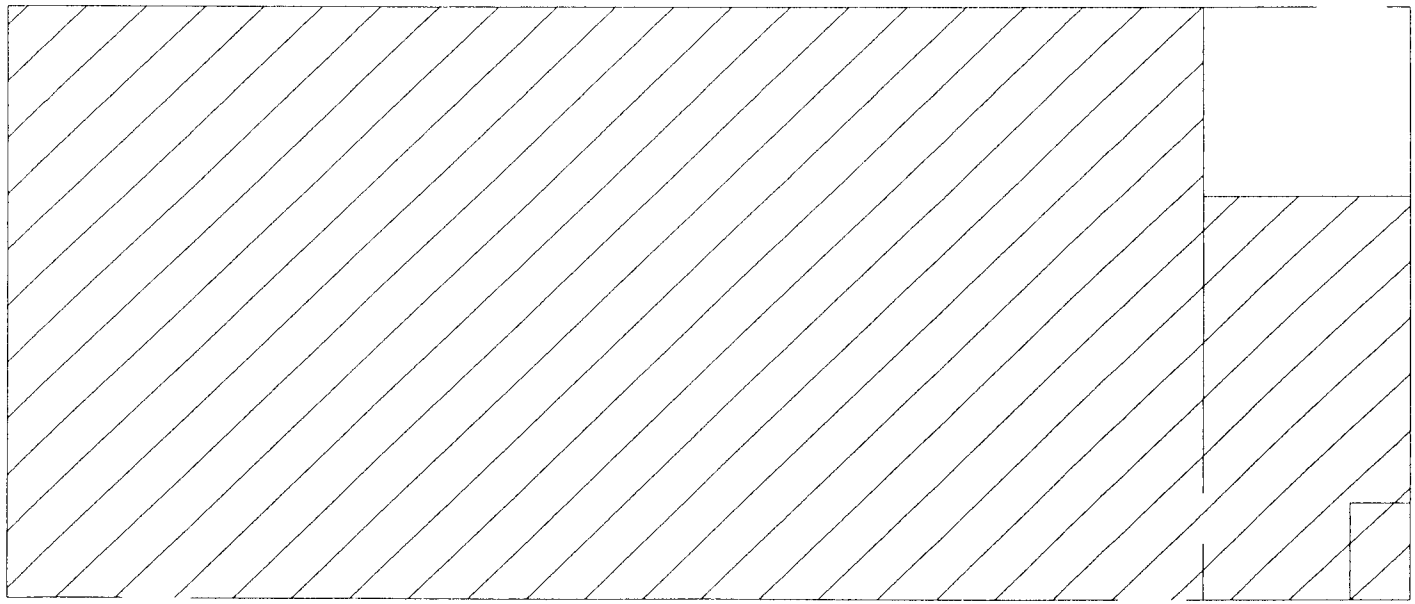


FIG. 1 LAYOUT PLAN

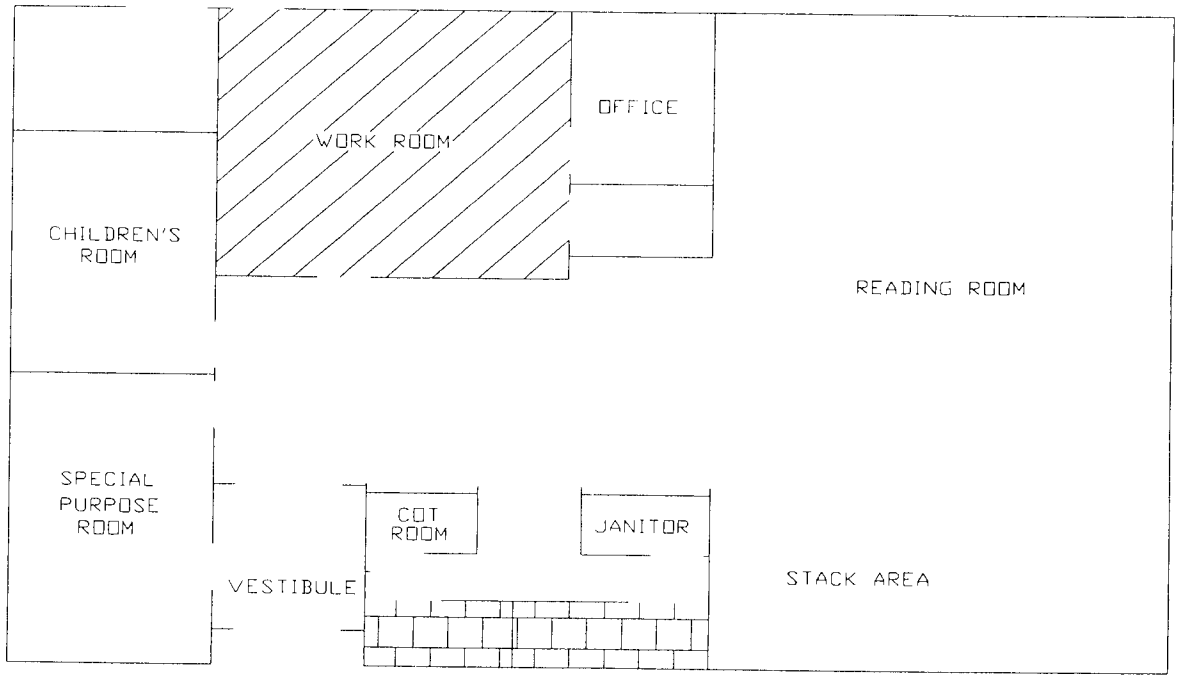
BUILDING: 2091	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



9 x 9 Floor Tile

FIG. 1 LAYOUT PLAN SCALE: 1" = 10'

BUILDING: 2098	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



BUILDING: 2102	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

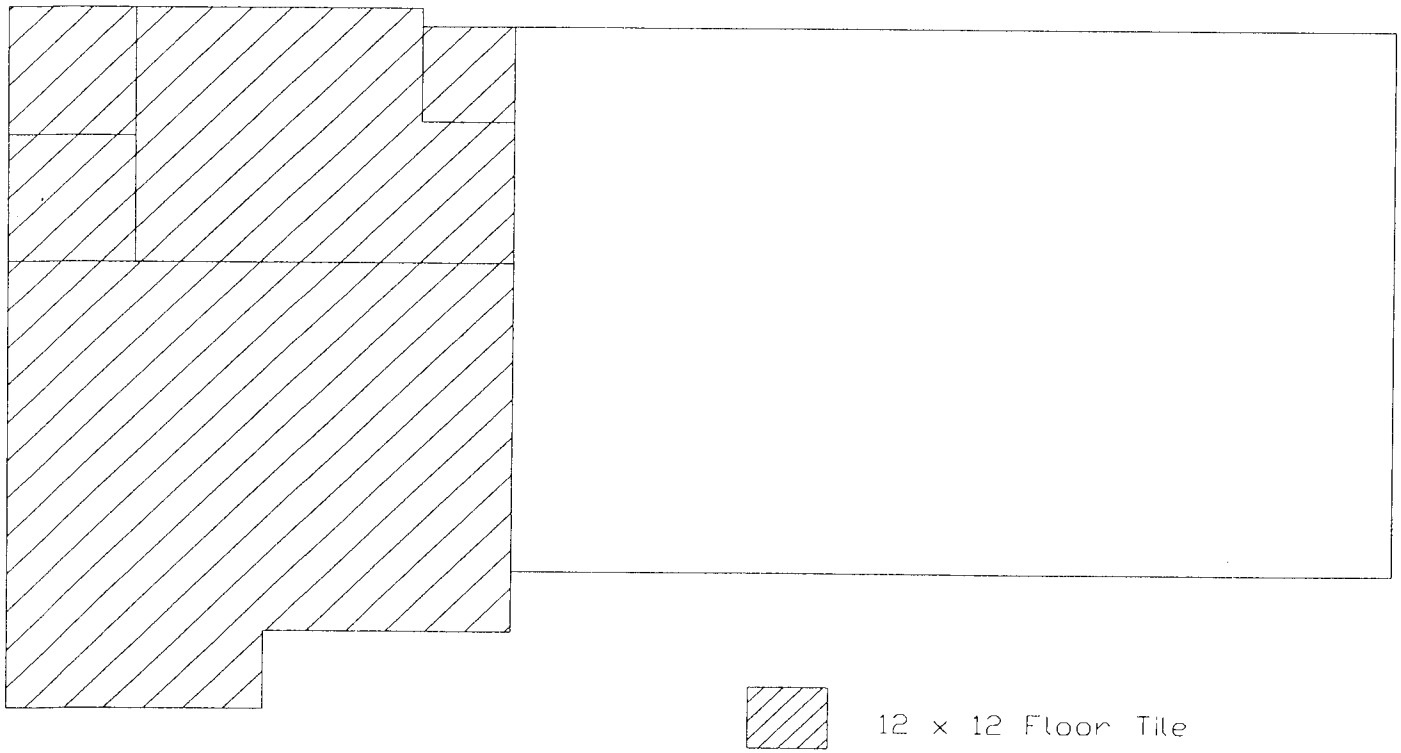
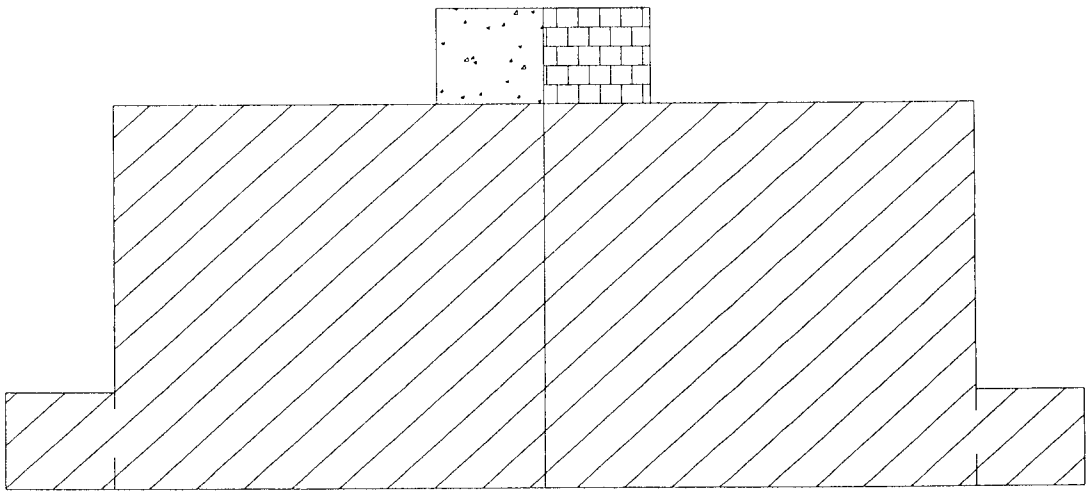


FIG. 1 LAYOUT PLAN

BUILDING: 2109	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

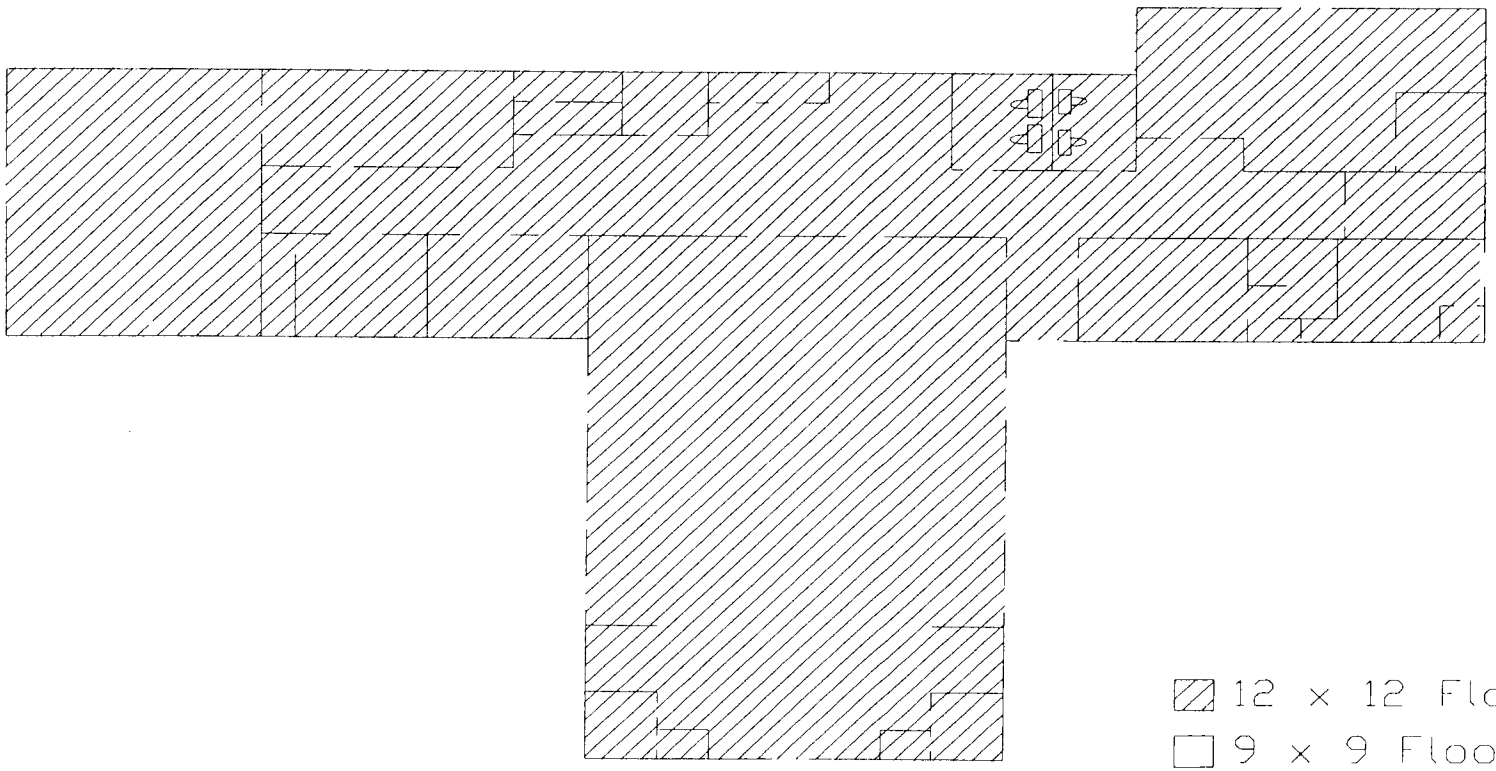


12 x 12 Floor Tile

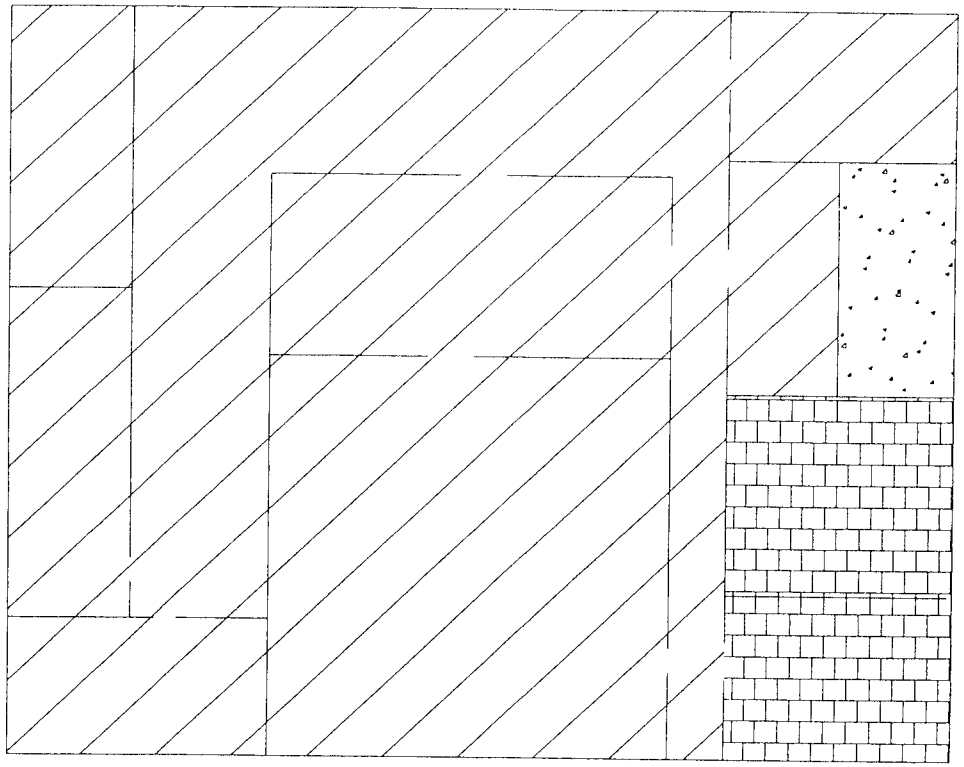
Cement Floor

Ceramic Tile Floor

BUILDING: 3174		ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



BUILDING: 3213		ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



12 x 12 Floor Tile

Cement Floor

12 x 12 Floor Tile

BUILDING: 3160		ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

ASBESTOS CONTAINING BUILDING MATERIALS
SURVEY REPORT

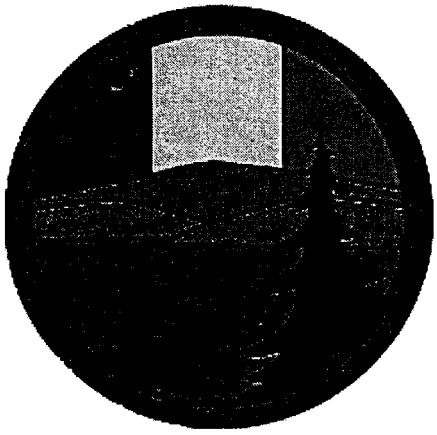
BUILDING: 300

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
RESIDENTIAL
BUILDING 300

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Fort McClellan



Staying Beautiful

Conducted and Prepared by:

REISZ ENGINEERING
P.O. BOX 1349

HUNTSVILLE, ALABAMA 35807

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
RESIDENTIAL
BUILDING 300

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Prepared For:

DIRECTORATE OF ENVIRONMENT
FORT McCLELLAN

APPROVED FOR TRANSMITTAL BY
JAMES R. WRIGHT

Conducted and Prepared by:

REISZ ENGINEERING

May, 1998

TABLE OF CONTENTS

1.0	PURPOSE AND SCOPE OF SERVICES	1
2.0	REGULATORY STANDARDS	2
3.0	PROJECT CHARACTERISTICS	3
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7.0	ASBESTOS INSPECTION AND SAMPLING RESULTS	6
	FRIABLE ACM	6
	NON FRIABLE ACM	7
	INACCESSIBLE MATERIAL	7
8.0	CONCLUSIONS AND RECOMMENDATIONS	7
9.0	ASSUMPTIONS AND LIMITATIONS	8

APPENDICES

APPENDIX A - REPORT OF LABORATORY ANALYSIS
APPENDIX B - SUMMARY TABLE OF ACM
APPENDIX C - SAMPLE LOCATIONS PLANS
APPENDIX D - SELECTED ACM LOCATIONS PLANS (None)
APPENDIX E - SELECTED ACM PHOTOGRAPHS

1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this survey was to locate and identify asbestos containing building materials at Building 300 located at Fort McClellan, Alabama. Pursuant to the Contract, Reisz Engineering was required to provide the survey in accordance with AHERA (40 CFR Part 763 Subpart E) protocol. AHERA is applicable to interior building products installed prior to October 12, 1988. AHERA does not apply to the exterior of buildings and does not apply to non-building materials (e.g. cabinetry, special equipment and chalkboards). Reisz Engineering has included as part of the survey those readily accessible, suspect friable interior non-building materials (e.g. vibration dampers); but has not included certain items (e. g. interior linings of equipment and special supplies, some non-friables such as transite, ect.). Exterior building materials were not sampled as part of this contract unless those materials were suspected to be of friable nature and continuous with indoor materials (e.g. piping insulation). Specifically, Reisz Engineering was contracted to provide the following services:

1. Identify and collect samples of accessible suspect friable building materials within the referenced project area.
2. Perform a visual inspection to provide information on material condition, material quantities, material locations, and building use.
3. Analysis of all bulk samples for asbestos content utilizing Polarized Light Microscopy and Dispersion Staining Techniques performed in accordance with EPA Bulk Analysis Method EPA 600/M4-82-020.
4. Make recommendations as to response actions pertaining to those materials identified as asbestos containing.
5. Compilation of a final report (contained herein) which details all sample results, identifies sample locations, and provides recommendations based upon the results.

6. Preparation of a Building specific Operations & Maintenance (O&M) Plan for buildings containing friable asbestos materials.

2.0 REGULATORY STANDARDS

T'he National Emissions Standards for Hazardous Air Pollutants (NESHAP) requires the Owner or Operator of a facility to determine the presence or non-presence of asbestos containing materials prior to conducting renovation or demolition activities. The NESHAP Standard for asbestos (40CFR Part 61 Sub-part M) requires the use of engineered control procedures for removal of asbestos materials that are or will become friable during renovation or demolition. The removal must occur before renovation or demolition activities impact those materials.

On October 11, 1994 an OSHA promulgated regulation (29 CFR Part 1926.1101) became effective. This Standard is related to asbestos exposure in construction, renovation and building maintenance work places. Building owners are required, pursuant to the Standard, to notify employees, tenants and prospective employers (contractors) of the presence, location and quantities of ACM in the building. Implementation of the "communication of hazards" provisions in the Standard were originally to be not later than April 10, 1995 but was extended to July 10, 1995 and is now in effect. The OSHA Standard does not apply to work performed by employees of State agencies in states without state run OSHA programs (e. g. Alabama).

In October 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law. Included in this act are provisions directing E.P.A. to establish rules and regulations (40CFR Part 763) addressing asbestos-containing materials in schools. Specifically, the E.P.A. was directed to address the issues of: 1) identifying, 2) evaluating, and 3) controlling asbestos containing materials

(ACM) in schools. AHERA requires schools to perform building inspections and to prepare management plans for ACM control. Although the AHERA regulation does not specifically apply to this project it is generally accepted as the industry standard and was cited by Fort McClellan in the Asbestos Survey Request as the basis of survey methodology. The AHERA inspections must be conducted using specific guidelines which include a minimum number of samples per material type. This survey was conducted in accordance with those guidelines per the Contract requirements.

On November 28, 1992 a law became effective which extended the EPA's Model Accreditation Plan to all public and commercial buildings. Currently the rule extends the accreditation requirements of persons performing asbestos work (inspectors, project designers, abatement supervisors, and workers) in public and commercial buildings, but does not extend the other aspects of AHERA. This project was conducted utilizing EPA accredited personnel.

3.0 PROJECT CHARACTERISTICS

During the month of June 1997, Reisz Engineering accredited asbestos Inspectors performed inspections of Building 300 for the purpose of identifying building materials suspected to contain asbestos. Building 300 is a single story residential structure containing approximately 3,150 sq. ft. of floor space. Based on information provided by Fort McClellan representatives, the building was originally constructed in 1956. Various renovations may have taken place since the building was originally constructed, but no building plans have been found which can be used to verify specific dates and activities. The two dominant flooring conditions existing in the facility are 1) carpet, and 2) vinyl floor tile.

4.0 SURVEY METHODOLOGY

The building was visually inspected for the presence of material suspected to contain asbestos. Those suspect materials were identified, bulk samples were obtained and placed into individual vials for transportation to the University of Alabama in Huntsville. General areas for sample locations were selected on a random basis with a preference for exact positioning at existing damage. Each sample location is represented by a number on the plans in Appendix C. Those numbers directly correspond with the numbers listed elsewhere in this report.

If any additional suspect materials are identified during renovation or demolition they should be analyzed for asbestos content. Materials visibly identifiable as non-asbestos (fiberglass, foam rubber, wood, etc.) were not sampled. Materials installed after October 12, 1988 (as reported by Fort McClellan staff) were not sampled.

Hazard Assessment Factors

Each time suspect ACM was sampled, it was classified as either a friable or a non-friable material. Friable material may be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is more hazardous than non-friable ACM because friable material can release airborne asbestos fibers more easily. In assessing the fiber release potential, the current condition of all ACM identified was noted. Evidence of deterioration, physical damage, water damage, erosion of ACM due to its' proximity to an air plenum, high vibration, or contact potential was also noted.

5.0 LABORATORY ANALYSIS METHODOLOGY

All bulk samples were analyzed at UAH by polarized light microscopy utilizing dispersion staining or Becke line techniques, in accordance with the EPA's "Interim Method for Determination of Asbestos in Bulk Insulation Samples" (EPA 6OO/m4-82-020). Quality control samples were taken as duplicates at a rate of 1 to 20 and were sent to a second accredited laboratory. This type of analysis requires the microscopist to take a portion of the bulk sample and treat it with an oil of specific refractive index. This prepared slide is then subjected to a variety of optical tests.

Each type of asbestos displays unique characteristics when subjected to these tests. Percentages of the identified types of asbestos are determined by visual estimation. Even though this is an estimation, any material that contains greater than one percent of any type of fibrous asbestos is considered ACM and must be handled according to OSHA and EPA regulations if disturbed during maintenance, renovation, demolition or removal.

The UAH laboratory participates in the American Industrial Hygiene Association (AIHA) quality assurance program for polarized light microscopy and is accredited by the AIHA through their voluntary program.

6.0 SUSPECT MATERIALS

The following is a general list of building materials that were suspected to contain asbestos. A complete and more detailed description of these substances can be found in Appendix B.

Surfacing

- None

Thermal System Insulation

- Brown paper-like Air-cel pipe insulation (straight-runs)
- Cementitious hand-formed pipe fitting and straight-run insulations

Miscellaneous Material

- Vinyl floor tile 12x12
- Vinyl flooring mastics

7.0 ASBESTOS INSPECTION AND SAMPLING RESULTS

A total of four (4) bulk samples were collected and analyzed. Details of all laboratory results can be found in Appendix A. A listing of all suspect materials, their corresponding sample numbers, general location, and asbestos content are indicated in Appendix B. A narrative description of all "Friable Asbestos Containing Material" and "Non-Friable ACM" identified during the survey, is given below.

FRIABLE ACM

Laboratory analysis determined asbestos is present in three types of friable materials: 1) cementitous hand-formed pipe fitting insulations, 2) a brown paper-like insulation on piping straight-runs, and 3) cementitious straight-run insulation.

1) A friable, hand-formed, asbestos containing insulation compound is applied to the fittings of the heating water, chilled water and domestic water pipes throughout the building. This material is wrapped with an insulation cloth sealed with mastic at most accessible locations.

2) A brown paper-like asbestos containing friable insulation compound is found on the straight runs of pipes located in the mechanical room. The insulation is found to be in generally Fair to Poor Condition.

2) A cementitious asbestos containing material is found on straight runs of pipes located in the mechanical room. The material was found to be in generally Poor condition.

NON FRIABLE ACM

Two types of (Assumed) non-friable ACM's were found in the building: 1) vinyl floor tile, 12x12 inch, and 2) mastics associated with vinyl floor tile.

1) Assumed asbestos containing vinyl floor tiles in 12x12 inch size are present in the kitchen and bathrooms of the building. Generally, the tiles were found to be in good condition.

2) Black, asbestos containing mastics are present below vinyl floor tiles found in the building.

INACCESSIBLE MATERIAI,

Insulation and spray-on compounds associated with inaccessible crawl-space and tunnel areas are assumed as "like" materials corresponding to materials sampled within the building.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Some of the materials identified within this report are damaged to the extent that significant asbestos fiber release is likely under normal conditions. However, some of the asbestos containing materials, are subject to routine maintenance activities that could involve

significant disturbance. Those materials include the pipe fitting insulations and ceiling tiles. Based upon the aforementioned conditions no action is recommended at this time. Reisz Engineering has written a Building Operations & Maintenance Plan for Building 300 and we suggest that recommendations included in this plan be followed.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions and recommendations expressed in this report are based only on conditions which were observed during the inspections of Building 300 during July 1997. Reisz Engineering and this report make no representation or assumptions as to past conditions or future occurrences.

Our inspection was generally non-destructive in nature. Any conditions or material which were not visible on the surface were not inspected and may differ from those observed. It was not within the scope of this investigation to remove surface materials to investigate portions of the structure or materials which lay beneath the surface. Our selection of sample locations and frequency is based upon our observations and the assumption that all materials in the same area are homogeneous.

This report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos abatement contractors in locating ACM. Under no circumstances is this report to be utilized as a bidding document or as a project specification document.

APPENDIX A

REPORT OF LABORATORY ANALYSIS FOR ASBESTOS

UAH

The University of Alabama in Huntsville

Environmental Laboratory
Kenneth E. Johnson Research Center

Huntsville, Alabama 35899
Phone: (205) 895-6391
Fax: (205) 895-6376

Re : Bulk Asbestos Analysis EPA 600/R-931116
AIHA: 023601

Receipt Date: 07-07-97

Sample Date : 07/08/97

Microscopist: Tom Canington

Client: Reisz Engineering
Building 32 Suite A2
3322 Memorial Parkway South
Huntsville, AL 35801

Sample/Description	Asbestos Fibers(%)				Non-Asbestos Material (%)				
	Chry	Amos	Croc	Othr	Cell	Fbgl	MW	CaSO4	**Othr**
B300-01 / elbow pipe insul 6"	75								25
B300-02 / pipe insul 6" pipe 15' TSI	60	15					3		22
B300-03 / pipe insul 6" air cel	45								55
B300-04 / pipe insul 6" air cel	50					10			40

Chry = Chrysotilo
Amos = Amosite
Croc = Crocidolite

Othr = Other
Cell = Cellulose

MW = Mineral Wool
Ca SO4 = Calcium Sulfate
Fbgl = Fiberglass

A Space Grant Col loge
An Affirmative Action / Equal Opportunity Institution

APPENDIX B

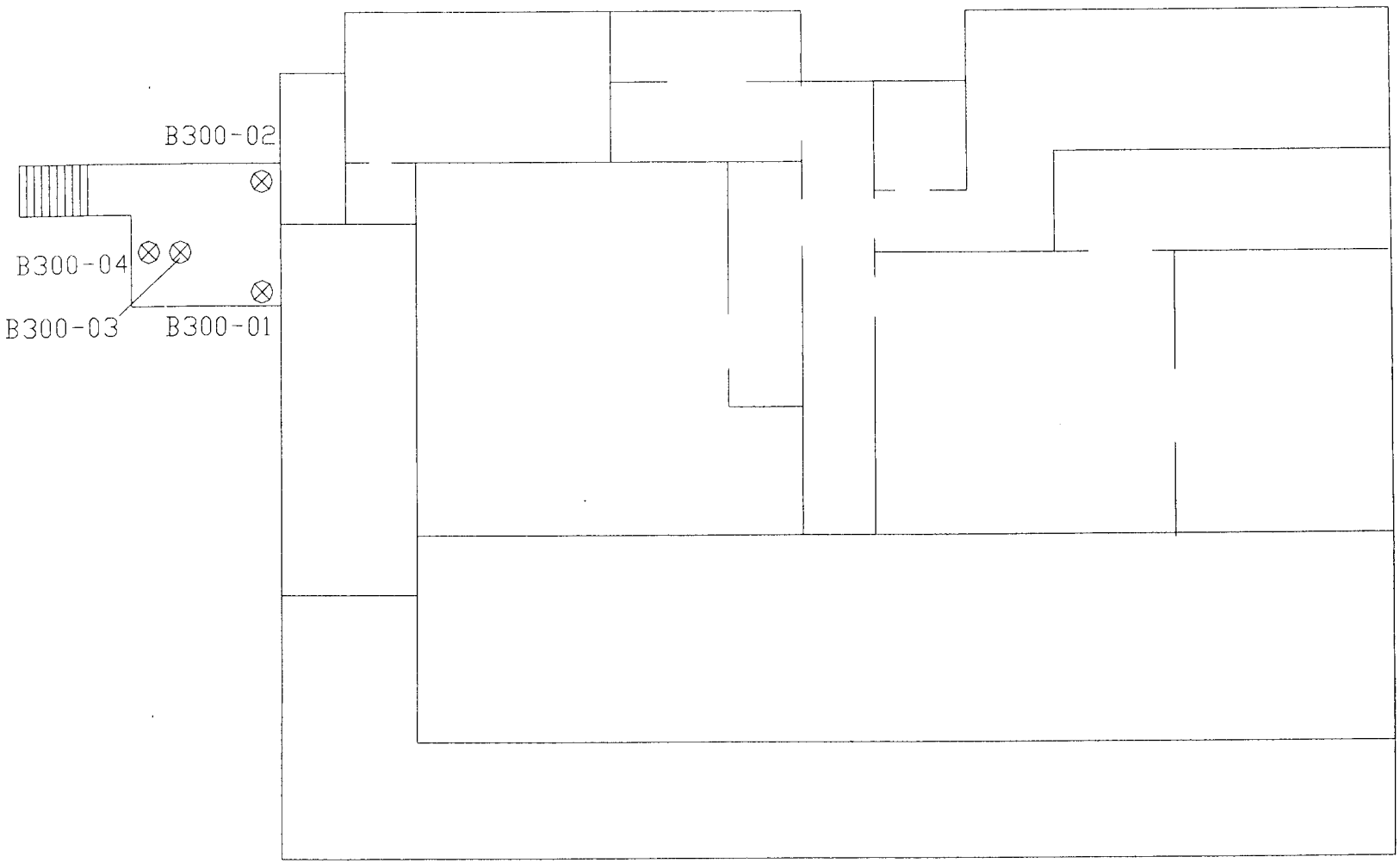
ASBESTOS CONTAINING MATERIALS

SUMMARY TABLE
ASBESTOS CONTAINING MATERIALS
RESIDENTIAL
BUILDING 300
FORT McCLELLAN, ALABAMA

SAMPLE #(S)	Description of Materials	General Location of Material	Quantity (approx.)
B300-01	6 inch pipe fitting TSI, cementitious	Mechanical Room	1 fitting
B300-02	6 inch pipe insulation cementitious	Mechanical Room	6 linear ft.
B300-03,04	Brown paper-like Insulation on piping	Mechanical Room	15 linear ft.

APPENDIX C

SAMPLE LOCATIONS PLANS



⊗ - POSITIVE SAMPLE LOCATION
⊗ - NEGATIVE SAMPLE LOCATION

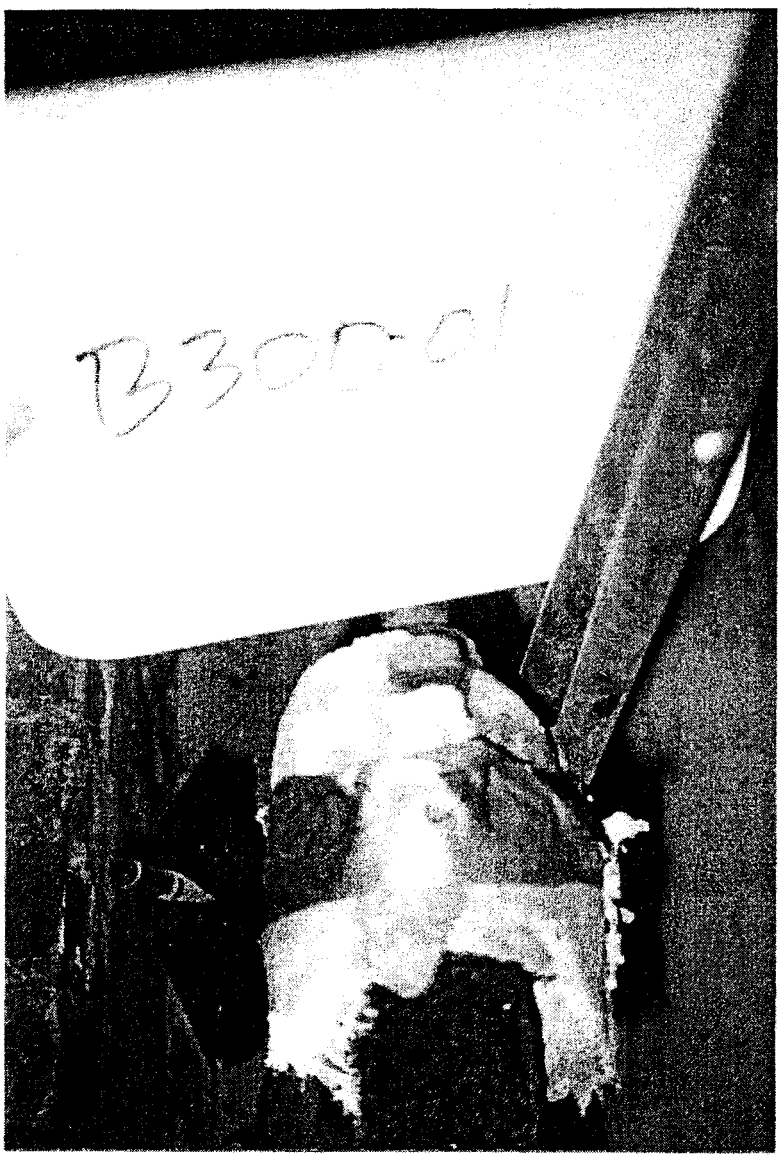
BUILDING: 300	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

APPENDIX D

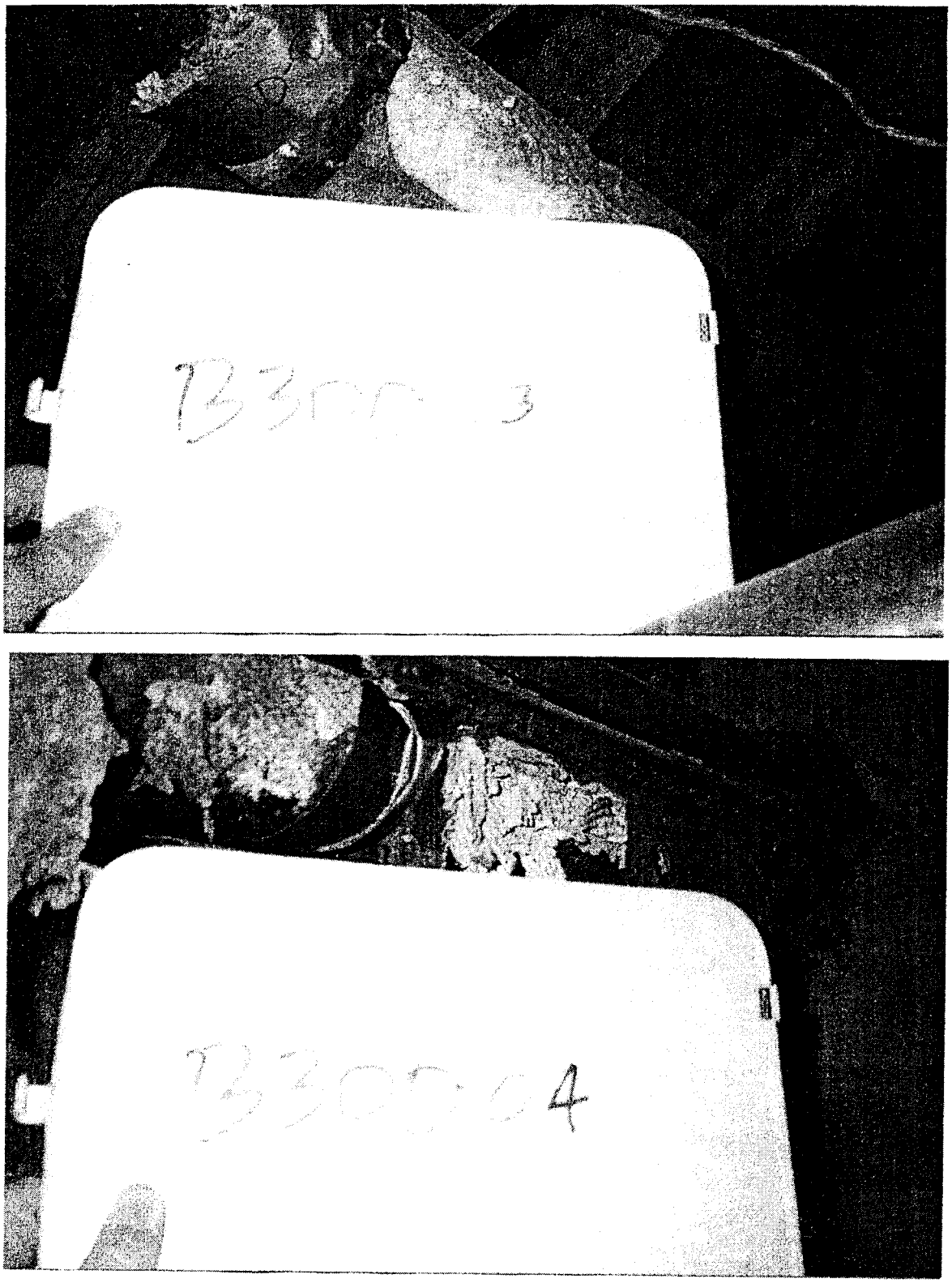
SELECTED ACM LOCATION PLANS (None)

APPENDIX E

SELECTED ACM PHOTOGRAPHS



B300-01: Typical Pipe Fitting Insulation



B300-03,04: Typical Air-cel type Pipe Insulation.

ASBESTOS CONTAINING BUILDING MATERIALS
SURVEY REPORT

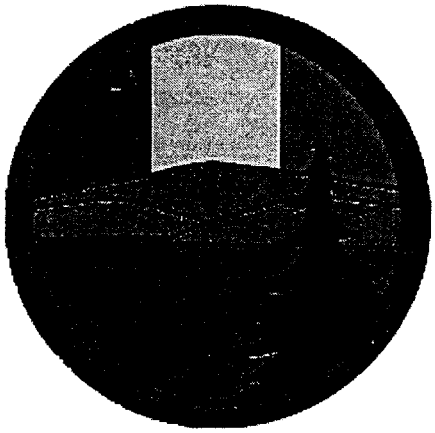
BUILDING: 305

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
WAREHOUSE
BUILDING 305

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Fort McClellan



Staying Beautiful

Conducted and Prepared by:

REISZ ENGINEERING
P.O. BOX 1349
HUNTSVILLE, ALABAMA 35807

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
WAREHOUSE
BUILDING 305

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Prepared For:

U.S ARMY ENGINEER DISTRICT, MOBILE
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

James R. Wright
APPROVED FOR TRANSMITTAL BY
JAMES R. WRIGHT

Conducted and Prepared by:

REISZ ENGINEERING

May, 1997

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APPENDIX B - SUMMARY TABLE OF ACM
APPENDIX C - SAMPLE LOCATIONS PLANS
APPENDIX D - SELECTED ACM LOCATIONS PLANS
APPENDIX E - SELECTED ACM PHOTOGRAPHS (none)

1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this survey was to locate and identify asbestos containing building materials at the Building 305 warehouse, located at Fort McClellan, Alabama. Pursuant to the Contract, REISZ Engineering was required to provide the survey in accordance with AHERA (40 CFR Part 763 Subpart E) protocol. AHERA is applicable to interior building products installed prior to October 12, 1988. AHERA does not apply to the exterior of buildings and does not apply to non-building materials (e.g. cabinetry, special equipment and chalkboards). REISZ Engineering has included as part of the survey those readily accessible, suspect friable interior non-building materials (e.g. vibration dampers); but has not included certain items (e. g. interior linings of equipment and special supplies, some non-friable materials such as transite, etc.). Exterior building materials were not sampled as part of this contract unless those materials were suspected to be of friable nature and continuous with indoor materials (e.g. piping insulation). Specifically, REISZ Engineering was contracted to provide the following services:

1. Identify and collect samples of accessible suspect friable building materials within the referenced project area.
2. Perform a visual inspection to provide information on material condition, material quantities, material locations, and building use.
3. Analysis of all bulk samples for asbestos content utilizing Polarized Light Microscopy and Dispersion Staining Techniques performed in accordance with EPA Bulk Analysis Method EPA 600/M4-82-020.
4. Make recommendations as to response actions pertaining to those materials identified as asbestos containing.
5. Compilation of a final report (contained herein) which details all sample results, identifies sample locations, and provides recommendations based upon the results.

6. Preparation of a Building specific Operations & Maintenance (O&M) Plan for buildings containing friable asbestos materials.

2.0 REGULATORY STANDARDS

The National Emissions Standards for Hazardous Air Pollutants (NESHAP) requires the Owner or Operator of a facility to determine the presence or non-presence of asbestos containing materials prior to conducting renovation or demolition activities. The NESHAP Standard for asbestos (40CFR Part 61 Sub-part M) requires the use of engineered control procedures for removal of asbestos materials that are or will become friable during renovation or demolition. The removal must occur before renovation or demolition activities impact those materials.

On October 11, 1994 an OSHA promulgated regulation (29 CFR Part 1926.1101) became effective. This Standard is related to asbestos exposure in construction, renovation and building maintenance work places. Building owners are required, pursuant to the Standard, to notify employees, tenants and prospective employers (contractors) of the presence, location and quantities of ACM in the building. Implementation of the "communication of hazards" provisions in the Standard were originally to be not later than April 10, 1995 but was extended to July 10, 1995 and is now in effect. The OSHA Standard does not apply to work performed by employees of State agencies in states without state run OSHA programs (e.g. Alabama).

In October 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law. Included in this act are provisions directing E.P.A. to establish rules and regulations (40CFR Part 763) addressing asbestos-containing materials in schools. Specifically, the E.P.A. was directed to address the issues of: 1) identifying, 2) evaluating and 3) controlling asbestos containing materials (ACM) in schools. AHERA requires schools to perform building inspections and to prepare management plans for ACM control. Although the AHERA

regulation does not specifically apply to this project it is generally accepted as the industry standard and was cited by Fort McClellan in the Asbestos Survey Request as the basis of survey methodology. The AHERA inspections must be conducted using specific guidelines, which include a minimum number of samples per material type. This survey was conducted in accordance with those guidelines per the Contract requirements.

On November 28, 1992 a law became effective which extended the EPA's Model Accreditation Plan to all public and commercial buildings. Currently the rule extends the accreditation requirements of persons performing asbestos work (inspectors, project designers, abatement supervisors, and workers) in public and commercial buildings, but does not extend the other aspects of AHERA. This project was conducted utilizing EPA accredited personnel.

3.0 PROJECT CHARACTERISTICS

During the month of August 1997, Reisz Engineering accredited Asbestos Inspectors performed inspections of Building 305 for the purpose of identifying building materials suspected to contain asbestos. Building 305 is a storage/warehouse facility, which is comprised of a one floor containing approximately 9,000 sq. ft. of floor space. Based on information provided by Fort McClellan representatives, the building was originally constructed in 1942. Various renovations may have taken place since the building was originally constructed but no building plans have been found which can be used to verify specific dates or activities.

The majority of interior walls are constructed of wood. Ceilings for the most part are either nonexistent (open to the deck) or lay in acoustical composition tile. The two dominant flooring conditions existing in the facility are 1) wood, and 2) vinyl floor tile.

4.0 SURVEY METHODOLOGY

The building was visually inspected for the presence of material suspected to contain asbestos. Those suspect materials were identified, bulk samples were obtained and placed into individual vials for transportation to the University of Alabama in Huntsville. General areas for sample locations were selected on a random basis with a preference for exact positioning at existing damage. A number on the plans in Appendix C represents each sample location. Those numbers directly correspond with the numbers listed elsewhere in this report.

If any additional suspect materials are identified during renovation or demolition they should be analyzed for asbestos content. Materials visibly identifiable as non-asbestos (fiberglass, foam rubber, wood, etc.) were not sampled. Materials installed after October 12, 1988 (as reported by Fort McClellan staff) were not sampled.

Hazard Assessment Factors

Each time suspect ACM was sampled, it was classified as either a friable or a non-friable material. Friable material may be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is more hazardous than non-friable ACM because friable material can release airborne asbestos fibers more easily. In assessing the fiber release potential, the current condition of all ACM identified was noted. Evidence of deterioration, physical damage, water damage, erosion of ACM due to its' proximity to an air plenum, high vibration, or contact potential was also noted.

5.0 LABORATORY ANALYSIS METHODOLOGY

All bulk samples were analyzed at UAH by polarized light microscopy utilizing dispersion staining or Becke line techniques, in accordance with the EPA's "Interim Method for Determination of Asbestos in Bulk Insulation Samples" (EPA 600/m4-82-020). Quality control samples were taken as duplicates at a rate of 1 to 10 and were sent to a second accredited laboratory. This type of analysis requires the microscopist to take a portion of the bulk sample and treat it with oil of specific refractive index. This prepared slide is then subjected to a variety of optical tests.

Each type of asbestos displays unique characteristics when subjected to these tests. Percentages of the identified types of asbestos are determined by visual estimation. Even though this is an estimation, any material that contains greater than one percent of any type of fibrous asbestos is considered ACM and must be handled according to OSHA and EPA regulations if disturbed during maintenance, renovation, demolition or removal.

The UAH laboratory participates in the American Industrial Hygiene Association (AIHA) quality assurance program for polarized light microscopy and is accredited by the AIHA through their voluntary program.

6.0 SUSPECT MATERIALS

The following is a general list of building materials that were suspected to contain asbestos. A complete and more detailed description of these substances can be found in Appendix B.

Surfacing

- None

Thermal System Insulation

- None

Miscellaneous Material

- Vinyl floor tiles 12x12 and 9x9
- Vinyl flooring mastics

7.0 ASBESTOS INSPECTION AND SAMPLING RESULTS

A total of 1 bulk sample was collected and analyzed. Details of all laboratory results can be found in Appendix A. A listing of all suspect materials, their corresponding sample numbers, general location, and asbestos content are indicated in Appendix B. A narrative description of all "Friable Asbestos Containing Material" and "Non-Friable ACM" identified during the survey, is given below.

FRIABLE ACM

No suspect friable ACM's were identified and sampled.

NON FRIABLE ACM

One type of non-friable ACM's were identified by laboratory testing as follows: 1) Vinyl floor tile (9x9). 12 x 12 inch vinyl floor tile is assumed to be asbestos containing in Building 305 until such time as laboratory analysis proves otherwise.

1) 9 x9 inch asbestos containing vinyl floor tile is found in one bathroom of Building 305. The remaining 12 x 12 inch floor tile is assumed ACM.

INACCESSIBLE MATERIAL

Insulation and spray-on compounds associated with inaccessible crawl space and tunnel areas should be assumed as "like" materials corresponding to materials sampled within the building.

8.0 CONCLUSIONS AND RECOMMENDATIONS

None of the materials identified within this report are damaged to the extent that significant asbestos fiber release may be likely under normal conditions. Some of the 9 x 9 inch floor tile is broken and measures should be taken to minimized further disturbance. Based upon the aforementioned conditions, abatement of asbestos containing floor tile should be considered. Reisz Engineering has written a Building Operations & Maintenance Plan for Building 305 and we suggest that recommendations included in this plan be followed.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions and recommendations expressed in this report are based only on conditions which were observed during the inspections of Building 305 during August 1997. Reisz Engineering and this report make no representation or assumptions as to past conditions or future occurrences.

Our inspection was generally non-destructive in nature. Any conditions or material that were not visible on the surface were not inspected and may differ from those observed. It was not within the scope of this investigation to remove surface materials to investigate portions of the structure or materials that lay beneath the surface. Our selection of sample locations and frequency is based upon our observations and the assumption that all materials in the same area are homogeneous.

This report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos abatement contractors in locating ACM. Under no circumstances is this report to be utilized as a bidding document or as a project specification document.

APPENDIX A

REPORT OF LABORATORY ANALYSIS FOR ASBESTOS

UAH
The University of Alabama in Huntsville

Environmental Laboratory
Kenneth E. Johnson Research Center

Huntsville, Alabama 35899
Phone: (205) 890-6391
Fax: (205) 890-6376

Re Bulk Asbestos Analysis
EPA 600/R-93/116

AIHA : 023601

Client : Reisz Engineering
Building 32 Suite A2
3322 Memorial Parkway South
Huntsville, AL 35801

Receipt Date : 08-22-97

Sample Date : 08/12/97

Microscopist : Tom Carrington

Sample/Description	Asbestos Fibers (%)				Non-Asbestos Material (%)				
	Chry	Amos	Croc	Othr	Cell	Fbgl	MW	CaSO4	Othr
B305-01 / 9 x 9 floor tile	15								85
5-02 / 9 x 9 mastic	5				5				90

= Chrysotile
Amos = Amosite
Croc = Crocidolite

Othr = Other
Cell = Cellulose

MW = Mineral Wool
Ca SO_4 = Calcium Sulfate
Fbgl = Fiberglass

APPENDIX B

ASBESTOS CONTAINING MATERIALS

SUMMARY TABLE
ASBESTOS CONTAINING MATERIALS
WAREHOUSE
BUILDING 305
FORT McCLELLAN, ALABAMA

SAMPLE #(S)	Description of Material	General Location of Material	Quantity (approx.)
B305-01	9x9 Vinyl Floor Tile	Small bathroom	30

APPENDIX C

SAMPLE LOCATIONS PLANS

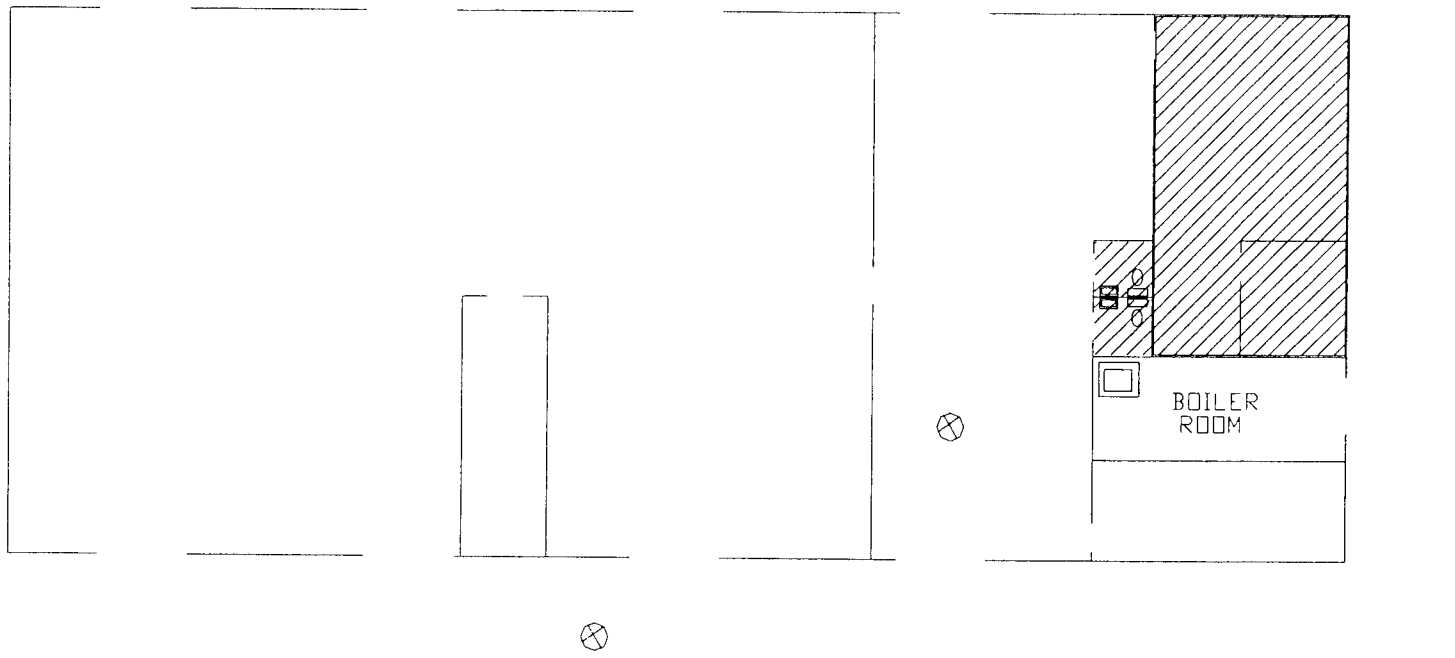
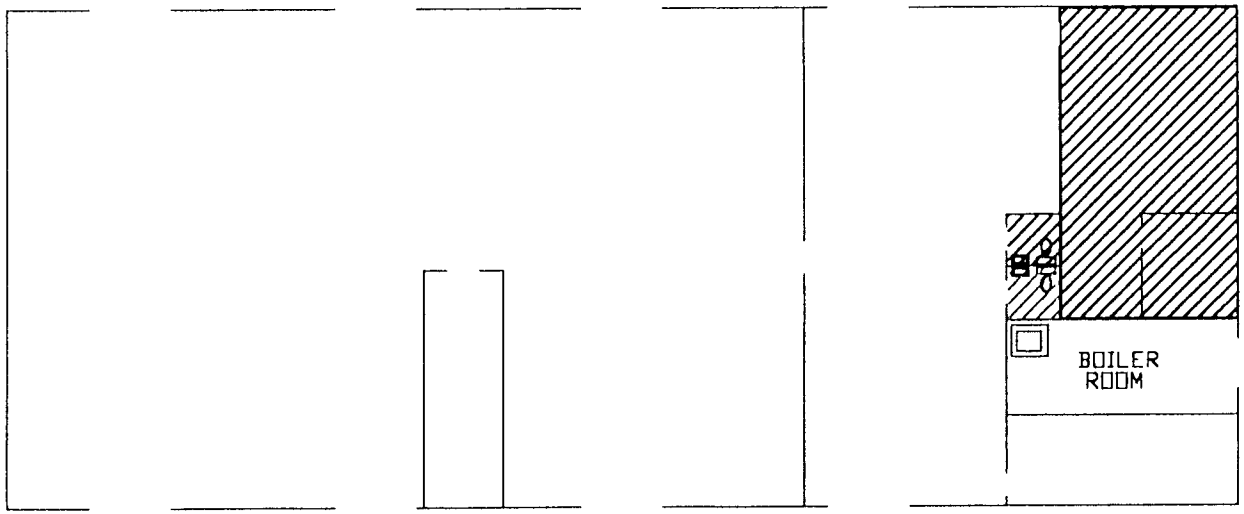


FIG. 1 LAYOUT PLAN SCALE: 1"=20'

BUILDING: 305	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

APPENDIX D

SELECTED ACM LOCATIONS PLANS



9 x 9 Floor Tile

12 x 12 Floor Tile

FIG. 1 LAYOUT PLAN SCALE: 1"=20'

BUILDING: 305	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY REPORT

BUILDINGS: 308, 310, 311, 314, 324, 325 and 338

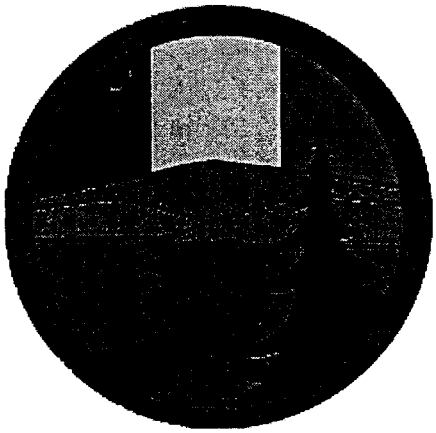
ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
MISCELLANEOUS
BUILDINGS (300s)

CONTAINING NON-FRIABLE PACM

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Fort McClellan



Staying Beautiful

Conducted and Prepared by:

REISZ ENGINEERING
P.O. BOX 1349

HUNTSVILLE, ALABAMA 35807

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
MISCELLANEOUS
BUILDINGS (300s)

CONTAINING NON-FRIABLE PACM

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Prepared For:

DIRECTORATE OF ENVIRONMENT
FORT McCLELLAN

APPROVED FOR TRANSMITTAL BY
JAMES R. WRIGHT

Conducted and Prepared by:

REISZ ENGINEERING

June, 1998

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APPENDICES

APPENDIX A - SUMMARY TABLE OF ACM AND COST ESTIMATES
APPENDIX B - LIST OF BUILDINGS

1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this survey was to locate and identify asbestos containing building materials at miscellaneous 300 series buildings located at Fort McClellan, Alabama. (See Appendix B for a complete list of buildings included in this document). Pursuant to the Contract, REISZ Engineering was required to provide the survey in accordance with AHERA (40 CFR Part 763 Subpart E) protocol. AHERA is applicable to interior building products installed prior to October 12, 1988. AHERA does not apply to the exterior of buildings and does not apply to non-building materials (e.g. cabinetry, special equipment and chalkboards). REISZ Engineering has included as part of the survey those readily accessible, suspect friable interior non-building materials (e.g. vibration dampers); but has not included certain items (e. g. interior linings of equipment and special supplies, some non-friable materials such as transite, etc.). Exterior building materials were not sampled as part of this contract unless those materials were suspected to be of friable nature and continuous with indoor materials (e.g. piping insulation). Specifically, REISZ Engineering was contracted to provide the following services:

1. Identify and collect samples of accessible suspect friable building materials within the referenced project area.
2. Perform a visual inspection to provide information on material condition, material quantities, material locations, and building use.
3. Analysis of all bulk samples for asbestos content utilizing Polarized Light Microscopy and Dispersion Staining Techniques performed in accordance with EPA Bulk Analysis Method

   EPA 600/M4-82-020.
4. Make recommendations as to response actions pertaining to those materials identified as asbestos containing.

5. Compilation of a final report (contained herein) which details all sample results, identifies sample locations, and provides recommendations based upon the results.

6. Preparation of a Building specific Operations & Maintenance (O&M) Plan for buildings containing friable asbestos materials.

2.0 REGULATORY STANDARDS

The National Emissions Standards for Hazardous Air Pollutants (NESHAP) requires the Owner or Operator of a facility to determine the presence or non-presence of asbestos containing materials prior to conducting renovation or demolition activities. The NESHAP Standard for asbestos (40CFR Part 61 Sub-part M) requires the use of engineered control procedures for removal of asbestos materials that are or will become friable during renovation or demolition. The removal must occur before renovation or demolition activities impact those materials.

On October 11, 1994 an OSHA promulgated regulation (29 CFR Part 1926.1101) became effective. This Standard is related to asbestos exposure in construction, renovation and building maintenance work places. Building owners are required, pursuant to the Standard, to notify employees, tenants and prospective employers (contractors) of the presence, location and quantities of ACM in the building. Implementation of the "communication of hazards" provisions in the Standard were originally to be not later than April 10, 1995 but was extended to July 10, 1995 and is now in effect. The OSHA Standard does not apply to work performed by employees of State agencies in states without state run OSHA programs (e.g. Alabama).

In October 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law. Included in this act are provisions directing E.P.A. to establish rules and regulations

(40CFR Part 763) addressing asbestos-containing materials in schools. Specifically, the E.P.A. was directed to address the issues of: 1) identifying, 2) evaluating, and 3) controlling asbestos containing materials (ACM) in schools. AHERA requires schools to perform building inspections and to prepare management plans for ACM control. Although the AHERA regulation does not specifically apply to this project it is generally accepted as the industry standard and was cited by Fort McClellan in the Asbestos Survey Request as the basis of survey methodology. The AHERA inspections must be conducted using specific guidelines that include a minimum number of samples per material type. This survey was conducted in accordance with those guidelines per the Contract requirements.

On November 28, 1992 a law became effective which extended the EPA's Model Accreditation Plan to all public and commercial buildings. Currently the rule extends the accreditation requirements of persons performing asbestos work (inspectors, project designers, abatement supervisors, and workers) in public and commercial buildings, but does not extend the other aspects of AHERA. This project was conducted utilizing EPA accredited personnel.

3.0 PROJECT CHARACTERISTICS

Reisz Engineering accredited Asbestos Inspectors performed inspections of these buildings for the purpose of identifying building materials suspected to contain asbestos. All buildings referenced in this survey contain only non-friable ACM. None of the buildings within this survey were found to have any friable asbestos containing materials. Various renovations may have taken place since the building was originally constructed but no building plans have been found which can be used to verify specific dates and activities.

4.0 SURVEY METHODOLOGY

The buildings were visually inspected for the presence of material suspected to contain asbestos. Those suspect materials were identified, bulk samples were obtained and placed into individual vials for transportation to the University of Alabama in Huntsville. General areas for sample locations were selected on a random basis with a preference for exact positioning at existing damage. Each sample location is represented by a number on the plans in Appendix C. Those numbers directly correspond with the numbers listed elsewhere in this report.

If any additional suspect materials are identified during renovation or demolition they should be analyzed for asbestos content. Materials visibly identifiable as non-asbestos (fiberglass, foam rubber, wood, etc.) were not sampled. Materials installed after October 12, 1988 (as reported by Fort McClellan staff) were not sampled.

Hazard Assessment Factors

Each time suspect ACM was sampled, it was classified as either a friable or a non-friable material. Friable material may be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is more hazardous than non-friable ACM because friable material can release airborne asbestos fibers more easily. In assessing the fiber release potential, the current condition of all ACM identified was noted. Evidence of deterioration, physical damage, water damage, erosion of ACM due to its' proximity to an air plenum, high vibration, or contact potential was also noted.

5.0 LABORATORY ANALYSIS METHODOLOGY

All bulk samples were analyzed at UAH by polarized light microscopy utilizing dispersion staining or Becke line techniques, in accordance with the EPA's "Interim Method for Determination of Asbestos in Bulk Insulation Samples" (EPA 6OO/m4-82-020). Quality control samples were taken as duplicates at a rate of 1 to 10 and were sent to a second accredited laboratory. This type of analysis requires the microscopist to take a portion of the bulk sample and treat it with an oil of specific refractive index. This prepared slide is then subjected to a variety of optical tests.

Each type of asbestos displays unique characteristics when subjected to these tests. Percentages of the identified types of asbestos are determined by visual estimation. Even though this is an estimation, any material that contains greater than one percent of any type of fibrous asbestos is considered ACM and must be handled according to OSHA and EPA regulations if disturbed during maintenance, renovation, demolition or removal.

The UAH laboratory participates in the American Industrial Hygiene Association (AIHA) quality assurance program for polarized light microscopy and is accredited by the AIHA through their voluntary program.

6.0 SUSPECT MATERIALS

The following is a general list of building materials that were suspected to contain asbestos. A complete and more detailed description of these materials can be found in Appendix B.

Surfacing

- None

Thermal System Insulation

- None

Miscellaneous Material

- 12x12 vinyl floor tile in various buildings
- 9x9 vinyl floor tile in various buildings
- Vinyl flooring mastics
- Transite

7.0 ASBESTOS INSPECTION AND SAMPLING RESULTS

No bulk samples were collected and analyzed.

FRIABLE ACM

None

NON FRIABLE ACM

Four types of non-friable PACM were found in various buildings. 1) suspect transite pipe, 2) 12x12 inch floor tile, 3) 9x9 floor tile, and 4) mastics associated vinyl floor tile.

1) Presumed asbestos containing transite piping can be found penetrating the roof of the following buildings:
B308 B310 B311 B314

2) Presumed asbestos containing 12x12 inch floor tile and mastic is found in the following buildings:
B303 B324 B325 B338

3) Presumed asbestos containing 9x9 inch floor tile and mastic is found in the following buildings:

B303 B325

INACCESSIBLE MATERIAI,

Insulation and spray-on compounds associated with inaccessible crawl-space and tunnel areas may should be assumed as "like" materials corresponding to materials sampled within the building.

8.0 CONCLUSIONS AND RECOMMENDATIONS

None of the materials identified within this report are damaged to the extent that significant asbestos fiber release may be likely under normal conditions. The asbestos containing materials may be subject to routine maintenance activities that could involve significant disturbance. Proper management of the material in-place may be acceptable assuming the proper precautions are taken to eliminate exposure of personnel to any airborne asbestos. Reisz Engineering has not written a Building Operations & Maintenance Plan for these buildings. Refer to Appendix A for Cost Estimates related to the abatement of the included ACM.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions and recommendations expressed in this report are based only on conditions that were observed during the inspections of these buildings during 1997.

Reisz Engineering and this report make no representation or assumptions as to past conditions or future occurrences.

Our inspection was generally non-destructive in nature. Any conditions or materials that were not visible on the surface were not inspected and may differ from those observed. It was not within the scope of this investigation to remove surface materials to investigate portions of the structure or materials that may lie beneath the surface. Our selection of sample locations and frequency is based upon our observations and the assumption that all materials in the same area are homogeneous.

This report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos abatement contractors in locating ACM. Under no circumstances is this report to be utilized as a bidding document or as a project specification document.

APPENDIX A

SUMMARY TABLE OF ACM AND COST ESTIMATES

Building Number	PACM Material	Quantity	Estimated abatement cost*
B303	12x12 floor tile and mastic	1200 sq. ft.	$2,640
	9X9 floor tile and mastic	495 sq. ft.	$1,000
		TOTAL	$3,640
B308,310,311,314	Transite vent insulation	200 sq. ft.	$800
B324	12x12 floor tile and mastic	2,300 sq. ft.	$5,100
B325	12x12 floor tile and mastic	6000 sq. ft.	$13,800
	9x9 floor tile and mastic	54 sq. ft.	
B338	12x12 floor tile and mastic	300 sq. ft.	$800

***Includes all air monitoring and design fees**

APPENDIX B

LIST OF BUILDINGS

BUILDING NUMBER

B303
B308
B310
B311
B314
B324
B325
B338

ASBESTOS CONTAINING BUILDING MATERIALS
SURVEY REPORT

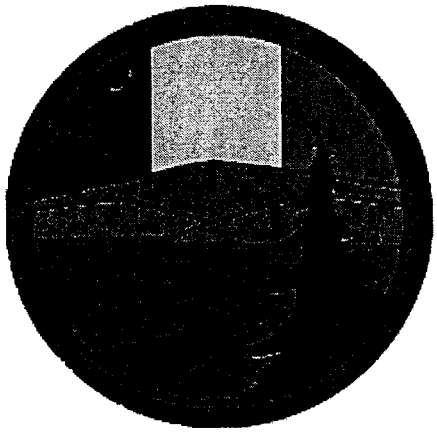
BUILDING: 328

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
OFFICE/ADMINISTRATIVE
BUILDING 328

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Fort McClellan



Staying Beautiful

Conducted and Prepared by:

REISZ ENGINEERING
P.O. BOX 1349

HUNTSVILLE, ALABAMA 35807

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
OFFICE/ADMINISTRATIVE
BUILDING 328

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Prepared For:

DIRECTORATE OF ENVIRONMENT
FORT McCLELLAN

APPROVED FOR TRANSMITTAL BY
JAMES R. WRIGHT

Conducted and Prepared by:

REISZ ENGINEERING

May, 1998

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APPENDIX A - REPORT OF LABORATORY ANALYSIS
APPENDIX B - SUMMARY TABLE OF ACM
APPENDIX C - SAMPLE LOCATIONS PLANS
APPENDIX D - SELECTED ACM LOCATIONS PLANS (None)
APPENDIX E - SELECTED ACM PHOTOGRAPHS

1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this survey was to locate and identify asbestos containing building materials at Building 328 located at Fort McClellan, Alabama. Pursuant to the Contract, REISZ Engineering was required to provide the survey in accordance with AHERA (40 CFR Part 763 Subpart E) protocol. AHERA is applicable to interior building products installed prior to October 12, 1988. AHERA does not apply to the exterior of buildings and does not apply to non-building materials (e.g. cabinetry, special equipment and chalkboards). REISZ Engineering has included as part of the survey those readily accessible, suspect friable interior non-building materials (e.g. vibration dampers); but has not included certain items (e. g. interior linings of equipment and special supplies, some non-friable materials such as transite, etc.). Exterior building materials were not sampled as part of this contract unless those materials were suspected to be of friable nature and continuous with indoor materials (e.g. piping insulation). Specifically, REISZ Engineering was contracted to provide the following services:

1. Identify and collect samples of accessible suspect friable building materials within the referenced project area.
2. Perform a visual inspection to provide information on material condition, material quantities, material locations, and building use.
3. Analysis of all bulk samples for asbestos content utilizing Polarized Light Microscopy and Dispersion Staining Techniques performed in accordance with EPA Bulk Analysis Method
   EPA 600/M4-82-020.
4. Make recommendations as to response actions pertaining to those materials identified as asbestos containing.

5. Compilation of a final report (contained herein) which details all sample results, identifies sample locations, and provides recommendations based upon the results.

6. Preparation of a Building specific Operations & Maintenance (O&M) Plan for buildings containing friable asbestos materials.

2.0 REGULATORY STANDARDS

The National Emissions Standards for Hazardous Air Pollutants (NESHAP) requires the Owner or Operator of a facility to determine the presence or non-presence of asbestos containing materials prior to conducting renovation or demolition activities. The NESHAP Standard for asbestos (40CFR Part 61 Sub-part M) requires the use of engineered control procedures for removal of asbestos materials that are or will become friable during renovation or demolition. The removal must occur before renovation or demolition activities impact those materials.

On October 11, 1994 an OSHA promulgated regulation (29 CFR Part 1926.1101) became effective. This Standard is related to asbestos exposure in construction, renovation and building maintenance work places. Building owners are required, pursuant to the Standard, to notify employees, tenants and prospective employers (contractors) of the presence, location and quantities of ACM in the building. Implementation of the "communication of hazards" provisions in the Standard were originally to be not later than April 10, 1995 but was extended to July 10, 1995 and is now in effect. The OSHA Standard does not apply to work performed by employees of State agencies in states without state run OSHA programs (e.g. Alabama).

In October 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law. Included in this act are provisions directing E.P.A. to establish rules and regulations

(40CFR Part 763) addressing asbestos-containing materials in schools. Specifically, the E.P.A. was directed to address the issues of: 1) identifying, 2) evaluating, and 3) controlling asbestos containing materials (ACM) in schools. AHERA requires schools to perform building inspections and to prepare management plans for ACM control. Although the AHERA regulation does not specifically apply to this project it is generally accepted as the industry standard and was cited by Fort McClellan in the Asbestos Survey Request as the basis of survey methodology. The AHERA inspections must be conducted using specific guidelines that include a minimum number of samples per material type. This survey was conducted in accordance with those guidelines per the Contract requirements.

On November 28, 1992 a law became effective which extended the EPA's Model Accreditation Plan to all public and commercial buildings. Currently the rule extends the accreditation requirements of persons performing asbestos work (inspectors, project designers, abatement supervisors, and workers) in public and commercial buildings, but does not extend the other aspects of AHERA. This project was conducted utilizing EPA accredited personnel.

3.0 PROJECT CHARACTERISTICS

During the month of July 1997, Reisz Engineering accredited Asbestos Inspectors performed inspections of Building 328 for the purpose of identifying building materials suspected to contain asbestos. Building 328 is a single story office structure containing approximately 11,616 sq. ft. of floor space. Based on information provided by Fort McClellan representatives the building was originally constructed in 1941. Various renovations have no doubt taken place since the building was originally constructed but no building plans have been found which can be used to verify specific dates and activities.

The two dominant flooring conditions existing in the facility are 1) 12x12 vinyl floor tile, and 2) carpet over vinyl floor tile.

4.0 SURVEY METHODOLOGY

The building was visually inspected for the presence of material suspected to contain asbestos. Those suspect materials were identified, bulk samples were obtained and placed into individual vials for transportation to the University of Alabama in Huntsville. General areas for sample locations were selected on a random basis with a preference for exact positioning at existing damage. Each sample location is represented by a number on the plans in Appendix C. Those numbers directly correspond with the numbers listed elsewhere in this report.

If any additional suspect materials are identified during renovation or demolition they should be analyzed for asbestos content. Materials visibly identifiable as non-asbestos (fiberglass, foam rubber, wood, etc.) were not sampled. Materials installed after October 12, 1988 (as reported by Fort McClellan staff) were not sampled.

Hazard Assessment Factors

Each time suspect ACM was sampled, it was classified as either a friable or a non-friable material. Friable material may be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is more hazardous than non-friable ACM because friable material can release airborne asbestos fibers more easily. In assessing the fiber release potential, the current condition of all ACM identified was noted. Evidence of deterioration, physical damage, water damage, erosion of ACM due to its' proximity to an air plenum, high vibration, or contact potential was also noted.

5.0 LABORATORY ANALYSIS METHODOLOGY

All bulk samples were analyzed at UAH by polarized light microscopy utilizing dispersion staining or Becke line techniques, in accordance with the EPA's "Interim Method for Determination of Asbestos in Bulk Insulation Samples" (EPA 6OO/m4-82-020). Quality control samples were taken as duplicates at a rate of 1 to 10 and were sent to a second accredited laboratory. This type of analysis requires the microscopist to take a portion of the bulk sample and treat it with an oil of specific refractive index. This prepared slide is then subjected to a variety of optical tests.

Each type of asbestos displays unique characteristics when subjected to these tests. Percentages of the identified types of asbestos are determined by visual estimation. Even though this is an estimation, any material that contains greater than one percent of any type of fibrous asbestos is considered ACM and must be handled according to OSHA and EPA regulations if disturbed during maintenance, renovation, demolition or removal.

The UAH laboratory participates in the American Industrial Hygiene Association (AIHA) quality assurance program for polarized light microscopy and is accredited by the AIHA through their voluntary program.

6.0 SUSPECT MATERIALS

The following is a general list of building materials that were suspected to contain asbestos. A complete and more detailed description of these substances can be found in Appendix B.

Surfacing

- None

Thermal System Insulation

- Cementitious hand-formed pipe fitting insulation

Miscellaneous Material

- Vinyl floor tile 12x12
- Vinyl flooring mastic

7.0 ASBESTOS INSPECTION AND SAMPLING RESULTS

A total of 4 bulk samples were collected and analyzed. Details of all laboratory results can be found in Appendix A. A listing of all suspect materials, their corresponding sample numbers, general location, and approximate quantity are indicated in Appendix B. A narrative description of all "Friable Asbestos Containing Material" and "Non-Friable ACM" identified during the survey, is given below.

FRIABLE ACM

Laboratory analysis determined asbestos is present in one type of friable material: 1) cementitious hand-formed pipe fitting insulation in mechanical room.

1) A friable, hand-formed, asbestos containing insulation compound is applied to the fittings of pipes located in the mechanical room of the building. This material was found to be in generally Fair condition.

NON FRIABLE ACM

One type of non-friable ACM was found in the building: 1) mastic associated with vinyl floor tile.

1) Black, asbestos containing mastics are present below 12 x12 vinyl floor tiles throughout the majority of the building.

INACCESSIBLE MATERIAI,

Insulation and spray-on compounds associated with inaccessible crawl-space and tunnel areas may should be assumed as "like" materials corresponding to materials sampled within the building.

8.0 CONCLUSIONS AND RECOMMENDATIONS

None of the materials identified within this report are damaged to the extent that significant asbestos fiber release may be likely under normal conditions. However, some of the asbestos containing materials are subject to routine maintenance activities that could involve significant disturbance. Those materials include the pipe fitting insulation located in the mechanical room. Proper management of the material in-place may be acceptable assuming the proper precautions are taken to eliminate exposure of personnel to any airborne asbestos. Reisz Engineering has written a Building Operations & Maintenance Plan for Building 328 and we suggest that recommendations included in this plan be followed.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions and recommendations expressed in this report are based only on conditions that were observed during the inspections of Building 328 during July, 1997. Reisz Engineering and this report make no representation or assumptions as to past conditions or future occurrences.

Our inspection was generally non-destructive in nature. Any conditions or materials that were not visible on the surface were not inspected and may differ from those observed. It was not within the scope of this investigation to remove surface materials to investigate portions of the structure or materials that may lay beneath the surface. Our selection of sample locations and frequency is based upon our observations and the assumption that all materials in the same area are homogeneous.

This report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos abatement contractors in locating ACM. Under no circumstances is this report to be utilized as a bidding document or as a project specification document.

APPENDIX A

REPORT OF LABORATORY ANALYSIS FOR ASBESTOS

UAH
The University of Alabama in Huntsville

Environmental Laboratory
Kenneth E. Johnson Research Center

Huntsville, Alabama 35899
Phone: (205) 895-6391
Fax: (205) 895-6376

Re Bulk Asbestos Analysis
EPA 600/R-93/116

AIHA 023601

Chem Reisz Engineering
Building 32 Suite A2
3322 Memorial Parkway South
Huntsville AL 35801

Receipt Date : 07-07-97

Sample Date : 07/10/97

Microscopist : Tom Carrington

Sample/Description	Asbestos Fibers (%)				Non-Asbestos Material (%)				
	Chry	Amos	Croc	Othr	Cell	Fbgl	MW	CaSO4	Othr
B328-01 elbow pipe insul 8" pipe TSI		55		5			5		35
B328-02 elbow pipe insul 8" pipe TSI		70		5					25
B328-03 12 x [illegible]									100
B328-04 mastic	1						10		89

Chry = Chrysotile
Amos = Amosite
Croc = Crocidolite

Othr = Other
Cell = Cellulose

MW = Mineral Wool
$CaSO_4$ = Calcium Sulfate
Fbgl = Fiberglass

APPENDIX B

ASBESTOS CONTAINING MATERIALS

SUMMARY TABLE
ASBESTOS CONTAINING MATERIALS
OFFICE/ADMINISTRATIVE
BUILDING 328
FORT McCLELLAN, ALABAMA

SAMPLE #(S)	Description of Materials	General Location of Material	Quantity (approx.)
B328-01,02	8 inch pipe fittings	Mechanical Room	4 fittings
B328-04	Black mastic found Under 12x12 fl. tile	Throughout building	11,000 sq. ft.

APPENDIX C

SAMPLE LOCATIONS PLANS

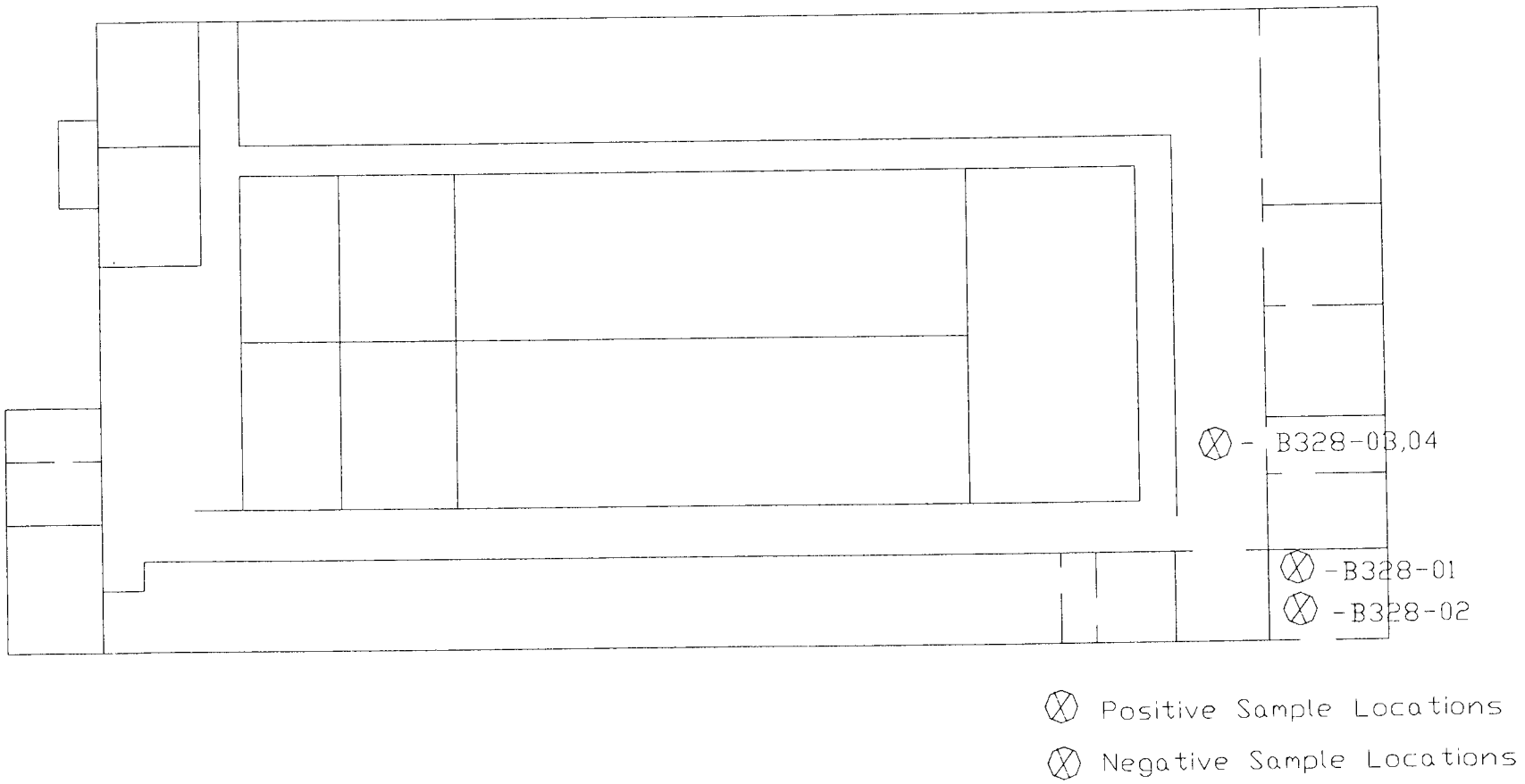


FIG. 1 LAYOUT PLAN SCALE: 1"=10'

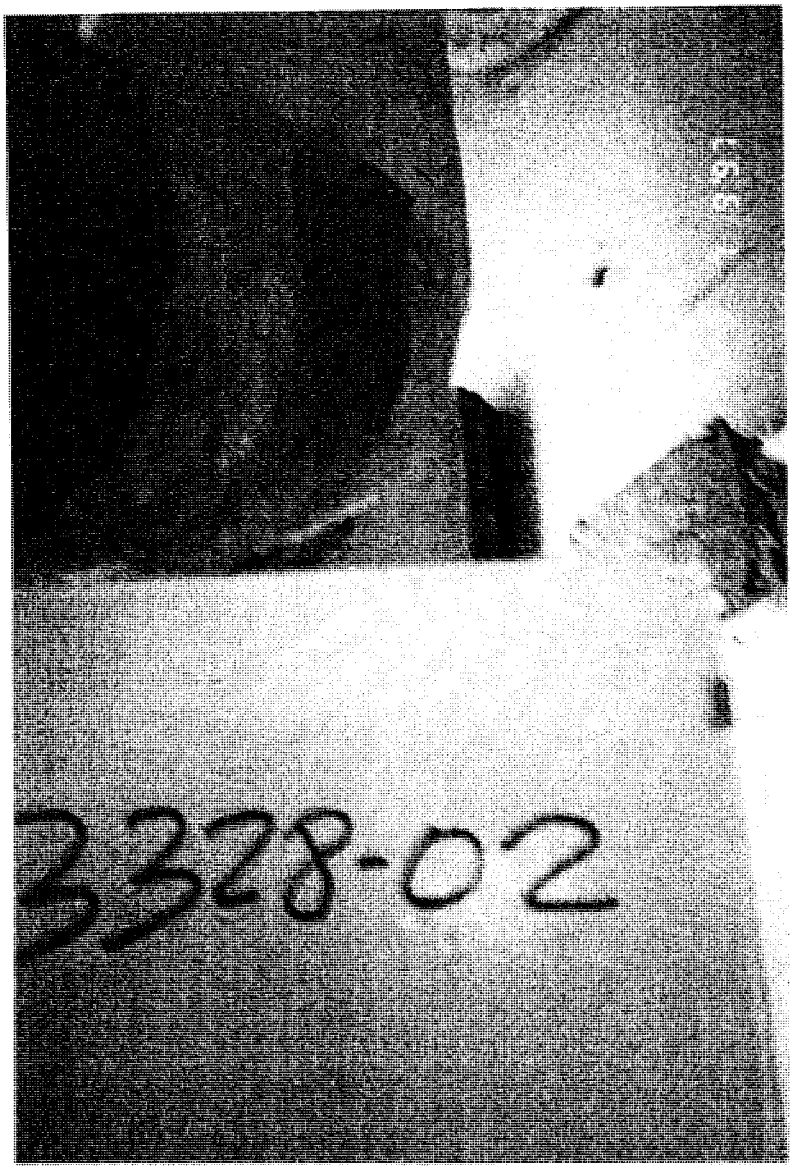
BUILDING: 328	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

APPENDIX D

SELECTED ACM LOCATION PLANS (None)

APPENDIX E

SELECTED ACM PHOTOGRAPHS



B328-02: Typical Pipe Elbow ACM

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY REPORT

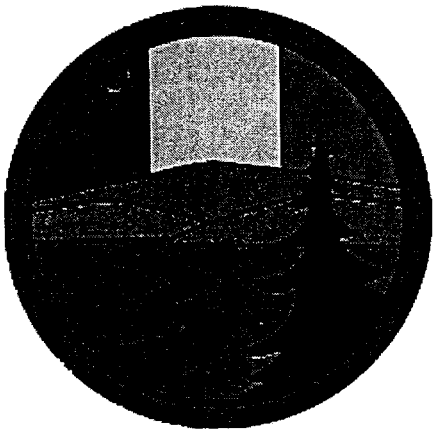
BUILDING: 339

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
RECYCLING WAREHOUSE
BUILDING 339

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Fort McClellan



Staying Beautiful

Conducted and Prepared by:

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ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
RECYCLING WAREHOUSE
BUILDING 339

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Prepared For:

DIRECTORATE OF ENVIRONMENT
FORT McCLELLAN

APPROVED FOR TRANSMITTAL BY
JAMES R. WRIGHT

Conducted and Prepared by:

REISZ ENGINEERING

May, 1998

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APPENDIX E - SELECTED ACM PHOTOGRAPHS (None)

1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this survey was to locate and identify asbestos containing building materials at Building 339 located at Fort McClellan, Alabama. Pursuant to the Contract, REISZ Engineering was required to provide the survey in accordance with AHERA (40 CFR Part 763 Subpart E) protocol. AHERA is applicable to interior building products installed prior to October 12, 1988. AHERA does not apply to the exterior of buildings and does not apply to non-building materials (e.g. cabinetry, special equipment and chalkboards). REISZ Engineering has included as part of the survey those readily accessible, suspect friable interior non-building materials (e.g. vibration dampers); but has not included certain items (e. g. interior linings of equipment and special supplies, some non-friable materials such as transite, etc.). Exterior building materials were not sampled as part of this contract unless those materials were suspected to be of friable nature and continuous with indoor materials (e.g. piping insulation). Specifically, REISZ Engineering was contracted to provide the following services:

1. Identify and collect samples of accessible suspect friable building materials within the referenced project area.
2. Perform a visual inspection to provide information on material condition, material quantities, material locations, and building use.
3. Analysis of all bulk samples for asbestos content utilizing Polarized Light Microscopy and Dispersion Staining Techniques performed in accordance with EPA Bulk Analysis Method
   EPA 600/M4-82-020.
4. Make recommendations as to response actions pertaining to those materials identified as asbestos containing.

5. Compilation of a final report (contained herein) which details all sample results, identifies sample locations, and provides recommendations based upon the results.

6. Preparation of a Building specific Operations & Maintenance (O&M) Plan for buildings containing friable asbestos materials.

2.0 REGULATORY STANDARDS

The National Emissions Standards for Hazardous Air Pollutants (NESHAP) requires the Owner or Operator of a facility to determine the presence or non-presence of asbestos containing materials prior to conducting renovation or demolition activities. The NESHAP Standard for asbestos (40CFR Part 61 Sub-part M) requires the use of engineered control procedures for removal of asbestos materials that are or will become friable during renovation or demolition. The removal must occur before renovation or demolition activities impact those materials.

On October 11, 1994 an OSHA promulgated regulation (29 CFR Part 1926.1101) became effective. This Standard is related to asbestos exposure in construction, renovation and building maintenance work places. Building owners are required, pursuant to the Standard, to notify employees, tenants and prospective employers (contractors) of the presence, location and quantities of ACM in the building. Implementation of the "communication of hazards" provisions in the Standard were originally to be not later than April 10, 1995 but was extended to July 10, 1995 and is now in effect. The OSHA Standard does not apply to work performed by employees of State agencies in states without state run OSHA programs (e.g. Alabama).

In October 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law. Included in this act are provisions directing E.P.A. to establish rules and regulations

(40CFR Part 763) addressing asbestos-containing materials in schools. Specifically, the E.P.A. was directed to address the issues of: 1) identifying, 2) evaluating, and 3) controlling asbestos containing materials (ACM) in schools. AHERA requires schools to perform building inspections and to prepare management plans for ACM control. Although the AHERA regulation does not specifically apply to this project it is generally accepted as the industry standard and was cited by Fort McClellan in the Asbestos Survey Request as the basis of survey methodology. The AHERA inspections must be conducted using specific guidelines that include a minimum number of samples per material type. This survey was conducted in accordance with those guidelines per the Contract requirements.

On November 28, 1992 a law became effective which extended the EPA's Model Accreditation Plan to all public and commercial buildings. Currently the rule extends the accreditation requirements of persons performing asbestos work (inspectors, project designers, abatement supervisors, and workers) in public and commercial buildings, but does not extend the other aspects of AHERA. This project was conducted utilizing EPA accredited personnel.

3.0 PROJECT CHARACTERISTICS

During the month of August 1997, Reisz Engineering accredited Asbestos Inspectors performed inspections of Building 339 for the purpose of identifying building materials suspected to contain asbestos. Building 339 is a single story structure containing approximately 10,540 sq. ft. of floor space. Based on information provided by Fort McClellan representatives the building was originally constructed in 1941. Various renovations may have taken place since the building was originally constructed but no building plans have been found which can be used to verify specific dates and activities. The dominant flooring condition existing in the facility is bare concrete.

4.0 SURVEY METHODOLOGY

The building was visually inspected for the presence of material suspected to contain asbestos. Those suspect materials were identified, bulk samples were obtained and placed into individual vials for transportation to the University of Alabama in Huntsville. General areas for sample locations were selected on a random basis with a preference for exact positioning at existing damage. Each sample location is represented by a number on the plans in Appendix C. Those numbers directly correspond with the numbers listed elsewhere in this report.

If any additional suspect materials are identified during renovation or demolition they should be analyzed for asbestos content. Materials visibly identifiable as non-asbestos (fiberglass, foam rubber, wood, etc.) were not sampled. Materials installed after October 12, 1988 (as reported by Fort McClellan staff) were not sampled.

Hazard Assessment Factors

Each time suspect ACM was sampled, it was classified as either a friable or a non-friable material. Friable material may be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is more hazardous than non-friable ACM because friable material can release airborne asbestos fibers more easily. In assessing the fiber release potential, the current condition of all ACM identified was noted. Evidence of deterioration, physical damage, water damage, erosion of ACM due to its' proximity to an air plenum, high vibration, or contact potential was also noted.

5.0 LABORATORY ANALYSIS METHODOLOGY

All bulk samples were analyzed at UAH by polarized light microscopy utilizing dispersion staining or Becke line techniques, in accordance with the EPA's "Interim Method for Determination of Asbestos in Bulk Insulation Samples" (EPA 6OO/m4-82-020). Quality control samples were taken as duplicates at a rate of 1 to 10 and were sent to a second accredited laboratory. This type of analysis requires the microscopist to take a portion of the bulk sample and treat it with an oil of specific refractive index. This prepared slide is then subjected to a variety of optical tests.

Each type of asbestos displays unique characteristics when subjected to these tests. Percentages of the identified types of asbestos are determined by visual estimation. Even though this is an estimation, any material that contains greater than one percent of any type of fibrous asbestos is considered ACM and must be handled according to OSHA and EPA regulations if disturbed during maintenance, renovation, demolition or removal.

The UAH laboratory participates in the American Industrial Hygiene Association (AIHA) quality assurance program for polarized light microscopy and is accredited by the AIHA through their voluntary program.

6.0 SUSPECT MATERIALS

The following is a general list of building materials that were suspected to contain asbestos. A complete and more detailed description of these substances can be found in Appendix B.

Surfacing

- None

Thermal System Insulation

- White/gray paper-like TSI on piping straight runs

Miscellaneous Material

- None

7.0 ASBESTOS INSPECTION AND SAMPLING RESULTS

A total of 2 bulk samples were collected and analyzed. Details of all laboratory results can be found in Appendix A. A listing of all suspect materials, their corresponding sample numbers, general location, and approximate quantity are indicated in Appendix B. A narrative description of all "Friable Asbestos Containing Material" and "Non-Friable ACM" identified during the survey, is given below.

FRIABLE ACM

Laboratory analysis determined asbestos is present in one type of friable material: 1) a brown paper-like insulation on piping straight-runs throughout the building.

1) A friable, paper-like, asbestos containing insulation compound is applied to pipes located throughout much of the building. This material was found to be in generally Poor condition.

NON FRIABLE ACM

None

INACCESSIBLE MATERIAL,

Insulation and spray-on compounds associated with inaccessible crawl-space and tunnel areas may should be assumed as "like" materials corresponding to materials sampled within the building.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Some of the materials identified within this report are damaged to the extent that significant asbestos fiber release may occur under normal conditions. The asbestos containing materials are subject to routine maintenance activities that could involve significant disturbance. Those materials include the pipe fitting and straight-run insulation located throughout the building. Based upon the aforementioned conditions, abatement of asbestos containing materials within this building should be considered. Proper management of the material in-place may be acceptable assuming the proper precautions are taken to eliminate exposure of personnel to any airborne asbestos. Reisz Engineering has written a Building Operations & Maintenance Plan for Building 339 and we suggest that recommendations included in this plan be followed.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions and recommendations expressed in this report are based only on conditions that were observed during the inspections of Building 339 during August, 1997. Reisz Engineering and this report make no representation or assumptions as to past conditions or future occurrences.

Our inspection was generally non-destructive in nature. Any conditions or materials that were not visible on the surface were not inspected and may differ from those observed. It was not within the scope of this investigation to remove surface materials to investigate portions of the structure or materials that may lay beneath the surface. Our selection of sample locations and frequency is based upon our observations and the assumption that all materials in the same area are homogeneous.

This report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos abatement contractors in locating ACM. Under no circumstances is this report to be utilized as a bidding document or as a project specification document.

APPENDIX A

REPORT OF LABORATORY ANALYSIS FOR ASBESTOS

UAH
The University of Alabama in Huntsville

Environmental Laboratory
Kenneth E. Johnson Research Center

Huntsville, Alabama 35899
Phone: (205) 890-6391
Fax: (205) 890-6376

Re Bulk Asbestos Analysis
EPA 600/R-93/116

AIHA : 023601

Client : Reisz Engineering
Building 32 Suite A2
3322 Memorial Parkway South
Huntsville, AL 35801

Receipt Date : 08-22-97

Sample Date : 08/18/97

Microscopist : Tom Carrington

Sample/Description	Asbestos Fibers (%)				Non-Asbestos Material (%)				
	Chry	Amos	Croc	Othr	Cell	Fbgl	MW	CaSO4	Othr
B339-01 / 6" pipe TSI, white paper-like	30				65				5
B339-02 / 6" pipe TSI, white paper-like	25				60				15

Chry = Chrysotile
Amos = Amosite
Croc = Crocidolite

Othr = Other
Cell = Cellulose

MW = Mineral Wool
$CaSO_4$ = Calcium Sulfate
Fbgl = Fiberglass

APPENDIX B

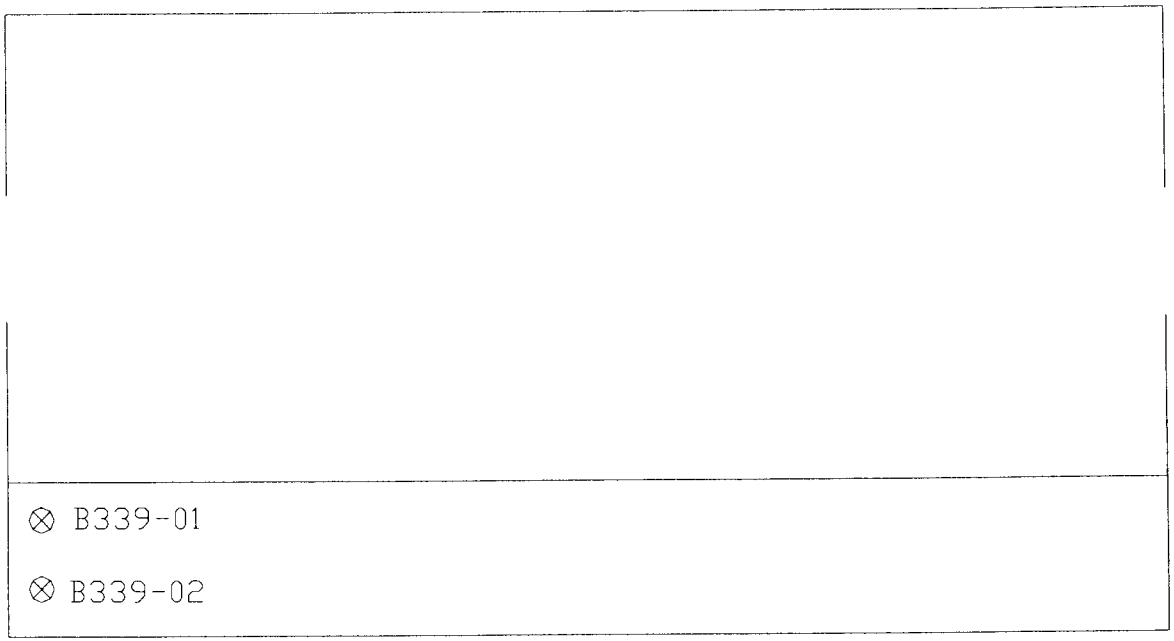
ASBESTOS CONTAINING MATERIALS

SUMMARY TABLE
ASBESTOS CONTAINING MATERIALS
ADMINISTRATIVE
BUILDING 339
FORT McCLELLAN, ALABAMA

SAMPLE #(s)	Description of Material	General Location Of Material	Quantity (approx.)
B339-01,02	Pipe TSI (Air-Cell)	Throughout building	300 linear ft.

APPENDIX C

SAMPLE LOCATIONS PLANS



⊗ - POSITIVE SAMPLE LOCATION
⊗ - NEGATIVE SAMPLE LOCATION

BUILDING: 339	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

ASBESTOS CONTAINING BUILDING MATERIALS
SURVEY REPORT

BUILDINGS: 852, 853, 854

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
MISCELLANEOUS OFFICE/CLASSROOM
BUILDINGS (800s)

CONTAINING NON-FRIABALE PACM

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Fort McClellan

Staying Beautiful

Conducted and Prepared by:

REISZ ENGINEERING
P.O. BOX 1349

HUNTSVILLE, ALABAMA 35807

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY MISCELLANEOUS OFFICE/CLASSROOM BUILDINGS (800s)

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Prepared For:

DIRECTORATE OF ENVIRONMENT
FORT McCLELLAN

APPROVED FOR TRANSMITTAL BY
JAMES R. WRIGHT

Conducted and Prepared by:

REISZ ENGINEERING

June, 1998

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APPENDIX A - SUMMARY TABLE OF ACM AND COST ESTIMATES
APPENDIX B – SAMPLE & ACM LOCATIONS PLANS
APPENDIX C – LIST OF BUILDINGS

1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this survey was to locate and identify asbestos containing building materials at miscellaneous 800 series buildings located at Fort McClellan, Alabama. (See Appendix C for a complete list of buildings included in this document). Pursuant to the Contract, REISZ Engineering was required to provide the survey in accordance with AHERA (40 CFR Part 763 Subpart E) protocol. AHERA is applicable to interior building products installed prior to October 12, 1988. AHERA does not apply to the exterior of buildings and does not apply to non-building materials (e.g. cabinetry, special equipment and chalkboards). REISZ Engineering has included as part of the survey those readily accessible, suspect friable interior non-building materials (e.g. vibration dampers); but has not included certain items (e. g. interior linings of equipment and special supplies, some non-friable materials such as transite, etc.). Exterior building materials were not sampled as part of this contract unless those materials were suspected to be of friable nature and continuous with indoor materials (e.g. piping insulation). Specifically, REISZ Engineering was contracted to provide the following services:

1. Identify and collect samples of accessible suspect friable building materials within the referenced project area.
2. Perform a visual inspection to provide information on material condition, material quantities, material locations, and building use.
3. Analysis of all bulk samples for asbestos content utilizing Polarized Light Microscopy and Dispersion Staining Techniques performed in accordance with EPA Bulk Analysis Method
   EPA 600/M4-82-020.
4. Make recommendations as to response actions pertaining to those materials identified as asbestos containing.

5. Compilation of a final report (contained herein) which details all sample results, identifies sample locations, and provides recommendations based upon the results.
6. Preparation of a Building specific Operations & Maintenance (O&M) Plan for buildings containing friable asbestos materials.

2.0 REGULATORY STANDARDS

The National Emissions Standards for Hazardous Air Pollutants (NESHAP) requires the Owner or Operator of a facility to determine the presence or non-presence of asbestos containing materials prior to conducting renovation or demolition activities. The NESHAP Standard for asbestos (40CFR Part 61 Sub-part M) requires the use of engineered control procedures for removal of asbestos materials that are or will become friable during renovation or demolition. The removal must occur before renovation or demolition activities impact those materials.

On October 11, 1994 an OSHA promulgated regulation (29 CFR Part 1926.1101) became effective. This Standard is related to asbestos exposure in construction, renovation and building maintenance work places. Building owners are required, pursuant to the Standard, to notify employees, tenants and prospective employers (contractors) of the presence, location and quantities of ACM in the building. Implementation of the "communication of hazards" provisions in the Standard were originally to be not later than April 10, 1995 but was extended to July 10, 1995 and is now in effect. The OSHA Standard does not apply to work performed by employees of State agencies in states without state run OSHA programs (e.g. Alabama).

In October 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law. Included in this act are provisions directing E.P.A. to establish rules and regulations (40CFR Part 763) addressing asbestos-containing materials in schools. Specifically, the E.P.A.

was directed to address the issues of: 1) identifying, 2) evaluating, and 3) controlling asbestos containing materials (ACM) in schools. AHERA requires schools to perform building inspections and to prepare management plans for ACM control. Although the AHERA regulation does not specifically apply to this project it is generally accepted as the industry standard and was cited by Fort McClellan in the Asbestos Survey Request as the basis of survey methodology. The AHERA inspections must be conducted using specific guidelines that include a minimum number of samples per material type. This survey was conducted in accordance with those guidelines per the Contract requirements.

On November 28, 1992 a law became effective which extended the EPA's Model Accreditation Plan to all public and commercial buildings. Currently the rule extends the accreditation requirements of persons performing asbestos work (inspectors, project designers, abatement supervisors, and workers) in public and commercial buildings, but does not extend the other aspects of AHERA. This project was conducted utilizing EPA accredited personnel.

3.0 PROJECT CHARACTERISTICS

During the month of September 1997, Reisz Engineering accredited Asbestos Inspectors performed inspections of these buildings for the purpose of identifying building materials suspected to contain asbestos. All buildings referenced in this survey contain only non-friable ACM. None of the buildings within this survey were found to have any friable asbestos containing materials. Based on information provided by Fort McClellan representatives the buildings were originally constructed in 1940 and 1941. Various renovations may have taken place since the building was originally constructed but no building plans have been found which can be used to verify specific dates and activities. The dominant flooring condition existing in the buildings are 12x12 or 9x9 vinyl floor tile and cement.

4.0 SURVEY METHODOLOGY

The buildings were visually inspected for the presence of material suspected to contain asbestos. Those suspect materials were identified, bulk samples were obtained and placed into individual vials for transportation to the University of Alabama in Huntsville. General areas for sample locations were selected on a random basis with a preference for exact positioning at existing damage. Each sample location is represented by a number on the plans in Appendix C. Those numbers directly correspond with the numbers listed elsewhere in this report.

If any additional suspect materials are identified during renovation or demolition they should be analyzed for asbestos content. Materials visibly identifiable as non-asbestos (fiberglass, foam rubber, wood, etc.) were not sampled. Materials installed after October 12, 1988 (as reported by Fort McClellan staff) were not sampled.

Hazard Assessment Factors

Each time suspect ACM was sampled, it was classified as either a friable or a non-friable material. Friable material may be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is more hazardous than non-friable ACM because friable material can release airborne asbestos fibers more easily. In assessing the fiber release potential, the current condition of all ACM identified was noted. Evidence of deterioration, physical damage, water damage, erosion of ACM due to its' proximity to an air plenum, high vibration, or contact potential was also noted.

5.0 LABORATORY ANALYSIS METHODOLOGY

All bulk samples were analyzed at UAH by polarized light microscopy utilizing dispersion staining or Becke line techniques, in accordance with the EPA's "Interim Method for Determination of Asbestos in Bulk Insulation Samples" (EPA 6OO/m4-82-020). Quality control samples were taken as duplicates at a rate of 1 to 10 and were sent to a second accredited laboratory. This type of analysis requires the microscopist to take a portion of the bulk sample and treat it with an oil of specific refractive index. This prepared slide is then subjected to a variety of optical tests.

Each type of asbestos displays unique characteristics when subjected to these tests. Percentages of the identified types of asbestos are determined by visual estimation. Even though this is an estimation, any material that contains greater than one percent of any type of fibrous asbestos is considered ACM and must be handled according to OSHA and EPA regulations if disturbed during maintenance, renovation, demolition or removal.

The UAH laboratory participates in the American Industrial Hygiene Association (AIHA) quality assurance program for polarized light microscopy and is accredited by the AIHA through their voluntary program.

6.0 SUSPECT MATERIALS

The following is a general list of building materials that were suspected to contain asbestos. A complete and more detailed description of these materials can be found in Appendix B.

Surfacing

- None

Thermal System Insulation

- None

Miscellaneous Material

- 12x12 vinyl floor tile in various buildings
- 9x9 vinyl floor tile in various buildings
- Vinyl flooring mastics
- Transite siding on exterior of various buildings

7.0 ASBESTOS INSPECTION AND SAMPLING RESULTS

No bulk samples were collected and analyzed.

FRIABLE ACM

None

NON FRIABLE ACM

Four types of non-friable PACM were found in various buildings. 1) transite siding is located on the exterior of various buildings, 2) 12x12 inch floor tile, 3) 9x9 floor tile, and 4) mastics associated vinyl floor tile.

1) Presumed asbestos containing transite siding can be found on the exterior walls of the following buildings:
B830 B831 B856 B857 B874 B875

2) Presumed asbestos containing 12x12 inch floor tile and mastic is found in the following buildings:
B832 B833 B834 B837 B838 B839 B840 B841 B852 B855 B856 B874

3) Presumed asbestos containing 9x9 inch floor tile and mastic is found in the following buildings:
B829 B830 B831 B842 B843 B844 B853 B854 B857 B858 B859

Building 874 is bare concrete.

INACCESSIBLE MATERIAL,

Insulation and spray-on compounds associated with inaccessible crawl-space and tunnel areas may should be assumed as "like" materials corresponding to materials sampled within the building.

8.0 CONCLUSIONS AND RECOMMENDATIONS

None of the materials identified within this report are damaged to the extent that significant asbestos fiber release may be likely under normal conditions. The asbestos containing materials may be subject to routine maintenance activities that could involve significant disturbance. Proper management of the material in-place may be acceptable assuming the proper precautions are taken to eliminate exposure of personnel to any airborne asbestos. Reisz

Engineering has not written a Building Operations & Maintenance Plan for these buildings. Refer to Appendix B for Cost Estimates related to the abatement of the included ACM.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions and recommendations expressed in this report are based only on conditions that were observed during the inspections of these buildings during September, 1997. Reisz Engineering and this report make no representation or assumptions as to past conditions or future occurrences.

Our inspection was generally non-destructive in nature. Any conditions or materials that were not visible on the surface were not inspected and may differ from those observed. It was not within the scope of this investigation to remove surface materials to investigate portions of the structure or materials that may lie beneath the surface. Our selection of sample locations and frequency is based upon our observations and the assumption that all materials in the same area are homogeneous.

This report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos abatement contractors in locating ACM. Under no circumstances is this report to be utilized as a bidding document or as a project specification document.

APPENDIX A

SUMMARY TABLE OF ACM AND COST ESTIMATES

SUMMARY TABLE
ASBESTOS CONTAINING MATERIALS
MISCELLANEOUS OFFICE/CLASSROOM
BUILDINGS (800s)

FORT McCLELLAN, ALABAMA

SAMPLE #(S)	Description of Materials	General Location of Material	Quantity (approx.)	Estimated Abatement Cost
PACM (1)	Transite Siding	See (1) below	8340 sq.ft. per/bldg 33,360 sq.ft. total	$57,540
PACM (2)	12x12 floor tile & mastic	See (2) below	36,000 sq.ft. total	$82,800
PACM (3)	9x9 floor tile & mastic	See (3) below	28,000 sq.ft. total	$52,900

1)
B830
B831
B856
B857
B874
B875

2)
B832
B833
B834
B837-841
B852
B855
B856
B874

3)
B829-831
B842-844
B853
B854
B857
B859

APPENDIX B

ACM LOCATION PLANS

APPENDIX A

SUMMARY TABLE OF ACM AND COST ESTIMATES

SUMMARY TABLE
ASBESTOS CONTAINING MATERIALS
MISCELLANEOUS OFFICE/CLASSROOM
BUILDINGS (800s)

FORT McCLELLAN, ALABAMA

SAMPLE #(S)	Description of Materials	General Location of Material	Quantity (approx.)	Estimated Abatement Cost
PACM (1)	Transite Siding	See (1) below	8340 sq.ft. per/bldg 33,360 sq.ft. total	$57,540
PACM (2)	12x12 floor tile & mastic	See (2) below	36,000 sq.ft. total	$82,800
PACM (3)	9x9 floor tile & mastic	See (3) below	28,000 sq.ft. total	$52,900

1) B830
B831
B856
B857
B874
B875

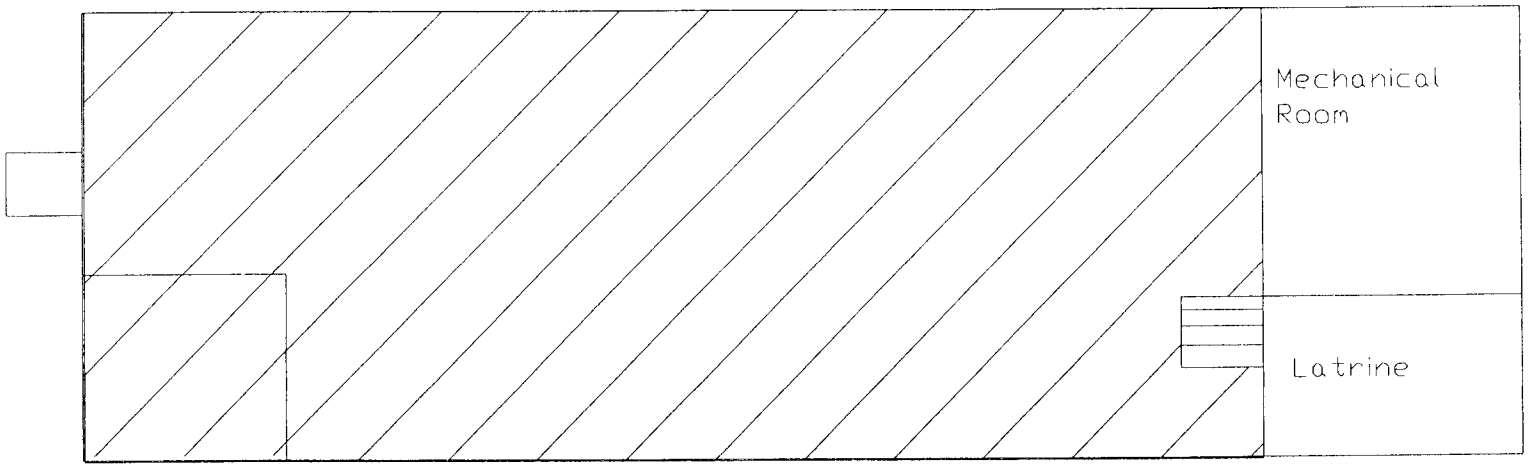
2) B832
B833
B834
B837-841
B852
B855
B856
B874

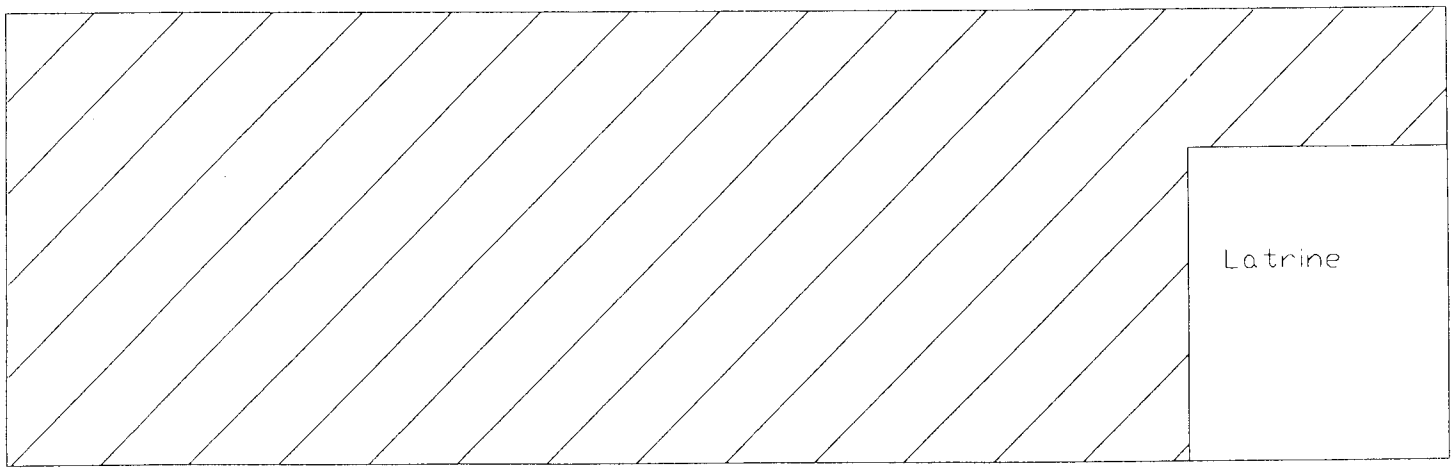
3) B829-831
B842-844
B853
B854
B857
B859

APPENDIX B

ACM LOCATION PLANS

First Floor





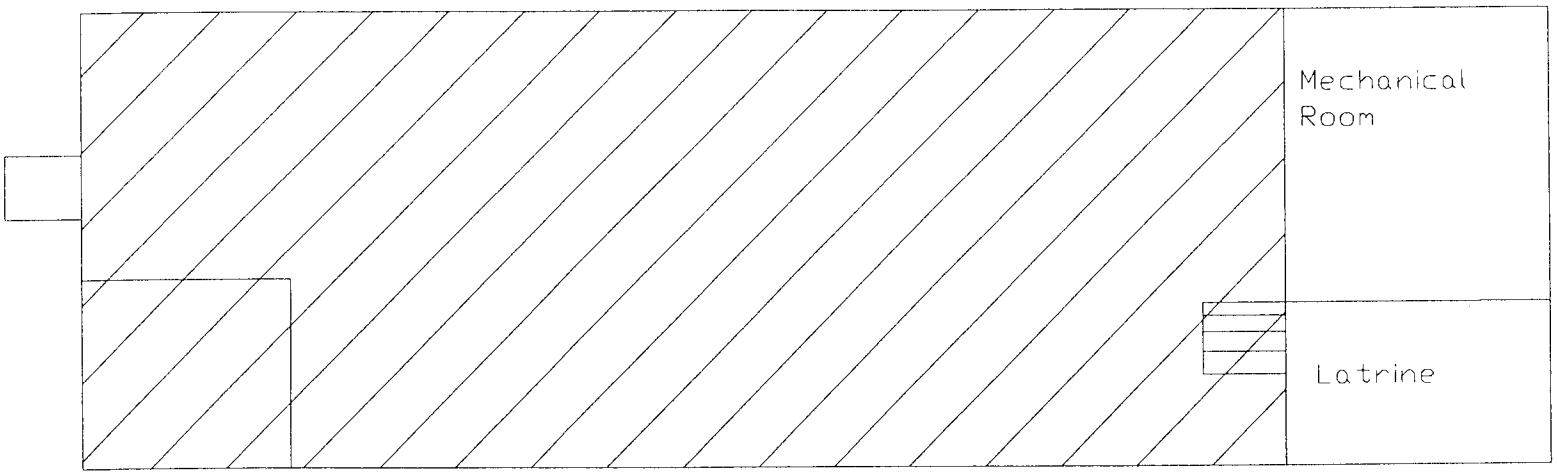
Second Floor

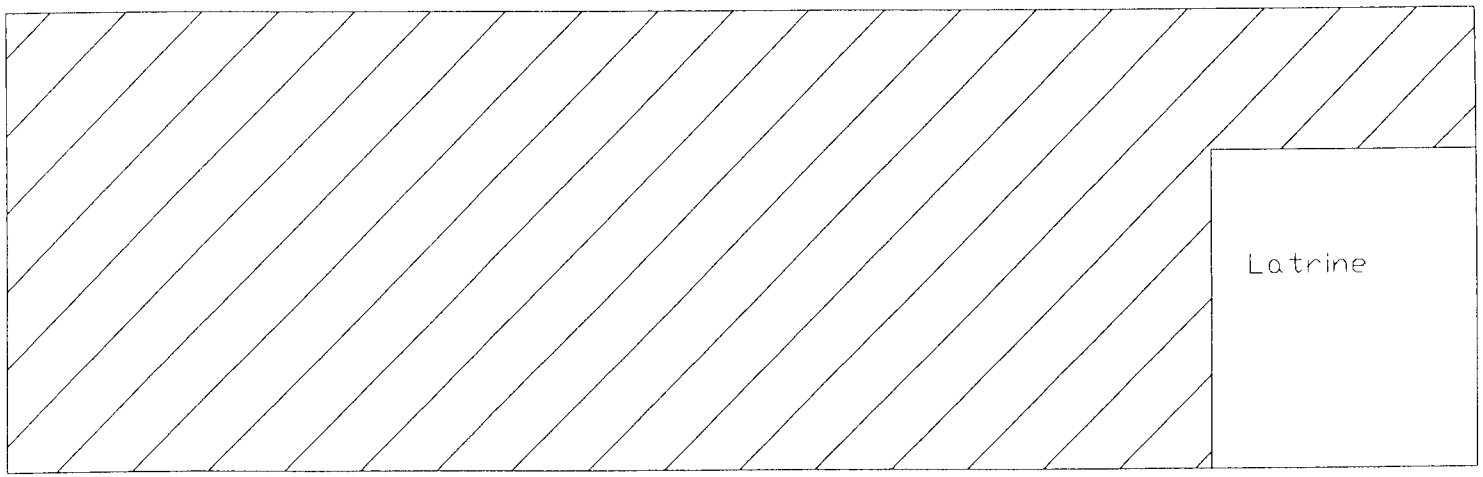
FIG. 1 LAYOUT PLAN

9 x 9 Floor Tile

BUILDINGS: 829, 830, 831, 842, 843, 844	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

First Floor



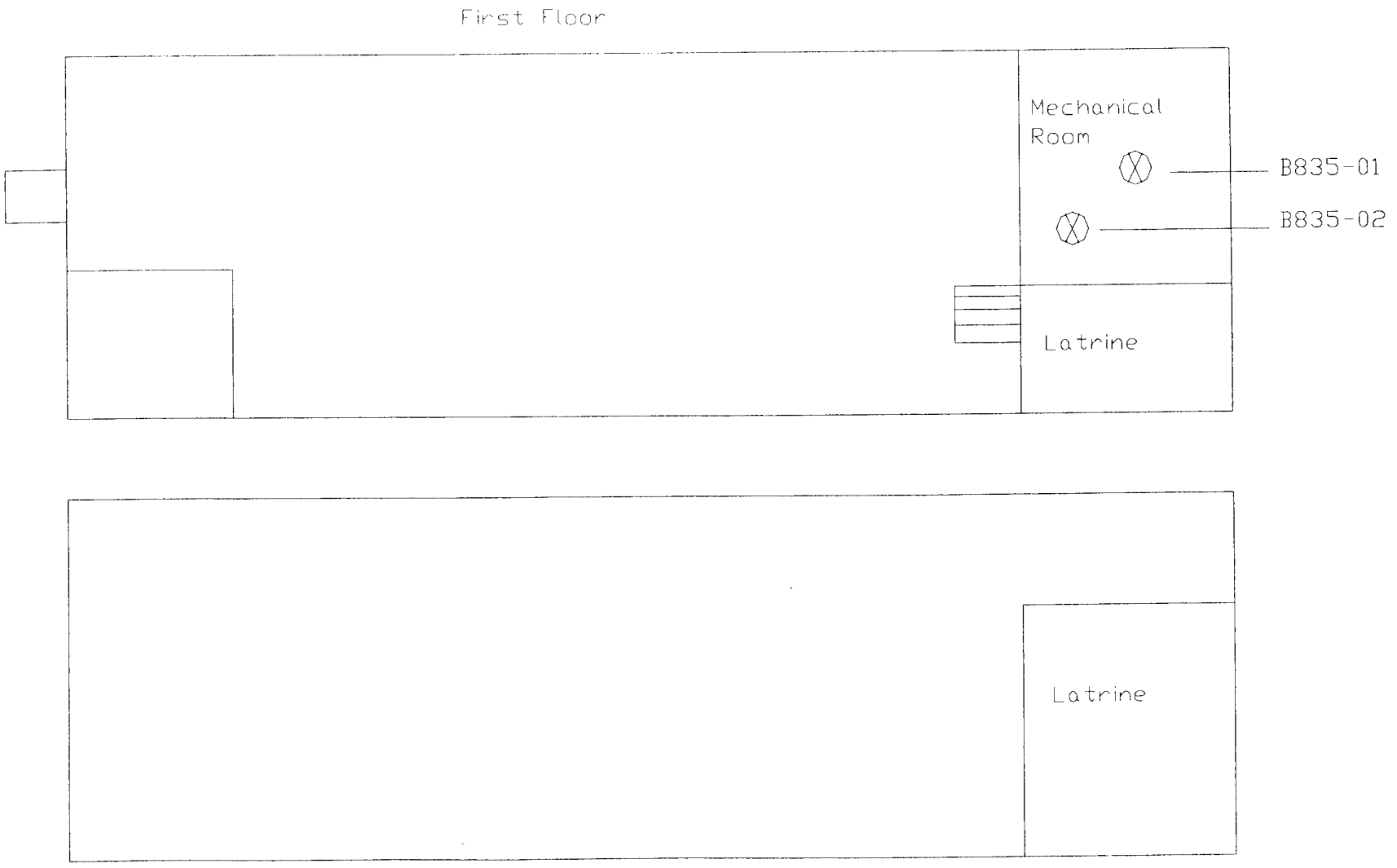


Second Floor

12 x 12 Floor Tile

FIG. 1 LAYOUT PLAN

BUILDING: 832, 833,834,837-841	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



BUILDING 835	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

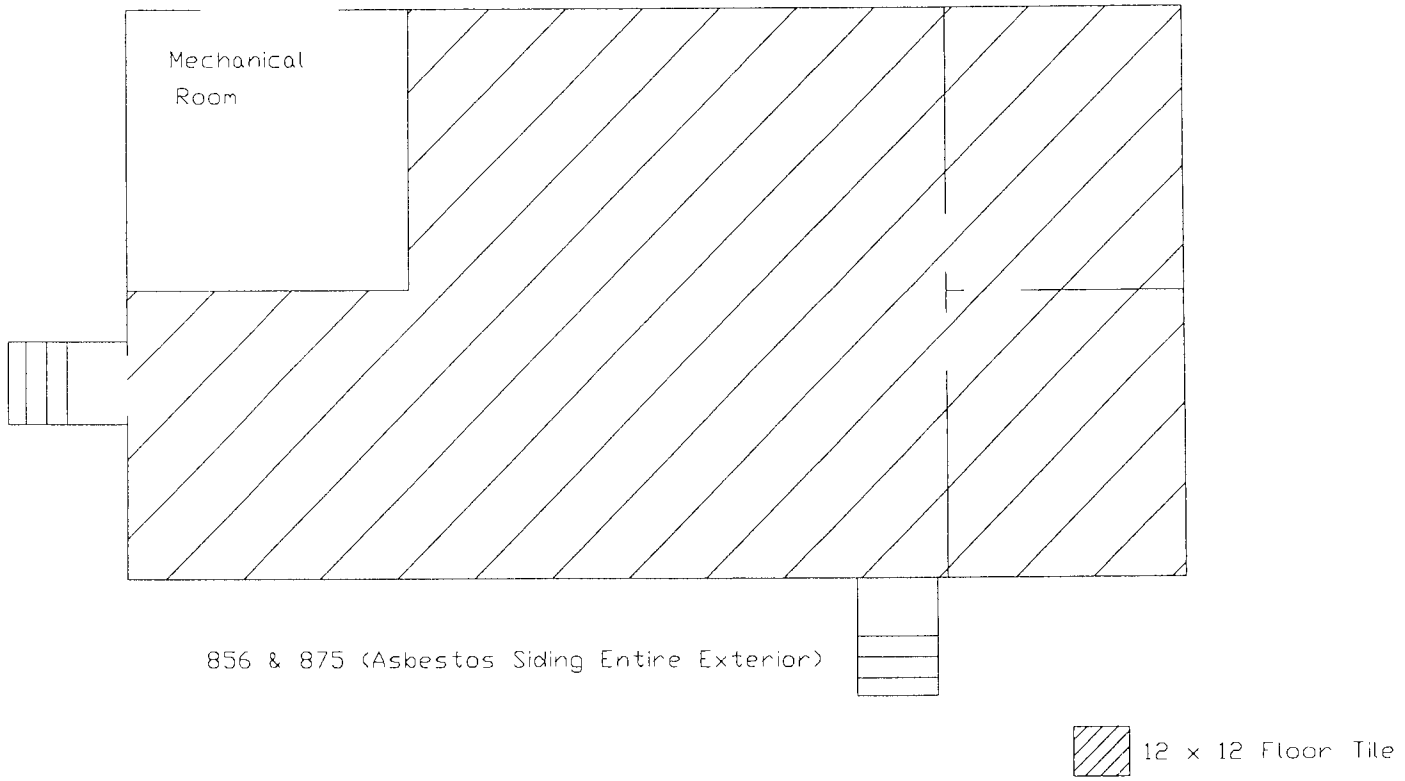


FIG. 1 LAYOUT PLAN

BUILDING: 852, 855,856,875	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

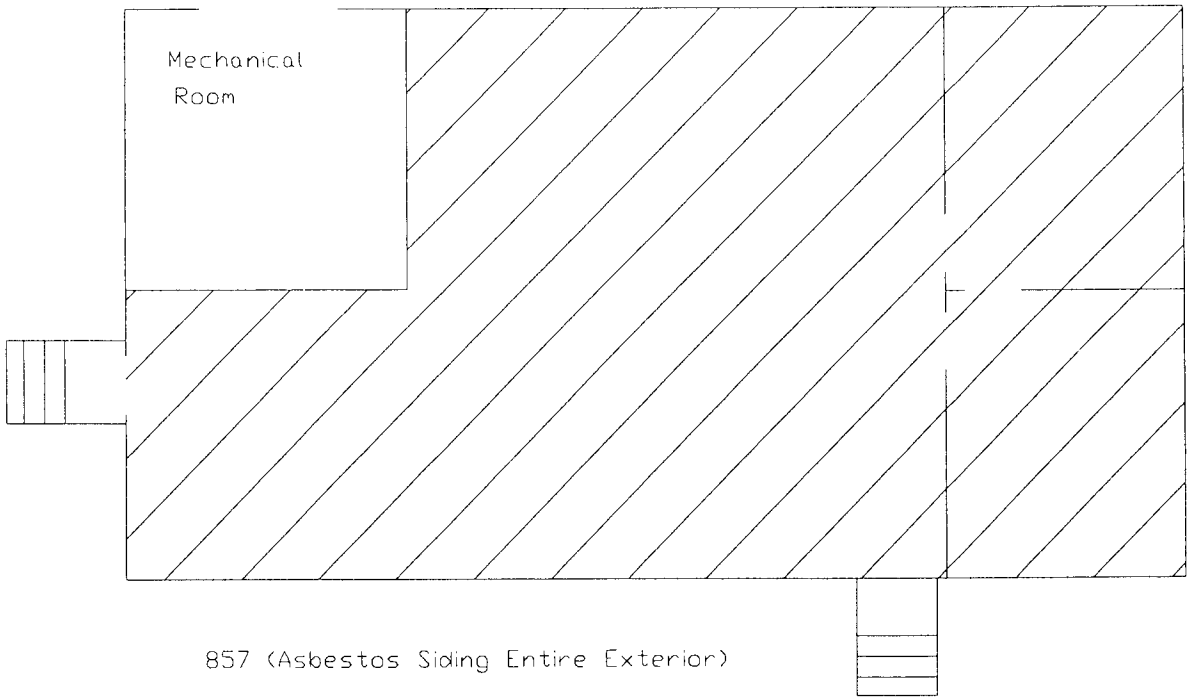


FIG. 1 LAYOUT PLAN

BUILDING: 853, 854,857,858,859	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

APPENDIX C

LIST OF BUILDINGS

829
830
831
832
833
834

837
838
839
840
841
842
843
844

852
853
854
855
856
857

874
875

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY REPORT

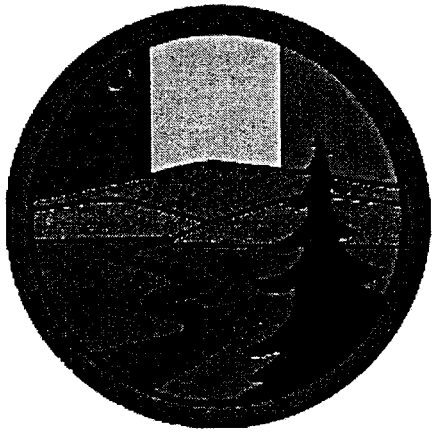
BUILDING(S): 1800, 2115, 2116, and 4437

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
MISCELLANEOUS BUILDINGS
PACM

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Fort McClellan



Staying Beautiful

Conducted and Prepared by:

REISZ ENGINEERING
P.O. BOX 1349
HUNTSVILLE, ALABAMA 35807

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
MISCELLANEOUS BUILDINGS
PACM

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Prepared For:

DIRECTORATE OF ENVIRONMENT
FORT McCLELLAN

APPROVED FOR TRANSMITTAL BY
JOSEPH L. HILLERICH

Conducted and Prepared by:

REISZ ENGINEERING

P.O. BOX 1349

HUNTSVILLE, ALABAMA 35807

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7.0	ASBESTOS INSPECTION AND SAMPLING RESULTS.....	6
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9.0	ASSUMPTIONS AND LIMITATIONS.....	8

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APPENDIX B – LIST OF MISCELLANEOUS BUILDINGS WITH PACM
APPENDIX C - SELECTED PACM LOCATIONS PLANS
APPENDIX D – SUMMARY TABLE OF PACM AND COST ESTIMATES

1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this survey was to locate and identify asbestos containing building materials at miscellaneous buildings located throughout Fort McClellan, Alabama. (See Appendix B for a complete list of buildings included in this document). Pursuant to the Contract, REISZ Engineering was required to provide the survey in accordance with AHERA (40 CFR Part 763 Subpart E) protocol. AHERA is applicable to interior building products installed prior to October 12, 1988. AHERA does not apply to the exterior of buildings and does not apply to non-building materials (e.g. cabinetry, special equipment and chalkboards). REISZ Engineering has included as part of the survey those readily accessible, suspect friable interior non-building materials (e.g. vibration dampers); but has not included certain items (e.g. interior linings of equipment and special supplies, some non-friable materials such as transite, etc.). Exterior building materials were not sampled as part of this contract unless those materials were suspected to be of friable nature and continuous with indoor materials (e.g. piping insulation). Specifically, REISZ Engineering was contracted to provide the following services:

1. Identify and collect samples of accessible suspect friable building materials within the referenced project area.
2. Perform a visual inspection to provide information on material condition, material quantities, material locations, and building use.
3. Analysis of all bulk samples for asbestos content utilizing Polarized Light Microscopy and Dispersion Staining Techniques performed in accordance with EPA Bulk Analysis Method EPA 600/M4-82-020.
4. Make recommendations as to response actions pertaining to those materials identified as asbestos containing.
5. Compilation of a final report (contained herein) which details all sample results, identifies sample locations, and provides recommendations based upon the results.

6. Preparation of a Building specific Operations & Maintenance (O&M) Plan for buildings containing friable asbestos materials.

2.0 REGULATORY STANDARDS

The National Emissions Standards for Hazardous Air Pollutants (NESHAP) requires the Owner or Operator of a facility to determine the presence or non-presence of asbestos containing materials prior to conducting renovation or demolition activities. The NESHAP Standard for asbestos (40CFR Part 61 Sub-part M) requires the use of engineered control procedures for removal of asbestos materials that are or will become friable during renovation or demolition. The removal must occur before renovation or demolition activities impact those materials.

On October 11, 1994 an OSHA promulgated regulation (29 CFR Part 1926.1101) became effective. This Standard is related to asbestos exposure in construction, renovation and building maintenance work places. Building owners are required, pursuant to the Standard, to notify employees, tenants and prospective employers (contractors) of the presence, location and quantities of asbestos-containing materials (ACM) in the building. Implementation of the "communication of hazards" provisions in the Standard were originally to be not later than April 10, 1995 but was extended to July 10, 1995 and is now in effect. The OSHA Standard does not apply to work performed by employees of State agencies in states without state run OSHA programs (e. g. Alabama).

In October 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law. Included in this act are provisions directing EPA to establish rules and regulations (40CFR Part 763) addressing ACM in schools. Specifically, the EPA was directed to address the issues of: 1) identifying, 2) evaluating, and 3) controlling ACM in schools. AHERA requires schools to perform building inspections and to prepare management plans for ACM control. Although the AHERA regulation does not specifically apply to this project it is generally accepted as the industry standard and was cited by Fort McClellan in the Asbestos Survey

Request as the basis of survey methodology. The AHERA inspections must be conducted using specific guidelines that include a minimum number of samples per material type. This survey was conducted in accordance with those guidelines per the Contract requirements.

On November 28, 1992 a law became effective which extended the EPA's Model Accreditation Plan to all public and commercial buildings. Currently the rule extends the accreditation requirements of persons performing asbestos work (inspectors, project designers, abatement supervisors, and workers) in public and commercial buildings, but does not extend the other aspects of AHERA. This project was conducted utilizing EPA's accredited personnel.

3.0 PROJECT CHARACTERISTICS

Reisz Engineering's accredited asbestos inspectors performed inspections of presumed asbestos containing material (PACM) buildings for the purpose of identifying building materials suspected to contain asbestos. Based on information provided by our observations and tests results it appears that all buildings referenced in this survey contain only non-friable materials. None of the buildings within this survey were found to have any friable ACM. Although, various renovations may have taken place since the building was originally constructed but no building plans have been found which can be used to verify specific dates and activities.

The three dominant flooring conditions existing in the PACM buildings are 1) carpet, 2) vinyl floor tile and 3) concrete. Other materials include ceramic and brick tile, wood flooring, cement, linoleum, and terrazzo. Also carpet has been installed over vinyl tiles in some locations of the buildings.

4.0 SURVEY METHODOLOGY

The buildings were visually inspected for the presence of material suspected to contain asbestos. The suspect materials were identified and bulk samples were obtained and placed into

individual vials for transportation to the University of Alabama in Huntsville (UAH). General areas for sample locations were selected on a random basis with a preference for exact positioning at existing damage. Each sample location is represented by a number on the plans in Appendix C. Those numbers directly correspond with the numbers listed elsewhere in this report.

If any additional suspect materials are identified during renovation or demolition they should be analyzed for asbestos content. Materials visibly identifiable as non-asbestos (fiberglass, foam rubber, wood, etc.) were not sampled. Materials installed after October 12, 1988 (as reported by Fort McClellan staff) were not sampled.

Hazard Assessment Factors

Each time suspect ACM was sampled, it was classified as either a friable or a non-friable material. Friable material may be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is more hazardous than non-friable ACM because friable material can release airborne asbestos fibers more easily. In assessing the fiber release potential, the current condition of all ACM identified was noted. Evidence of deterioration, physical damage, water damage, erosion of ACM due to its' proximity to an air plenum, high vibration, or contact potential was also noted.

5.0 LABORATORY ANALYSIS METHODOLOGY

All bulk samples were analyzed at UAH by polarized light microscopy utilizing dispersion staining or Becke line techniques, in accordance with the EPA's "Interim Method for Determination of Asbestos in Bulk Insulation Samples" (EPA 6OO/m4-82-020). Quality control samples were taken as duplicates at a rate of 1 to 20 and were sent to a second accredited laboratory. This type of analysis requires the microscopist to take a portion of the bulk sample

and treat it with an oil of specific refractive index. This prepared slide is then subjected to a variety of optical tests.

Each type of asbestos displays unique characteristics when subjected to these tests. Percentages of the identified types of asbestos are determined by visual estimation. Even though this is an estimation, any material that contains greater than one percent of any type of fibrous asbestos is considered ACM and must be handled according to OSHA and EPA regulations if disturbed during maintenance, renovation, demolition or removal.

The UAH laboratory participates in the American Industrial Hygiene Association (AIHA) quality assurance program for polarized light microscopy and is accredited by the AIHA through their voluntary program.

6.0 SUSPECT MATERIALS

The following is a general list of building materials that were suspected to contain asbestos.

Surfacing

- None

Thermal System Insulation

- Rear wall gas heater reflectors in building 4437

Miscellaneous Material

- Vinyl surfaced sheet flooring
- Vinyl flooring mastics
- Drywall joint compound
- Asbestos siding
- Transite siding

- Transite piping

7.0 ASBESTOS INSPECTION AND SAMPLING RESULTS

A total of three bulk samples were collected and analyzed. Details of all laboratory results can be found in Appendix A. A narrative description of all "Friable Asbestos Containing Material" and "Non-Friable ACM" identified during the survey, is given below.

FRIABLE ACM

None

NON FRIABLE ACM

Five types of non-friable ACM's were found in various buildings: 1) 12x12 inch vinyl floor tile, 2) 9x9 inch vinyl floor tile, 3) asbestos siding is located on the exterior of B793, 4) transite piping in B1920 and 5) thermal system insulation in B4437.

1) Presumed asbestos containing 12x12 inch vinyl floor tile and mastic is found in the following buildings:

   B66 B184 B698 B793 B888 B891 B900 B992 B1012 B1800 B1920 B1928 B2090 B2116 B2202 B3136 B3189 B3600 B4434

   Generally, the tiles were found to be in good condition.

2) Presumed asbestos containing 9x9-inch vinyl floor tile and mastic is found in the following buildings:

   B1108 B1919 B2020 B2115 B2116

3) Asbestos siding can be found on the exterior walls of the building:

B793

4) The hot water heater vent pipe contains a transite pipe extending into the attic of the following building:

B1920

5) Thermal system insulation is located in the gas heater reflectors and is assumed to contain possible ACM. The gas heater is located in the rear wall of the following building:

B4437

INACCESSIBLE MATERIAL,

Insulation and spray-on compounds associated with inaccessible crawl-space and tunnel areas may be assumed as "like" materials corresponding to materials sampled within the building.

8.0 CONCLUSIONS AND RECOMMENDATIONS

None of the materials identified within this report are damaged to the extent that significant asbestos fiber release is likely under normal conditions. However, some of the asbestos containing materials, is subject to routine maintenance activities that could involve significant disturbance. As concluded by this survey, the buildings within this report were found to contain non-friable asbestos containing materials. Proper management of the material in-place may be acceptable assuming the proper precautions are taken to eliminate exposure of personnel to any airborne asbestos.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions and recommendations expressed in this report are based only on conditions which were observed during the inspections of the PACM Buildings during 1997. Reisz Engineering and this report make no representation or assumptions as to past conditions or future occurrences.

Our inspection was generally non-destructive in nature. Any conditions or material, which were not visible on the surface, were not inspected and may differ from those observed. It was not within the scope of this investigation to remove surface materials to investigate portions of the structure or materials that lay beneath the surface. Our selection of sample locations and frequency is based upon our observations and the assumption that all materials in the same area are homogeneous.

This report is designed to aid the building owner, architect, construction manager, general contractor, and potential asbestos abatement contractors in locating ACM. Under no circumstances is this report to be utilized as a bidding document or as a project specification document.

APPENDIX A

REPORT OF LABORATORY ANALYSIS FOR ASBESTOS

UAH
The University of Alabama in Huntsville

Environmental Laboratory
Kenneth E. Johnson Research Center

Huntsville, Alabama 35899
Phone: (256) 890-6391 Fax: (256) 890-6376

: Bulk Asbestos Analysis
EPA 600/R-93/116

Receipt Date: 06-13-97

AIHA: 023601

Sample Date : 06/10/97

Client: Reisz Engineering
Building 32 Suite A2
3322 S. Memorial Parkway
Huntsville, AL 35801

Microscopist : Tom Carrington

Sample/Description	Asbestos Fibers (%)				Non-Asbestos Material (%)				
	Chry	Amos	Croc	Othr	Cell	Fbgl	NIW	CaSO4	Othr
B 1928-01 / 12 x 12 floor tile brown rock-type				1					99

Chry = Chrysotile
Amos = Amosite
Croc = Crocidolite

Othr = Other
Cell = Cellulose

MW = Mineral Wool
Ca SO_4 = Calcium Sulfate
Fbgl = Fiberglass

UAH

Environmental Laboratory
Kenneth **E.** Johnson Research Center

Huntsville, Alabama 35899
Phone: (256) 890-6391
Fax: (256) 890-6376

Re : Bulk Asbestos Analysis EPA 600/R-93/116
AIHA:
023601
Client: Reisz Engineering
Building 32 Suite, A2
3322 Memorial Parkway South
Huntsville, AL 35801

Receipt Date : 06-20-97

Sample Date : 06/18/97

Microscopist: Tom Canington

Sample/Description	Asbestos Fibers (%)			Non-Asbestos Material (%)	
	Chry	Amos	Croc	Othr	Cell
Fbgl MW CaSO4 Othr					
B3136-01 / run of TSI chalk-like insul		55	20		25
B3136-02 / elbow-putty material			40	60	

Chry = Chrysotile
Amos = Amosite
Croc = Crocidolite

Othr = Other
Cell = cellulose

MW = Mineral Wool
Ca SO4 = Calcium Sulfate
Fbgl = Fiberglass

APPENDIX B

MISCELLANEOUS BUILDINGS WITH PACM

BUILDING NUMBERS

66
184
698
793
888
891
900
992
1012
1108
1800
1919
1920
1928
2020
2090
2115
2116
2202
3136
3189
3600
4434
4437

APPENDIX C

SELECTED ACM LOCATIONS PLANS

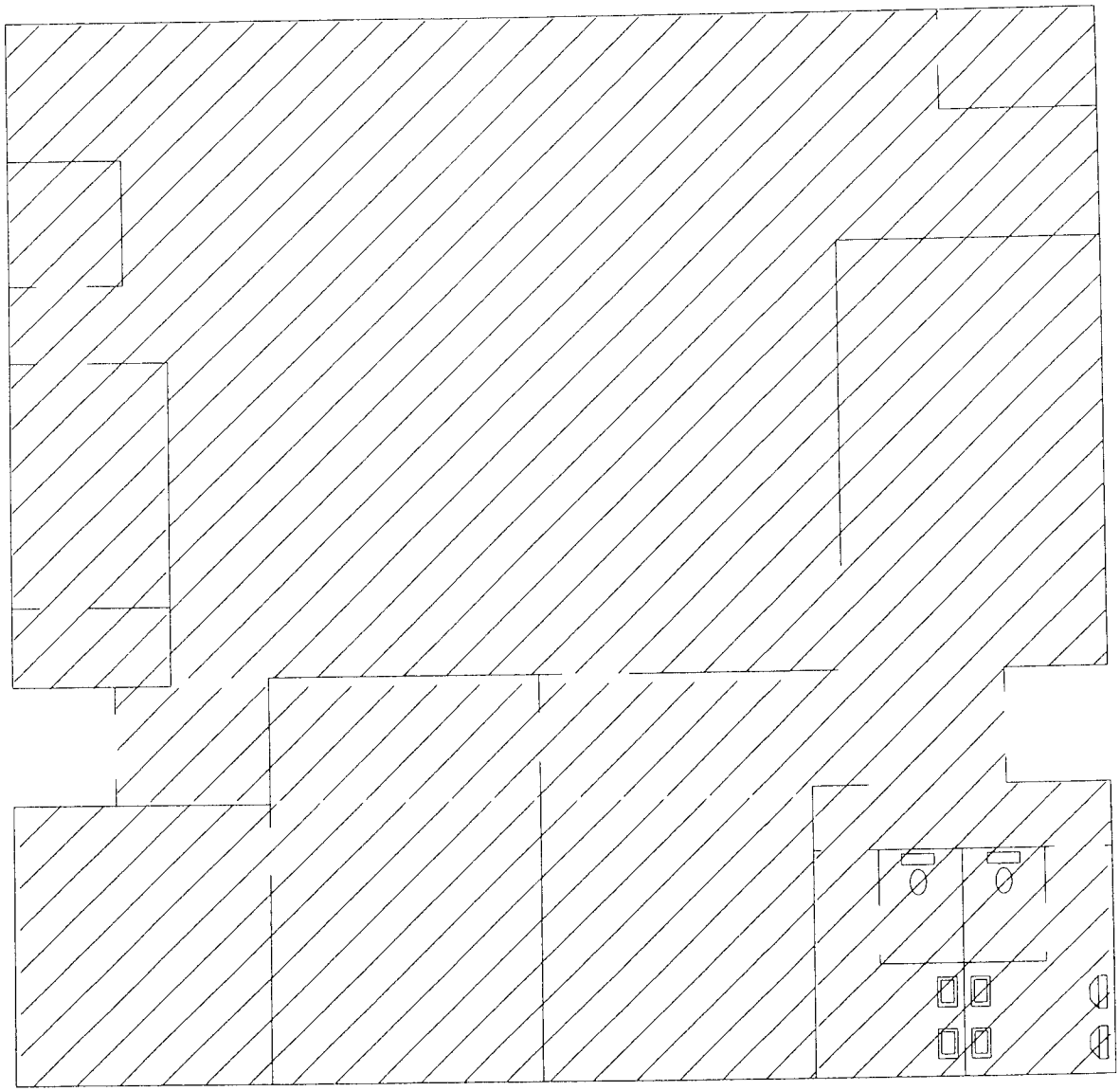
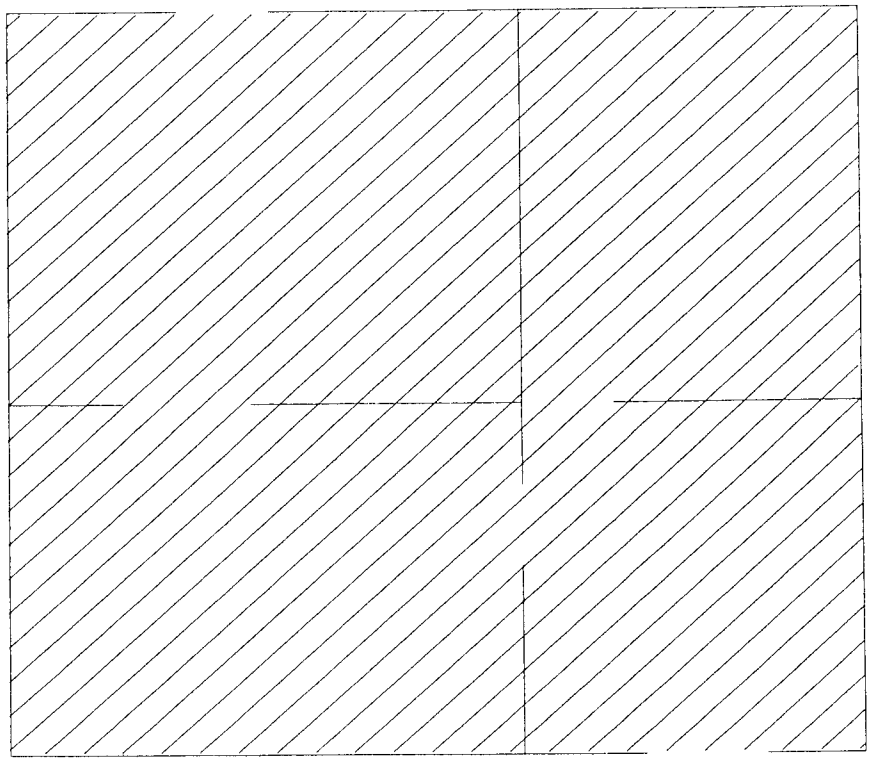


FIG. 1 LAYOUT PLAN SCALE: 1"=10'

12X12 TILE

CERAMIC TILE

BUILDING: 66	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



12X12 FLOOR TILE (CARPET LAID OVER IN MOST AREAS)

BUILDING: 184	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

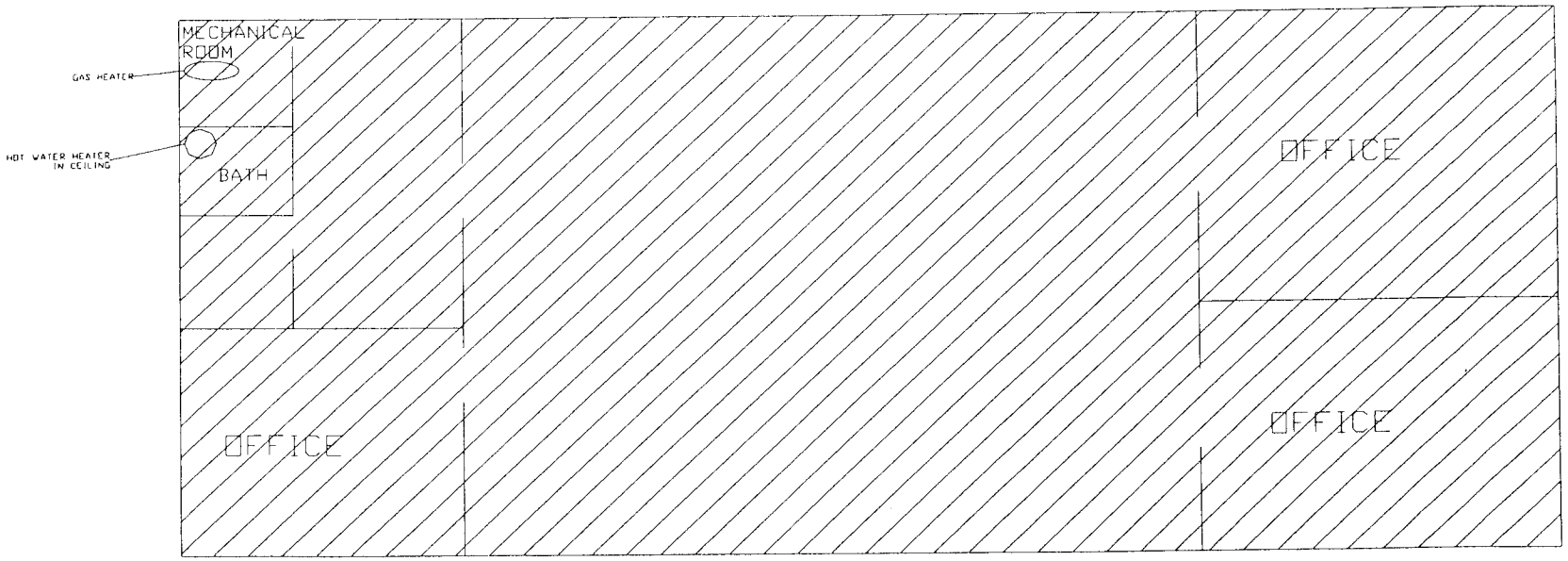


FIG. 1 LAYOUT PLAN SCALE: 1"=10'

12X12 TILE

BUILDING: 698	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

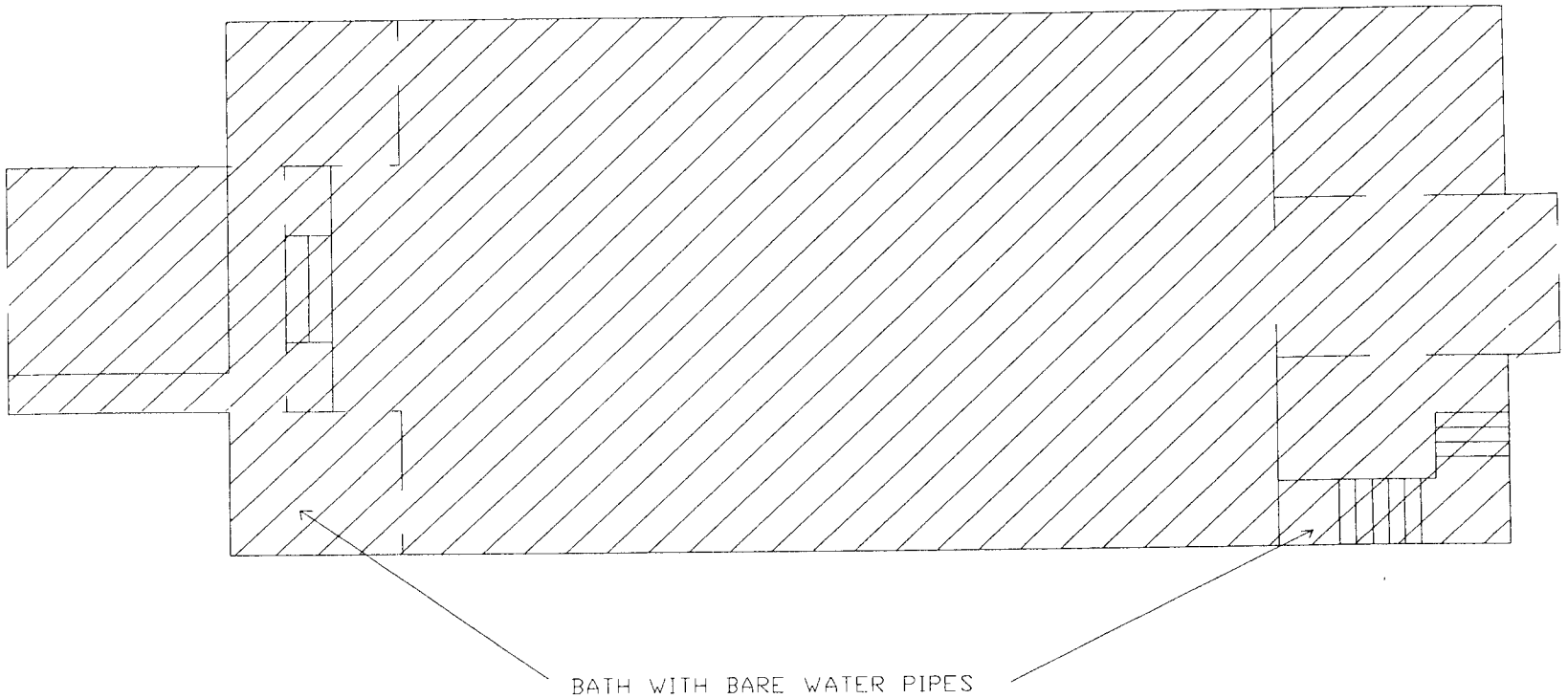


FIG. 1 LAYOUT PLAN SCALE: 1"=10'

ASBESTOS SIDING

12X12 TILE

BUILDING: 793	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

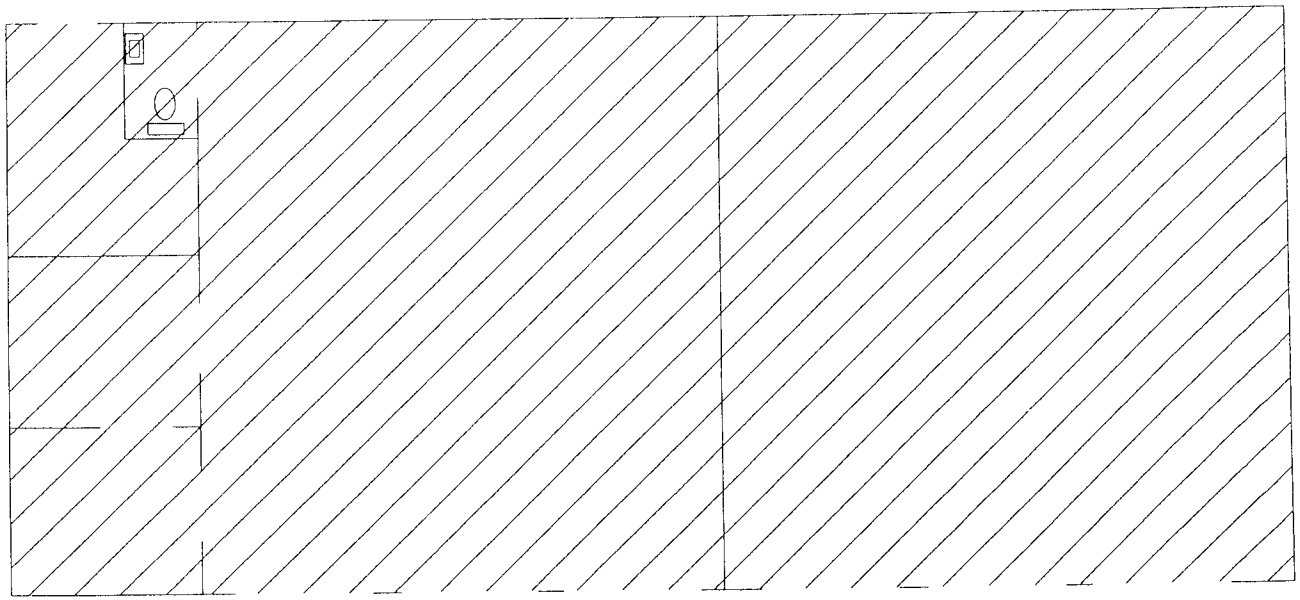


FIG. 1 LAYOUT PLAN

12X12 TILE

CONCRETE

BUILDING: 888	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

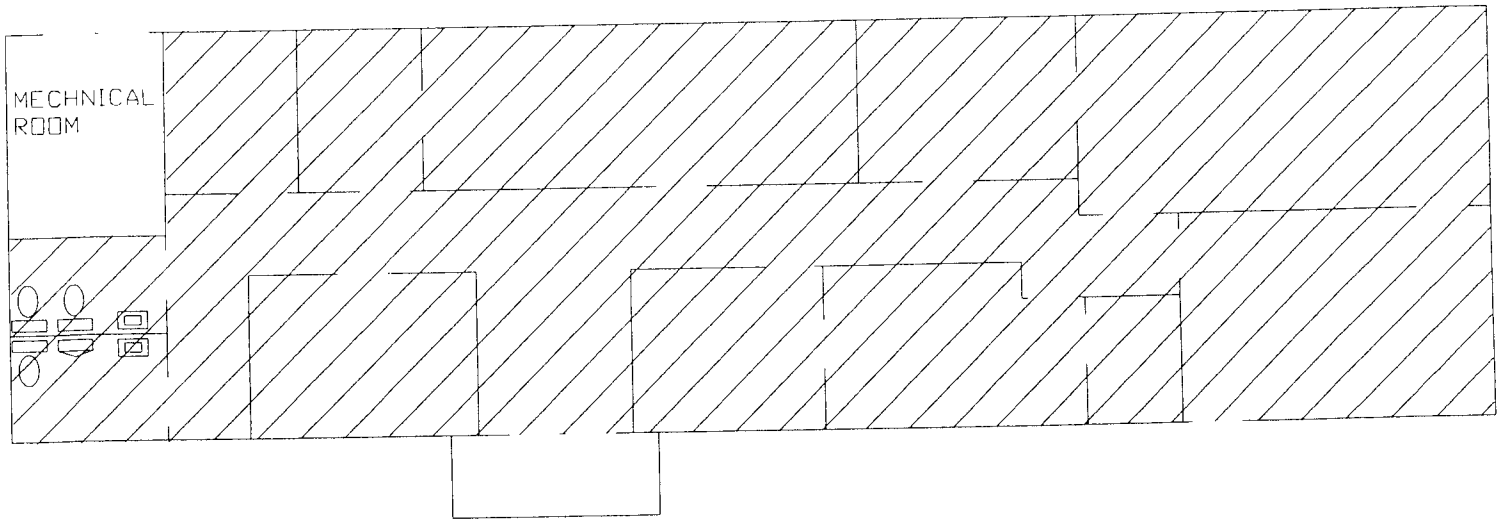


FIG. 1 LAYOUT PLAN SCALE: 1" = 10'

12X12 TILE

CERAMIC TILE

BUILDING: 891	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

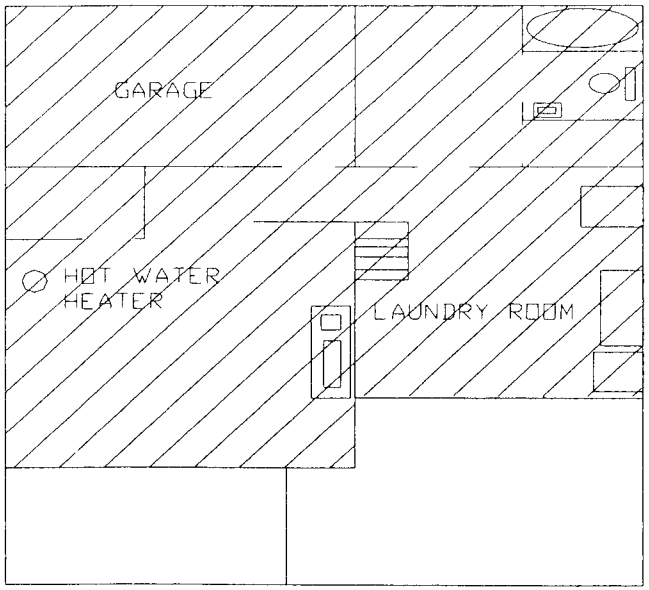


FIG. 1 BASEMENT PLAN

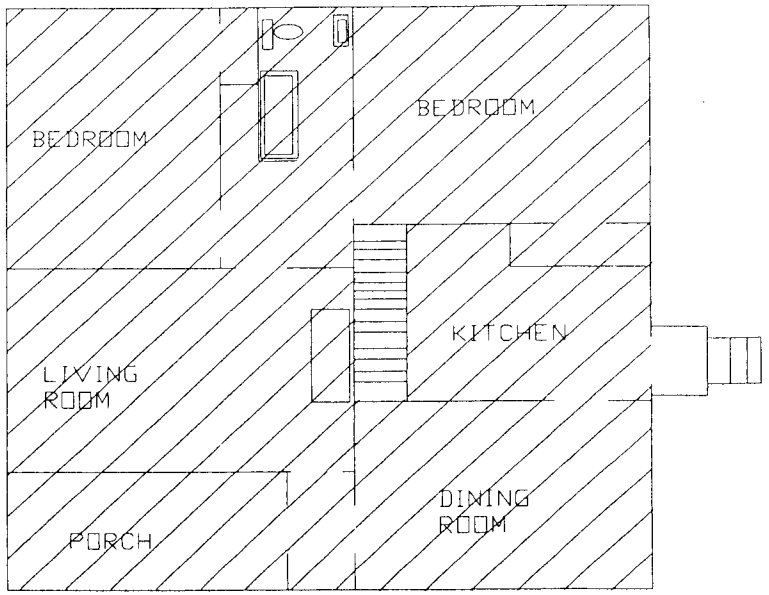


FIG. 2 FLOOR PLAN

SCALE: 1" = 10'

CONCRETE

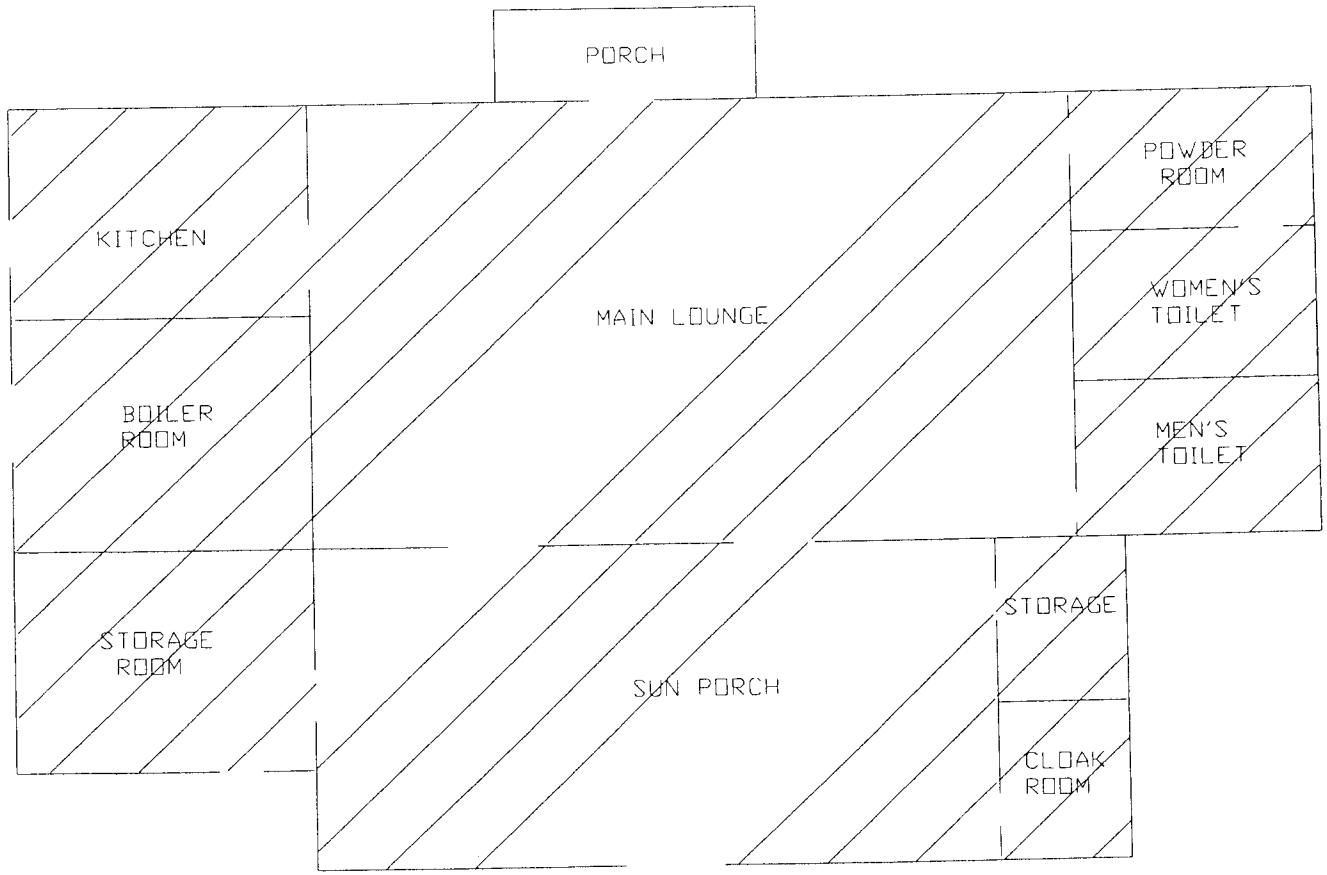
PAINTED CONCRETE

CARPET

12X12 TILE

CERAMIC TILE

BUILDING: 900	FIG. 1 BASEMENT FIG.2 FLOOR PLAN	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



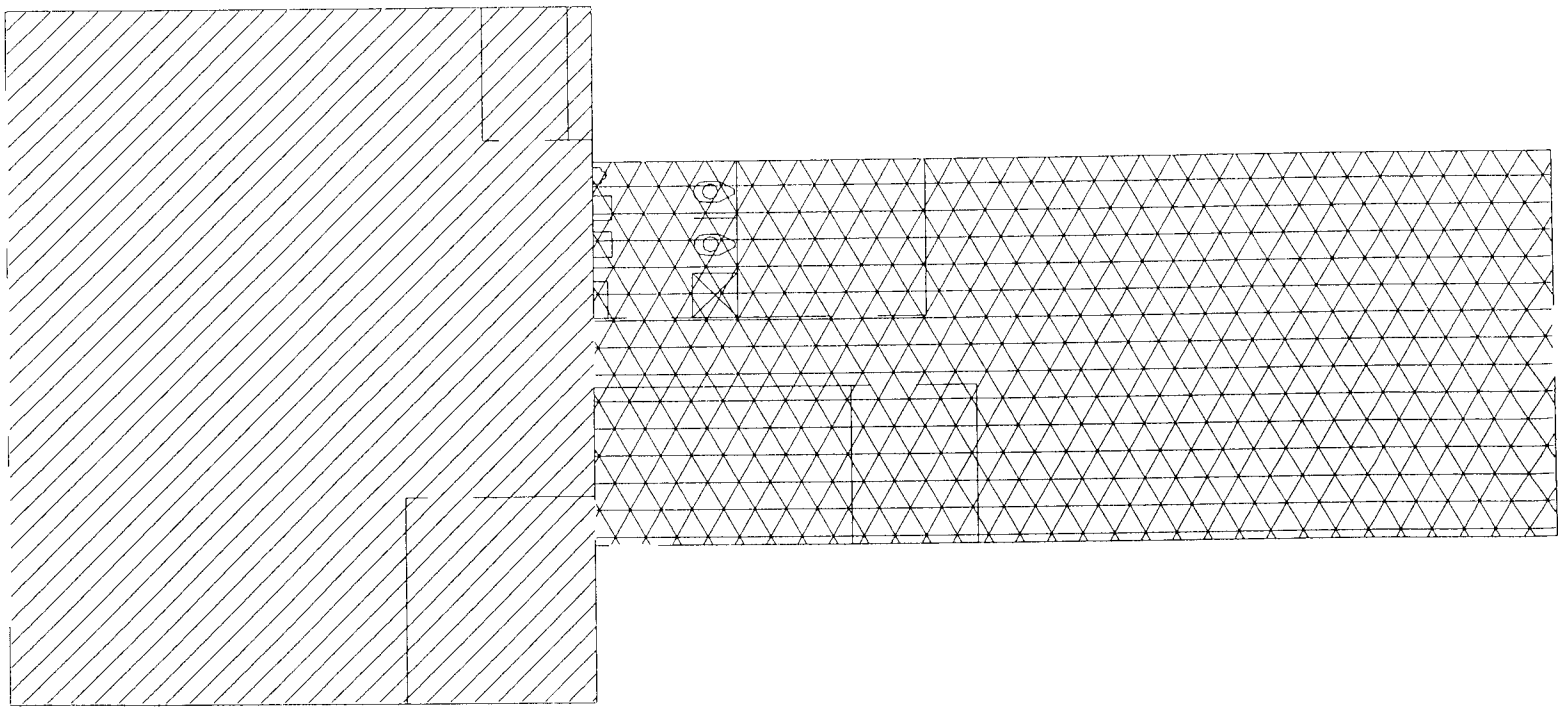
WOOD FLOOR

12X12 FLOOR TILE

CONCRETE FLOOR

CERAMIC TILE

BUILDING: 992	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



CONCRETE

12 X 12 TILE OVER
9 X 9 TILE

FIG. 1 LAYOUT PLAN SCALE: 1"=40'

BUILDING: 1108	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

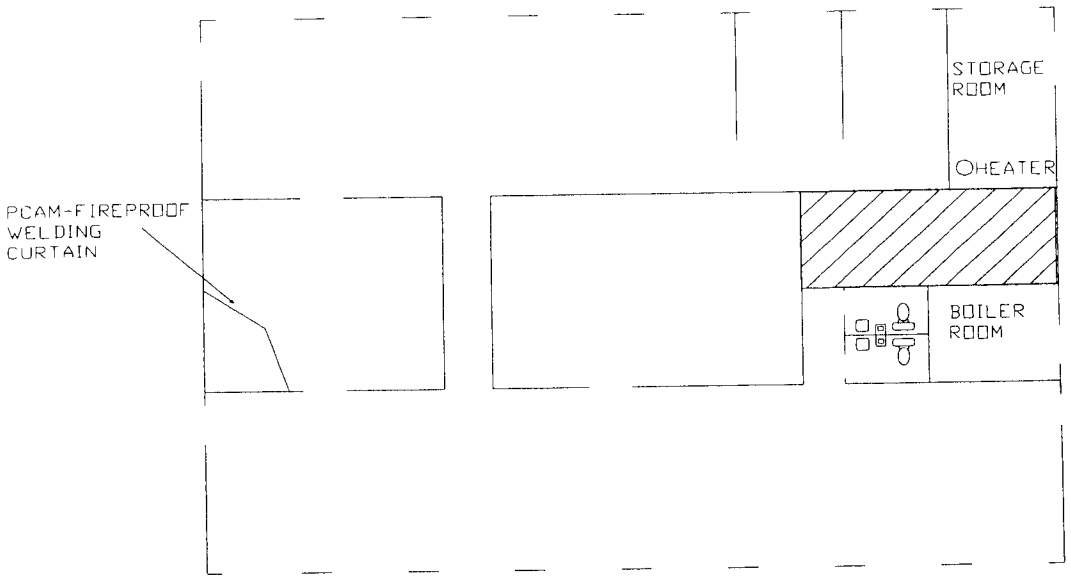
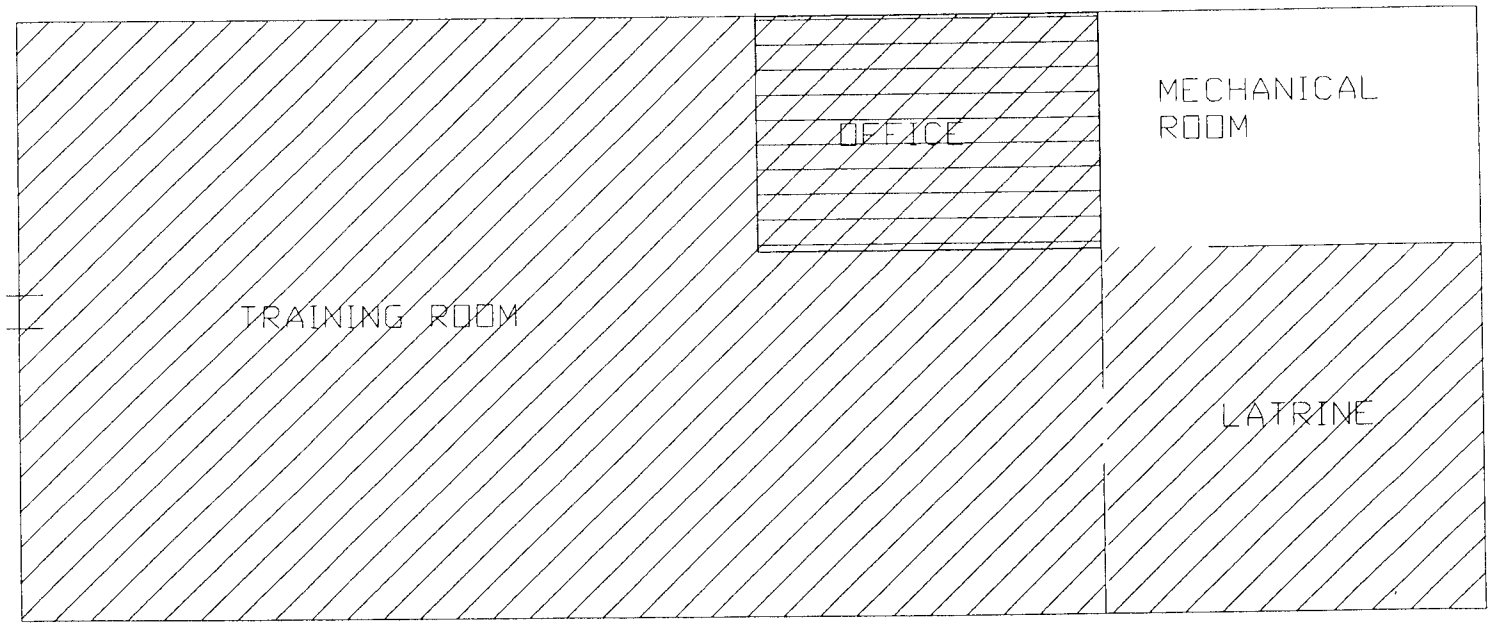


FIG. 1

LAYOUT PLAN

12X12 TILE

BUILDING: 1800	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

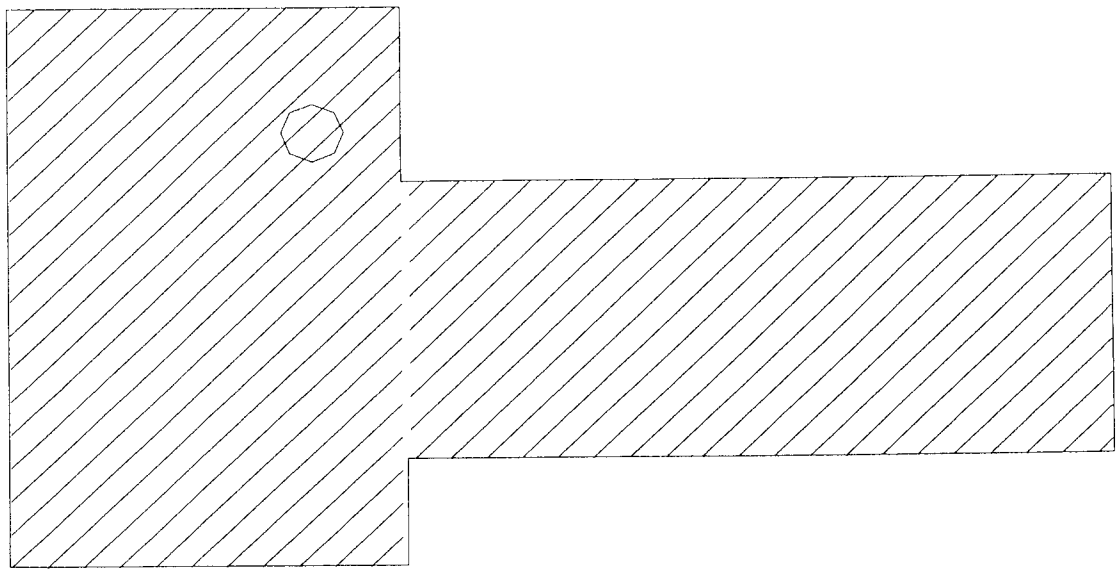


9X9 TILE

ACOUSTIC TILE ON CEILING

12X12 ACOUSTIC TILE

BUILDING: 1919	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



12X12 TILE

ACOUSTIC TILE ON CEILING AND WALLS THROUGHOUT

HOT WATER HEATER (HAS TRANSITE PIPE LEADING INTO THE ATTIC)

BUILDING: 1920	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

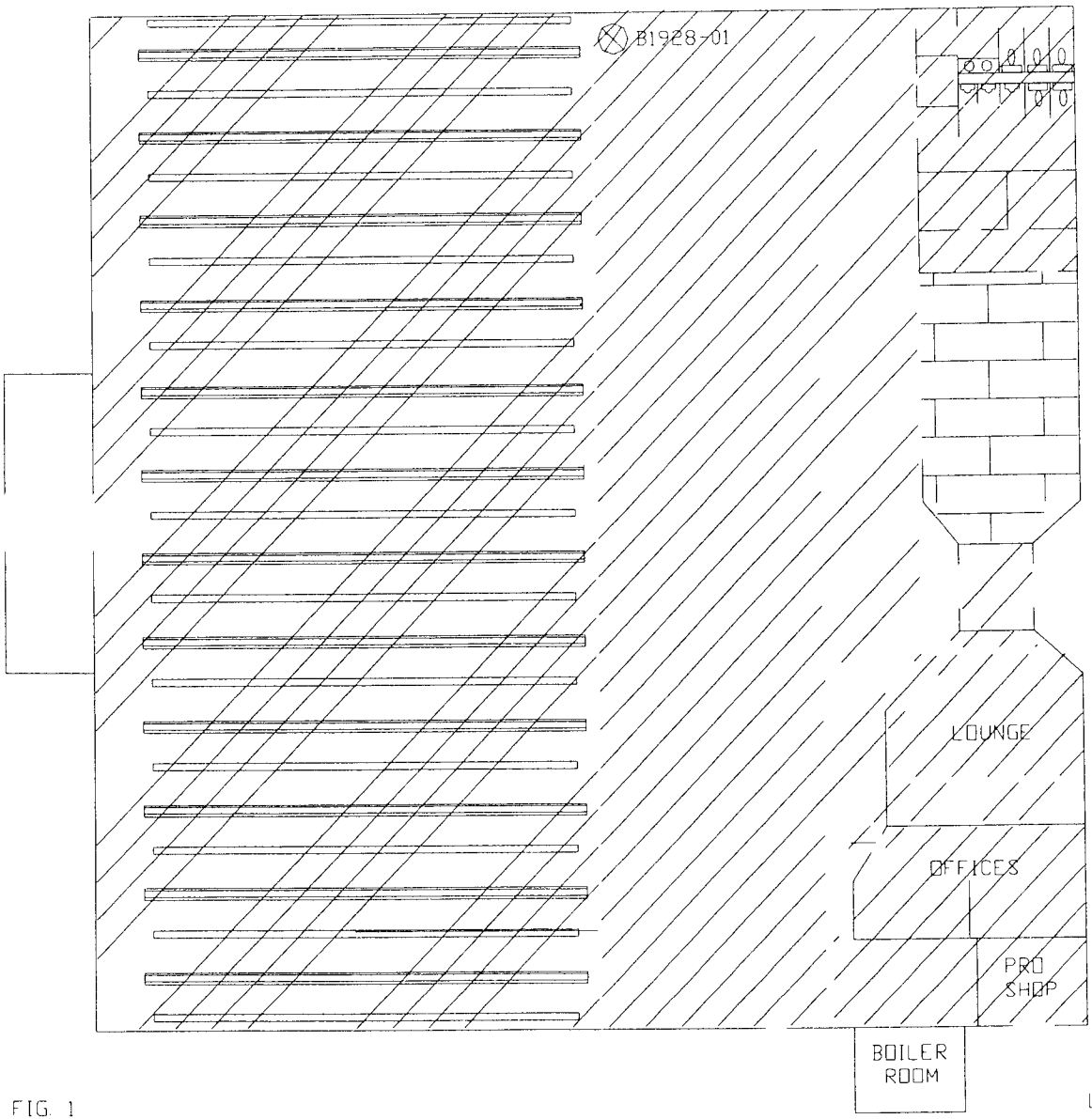


FIG. 1 LAYOUT PLAN

WOOD

REGULAR 12X12 TILE

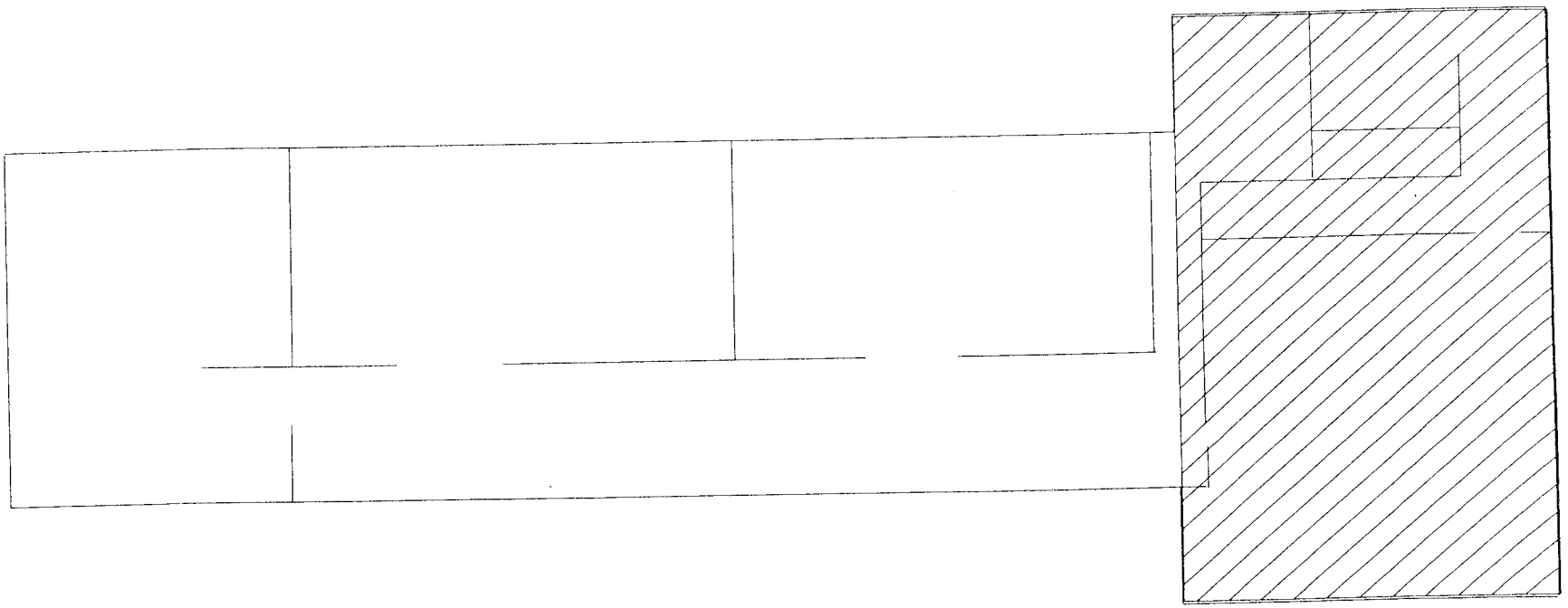
BROWN ROCK 12X12 TILE

CARPET

CERAMIC TILE

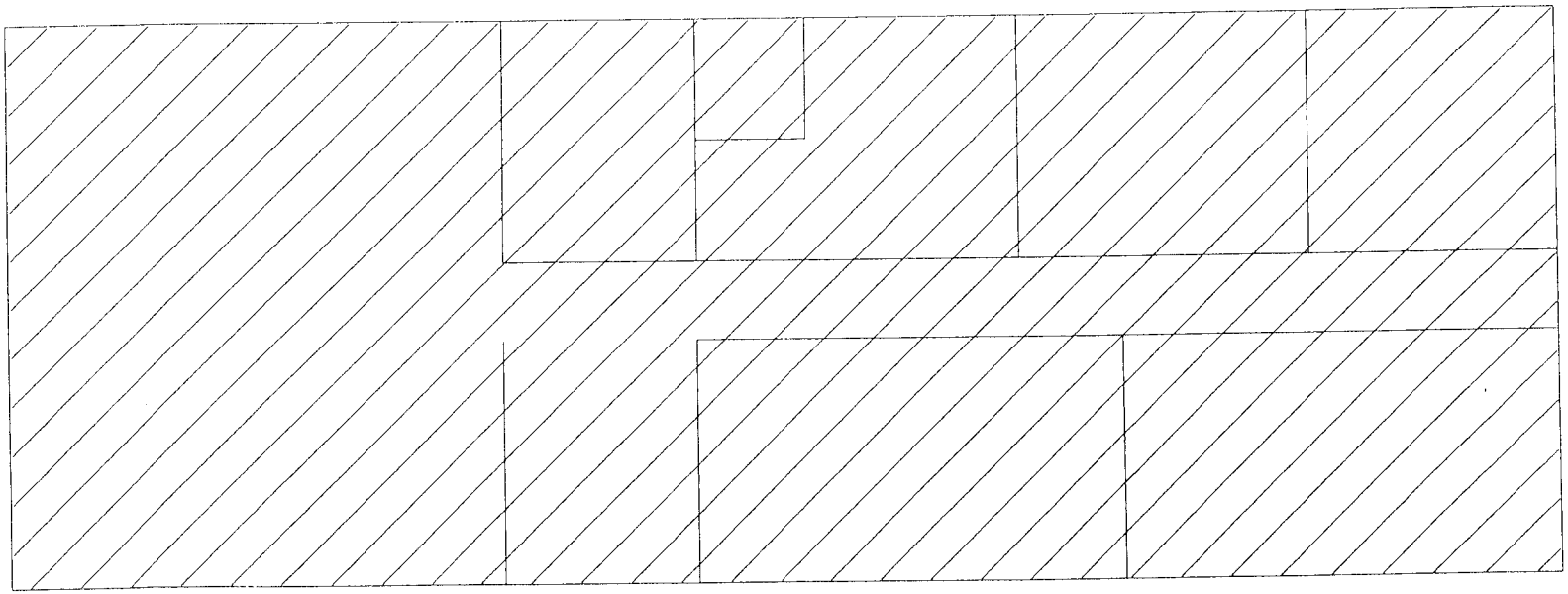
BRICK TILE

BUILDING: 1928	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



9 X 9 TILE

BUILDING: 2020	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



12X12 FLOOR TILE

BUILDING: 2090	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

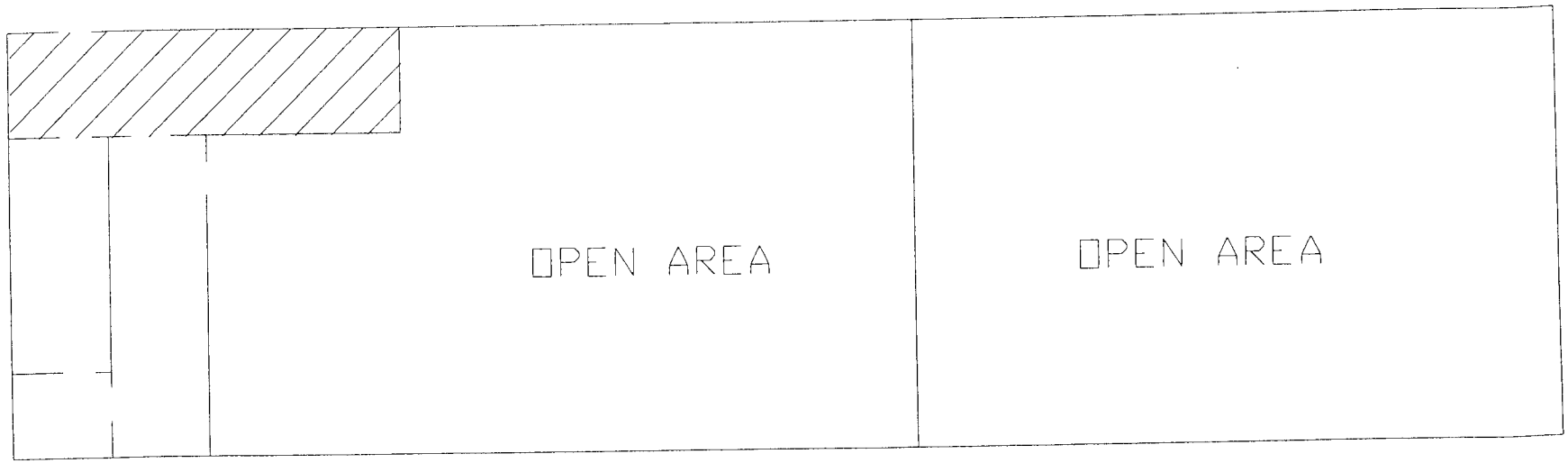
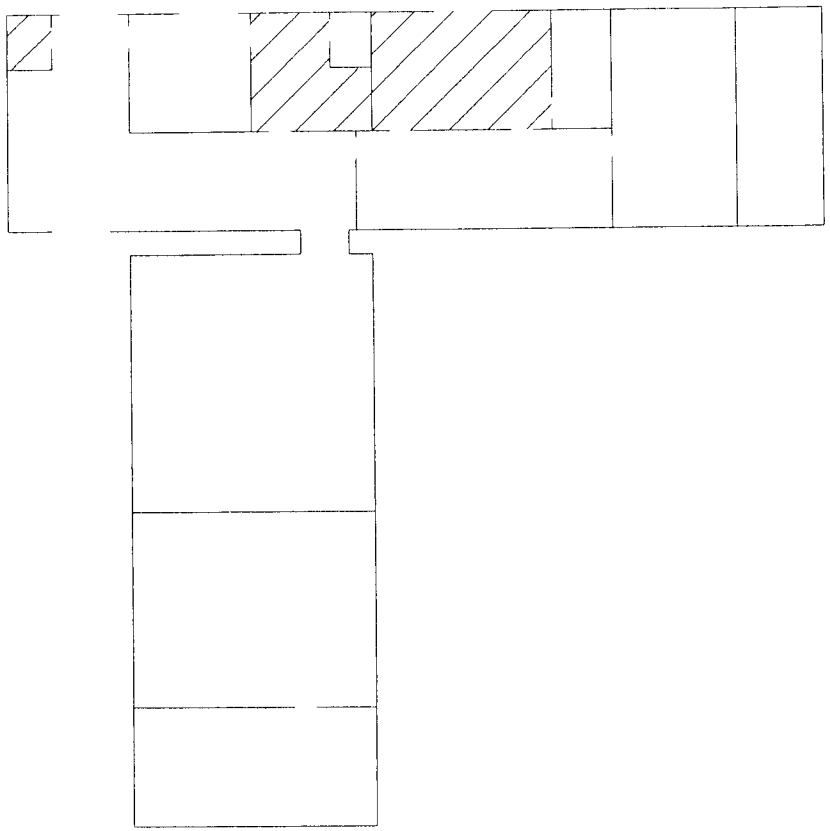


FIG. 1 LAYOUT PLAN SCALE: 1"=40'

9X9 TILE

BUILDING: 2115	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

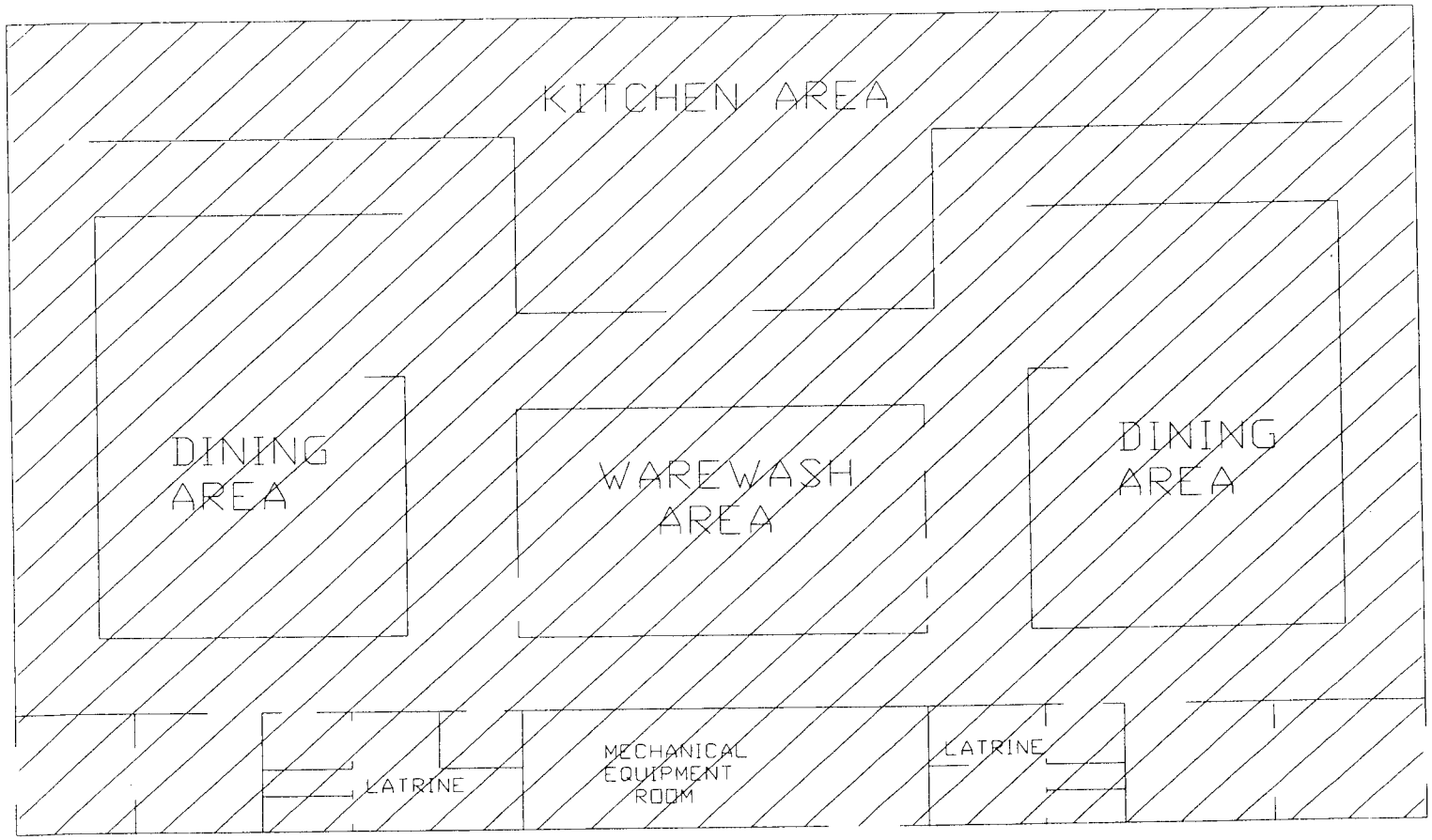


12X12 TILE

9X9 TILE

FIG. 1 LAYOUT PLAN

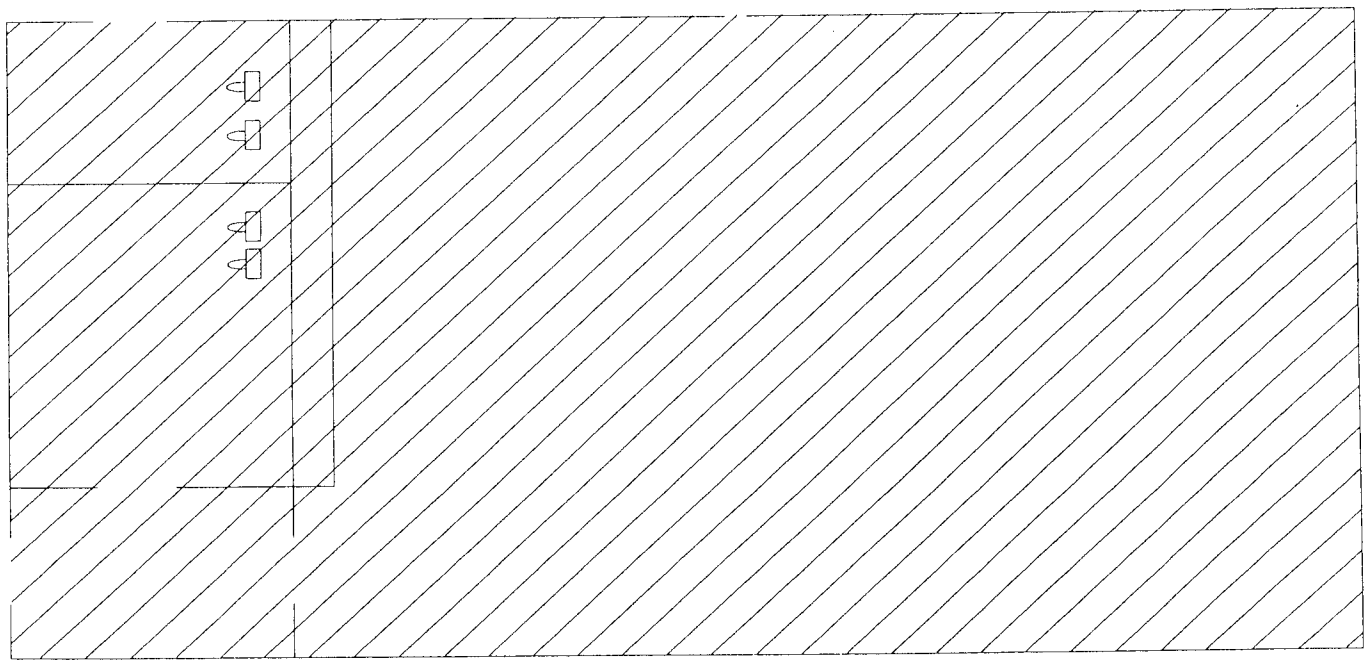
BUILDING: 2116	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



CERAMIC TILE

12X12 FLOOR TILE

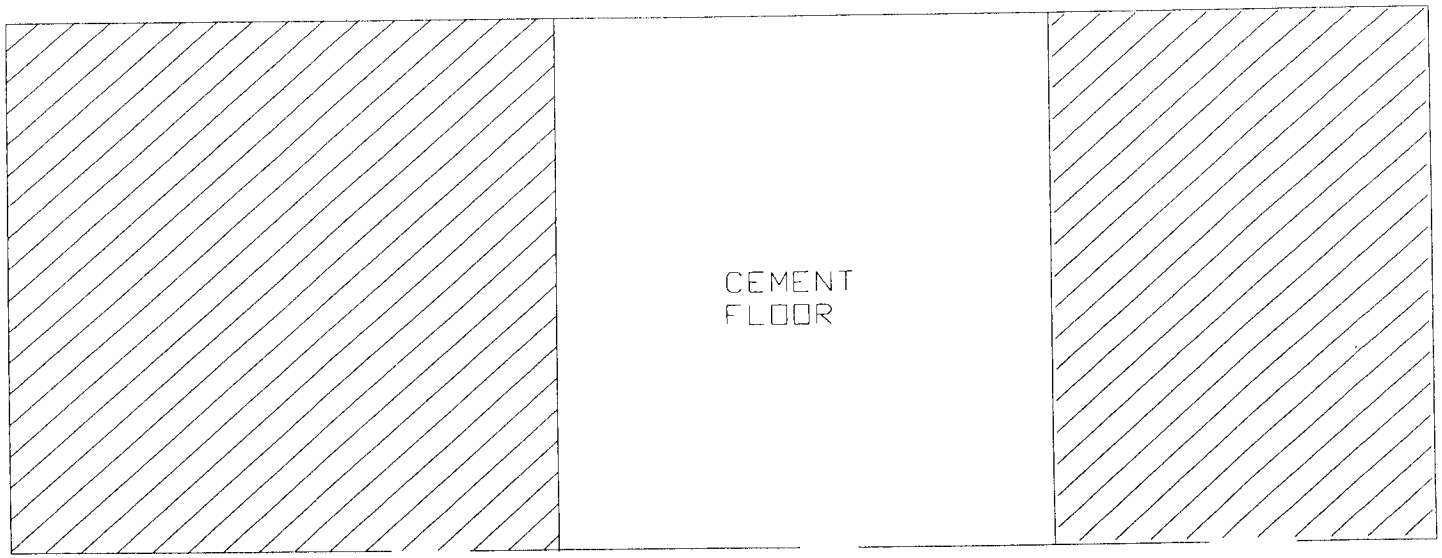
BUILDING: 2202	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



CONCRETE

12X12 TILE

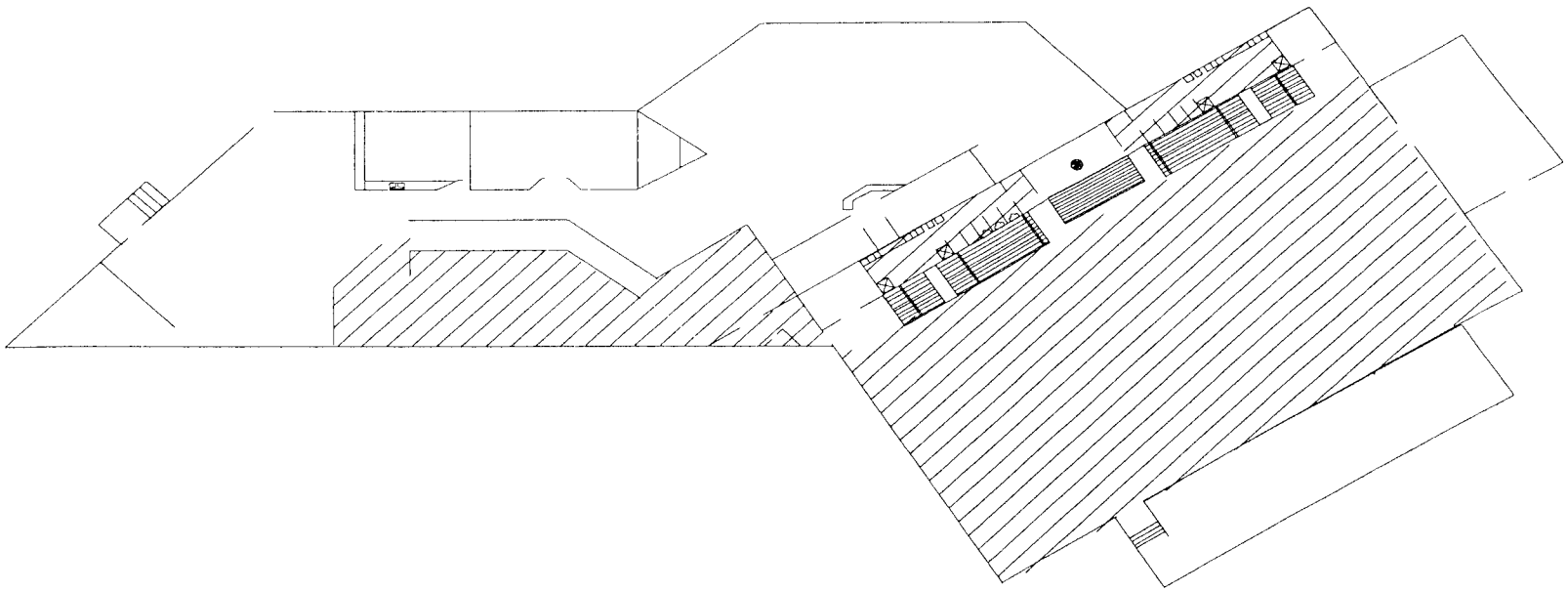
BUILDING: 3189		ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



12X12 TILE

9X9 TILE

BUILDING: 3297	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

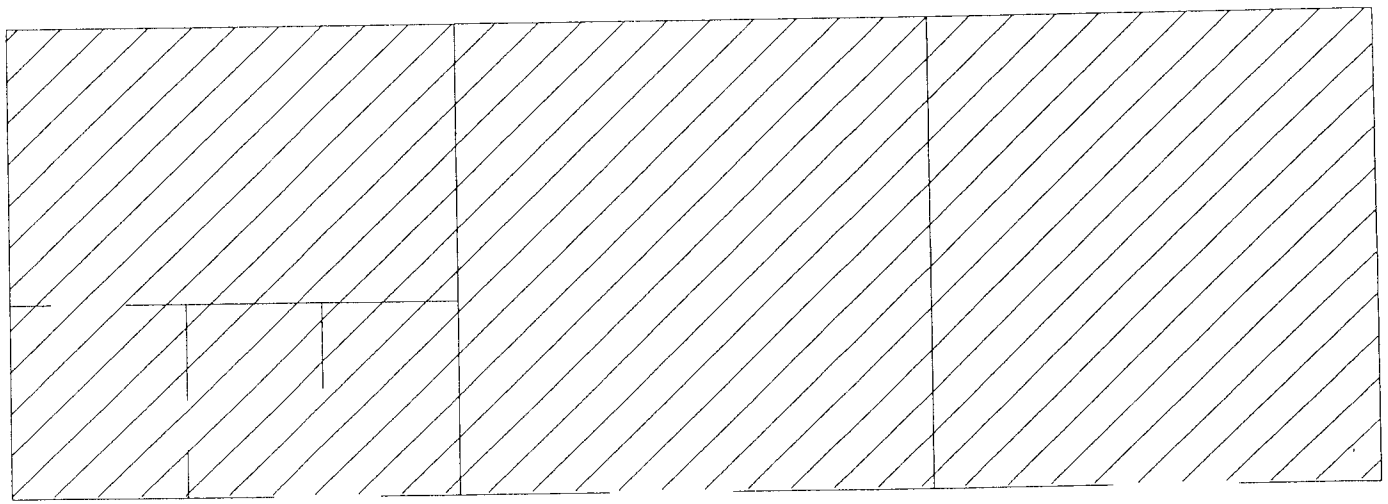


12 X 12 Floor Tile

Ceramic Tile

SCALE: 1"=30'

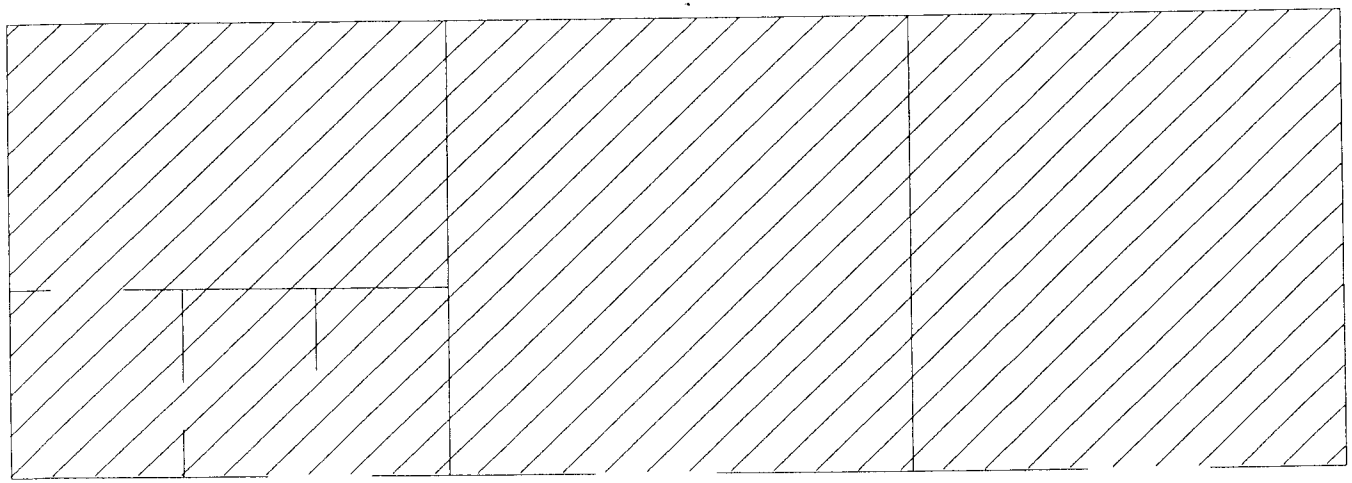
BUILDING: 3600		ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



12X12 TILE

SCALE: 1"=30'

BUILDING: 4434		ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



CEMENT

SCALE: 1"=30'

BUILDING: 4437		ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

APPENDIX D

SUMMARY TABLE OF PACM AND COST ESTIMATES

Building Number	PACM Material	Quantity	Estimated Abatement Cost*
B66	12x12 vinyl floor tile and mastic	6446 ft^2	$14,825.00
		Total	**$14,825.00**
B184	12x12 vinyl floor tile and mastic	576 ft^2	$1,400.00
		Total	**$1,400.00**
B698	12x12 vinyl floor tile and mastic	3108 ft^2	$7,150.00
		Total	**$7,150.00**
B793	12x12 vinyl floor tile and mastic	3,700 ft^2	$8,510.00
	Asbestos Siding	5890 ft	$10,315.00
		Total	**$18,825.00**
B888	12x12 vinyl floor tile and mastic	168 ft^2	$525.00
		Total	**$525.00**
B891	12x12 vinyl floor tile and mastic	2000 ft^2	$4,600.00
		Total	**$4,600.00**
B900	12x12 vinyl floor tile and mastic	216 ft^2	$650.00
		Total	**$650.00**
B992	12x12 vinyl floor tile and mastic	432 ft^2	$1,080.00
		Total	**$1,080.00**
B1012	12x12 vinyl floor tile and mastic	10,000 ft^2	$23,000.00
		Total	**$23,000.00**
B1108	9x9 vinyl floor tile and mastic	1420 ft^2	$3,550.00
		Total	**$3,550.00**
B1800	12x12 vinyl floor tile and mastic	240 ft^2	$725.00
		Total	**$725.00**
B1919	9x9 vinyl floor tile and mastic	1080 ft^2	$2,700.00
		Total	**$2,700.00**
B1920	12x12 vinyl floor tile and mastic	2136 ft^2	$4,925.00
	Transite pipe	10 ft	$100.00
		Total	**$5,025.00**
B1928	12x12 vinyl floor tile and mastic	1900 ft^2	$4,750.00
		Total	**$4,750.00**

Building Number	PACM Material	Quantity	Estimated Abatement Cost*
B2020	9x9 vinyl floor tile and mastic	651 ft^2	$1,650.00
		Total	**$1,650.00**
B2090	12x12 vinyl floor tile and mastic	1716 ft^2	$3,950.00
		Total	**$3,950.00**
B2115	9x9 vinyl floor tile and mastic	500 ft^2	$1,250.00
		Total	**$1,250.00**
B2116	12x12 vinyl floor tile and mastic	300 ft^2	$750.00
	9x9 vinyl floor tile and mastic	920 ft^2	$2,300.00
		Total	**$3,050.00**
B2202	12x12 vinyl floor tile and mastic	7800 ft^2	$17,940.00
		Total	**$17,940.00**
B3136	12x12 vinyl floor tile and mastic	675 ft^2	$1,690.00
		Total	**$1,690.00**
B3189	12x12 vinyl floor tile and mastic	200 ft^2	$600.00
		Total	**$600.00**
B3600	12x12 vinyl floor tile and mastic	300 ft^2	$750.00
		Total	**$750.00**
B4434	12x12 vinyl floor tile and mastic	800 ft^2	$2,000.00
		Total	**$2,000.00**
B4437	Thermal system insulation	6 ft^2	$75.00
		Total	**$75.00**
		Grand Total	**$184,790.00**

*Includes all air monitoring and design fees

ASBESTOS CONTAINING BUILDING MATERIALS
SURVEY REPORT

BUILDING: 1876

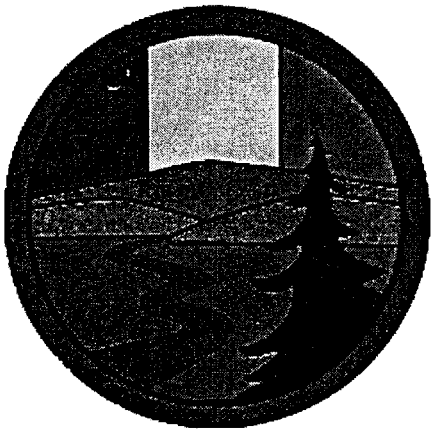
ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
MISCELLANEOUS ACM BUILDINGS
1696, 1697, & 1876

CONTAINING NON-FRIABLE ACM

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0033

Fort McClellan



Staying Beautiful

Conducted and Prepared by:

REISZ ENGINEERING
P.O. BOX 1349

HUNTSVILLE, ALABAMA 35807

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
MISCELLANEOUS ACM BUILDINGS
1696, 1697, & 1876

CONTAINING NON-FRIABLE ACM

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0033

Prepared For:

DIRECTORATE OF ENVIRONMENT
FORT McCLELLAN

APPROVED FOR TRANSMITTAL BY
JOSEPH L. HILLERICH

Conducted and Prepared by:

REISZ ENGINEERING

December, 1998

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1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this survey was to locate and identify asbestos containing building materials at multiple buildings located at Fort McClellan, Alabama. (See Appendix C for a complete list of buildings included in this document). Pursuant to the Contract, Reisz Engineering was required to provide the survey in accordance with AHERA (40 CFR Part 763 Subpart E) protocol. AHERA is applicable to interior building products installed prior to October 12, 1988. AHERA does not apply to the exterior of buildings and does not apply to non-building materials (e.g. cabinetry, special equipment and chalkboards). Reisz Engineering has included as part of the survey those readily accessible, suspect friable interior non-building materials (e.g. vibration dampers); but has not included certain items (e. g. interior linings of equipment and special supplies, some non-friable materials such as transite, etc.). Exterior building materials were not sampled as part of this contract unless those materials were suspected to be of friable nature and continuous with indoor materials (e.g. piping insulation). Specifically, Reisz Engineering was contracted to provide the following services:

1. Identify and collect samples of accessible suspect friable building materials within the referenced project area.
2. Perform a visual inspection to provide information on material condition, material quantities, material locations, and building use.
3. Analysis of all bulk samples for asbestos content utilizing Polarized Light Microscopy and Dispersion Staining Techniques performed in accordance with EPA Bulk Analysis Method EPA 600/M4-82-020.
4. Make recommendations as to response actions pertaining to those materials identified as asbestos containing.

5. Compilation of a final report (contained herein) which details all sample results, identifies sample locations, and provides recommendations based upon the results.

6. Preparation of a Building specific Operations & Maintenance (O&M) Plan for buildings containing friable asbestos materials.

2.0 REGULATORY STANDARDS

The National Emissions Standards for Hazardous Air Pollutants (NESHAP) requires the Owner or Operator of a facility to determine the presence or non-presence of asbestos containing materials prior to conducting renovation or demolition activities. The NESHAP Standard for asbestos (40CFR Part 61 Sub-part M) requires the use of engineered control procedures for removal of asbestos materials that are or will become friable during renovation or demolition. The removal must occur before renovation or demolition activities impact those materials.

On October 11, 1994 an OSHA promulgated regulation (29 CFR Part 1926.1101) became effective. This Standard is related to asbestos exposure in construction, renovation and building maintenance work places. Building owners are required, pursuant to the Standard, to notify employees, tenants and prospective employers (contractors) of the presence, location and quantities of ACM in the building. Implementation of the "communication of hazards" provisions in the Standard were originally to be not later than April 10, 1995 but was extended to July 10, 1995 and is now in effect. The OSHA Standard does not apply to work performed by employees of State agencies in states without state run OSHA programs (e.g. Alabama).

In October 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law. Included in this act are provisions directing EPA to establish rules and regulations

(40CFR Part 763) addressing asbestos-containing materials in schools. Specifically, the EPA was directed to address the issues of: 1) identifying, 2) evaluating and 3) controlling asbestos containing materials (ACM) in schools. AHERA requires schools to perform building inspections and to prepare management plans for ACM control. Although the AHERA regulation does not specifically apply to this project it is generally accepted as the industry standard and was cited by Fort McClellan in the Asbestos Survey Request as the basis of survey methodology. The AHERA inspections must be conducted using specific guidelines that include a minimum number of samples per material type. This survey was conducted in accordance with those guidelines per the Contract requirements.

On November 28, 1992 a law became effective which extended the EPA's Model Accreditation Plan to all public and commercial buildings. Currently the rule extends the accreditation requirements of persons performing asbestos work (inspectors, project designers, abatement supervisors, and workers) in public and commercial buildings, but does not extend the other aspects of AHERA. This project was conducted utilizing EPA accredited personnel.

3.0 PROJECT CHARACTERISTICS

Reisz Engineering accredited Asbestos Inspectors performed inspections of these buildings for the purpose of identifying building materials suspected to contain asbestos. All of the buildings referenced in this survey contain only non-friable ACM. Refer to Appendix B for types and quantities of materials in individual buildings.

4.0 SURVEY METHODOLOGY

The buildings were visually inspected for the presence of material suspected to contain asbestos. Those suspect materials were identified, bulk samples were obtained of tank insulation

and placed into individual vials for transportation to the University of Alabama in Huntsville (UAH). General areas for sample locations were selected on a random basis with a preference for exact positioning at existing damage. Each sample location is represented by a number on the plans in Appendix C. Those numbers directly correspond with the numbers listed elsewhere in this report.

If any additional suspect materials are identified during renovation or demolition they should be analyzed for asbestos content. Materials visibly identifiable as non-asbestos (fiberglass, foam rubber, wood, etc.) were not sampled. Materials installed after October 12, 1988 (as reported by Fort McClellan staff) were not sampled.

Hazard Assessment Factors

Each time suspect ACM was sampled; it was classified as either a friable or a non-friable material. Friable material may be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is more hazardous than non-friable ACM because friable material can release airborne asbestos fibers more easily. In assessing the fiber release potential, the current condition of all ACM identified was noted. Evidence of deterioration, physical damage, water damage, erosion of ACM due to its' proximity to an air plenum, high vibration, or contact potential was also noted.

5.0 LABORATORY ANALYSIS METHODOLOGY

All bulk samples were analyzed at UAH by polarized light microscopy utilizing dispersion staining or Becke line techniques, in accordance with the EPA's "Interim Method for Determination of Asbestos in Bulk Insulation Samples" (EPA 6OO/m4-82-020). Quality control samples were taken as duplicates at a rate of 1 to 10 and were sent to a second accredited

laboratory. This type of analysis requires the microscopist to take a portion of the bulk sample and treat it with oil of specific refractive index. This prepared slide is then subjected to a variety of optical tests.

Each type of asbestos displays unique characteristics when subjected to these tests. Percentages of the identified types of asbestos are determined by visual estimation. Even though this is an estimation, any material that contains greater than one percent of any type of fibrous asbestos is considered ACM and must be handled according to OSHA and EPA regulations if disturbed during maintenance, renovation, demolition or removal.

The UAH laboratory participates in the American Industrial Hygiene Association (AIHA) quality assurance program for polarized light microscopy and is accredited by the AIHA through their voluntary program.

6.0 SUSPECT MATERIALS

The following is a general list of building materials that were suspected to contain asbestos in various buildings. A complete and more detailed description of these materials can be found in Appendix B.

Surfacing

- None

Thermal System Insulation

- Transite sheeting on chiller in building 1876

Miscellaneous Material

- Exterior transite siding

7.0 ASBESTOS INSPECTION AND SAMPLING RESULTS

A narrative description of all ACM identified during the survey is given below.

FRIABLE ACM

None

NON FRIABLE ACM

Two types of non-friable presumed ACM were found in the buildings: 1) exterior transite siding and 2) transite on two sides of a chiller.

1) Asbestos containing transite siding is found on the exterior of buildings 1696 and 1697.

2) Asbestos containing transite sheeting is found on the chiller of one room in building 1876.

INACCESSIBLE MATERIAL

Insulation and spray-on compounds associated with inaccessible crawl space and tunnel areas should be assumed as "like" materials corresponding to materials sampled within the building.

8.0 CONCLUSIONS AND RECOMMENDATIONS

None of the materials identified within this report are damaged to the extent that significant asbestos fiber release may be likely under normal conditions. The asbestos containing materials may be subject to routine maintenance activities that could involve significant

disturbance. Proper management of the material in-place may be acceptable assuming the proper precautions are taken to eliminate exposure of personnel to any airborne asbestos.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions and recommendations expressed in this report are based only on conditions that were observed during the inspections of these buildings during the period of this contract. Reisz Engineering and this report make no representation or assumptions as to past conditions or future occurrences.

Our inspection was generally non-destructive in nature. Any conditions or materials that were not visible on the surface were not inspected and may differ from those observed. It was not within the scope of this investigation to remove surface materials to investigate portions of the structure or materials that may lie beneath the surface. Our selection of sample locations and frequency is based upon our observations and the assumption that all materials in the same area are homogeneous.

This report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos abatement contractors in locating ACM. Under no circumstances is this report to be utilized as a bidding document or as a project specification document.

APPENDIX A

REPORT OF LABORATORY ANALYSIS

UAH

Environmental Laboratory
Kenneth E. Johnson Research Center

The University of Alabama in Huntsville

347 Wilson Hall
Huntsville, Alabama 35899
Phone: (256) 890-6391
Fax: (256) 890-6376

Re, Bulk Asbestos Analysis
EPA 600/R-93/116

AIHA: 023601

Client Reisz Engineering
Building 32 Suite A2
3322 Memorial Parkway South
Huntsville, AL 35801

Receipt Date: 07/24/98

Sample Date: 07/14/98

Microscopist: Safe-State
#102005

Sample/Description	Asbestos Fibers (%) Chry	Amos	Croc	Othr	Non-Asbestos Material (%) Cell	Fbgl	MW	CaSO4	Othr
B 1 876-01 /Insulation on water tank					18	4			78
B1876-02 I Insulation on water storage tank					18				82

Chry = Chrysotile
Amos = Amosite
Croc = Crocidolite

Othr = Other
cell = Cellulose

MW = Mineral Wool
CaSO4 = Calcium Sulfate
Fbgl = Fiberglass

APPENDIX B

SUMMARY OF ACM AND COST ESTIMATES

Building Number	ACM Material	Quantity	Estimated abatement cost*
B1696	Transite siding	30,000 sq. ft.	$52500
B1697	Transite siding	34,000 sq. ft.	$59500
B1876	Transite sheeting	240 sq. ft.	$3000
	12x12 floor tile and mastic	120 sq. ft	$320

***Includes all air monitoring and design fees**

APPENDIX C

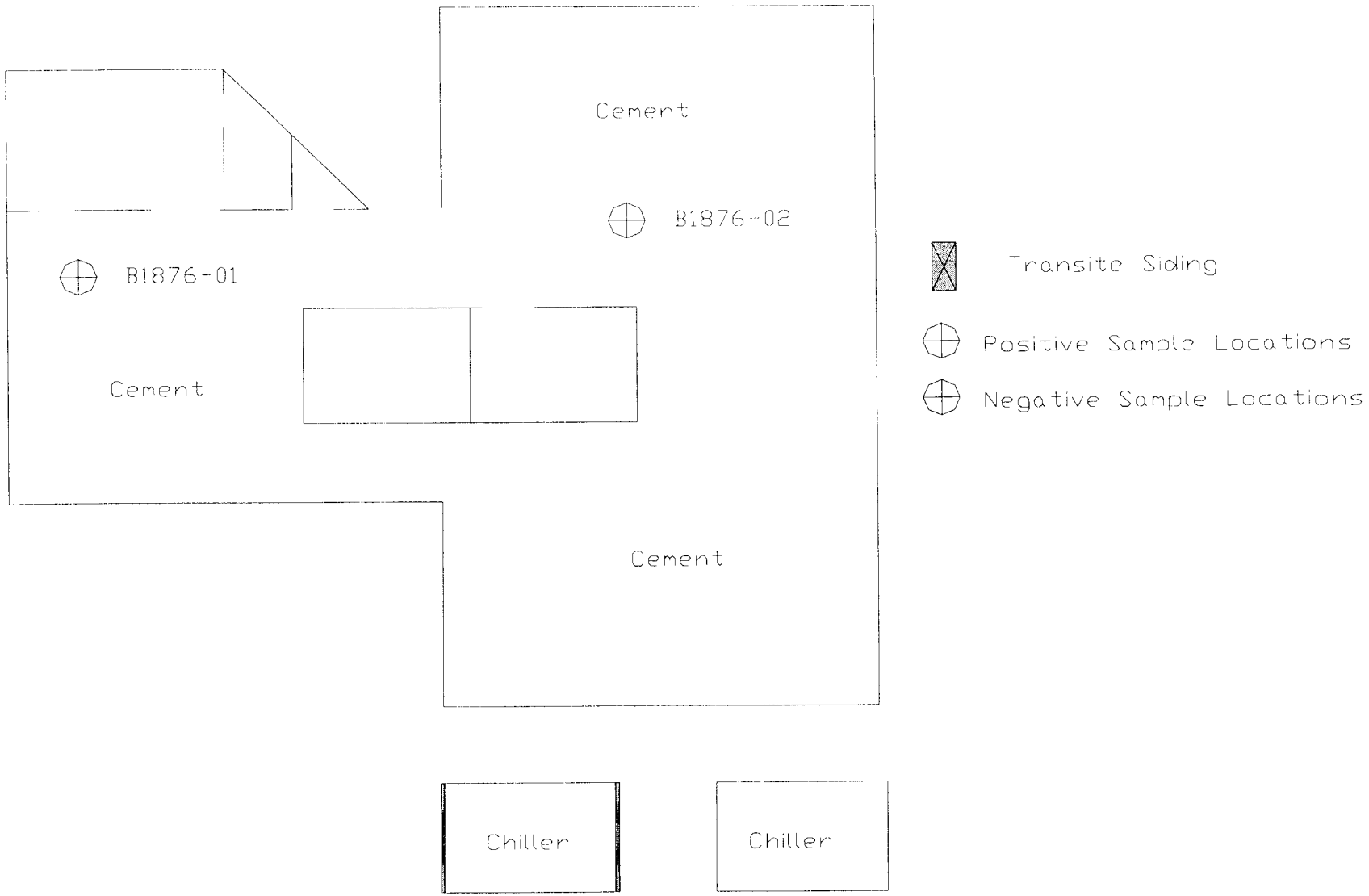
LIST OF BUILDINGS

BUILDING NUMBER

1696
1697
1876

APPENDIX D

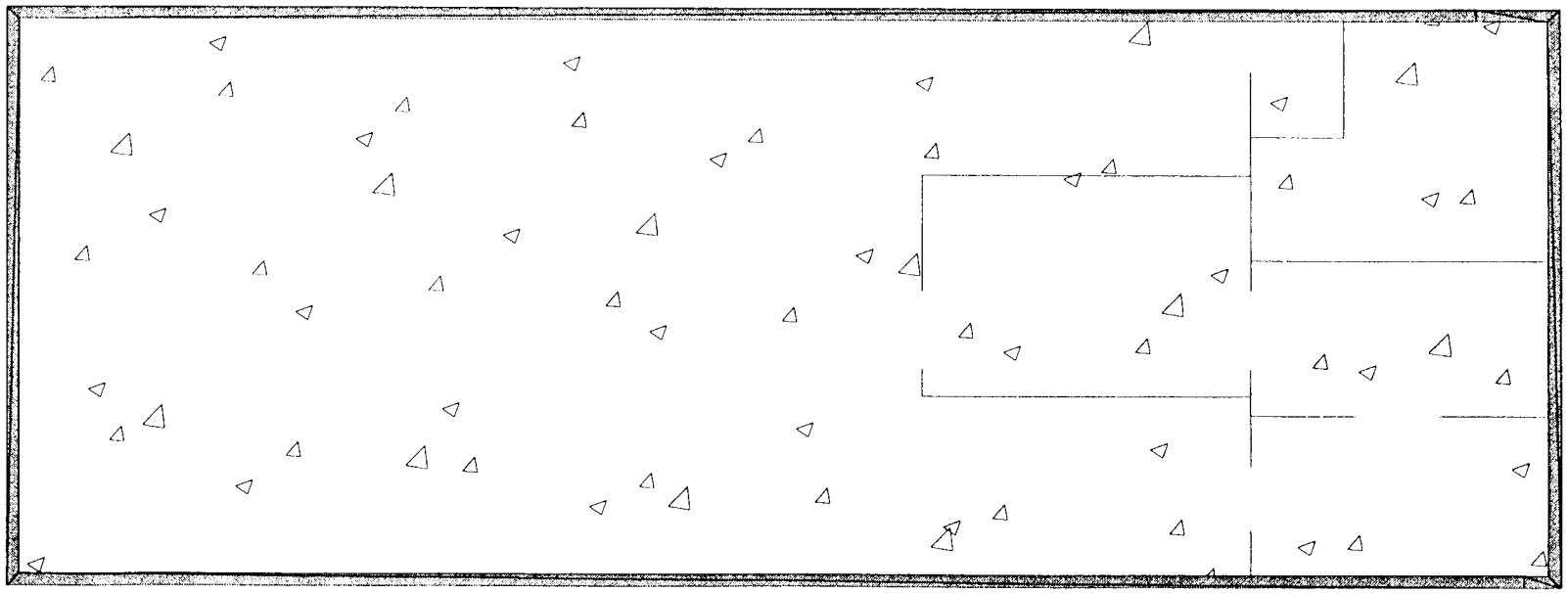
ACM SAMPLE LOCATION PLANS



BUILDING: 1876	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM833	**REISZ ENGINEERING**

APPENDIX E

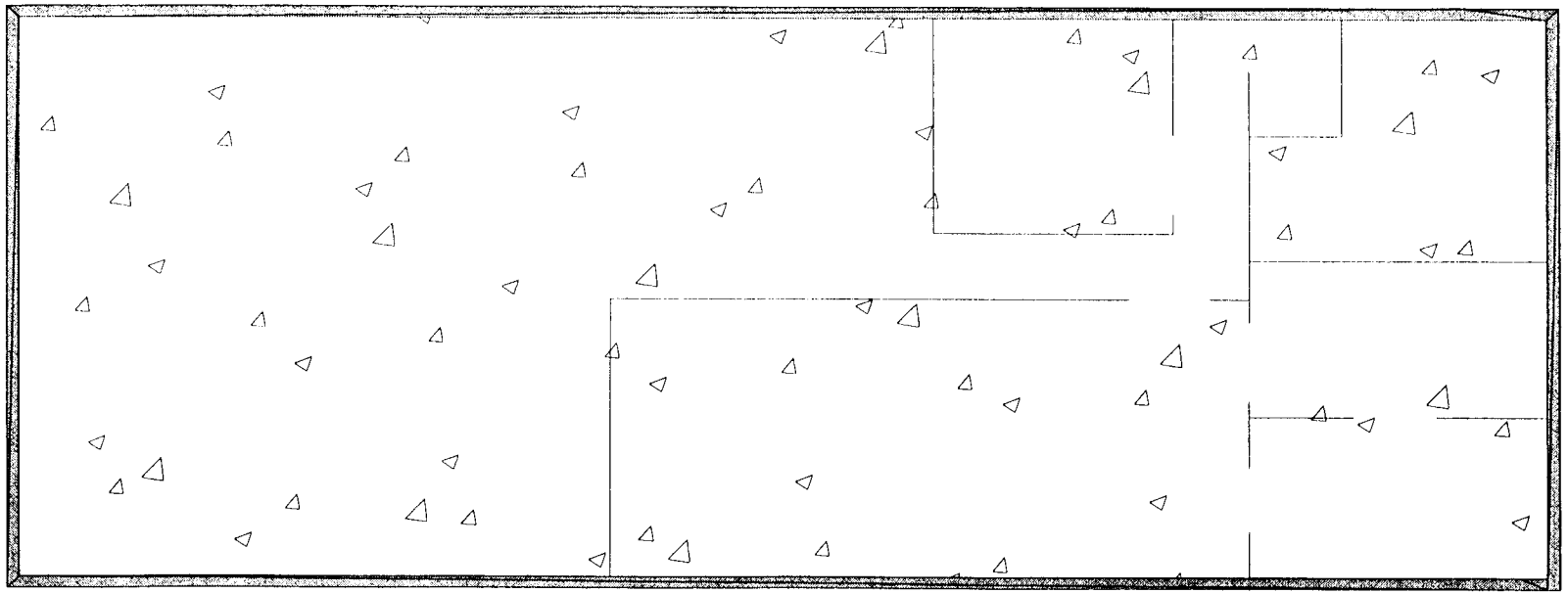
SELECTED ACM LOCATION PLANS



Cement Floors

Transite Siding

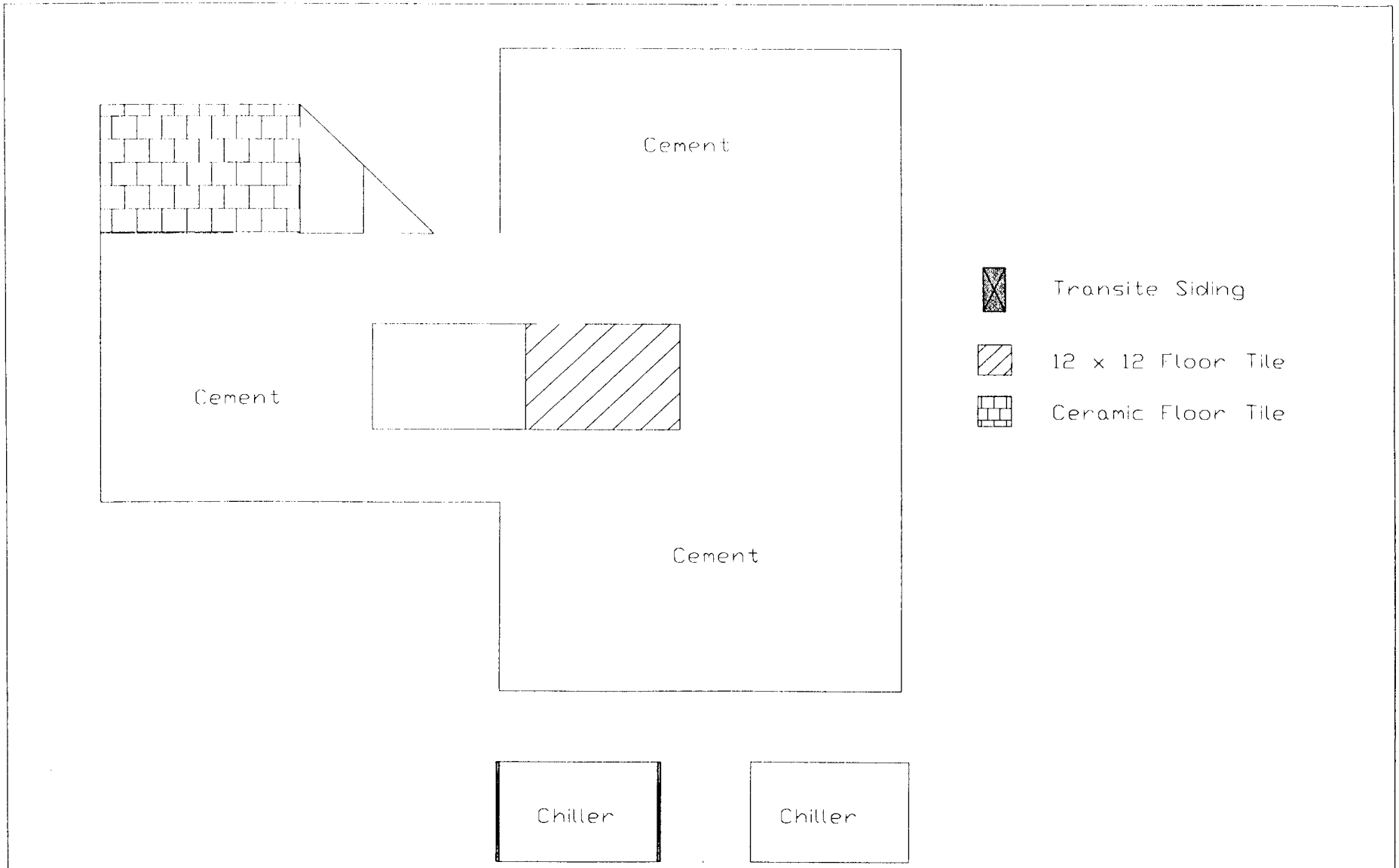
BUILDING: 1696	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM833	**REISZ ENGINEERING**



Cement Floors

Transite Siding

BUILDING: 1697	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM833	**REISZ ENGINEERING**



BUILDING: 1876	FIG. 1 LAYOUT	ASBESTOS SURVEY DABT02-96-D-0005 FM833	**REISZ ENGINEERING**

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY REPORT

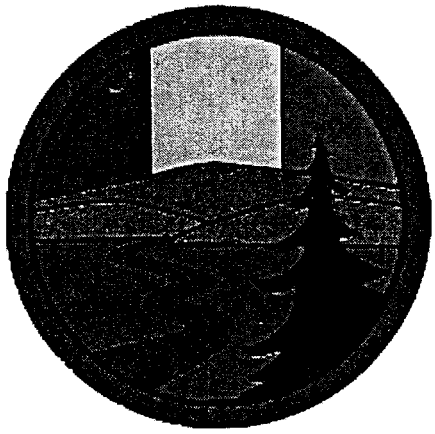
BUILDING: 3176

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
STEAM PLANT
BUILDINGS 3176

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Fort McClellan



Staying Beautiful

Conducted and Prepared by:

REISZ ENGINEERING
P.O. BOX 1349
HUNTSVILLE, ALABAMA 35807

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
STEAM PLANT
BUILDINGS 3176

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Prepared For:

DIRECTORATE OF ENVIRONMENT
FORT McCLELLAN

APPROVED FOR TRANSMITTAL BY
JAMES R. WRIGHT

Conducted and Prepared by:

REISZ ENGINEERING

June, 1998

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APPENDIX B - SUMMARY TABLE OF ACM
APPENDIX C - SAMPLE LOCATIONS PLANS
APPENDIX D - SELECTED ACM LOCATIONS PLANS (None)
APPENDIX E - SELECTED ACM PHOTOGRAPHS (None)

1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this survey was to locate and identify asbestos containing building materials at Building 3176 located at Fort McClellan, Alabama. Pursuant to the Contract, REISZ Engineering was required to provide the survey in accordance with AHERA (40 CFR Part 763 Subpart E) protocol. AHERA is applicable to interior building products installed prior to October 12, 1988. AHERA does not apply to the exterior of buildings and does not apply to non-building materials (e.g. cabinetry, special equipment and chalkboards). REISZ Engineering has included as part of the survey those readily accesible, suspect friable interior non-building materials (e.g. vibration dampers); but has not included certain items (e. g. interior linings of equipment and special supplies, some non-friables such as transite, ect.). Exterior building materials were not sampled as part of this contract unless those materials were suspected to be of friable nature and continuous with indoor materials (e.g. piping insulation). Specifically, REISZ Engineering was contracted to provide the following services:

1. Identify and collect samples of accessible suspect friable building materials within the referenced project area.
2. Perform a visual inspection to provide information on material condition, material quantities, material locations, and building use.
3. Analysis of all bulk samples for asbestos content utilizing Polarized Light Microscopy and Dispersion Staining Techniques performed in accordance with EPA Bulk Analysis Method
   EPA 600/M4-82-020.
4. Make recommendations as to response actions pertaining to those materials identified as asbestos containing.

5. Compilation of a final report (contained herein) which details all sample results, identifies sample locations, and provides recommendations based upon the results.
6. Preparation of a Building specific Operations & Maintenance (O&M) Plan for buildings containing friable asbestos materials.

2.0 REGULATORY STANDARDS

T'he National Emissions Standards for Hazardous Air Pollutants (NESHAP) requires the Owner or Operator of a facility to determine the presence or non-presence of asbestos containing materials prior to conducting renovation or demolition activities. The NESHAP Standard for asbestos (40CFR Part 61 Sub-part M) requires the use of engineered control procedures for removal of asbestos materials that are or will become friable during renovation or demolition. The removal must occur before renovation or demolition activities impact those materials.

On October 11, 1994 an OSHA promulgated regulation (29 CFR Part 1926.1101) became effective. This Standard is related to asbestos exposure in construction, renovation and building maintenance work places. Building owners are required, pursuant to the Standard, to notify employees, tenants and prospective employers (contractors) of the presence, location and quantities of ACM in the building. Implementation of the "communication of hazards" provisions in the Standard were originally to be not later than April 10, 1995 but was extended to July 10, 1995 and is now in effect. The OSHA Standard does not apply to work performed by employees of State agencies in states without state run OSHA programs (e. g. Alabama).

In October 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law. Included in this act are provisions directing E.P.A. to establish rules and regulations (40CFR Part 763) addressing asbestos-containing materials in schools. Specifically, the E.P.A. was directed to address the issues of: 1) identifying, 2) evaluating, and 3) controlling asbestos

containing materials (ACM) in schools. AHERA requires schools to perform building inspections and to prepare management plans for ACM control. Although the AHERA regulation does not specifically apply to this project it is generally accepted as the industry standard and was cited by Fort McClellan in the Asbestos Survey Request as the basis of survey methodology. The AHERA inspections must be conducted using specific guidelines which include a minimum number of samples per material type. This survey was conducted in accordance with those guidelines per the Contract requirements.

On November 28, 1992 a law became effective which extended the EPA's Model Accreditation Plan to all public and commercial buildings. Currently the rule extends the accreditation requirements of persons performing asbestos work (inspectors, project designers, abatement supervisors, and workers) in public and commercial buildings, but does not extend the other aspects of AHERA. This project was conducted utilizing EPA accredited personnel.

3.0 PROJECT CHARACTERISTICS

During the month of December 1997, Reisz Engineering accredited asbestos Inspectors performed inspections of Building 3176 for the purpose of identifying building materials suspected to contain asbestos. The building is constucted of cement blocks and a steam generation plant with 3 large boilers. Based on information provided by Fort McClellan representatives the building was originally constucted in 1977 and contains aproximately 10,351 sq. ft. of floor space.

sections while the steel framed, metal decked sections are not protected. Various renevations may have taken place since the buildings were originally constructed but no building plans have been found which can be used to verify specific dates and activities.

The dominant flooring conditions existing in the building is cement. The buildings were found to contain various types of suspect pipe insulation and boiler insulation. The building and equipment are in use.

4.0 SURVEY METHODOLOGY

The building was visually inspected for the presence of material suspected to contain asbestos. Those suspect materials were identified, bulk samples were obtained and placed into individual vials for transportation to the University of Alabama in Huntsville. General areas for sample locations were selected on a random basis with a preference for exact positioning at existing damage. Each sample location is represented by a number on the plans in Appendix C. Those numbers directly correspond with the numbers listed elsewhere in this report.

If any additional suspect materials are identified during renovation or demolition they should be analyzed for asbestos content. Materials visibly identifiable as non-asbestos (fiberglass, foam rubber, wood, etc.) were not sampled. Materials installed after October 12, 1988 (as reported by Fort McClellan staff) were not sampled.

Hazard Assessment Factors

Each time suspect ACM was sampled, it was classified as either a friable or a non-friable material. Friable material may be crumbled, pulverized, or reduced to powder by hand pressure. Friable ACM is more hazardous than non-friable ACM because friable material can release airborne asbestos fibers more easily. In assessing the fiber release potential, the current condition of all ACM identified was noted. Evidence of deterioration, physical damage, water damage, erosion of ACM due to its' proximity to an air plenum, high vibration, or contact potential was also noted.

5.0 LABORATORY ANALYSIS METHODOLOGY

All bulk samples were analyzed at UAH by polarized light microscopy utilizing dispersion staining or Becke line techniques, in accordance with the EPA's "Interim Method for Determination of Asbestos in Bulk Insulation Samples" (EPA 6OO/m4-82-020). Quality control samples were taken as duplicates at a rate of 1 to 20 and were sent to a second accredited laboratory. This type of analysis requires the microscopist to take a portion of the bulk sample and treat it with an oil of specific refractive index. This prepared slide is then subjected to a variety of optical tests.

Each type of asbestos displays unique characteristics when subjected to these tests. Percentages of the identified types of asbestos are determined by visual estimation. Even though this is an estimation, any material that contains greater than one percent of any type of fibrous asbestos is considered ACM and must be handled according to OSHA and EPA regulations if disturbed during maintenance, renovation, demolition or removal.

The UAH laboratory participates in the American Industrial Hygiene Association (AIHA) quality assurance program for polarized light microscopy and is accredited by the AIHA through their voluntary program.

6.0 SUSPECT MATERIALS

The following is a general list of building materials that were suspected to contain asbestos. A complete and more detailed description of these substances can be found in Appendix B.

Surfacing

- None

Thermal System Insulation

- Brown air-cell type pipe insulation (various size pipes)
- White, cementitious pipe fitting and straight run insulation (various size pipes)
- Boiler insulation

Miscellaneous Material

- None
-

7.0 ASBESTOS INSPECTION AND SAMPLING RESULTS

A total of 17 bulk samples were collected and analyzed for Building 3176. Details of all laboratory results can be found in Appendix A. A listing of all suspect materials, their corresponding sample numbers, general location, and asbestos content are indicated in Appendix B. A narrative description of all "Friable Asbestos Containing Material" and "Non-Friable ACM" identified during the survey, is given below.

FRIABLE ACM

Laboratory analysis determined asbestos is present in three types of friable materials: 1) brown air-cell type pipe insulation, 2) a white cementitious pipe fitting and straight run insulation, and 3) a white cementitious insulation on boiler number 3.

1) A brown air-cell type pipe insulation is found on various pipes throughout the building.

2) A whit cementitious pipe fitting and straight run insulation is found on various pipes throughout the building.

3) A white cementitious insulation is found applied to Boiler # 3. Apparently, Boiler #1 & 2 have been abated of ACM.

NON FRIABLE ACM

None.

INACCESSIBLE MATERIAL,

Insulation and spray-on compounds associated with inaccessible crawl-space and tunnel areas are assumed as "like" materials corresponding to materials sampled within the building.

8.0 CONCLUSIONS AND RECOMMENDATIONS

None of the materials identified within this report are damaged to the extent that significant asbestos fiber release is likely under normal conditions. However, some of the asbestos containing materials, are subject to routine maintenance activities that could involve significant disturbance. Those materials include the pipe fitting insulations and ceiling tiles. Based upon the aforementioned conditions no action is recommended at this time. Reisz Engineering has written a Building Operations & Maintenance Plan for Building 3176 and we suggest that recommendations included in this plan be followed.

9.0 ASSUMPTIONS AND LIMITATIONS

The results, findings, conclusions and recommendations expressed in this report are based only on conditions which were observed during the inspections of Building XXXX during April 1997. Reisz Engineering and this report make no representation or assumptions as to past conditions or future occurrences.

Our inspection was generally non-destructive in nature. Any conditions or material which were not visible on the surface were not inspected and may differ from those observed. It was not within the scope of this investigation to remove surface materials to investigate portions of the structure or materials which lay beneath the surface. Our selection of sample locations and frequency is based upon our observations and the assumption that all materials in the same area are homogeneous.

This report is designed to aid the building owner, architect, construction manager, general contractors, and potential asbestos abatement contractors in locating ACM. Under no circumstances is this report to be utilized as a bidding document or as a project specification document.

APPENDIX A

REPORT OF LABORATORY ANALYSIS FOR ASBESTOS

UAH

The University of Alabama in Huntsville

Environmental Laboratory
Kenneth E. Johnson Research Center

Huntsville, Alabama 35899
Phone: (205) 895-6391
Fax: (205) 895-6376

Re : Bulk Asbestos Analysis EPA 600/R-931116
AIHA: 023601

Receipt Date: 01/15/98

Sample Date : 12/04,08/97

Microscopist: Tom Canington

Client: Reisz Engineering
Building 32 Suite A2
3322 Memorial Parkway South
Huntsville, AL 35801

Sample/Description	Asbestos Fibers (%)				Non-Asbestos Material (%)				
	Chry	Amos	Croc	Othr	Cell	Fbgl	MW	CaSO4	Othr
3176-01/ Brown paper insul. On 4" pipe	35				60				5
3176-02/ White chalky insul. On 6" pipe	60	15							25
3176-03/ Brown paper insul. On 3" pipe	15				73				12
3176-04/ White chalky insul. On 8" pipe	35								25
3176-05/ White chalky insul. On 12" pipe	35								25
3176-06/ Brown paper insul. On 3" pipe	28				50				17
3176-07/ Brown paper insul. On 4" pipe	20				65				15
3176-08/ Yellow powdery insul. On 5" pipe									100
3176-09/ White chalky insul. On 5" pipe	35	10	35						20
3176-10/ White chalky insul. On 3" pipe	45	10	25						20
3176-11/ Boiler insul.	10	10				5	55		20
3176-12/ Brown paper insul. On 2" pipe	7				84				9
3176-13/ White chalky insul. On 4" pipe	40	30			2	1			26
3176-14/ Boiler insul.									100
3176-15/ Boiler top insul. (front)	10				10	8			72
3176-16/ Boiler top insul. (back)						5	15		80
3176-17/ Boiler insul. On port									100

Chry = Chrysotilo
Amos = Amosite
Croc = Crocidolite

Othr = Other
Cell = Cellulose

MW = Mineral Wool
Ca SO4 = Calcium Sulfate
Fbgl = Fiberglass

A Space Grant Col loge
An Affirmative Action / Equal Opportunity Institution

APPENDIX B

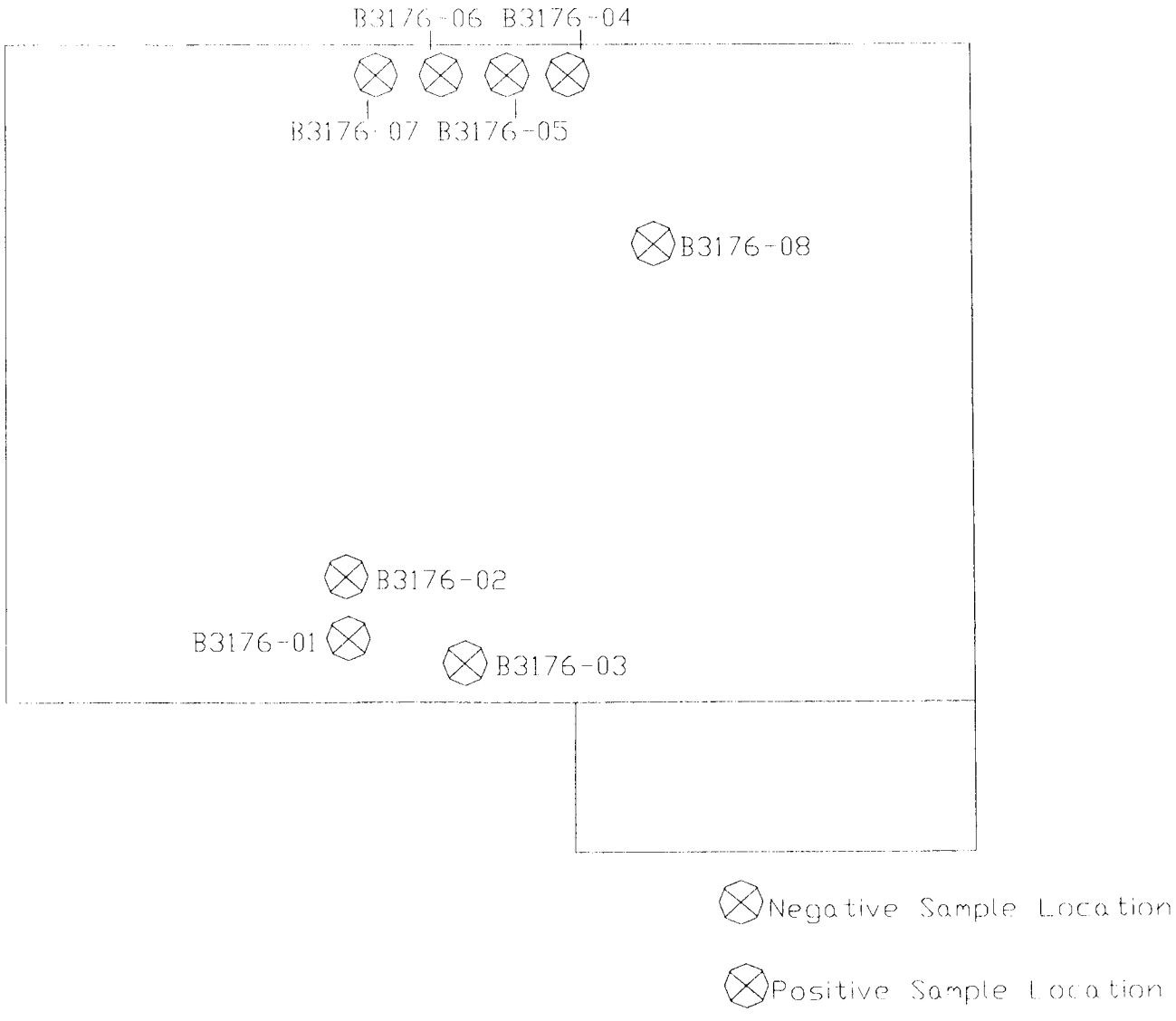
ASBESTOS CONTAINING MATERIALS

SUMMARY TABLE
ASBESTOS CONTAINING MATERIALS
STEAM PLANT
BUILDING 3176
FORT McCLELLAN, ALABAMA

SAMPLE #(s)	Description of Material	General Location Of Material	Quantity (approx.)
Multiple samples	White chalky pipe insulation	Throughout building	1085 linear ft.
Multiple samples	Brown paper-like pipe insulation	Throughout building	655 linear ft.
B3176-11,15	Boiler Insulation	Boiler #3	72 sq. ft.

APPENDIX C

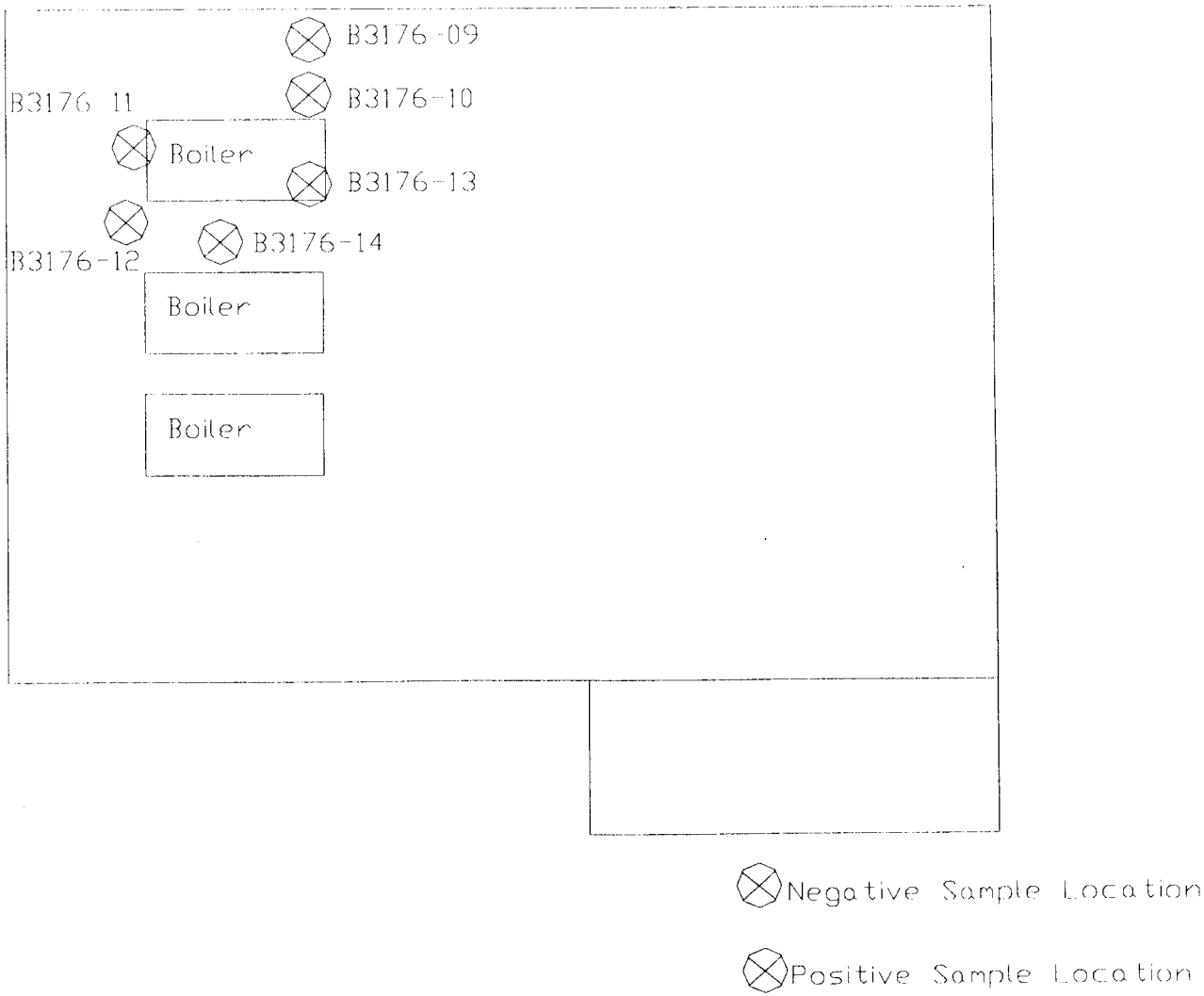
SAMPLE LOCATIONS PLANS



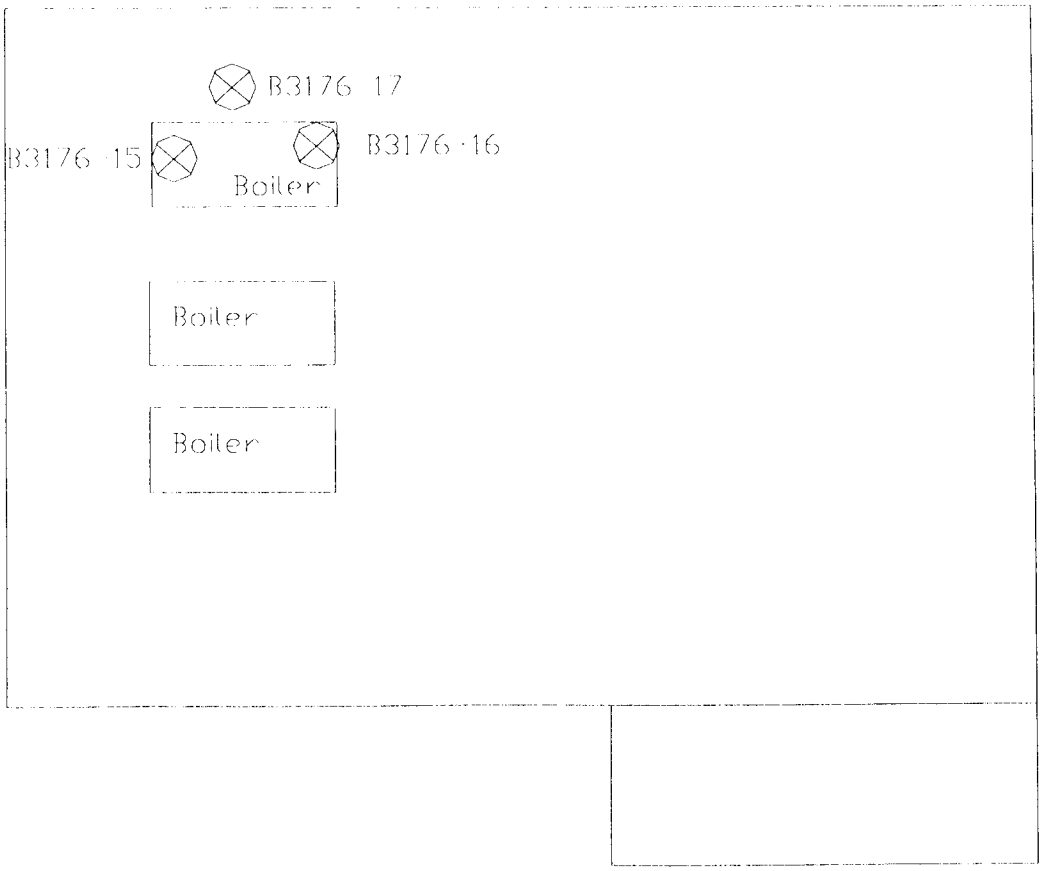
BUILDING: 3176	LEVEL 1	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

APPENDIX D

SELECTED ACM LOCATION PLANS



BUILDING: 3176	LEVEL 2	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**



⊗ Negative Sample Location

⊗ Positive Sample Location

BUILDING: 3176	LEVEL 3	ASBESTOS SURVEY DABT02-96-D-0005 FM705	**REISZ ENGINEERING**

APPENDIX E

SELECTED ACM PHOTOGRAPHS

BUILDINGS WITH NO PRESUMED ACM
SURVEY REPORT

BUILDINGS: 309, 326, 2099, 4405, 4420, and 4424

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY
MISCELLANEOUS BUILDINGS
No PACM

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Fort McClellan

Staying Beautiful

Conducted and Prepared by:

REISZ ENGINEERING
P.O. BOX 1349
HUNTSVILLE, ALABAMA 35807

ASBESTOS CONTAINING BUILDING MATERIALS SURVEY

MISCELLANEOUS BUILDINGS
No PACM

FORT McCLELLAN, ALABAMA

U.S. ARMY CONTRACT NO. DABT02-96-D-0005
DELIVERY ORDER 0005

Prepared For:

DIRECTORATE OF ENVIRONMENT
FORT McCLELLAN

APPROVED FOR TRANSMITTAL BY
JAMES R. WRIGHT

Conducted and Prepared by:

REISZ ENGINEERING

June, 1998

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APPENDIX A – LIST OF BUILDINGS WITH NO PRESUMED ACM

1.0 PURPOSE AND SCOPE OF SERVICES

The purpose of this survey was to locate and identify asbestos containing building materials at Fort McClellan, Alabama. Pursuant to the Contract, REISZ Engineering was required to provide the survey in accordance with AHERA (40 CFR Part 763 Subpart E) protocol. AHERA is applicable to interior building products installed prior to October 12, 1988. AHERA does not apply to the exterior of buildings and does not apply to non-building materials (e.g. cabinetry, special equipment and chalkboards). REISZ Engineering has included as part of the survey those readily accessible, suspect friable interior non-building materials (e.g. vibration dampers); but has not included certain items (e. g. interior linings of equipment and special supplies, some non-friable materials such as transite, etc.). Exterior building materials were not sampled as part of this contract unless those materials were suspected to be of friable nature and continuous with indoor materials (e.g. piping insulation). Specifically, REISZ Engineering was contracted to provide the following services:

1. Identify and collect samples of accessible suspect friable building materials within the referenced project area.
2. Perform a visual inspection to provide information on material condition, material quantities, material locations, and building use.
3. Analysis of all bulk samples for asbestos content utilizing Polarized Light Microscopy and Dispersion Staining Techniques performed in accordance with EPA Bulk Analysis Method
   EPA 600/M4-82-020.
4. Make recommendations as to response actions pertaining to those materials identified as asbestos containing.

5. Compilation of a final report (contained herein) which details all sample results, identifies sample locations, and provides recommendations based upon the results.

6. Preparation of a Building specific Operations & Maintenance (O&M) Plan for buildings containing friable asbestos materials.

2.0 PROJECT CHARACTERISTICS

Reisz Engineering accredited Asbestos Inspectors performed inspections of the buildings listed in Appendix A for the purpose of identifying building materials suspected to contain asbestos. None of the buildings listed in the survey report were found to contain PACM.

APPENDIX A

MISCELLANEOUS BUILDINGS WITH NO PACM

BUILDING NUMBERS

57
129
137
144
181
197
198
200
201
206
208
212
213
234
235
236
242
243
250
257
262
265
266
294
309
326
327
341
342
345
346
402
699
1077
1122
1211
1212
1213
1214
1215
1216
1217
1218
1219
1220
1221
1222
1367
1387
1928
1965 (has transite cooling tower)
1967
2041
2099
2105
3133
3134
3135
3165
3182
3192
4400
4405
4417
4420
4422
4423
4424
4450
6357
6530
6552
6574
6586
6594

ATTACHMENT 3

LBP RISK ASSESSMENT AND SURVEY REPORTS

Lead-Based Paint
Risk Assessment Report

For:

Ft. McClellan, Alabama

By:

John W. Calvert, P.E., CIH
John Calvert Environmental, Inc.
7741 Kennington Lane
Jonesboro, Georgia 30236
404-471-5302

DATE:

July 17, 1995

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Table 1 - List of Buildings Identified With LBP

Table 2 - List of Building Components With LBP in Fair/Poor Condition

Appendix C -

Table of Buildings Where Lead Dust Levels Exceeded Clearance Levels

US COE, South Atlantic Division Laboratory Dust Data (Sampling Results)

US COE, SADL Quality Control Data for Ft. McClellan Dust Samples

Appendix D -

Table of Building Areas Where Soil Lead Concentrations Exceeded 400 ppm

Table, USEPA Recommended Response Activities for Residential Lead-Contaminated Bare Soil

US COE, SADL Soil Sample Data

US COE, SADL Quality Control Data for Ft. McClellan Soil Samples

Appendix E - Table, Summary of Lead-Based Paint Hazards

Appendix F - Part V: In-Place Management, US Dept. of Housing and Urban Develpoment, Lead-Based Paint Risk Assessment Protocol

Appendix G - HUD Standard Reevaluation Schedule

Appendix H -

-Table 6-1 Training Topics, TM5-6XX

-Cover Page and Table of Contents of National Institute of Building Sciences (NIBS), O & M Work Practices Manual for Homes and Buildings, May 1995

-Appendix B - Model Training Programs- EPA and SOEH, NIBS O & M Work Practices Manual

Appendix I -

- Quality Control for XRF Lead-Based Paint Surveys
- SADL Lead-Based Paint Survey Reports

SUMMARY

A lead-based paint (LBP) risk assessment was conducted for Ft. McClellan, AL by John W. Calvert, P.E., CIH, 7741 Kennington Lane, Jonesboro, GA 30236 (404-471-5302) and the US Army Corps of Engineers South Atlantic Division Laboratory (SADL) personnel, 611 South Cobb Drive, Marietta, GA 30060-3112 (404-919-5271). The risk assessment report was prepared by John Calvert based on field and laboratory data collected by SADL personnel.

Twenty-six individual buildings (including 2 family housing quarters) and 171 family housing units representing 12 groups and/or subgroups of building were surveyed. These buildings and units were selected by Ft. McClellan and SADL personnel. SADL personnel grouped together family housing units (buildings) based on similarities in construction, age, and paint history (based on XRF (X-Ray Fluorescence) spectrum analyzer LBP survey results).

LBP was found to some degree in most of the buildings surveyed. LBP hazards identified included LBP in deteriorated condition; LBP present on friction surfaces, impact surfaces, and surfaces accessible to mouthing or chewing by children; leaded dust; and isolated soil lead contamination.

LBP hazard control options have been presented. Ft. McClellan staff must decide which hazard control option is appropriate. Ongoing monitoring will be required. Reevaluation type and frequency will depend on options selected.

Staff and occupant education/training has been discussed and recommended training topics/issues provided.

LEAD-BASED PAINT RISK ASSESSMENT REPORT
for FT. McCLELLAN, AL

I. Introduction.

A. Identifying Information. This Lead-Based Paint (LBP) Risk Assessment report for Ft. McClellan, AL was prepared by John W. Calvert, P.E., CIH from field and laboratory data collected by US Army Corps of Engineers, South Atlantic Division Laboratory (SADL) personnel. The table in Appendix A is a list of the buildings or groups of buildings surveyed and their respective use or activity. This information was extracted from SADL survey reports. Twenty-six individual buildings (including 2 family housing quarters, #s 2242 & 2271) and 171 family housing units representing 12 groups and/or sub-groups of buildings were surveyed. These buildings and units were selected by Ft. McClellan and SADL personnel. SADL personnel grouped together family housing units (buildings) due to similarities in construction, age, and paint history (based on XRF (X-Ray Fluorescence) spectrum analyzer LBP survey results). Two site visits were made to observe the LBP surveys using the XRF instruments (spectrum analyzers) and to observe and instruct the surveyors in dust sampling techinques and procedures.

This risk assessment report was written following the guidance published in the Federal Register dated 29 June 1992, Department of Housing and Urban Development, "NOFA for Lead-Based Paint (LBP) Risk Assessment; Notice." Subsequent to the initiation of this project, the US Environmental Protection Agency published on July 14, 1994 a Memorandum, Subject: Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil. This guidance serves as the updated standard of care and has been used in determining lead hazards from dust and soil.

B. Lead-Based Paint Health Hazards. Lead when swallowed or inhaled, can be harmful to human beings. It can be especially harmful to small children, pregnant women, men and women during their reproductive years, and people with hypertension.

The lead hazards in buildings come primarily from the past use of LBP. The mere presence of LBP, however, does not constitute a hazard. The risk of adverse human health effects depends on the paint's location and condition and on the way occupants use the building. If circumstances are such that people, especially children, may inhale or ingest lead, then a hazard is present, Public Law 102-550 (Federal "Title X") defines LBP hazard as "any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-contaminated paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human effects as established by the appropriate federal agency." A surface is considered to be accessible for mouthing or chewing by children if it protrudes from the surrounding area to the extent that a child can chew the surface, and is within three feet of the floor or ground (e.g., window sills, railings, and the edges of stair tread). A friction surface is subject to abrasion or friction (e.g., window, floor, and stair surfaces). An impact surface is subject to damage from

repeated impacts (e.g., certain parts of door frames).

If LBP is in poor condition, hazards from dust and debris are more likely. Abrasive action on leaded paint surfaces can create lead-contaminated dust in a building. Lead in bare soil outside a building can increase the lead dust inside. Chips from exterior paint in poor condition often fall into the surrounding soil. This contaminated soil can then be brought indoors by foot traffic. Children frequently contact lead-contaminated dust and soil because they play indoors on the floor and outdoors on the ground.

II. Management, Maintenance, and Environmental Results Forms and Analyses.

A. Management Information. Not provided.

B. Maintenance/Paint Condition Information. Paint condition information for building components tested for LBP with the XRF spectrum analyzer is contained in the lead-based paint survey reports. Those reports are presented in Appendix I. Due to their size they were placed in the back of this report. Building interior and exterior paint conditions are presented in the table in Appendix E.

C. Building Condition. No specific information concerning building condition was provided.

D. Building/Unit Selection Process. The buildings and units were selected by Ft. McClellan and SADL personnel. SADL personnel grouped together family housing units (buildings) due to similarities in construction, age, and paint history (based on XRF (X-Ray Fluorescence) spectrum analyzer LBP survey results.

E. Paint, Dust, and Soil Sampling and Results.

1. Paint. The XRF and scrape sample results for paint and paint condition are contained in the SADL LBP survey reports presented in Appendix I, to the rear of this report. Also included in those survey reports are building descriptions and photos and generalized floor plan plates showing locations of positive LBP readings and/or samples.

The LBP survey was conducted in accordance with general procedures in the April 1, 1990 HUD Guidelines (revised September 28, 1990) and EPA standard operating procedures (EPA document EPA600/8-91/214) for this instrument. The survey was performed by certified surveyors using a SCITEC MAP 3, X-ray Fluorescence Spectrometer (spectrum analyzer) XRF instrument.

Positive readings (detectable lead above the action level) with the XRF vary depending on the instrument mode selected. The "test" mode is normally used for routine readings. Readings testing "positive" according to the XRF instrument manufacturer in the test mode are those with a lead concentration greater than 1.3

milligrams per centimeter squared (mg/cm^2), whereas, "negative" refers to readings of 0.7 mg/cm^2 or less. According to the HUD guidelines, positive readings for this instrument are greater than 1.3 mg/cm^2. "Inconclusive" readings are those that fall between 0.7 mg/cm^2 and 1.3 mg/cm^2. Scrape (paint chip) samples were taken and analyzed in the laboratory to verify inconclusive readings.

The "action level" defined in the HUD Interim Guidelines is a lead concentration above 1.0 mg/cm^2. Lead concentrations in the survey reports are shown for both K-shell and L-shell. The L-shell XRF reading is essentially for the top 1 or 2 surface paint layers, whereas, the K-shell is total lead applicable for multi-layered paint surfaces. HUD Guidelines specify that the K-Shell results be used for evaluating XRF readings.

In the survey reports paint condition stated as "good" is defined as intact; "fair" as intact but worn (minor chips from wear and tear but no adhesion or substrate problems); "poor" as severely worn or no longer adhering or, substrate deterioration (e.g., peeling, flaking, cracking, etc.).

Quality control procedures for the SADL XRF LBP surveys is presented in the front of Appendix I. These procedures were being followed during the site visits. A random check of the survey reports indicates these procedures were followed. Following these procedures increases the confidence of the XRF data.

A list of buildings and components identified with LBP is presented in Appendix B, Table 1. For the individual buildings, components with LBP were identified from positive XRF readings and/or positive scrape sample analysis in SADL survey reports. For family housing groups, components with LBP were identified from component summary tables in SADL survey reports. The HUD Interim Guidelines set out decision rules depending on the percentages of components classified as positive. The rules are applied to each component separately, and depend on the type of XRF analyzer used. For the XRF spectrum analyzer, if more than 11% of a component are positive, lead is present, and either all such components should be abated, or all should be tested to determine which require abatement and which do not. This assumes the number of units inspected/sampled in each group is in proportion to the number of units in the respective group per the 29 June 1992 Federal Register, Department of Housing and Urban Development, "NOFA for Lead-Based Paint (LBP) Risk Assessment; Notice". Refer to the SADL survey reports for specific building component and paint information.

Table 2, Appendix B is a list by building/unit of interior and exterior components/surfaces with LBP in fair/poor condition.

XRF readings and scrape sample analyses indicate the presence of paint containing lead, other than lead-based paint. These paints contain lead at a concentration less that 0.5 % by weight or 1 mg/cm^2 and those in poor condition may present hazards from dust paint chips. Those in poor condition should be controlled just as the LBP in poor condition.

2. Dust. Dust sampling was conducted in accordance with general procedures in the April 1, 1990 HUD Guidelines (revised September 28, 1990). A LBP survey using a SCITEC MAP 3, XRF spectrum analyzer was performed prior to dust sampling. Therefore, dust samples were taken in areas where lead contaminated dust was more likely to exist. A copy of the SADL dust sampling results and quality control data for the dust sampling (Tables 3 & 4 of SADL Soil and Dust Sample Data Report, 24 September 1994) are presented in Appendix C.

The number of dust samples analyzed totalled 161. Quality control (QC) for the dust sampling and analyses included preparing and analyzing 21 field spike samples and 42 field blank samples. Also 37 laboratory reference standard samples were analyzed for instrument calibration and control. The number of these QC samples is within acceptable limits which is 5% for field spike and blank samples. The analytical results for these QC samples are also within acceptable limits (± 25% for matrix spikes and ± 20% for laboratory control samples).

A table of buildings/units and locations where dust sampling results exceeded the recommended clearance standards below is presented in Appendix C, prior to the SADL dust sampling results. Current HUD and EPA recommended clearance levels for lead dust are:

Location	Lead Loading
Uncarpeted Floors	100 $\mu g/ft^2$.
Interior Window Sills	500 $\mu g/ft^2$.
Window Wells	800 $\mu g/ft^2$.

3. Soil. Soil sampling was conducted in accordance with general procedures in the April 1, 1990 HUD Guidelines (revised September 28, 1990). A copy of the SADL soil sampling results and quality control data for the soil sampling (Tables 1 & 2 of SADL Soil and Dust Sample Data Report, 24 September 1994) is presented in Appendix D.

The number of soil samples analyzed totalled 159. Quality control (QC) for the dust sampling and analyses included preparing and analyzing 16 field spike samples and 22 field blank samples. Also 19 laboratory reference standard samples were analyzed for instrument calibration and control. The number of these QC samples is within acceptable limits which is 5% for field matrix spike and blank samples. With the exception of one field matrix spike sample, the analytical results for these QC samples are also within acceptable limits (± 25% for matrix spikes and ± 20% for laboratory control samples).

A table of building areas where soil lead concentrations exceeded 400 ppm and a copy of the EPA Recommendations for Response Activities for Residential Lead-Contaminated Soil are presented in Appendix D prior to the SADL soil sampling results.

F. List of Location and Type of Actual or Suspected Lead Hazards. Appendix E is a lead hazards summary table listing by building number: interior and exterior paint condition; whether interior and exterior LBP is present; LBP in fair and poor condition; whether LBP is present on friction surfaces, impact surfaces, and surfaces accessible to mouthing or chewing by children; whether lead dust levels exceed clearance standards; and whether soil lead levels exceeded 400 ppm (mg/Kg). This table was compiled from SADL survey reports in Appendix I; Appendix B Table 1, Interior and Exterior Areas with LBP; Appendix B Table 2, Painted Building Components/Surfaces with LBP in Fair/Poor Condition; Appendix C, Buildings Where Lead Dust Sample Results Exceeded Clearance Levels; and Appendix D, Building Areas Where Soil Lead Concentrations Exceeded 400 mg/Kg (ppm). Refer to SADL survey reports for specific building component and condition.

1. Paint. LBP was identified on both interior and exterior surfaces and was found to some extent in/on most of the buildings surveyed. The majority of the LBP in fair and poor conditions was found on exterior surfaces. LBP on friction surfaces were predominately window sashes and were found in a few of the support/community type buildings and in family housing 2242 and Avery Group 1, 3600s, and 3700s Group C. LBP on surfaces mouthable or chewable by children were primarily window sills and possibly shelves, depending on the shelf heights. Closet shelves approximately 5 ft high pose no significant risk to mouthing and chewing by children. Interim and abatement control options for LBP are discussed later in this report.

2. Dust. Based on survey results, lead dust levels exceeding clearance standards appears to be isolated. Five floor, 1 window sill, and 12 window well samples exceeded clearance standards. Ten of the 12 window wells exceeding the standard were in the 3600 series family housing. Only 1 unit (3319A) from the 3310-3343, Avery Family Housing was sampled for dust. It had high dust levels on a bedroom floor and window sill and in a kitchen window well.

Family quarters 3319A has been grouped in Avery Family Housing Group 1 (3310-3331). Dust sampling was conducted only in unit 3319A which has high lead dust levels as mentioned above (bedroom floor and window sill and kitchen window well). All paint surveyed was judged to be in good condition. LBP was identified on window sashes in the kitchens and bedrooms and exterior window casings, sills, and aprons in this group. The lead dust is suspected to come from the friction surfaces surrounding the window sashes. Either more extensive dust sampling is needed to confirm this conclusion or assume all similar units (Avery Group 1) to have high dust levels. Frequent cleaning with a high phosphate detergent and treatment to reduce friction are recommended interim controls, which are discussed later in this report.

The 3600 Family Housing Group also had high dust levels in the window wells. Window components were identified as being painted with LBP judged to be good condition with a few in fair condition. Frequent cleaning with a high phosphate detergent and treatment to reduce friction are recommended interim controls.

Either more extensive dust sampling is needed in those buildings not sampled or assume that areas with LBP on friction and impact surfaces identified in the table in Appendix E would have high dust levels and perform the recommended interim controls.

3. Soil. Five soil samples (Bldgs: 129, 893, 1740, 2242, 2293) exceeded 400 mg/Kg (ppm), which requires control if children frequent the areas. One of the five samples, Bldg 893 (Chapel) exceeded 4000 ppm, which requires control in areas where contact by children is less likely or infrequent. None of the sampled areas had soil lead concentrations exceeding 5000 ppm which would require abatement.

For workshop building 129, all exterior wood components were considered positive for LBP which was judged to be in poor/fair condition. This is probably the source of the lead in the soil. Hazard controls for deteriorated LBP are discussed later. No dust sampling was performed in this building.

Building 893, Chapel, had the highest soil lead concentration. Its exterior paint is considered LBP and was judged to be in poor condition. This is the probable source of the lead.

Building 2242, family housing, also had extensive exterior LBP judged to be in poor condition. This is the probable source of the lead.

Building 2293, WAC Chapel, had exterior LBP judged to be in poor/fair condition. The lead concentration in the soil sample taken near the building (0-3 ft) was less than 400 ppm and in the sample taken 10-20 ft from the building was greater than 532. If children are not expected to frequent this location, the soil lead concentration does not pose a significant risk.

III. Lead Hazard Control Options.

A. Lead-Based Paint Policy Statement. Not provided in scope of this report.

B. Name of Individual in Charge of Lead-Based Paint Hazard Control Program. Not provided in scope of this report.

C. Recommended Changes to Work Order System and Property Management. Not provided in scope of this report.

D. Control Options. There are two basic approaches to managing LBP hazards in family housing and family support facilities; interim control (also referred to as in-place management) of LBP and LBP selective or full-scale abatement. Most often, a combination of the two approaches will best suit all parties involved in terms of lead hazard management effectiveness and cost effectiveness. Chapter 5, Technical Manual,TM 5-6XX, Managing Lead-Base Paint (LBP) in Family Housing and Family Support Facilities, Final Draft suggested issues to be considered in determining

specific substrate abatement/control decisions. Ft. McClellan personnel should consider these issues in deciding which hazard control option is appropriate. They are:

- Long- and -short-term objective of the plan.
- Future planned use of the structures.
- The degree of risk to exposure (occupants) to lead poisoning hazards.
- Availability of funding.
- The estimated cost of interim controls versus LBP abatement.
- The condition of substrates on which hazards are identified.
- The amount of time that abate will take.
- Availability of alternative housing for displaced residents.
- The estimated cost to relocate occupants prior to and after abatement.
- The predicted amount of hazardous waste that may be generated.
- The amount of occupant training that will be necessary to perform limited interim controls versus the training of workers.
- The number of skilled and properly trained in-house workers or abatement contractors that are available.
- The amount of available equipment and materials.

E. Interim Control. Interim control techniques or in-place management techniques include the following:

- Training and education of occupants and maintenance personnel regarding the hazards of LBP and the appropriate maintenance practices on lead-containing surfaces. This training may be conducted at a formal training center or through installation personnel such as the Environmental Officer.

- Washing/cleaning with Trisodium Phosphate (TSP) or other high phosphate detergent designed to cleanup lead dust can be used to reduce lead dust exposure. This is an effective interim control technique.

- Stabilizing all LBP surfaces by removing defective paint and repainting.

- Repairing all defective and rotted substrates that could lead to rapid paint deterioration.

- Treating friction and impact surfaces, such as door, floors, steps, handrails, and windows, when there is concern that these objects are responsible for generating LBP chips or lead-bearing dust.

- Treating protruding, accessible surfaces where LBP may be present, such as window sills and shelves, that children might chew or mouth.

- Inspect periodically to ensure the continued integrity of LBP containing surfaces.

- Document all interim control actions.

- Conduct scheduled maintenance.

INTERIM CONTROL FOR LBP HAZARDS:

Hazard No. 1: Deteriorated LBP.

a. Stabilizing all LBP surfaces by removing defective paint and repainting with non-LBP on surfaces such as metal and wood using methods prescribed in Part V, In-Place Management, HUD Lead-Based Paint Risk Assessment Protocol, September 1992. A copy of Part V is provided in Appendix F.
b. Surfaces such as plaster may require encapsulation or enclosure.
c. Educate occupants and maintenance and custodial personnel of the presence of LBP.
d. Request occupants report deteriorating paint so that it can be repaired quickly and safely.
e. Inspect periodically.
f. Conduct scheduled maintenance.

Hazard No. 2: LBP on Friction and Impact Surfaces.

a. Educate occupants and maintenance and custodial personnel concerning the generation of lead dust from these surfaces and the proper cleaning technique.
b. Treat to reduce friction and impact and encapsulate with durable liquid encapsulant if possible.
c. Monitor for dust generation.
d. Inspect periodically.

Hazard No. 3: LBP on Surfaces Mouthable or Chewable by Children.

a. Educate occupants of the presence of LBP on these surfaces so adults can deter mouthing and chewing by children.
b. Treat surfaces.
c. Inspect periodically.

Hazard No. 4: Lead Dust.

a. Dust removal following procedures recommended in Appendix F and paint film stabilization.
b. Educate occupants and maintenance and custodial personnel.
c. Monitor for dust.
d. Inspect periodically.

Hazard No. 5: Lead in Soil.

Follow interim controls for EPA recommended response activities for lead-contaminated bare soil. These recommendations are presented in Appendix D.

F. Abatement. Abatement techniques found in Chapter 5, TM 5-6xx, Final Draft, include the following:

- Chemical Removal: caustic strippers, non-caustic strippers, on-site stripping, off-site stripping.
- Abrasive Removal: vacuum blasting, needle gun, HEPA sanding.

- Component Removal & Replacement.

- Heat Gun Removal.

- Encapsulation: flexible wall covering, elastomeric surface coating, epoxy coating, acrylic/stucco coating.

- Training: occupants and workers.

- Enclosure: gypsum wall board; plywood/paneling; prefabricated metal; wood, metal, vinyl siding.

- Periodic Inspections.

ABATEMENT OF LBP HAZARDS:

Hazard No. 1: Deteriorated LBP.

a. Replace doors.
b. Chemically remove paint from doors and repaint.
c. Replace windows and exterior trim.
d. Chemically remove paint from windows and trim and repaint.
e. Remove paint from trim using head guns.

Hazard No. 2: LBP on Friction and Impact Surfaces.

a. Component replacement for friction and/or impact surfaces.
b. Encapsulation for impact surfaces.

Hazard No. 3: LBP on Surfaces Mouthable or Chewable by Children.

a. Remove and replace component.
b. Encapsulate.

Hazard No. 4: Lead Dust.

Remove and replace windows.

Hazard No. 5: Lead in Soil.

Soil sampling and analysis did not identify any soil lead concentrations that would require abatement per EPA Recommendations for Response Activities for Residential Lead-Contaminated Bare Soil.

Note on cost for LBP Hazards - Approximate Costs of LBP Abatement Alternatives can be found in Table 5-3 of TM 5-6XX, Managing Lead-Based Paint (LBP) in Family Housing and Family Support Facilities, Final Draft. Costs for interim controls are not provided. An estimate and a full lead hazard control plan should be obtained from a certified lead-based paint abatement contractor.

G. Ongoing Monitoring. If LBP is not in a hazardous condition, no hazard is present and no active control measures are necessary. However, paint can

deteriorate through normal use and maintenance activity, thereby releasing dust and contaminating soil. Therefore, ongoing monitoring is necessary in all buildings in which LBP is known or suspected to be present. Reevaluations and annual visual inspections are necessary due to the potential for LBP hazards to develop since hazard control methods can fail, previously intact LBP can become deteriorated, and leaded dust can reaccumulate through friction, impact, or the introduction of exterior dust and soil.

A reevaluation, in general terms, is a risk assessment that includes more limited soil and dust sampling, and a detailed visual examination of paint films and any existing lead hazard controls (such as enclosures, encapsulants). Reevaluations are performed only in buildings where LBP hazards have been found to be nonexistent, either through a risk assessment, a risk assessment/inspection combination, or a clearance examination following abatement or interim control work. Reevaluation occurs at intervals recommended by the HUD Standard Reevaluation Schedule; a copy is provided in Appendix G.

Annual visual surveys are conducted by owner staff to confirm that:

- Painted surfaces with known or suspected LBP are not deteriorating.
- Control methods such as encapsulation and enclosure have not failed.
- Structural problems do not threaten the integrity of any remaining known or suspected LBP.

Visual surveys should also be conducted whenever complaints are received by occupants about potential lead hazards, the building becomes vacant, or significant damage occurs that could affect the integrity of control treatments.

Building should be maintained in good condition by following the maintenance and management practices such as:

- High-efficiency particulate air (HEPA) vacuuming, wet mopping, and cleaning floors, window troughs, and interior window sills at turnover.
- Providing LBP hazard information to new occupants.
- Maintaining ground cover.
- Encouraging occupants to report any signs of paint deterioration or failure of hazard control treatments as soon as they are detected.

IV. Site-Specific Lead Hazard Control Plan.

A. Lead Hazard Control Option To Be Implemented at Ft. McClellan. To be determined by Ft. McClellan staff.

B. Training Plan for Managers, Maintenance Supervisors and Workers. It is essential that Ft. McClellan staff and others directly involved with reducing LBP hazards have instruction provided by qualified trainers to make them aware of the hazards of lead, proper procedures and work practices, and the need for protective equipment and proper hygiene. Great care must be exercised to protect workers from excess lead exposures and to prevent them from taking lead dust home on their

clothing or belongings which could then poison their children. Recommended training topics can be found in TM 5-6XX, Table 6-1. A copy of this is presented in Appendix H. Also included in Appendix H is the table of contents from the National Institute of Building Sciences, Lead-Based Paint, Operations & Maintenance Work Practices Manual for Homes and Buildings, May 1995. The work practices in this document provide good information on safely working with LBP hazards. Appendix B - Model Training Programs - EPA and SOEH from this manual is also provided in Appendix H as an additional reference.

C. Occupant Education. Building occupants should be advised of the LBP hazards identified. Especially housing occupants with small children should be advised that parents have an important role to play in protecting their children from lead poisoning. The importance of wet mopping and wet wiping to control dust levels should be stressed and the importance of washing children's hands should be emphasized. Occupants should be encouraged to call to the attention of facility personnel (staff) any chipping or peeling paint. Informational brochures may be beneficial in educating occupants about what they can do to reduce exposure to the LBP hazards. EPA has such informational brochures, One is Lead-Based Paint, Protect Your Family, Docket No. OPPTS-62133, March 1994, draft; final expected fall 1994. Additional information may be obtained from the National Lead Information Center, call (800) LEAD-FYI.

D. Signature.

Respectfully submitted,
July 17, 1995
John W. Calvert
John W. Calvert, P.E., CIH

APPENDIX A

Appendix A

Building/Group Number and Use/Activity of Buildings Surveyed

Building or Group Number	Use/Activity
66	Child Development Center
67	Silver Chapel
128	Family Fitness Center
129	Workshop
130	Miller Gym
292	Hospital (portions)
893	Chapel (exterior only)
992	Recreation Center (exterior only)
1012	Truman Gymnasium
1077	W.A.C. Museum
1740	Soldier's Chapel
1928	Bowling Alley
1929	Dental Clinic
2101	Post Theater
2102	Library
2213	Child Development Center
2242	Family Housing
2271	Family Housing
2290	Preventive Medicine Bldg.
2293	W.A.C. Chapel

Building/Group Number and Use/Activity of Buildings Surveyed

Building or Group Number	Use/Activity
2299	Chemical Corps Museum
3182	Military Police Museum
3213	Army Community Service Center
3293	Chapel
3527	Scout Building
3681	Elementary School
Buchner Housing (Qtrs 9 & 13)	Family Housing, 2 units
Baltzell Housing (Qtrs 25B, 27A, 28A, 29A, 30A)	Family Housing, 5 units
Drennen Housing (Qtrs 81,83,85,87,89,90, 103,105,106,107)	Family Housing, 10 units
W.A.C. Circle (Qtrs 2235, 2236)	Family Housing, 2 units
Avery Housing Group (3310-3343)	Family Housing
Group 1 (3310-3331), (Qtrs 3311A, 3313A, 3314A, 3314B, 3316A, 3316B, 3317B, 3319A, 3319B, 3322B, 3324A, 3325A, 3327B, 3328B, 3330A, 3331A)	16 units
Group 2 (3334-3343), (Qtrs 3334A, 3336A, 3337A, 3337B, 3339A, 3340A, 3341B, 3343A, 3343B)	9 units
Littlebrant Housing Group (3400-3411) (Qtrs 3401, 3402B, 3403B, 3407, 3409B)	Family Housing 5 units

Building/Group Number and Use/Activity of Buildings Surveyed

Building or Group Number	Use/Activity
Morton, Church, and Baker Rd Housing Group (3500-3540) (Qtrs 3500A, 3500C, 3501A, 3502B, 3502D, 3503A, 3517B, 3519B, 3520E, 3524A, 3524C,3526B, 3528D, 3529B, 3530C, 3531B, 3531E, 3532D,3533C, 3533E, 3534B, 3534F, 3535B, 3535D, 3536A,3536E, 3536F, 3537A, 3538B, 3538F, 3540E)	Family Housing 31 units
Wirans, Church, & Morton Rds Housing (3600 Series, 3610-3673) (Qtrs 3610B, 3611A, 3612A, 3614B, 3615B, 3616A, 3616B, 3617A, 3617B, 3618A, 3619B, 3620B, 3622B, 3624B, 3626B, 3629B, 3632B, 3635B, 3637B, 3640B, 3643B, 3652A, 3659B, 3662A, 3664A, 3664B, 3665B, 3668B, 3670A, 3671B, 3672B, 3673B)	Family Housing 32 Units
Summerall Housing (3700's Group A) (3700-3718) (Qtrs 3700A, 3700B, 3700D, 3700G, 3702B, 3702E, 3704B, 3704F, 3706D, 3708C, 3710C, 3712B, 3712G, 3714B, 3716A, 3716B, 3718A, 3718D)	Family Housing 18 units
Summerall & Sharp Housing (3700's Group B) (3719-3731) (Qtrs 3719E, 3719H, 3720C, 3721B, 3722C, 3722D, 3724A, 3725A, 3725D, 3726B, 3727A, 3727F, 3728C, 3728H, 3729E, 3731A, 3731F, 3731G, 3732A, 3732E, 3732H)	Family Housing 21 units
Cooper, Bray, Littlebrant (3700's Group C) (3737-3770) (Qtrs 3737A, 3737B, 3738B, 3739A, 3740A, 3741A, 3742B, 3743B, 3744B, 3745B, 3746B, 3761A, 3763A, 3765A, 3766A, 3767A, 3767B, 3768B, 3769B, 3770B)	Family Housing 20units

APPENDIX B

Appendix B

TABLE 1
INTERIOR AND EXTERIOR AREAS WITH LEAD-BASED PAINT

Building No.: Use	Components Where Lead-Based Paint Was Identified, I-Interior, E-Exterior
66 Child Development Center	I-Door components, stall, bookcase, ceiling E-none detected
67 Silver Chapel	I-Doors & components, window components, coat rack, pipes & HVAC duct, railings,ladder E-Railings & basement door & components
128 Family Fitness Center	I-None detected E-Doors & components, awnings, fire hydrant
129 Workshop	I-Concrete walls, windows, wood doors, door components E-doors & components, upper trim, soffits, windows
130 Miller Gym	I- None detected E-Brown metal guide wire cover/yellow paint
292 Hospital	I-None detected in pediatric areas and waiting rooms E-Not tested
893 Chapel	I-not tested per base personnel E-Assume all paint
992 Recreation Center	I-not tested per base personnel E-Assume white painted wood porch components
1012 Truman Gym	I-Metal doors, lockers E-None detected
1077 WAC Museum	I-None detected E-None detected
1740 Soldier's Chapel	I-Concrete walls, doors & components, windows & components, rafters, beams E-Windows & components, doors & components, support pad
1928 Bowling Alley	I-None detected E-None detected
1929 Dental Clinic	I-None detected E-None detected

Appendix B

TABLE 1
INTERIOR AND EXTERIOR AREAS WITH LEAD-BASED PAINT

Building No.: Use	Components Where Lead-Based Paint Was Identified, I-Interior, E-Exterior
2101 Post Theater	I-None detected E-Metal doors & components, railings
2102 Library	I-None detected E-Metal guide wire cover
2213 Child Development Center	I-Wood door components E-Wood doors & components, downspouts, pipes, metal panels
2242 Family Housing	I-Window sash & well E-Consider all outside paint positive, except front porch floor, block foundation, and various trim
2271 Family Housing	I-Window components, doors & trim, baseboards, shelf supports, fireplace mantle E-Porch ceiling & beam, door
2290 Preventive Medicine	I-Screen doors @ entryways E-Doors & frames, support poles, window casings & frames, handrails, downspouts
2293 WAC Chapel	I-None detected E-Soffits, window trim, door and frames, metal pole, concrete threshold, apron & steps
2299 Chemical Corps Museum	I-Window & door components, roll-up door & casing E-Downspout & gutter
3182 MP Museum	I-Metal door & components & windows, metal shelf E-Metal doors & frames & windows, metal awnings
3213 Army Community Service Center	I-Block wall, lower trim E-Window sash & casing, metal pole, door, yellow concrete curb
3293 Chapel	I-Window headers E-Door & components, upper facia

TABLE 1
INTERIOR AND EXTERIOR AREAS WITH LEAD-BASED PAINT

Building No.: Use	Components Where Lead-Based Paint Was Identified, I-Interior, E-Exterior
3527 Scout Building	I-Door casing & jamb, window casing, sheetrock wall, wood column E-Window casing, upper trim, column, soffit, door & jamb
3681 Elementary School	I-Door jambs rear & side entryways E-Window, soffit, door frame
Buchner Family Housing, #'s 9 & 13	I-Doors & components, window components, beadboard wood ceilings, walls, baseboards & moldings, stairway components, bookcase, mantel Newell post E-Porch components & handrails, door components, soffits, rafters, cornerboards, downspout
Baltzell Family Housing, 25B, 27A, 28A, 29A, 30A	I-Doors & components, window components, baseboards, shelves & shelf supports E-Porch components, wood door components, soffits, rafters, cornerboards
Drennen Family Housing, 81, 83, 85, 87, 89 90, 103, 105, 106, 107	I-Window components, baseboards, crown & chair molding, door components, walls, stair components, shelves & supports E-Siding & walls, facia, soffits, cornerboards, door components,
WAC Circle Housing, 2235, 2236	I-Doors & components, plaster ceilings, baseboards, shelves & shelf supports E-Porch components, wood door components, soffits, rafters, cornerboards, screen trim
Avery Family Housing, Group 1, 3310-3331	I-Window sashes, shelves & shelf supports, baseboards, curtain molding, attic scuttles E-Porch components, window components, door components, fences, wood beneath vinyl siding
Avery Family Housing, Group 2, 3334-3343	I-Shelves, shelf supports, baseboards, curtain molding E-Porch ceiling, trim, column, support; wood rail, wood fences, concrete slab

Appendix B

TABLE 1
INTERIOR AND EXTERIOR AREAS WITH LEAD-BASED PAINT

Building No.: Use	Components Where Lead-Based Paint Was Identified, I-Interior, E-Exterior
Littlebrant Family Housing, 3400-3411	I-Baseboards, shelves & shelf supports, attic scuttles E-Porch components, fence components
Morton, Church, & Baker Rd Family Housing, 3500-3540	I-Stairs, risers, thread, handrails, posts E-Facia, soffits, cornerboards; porch frame, trim, floor
Wirans, Church, and Morton Rds Family Housing , 3610-3673	I-Window components, shelves & shelf supports E-Door components, fences; metal electrical conduits, guide wire sleeves, & vents; porch supports, wood porch components, window components
Summerall Family Housing, Group A, 3700-3718	I-Window sills, frames, casings; baseboards, crown & chair molding, shelves & supports; stair stringer, riser; cabinets E-Door headers, casings, frames; porch frame, trim, floor
Summerall/Sharp Family Housing, Group B, 3719-3732	I-Bathroom cabinets (2nd FL), baseboards, shelves & supports, stair risers & stringers E-Door components, window header plate; porch support pole, ceiling, upper trim, back fence
Cooper, Bray, & Littlebrant Family Housing, Group C, 3737-3770	I-Shelves & supports, window sash, frames, casings E-window sills, frames, casings; porch frame, trim, floor; fences, conduit

For the individual buildings, components with LBP were identified from positive XRF readings and/or positive scrape sample analysis in SADL survey reports. For family housing groups, components with LBP were identified from component summary tables in SADL survey reports. The HUD Interim Guidelines set out decision rules depending on the percentages of components classified as positive. The rules are applied to each component separately, and depend on the type of XRF analyzer used. For the XRF spectrum analyzer, if more than 11% of a component are positive, lead is present, and either all such components should be abated, or all should be tested to determine which require abatement and which do not.

TABLE 2
PAINTED BUILDING COMPONENTS/SURFACES
WITH LEAD-BASED PAINT IN FAIR/POOR CONDITION

Building or Unit #	Fair ("I-": Interior; "E-": Exterior)	Poor ("I-": Interior; "E-": Exterior)
66	I-Janitor's closet: Tan metal door jamb.	I-Janitor's closet: White wood ceiling (above dropped tile ceiling)
67	I-Stairwell: Brown metal railing	E-Brown metal railing
128	E-Metal doors & components, beige metal fire hydrant	
129	I-Rm 1: beige upper concrete wall, beige metal door jamb, beige wood door casing, brown wood door jamb, beige wood door, Rm2: Beige metal window frame, Rm 3: Beige wood door, beige metal door jamb, Rm 5: beige wood door E-Brown metal window frame, brown screened door	I-Rm 1: Beige upper concrete wall, Rm 4: Beige concrete wall, Rm 5: beige concrete wall, Rm 6: brown wood door E-Brown wood door
893	E-White wood door	E-White wood clapboard, green concrete foundation, white wood window sill, white wood cornerboard, white wood door, white wood window sash
992	E-White wood porch ceiling	E-White wood upper porch trim
1012	I-Steam room orange metal door	
1740	I-Rm 1: White metal rafter, Rm 2: white metal door & casing, Rm 3: tan concrete wall	I-Rm 1: White metal window sash, Rm 6: White metal window sash E-Brown concrete pad
2101	E-Pink metal door & casing, pink metal dock apron	E-Pink metal rail
2102		E-Brown telephone guide wire cover
2213	E-Tan metal downspout lower section, brown wood door	E- brown metal panel, brown/white metal pipe, brown wood basement door, green wood door jamb
2242	E-White wood door jamb	I-LR brown window sash E-White wood siding, green wood window casing, green wood door, white wood porch ceiling, white wood porch rafter, white wood door

Appendix B

TABLE 2
PAINTED BUILDING COMPONENTS/SURFACES
WITH LEAD-BASED PAINT IN FAIR/POOR CONDITION

Building or Unit #	Fair ("I-": Interior; "E-": Exterior)	Poor ("I-": Interior; "E-": Exterior)
2271	E-Green wood door	I-Rm 5 BR: White wood shelf support E-White wood porch ceiling
2290	E-Brown metal railing , brown wood door, tan metal downspout base, brown metal support pole	E-Tan metal downspout
2293	E-Brown metal pole, brown wood door & jamb	E- Brown wood window sash, white concrete threshold , apron, & steps, brown wood door
2299	I-Partition office grey door casing E-Brown rain gutter	I-Rm 6: Green metal door casing, green roll-up door E-Brown metal downspout
3182	I-Rm 3:Tan metal door, Rm 6:white metal shelf E-Brown metal door frames with metal doors, brown metal awnings	
3213	E-Brown metal window casing	E-Brown metal window sash, brown metal pole, yellow concrete curb
3293	E-Brown metal door	E-Brown wood door & header, brown upper facia
3527	I-Rm 1: White metal window casing	E-White wood window casing, white wood upper trim, white wood column, white wood soffit, white door & jamb
Buchner #13	I-Basement: white steel column, green wood screen door, green wood door, Newel post E-Brown wood soffit	E-Brown metal downspout catch
Baltzell, 28A	E-white porch railing, white metal porch support	
Baltzell, 29A	E-white porch rail	
Baltzell, 30A	E-White porch railing, white porch ceiling	

TABLE 2
PAINTED BUILDING COMPONENTS/SURFACES
WITH LEAD-BASED PAINT IN FAIR/POOR CONDITION

Building or Unit #	Fair ("I-": Interior; "E-": Exterior)	Poor ("I-": Interior; "E-": Exterior)
Drennen, 81	I-Kitchen plaster ceiling, basement: steel support beam, back door E-White wood door jamb	I-MBR wood baseboard, Basement: stairwell, stair riser E-Creme porch soffit, white window apron, front porch siding, white wood rear door
Drennen, 83	I-Basement:cross beam support, gray creme door E-Upper porch trim	I-Basement: steel support post
Drennen, 85	E-Creme wood siding	
Drennen, 90	I-Basement: gray stair rail & stringer	
WAC Circle, 2236	E-Tan metal post, tan wood screen door, tan wood door casing, tan wood screen trim	E-Tan wood eave
Avery, Group 1, 3314B	E-White metal porch support	
Avery, GP 1, 3325A	I-Rm 4: White wood shelf support E-White wood window apron, white wood window casing	E-White wood door casing
Avery, GP 1 3327B		E-White wood window apron
Avery, GP 1, 3331A	E-White wood door casing, white wood window apron	E-White wood fence
Littlebrant, 3401	E-White metal porch support, white wood porch ceiling	E-White wood trim
Littlebrant, 3403B		E-Green metal fence support
Morton, Church, Baker, 3500A	E-White wood door overhang	E-White metal porch support
Morton, Church, Baker, 3503A		E-White wood window apron
Morton, Church, Baker, 3517B	E-White wood window casing, white wood window sill	E-White metal door casing

TABLE 2
PAINTED BUILDING COMPONENTS/SURFACES WITH LEAD-BASED PAINT IN FAIR/POOR CONDITION

Building or Unit #	Fair ("I-": Interior; "E-": Exterior)	Poor ("I-": Interior; "E-": Exterior)
Morton, Church, Baker, 3519B		E-White metal porch support, white door trim
Morton, Church, Baker, 3520E		E-White metal porch support
Morton, Church, Baker, 3524C		E-White wood window divider
Morton, Church, Baker, 3531B		E-White metal column
Morton, Church, Baker, 3532D	E-White metal porch support	
Morton, Church, Baker, 3533E		E-White metal porch support
Morton, Church, Baker, 3534F	E-White wood window casing	E-White wood porch support
Morton, Church, Baker, 3535D	E-White metal porch support, white wood upper trim	
Morton, Church, Baker, 3536A		E-White porch support, white wood window frame
Morton, Church, Baker, 3536F		E-White metal porch post
Morton, Church, Baker, 3537A	E-White wood window casings (2)	
Morton, Church, Baker, 3538B	E-White metal support post	
Morton, Church, Baker, 3540E	E-White metal porch	
Wirans, Church, Morton Rds, 3600s, 3610B	I-Kitchen: white wood window well; MB: white wood window well, child's BR: white wood window well	
Wirans, Church, Morton Rds, 3600s, 3611A	E-White metal porch post	E-White porch ceiling, white wood window sills (2)

TABLE 2
PAINTED BUILDING COMPONENTS/SURFACES WITH LEAD-BASED PAINT IN FAIR/POOR CONDITION

Building or Unit #	Fair ("I-": Interior; "E-": Exterior)	Poor ("I-": Interior; "E-": Exterior)
Wirans, Church, Morton Rds, 3600s, 3614B	E-White wood porch ceiling, white wood window casing (2), white metal porch support	
Wirans, Church, Morton Rds, 3600s, 3615B	E-White metal porch support, white wood upper trim	E-White wood window sill
Wirans, Church, Morton Rds, 3600s, 3616A	E-White wood porch trim	E-white wood window apron, white metal porch support, white wood porch ceiling
Wirans, Church, Morton Rds, 3600s, 3616B	I-Kitchen: white wood window well E-White wood door header, white wood window apron	E-Red wood fence
Wirans, Church, Morton Rds, 3600s, 3617B	I-Kitchen: white wood window well	I-Child's BR: white wood window well
Wirans, Church, Morton Rds, 3600s, 3618A	E-White metal porch support	E-White wood porch ceiling, white wood window casing, brown wood fence, white wood window sill
Wirans, Church, Morton Rds, 3600s, 3619B	E-White metal porch support	I-MBR: white wood window well, RM 4 BR: white wood window well E-White wood window apron, white wood porch ceiling
Wirans, Church, Morton Rds, 3600s, 3620B		E-White wood window apron, white wood porch ceiling, white wood fence
Wirans, Church, Morton Rds, 3600s, 3622B	I-Rm 1: white wood window well E-White wood upper trim, white wood window casing, white metal conduit, white wood door casing,	E-White metal porch support, white wood window sill, white wood fence
Wirans, Church, Morton Rds, 3600s, 3624B	E-White wood porch ceiling	
Wirans, Church, Morton Rds, 3600s, 3626B	I-Child's BR: white wood window well E-Whie wood window casing, white wood window sill, white metal porch post	

TABLE 2
PAINTED BUILDING COMPONENTS/SURFACES WITH LEAD-BASED PAINT IN FAIR/POOR CONDITION

Building or Unit #	Fair ("I-": Interior; "E-": Exterior)	Poor ("I-": Interior; "E-": Exterior)
Wirans, Church, Morton Rds, 3600s, 3629B	E-White wood fence, white wood door casing, white wood porch ceiling, white wood window apron	
Wirans, Church, Morton Rds, 3600s, 3632B	I-Kitchen: white wood window well E-White wood window casing, white metal porch support	E-White wood fence
Wirans, Church, Morton Rds, 3600s, 3637B	I-Kitchen: white wood window well, child's BR: white wood window well E-White wood window casing, white wood porch ceiling, white wood window sill	E-White wood fence
Wirans, Church, Morton Rds, 3600s, 3643B	E-White wood porch ceiling, white wood window sill, white metal porch support	
Wirans, Church, Morton Rds, 3600s, 3659B	I-MBR: white window well E-White wood window sill	E-white metal porch support
Wirans, Church, Morton Rds, 3600s, 3664A	I-Rm 2: white wood window well, white wood window sash E-White wood porch ceiling, white wood window casing	E-Green wood fence, white wood upper trim
Wirans, Church, Morton Rds, 3600s, 3664B	E-White wood porch ceiling, white wood door casing, white window apron	E-Green wood privacy fence
Wirans, Church, Morton Rds, 3600s, 3665B	I-Kitchen: white wood window well	E-White wood window casing
Wirans, Church, Morton Rds, 3600s, 3670A	I-Rm 2: White wood window well E-white electric conduit, white wood window sill, white metal porch support, white wood upper porch trim, white wood fence, white wood window casing	
Wirans, Church, Morton Rds, 3600s, 3671B	E-White metal porch support	E-white wood fence

TABLE 2
PAINTED BUILDING COMPONENTS/SURFACES
WITH LEAD-BASED PAINT IN FAIR/POOR CONDITION

Building or Unit #	Fair ("I-": Interior; "E-": Exterior)	Poor ("I-": Interior; "E-": Exterior)
Wirans, Church, Morton Rds, 3600s, 36172B	E-White wood window casing (2), tan guide wire sleeve	E-White metal porch support, tan wood fence
Summerall, 3700s, Group A, 3700A	E-White metal porch support	
Summerall, 3700s, Group A, 3700G	E-White metal porch support	
Summerall, 3700s, Group A, 3706D		E-White metal porch support
Summerall, 3700s, Group A, 3708C	E-White metal porch support	
Summerall & Sharp, 3700s, Group B, 3719E	E-White metal porch support, white metal window header, white wood porch ceiling, white wood door casing, white wood fence	
Summerall & Sharp, 3700s, Group B, 3719H	E-White metal porch support	
Summerall & Sharp, 3700s, Group B, 3721B	E-White wood door casing, white wood fence	
Summerall & Sharp, 3700s, Group B, 3722D	E-White metal porch post	
Summerall & Sharp, 3700s, Group B, 3724A	E-White metal porch post	
Summerall & Sharp, 3700s, Group B, 3725A	E-White metal porch post	

TABLE 2
PAINTED BUILDING COMPONENTS/SURFACES WITH LEAD-BASED PAINT IN FAIR/POOR CONDITION

Building or Unit #	Fair ("I-": Interior; "E-": Exterior)	Poor ("I-": Interior; "E-": Exterior)
Summerall & Sharp, 3700s, Group B, 3725D	E-White metal porch post, white wood door casing	
Summerall & Sharp, 3700s, Group B, 3727F	E-White metal porch post, white wood door jamb, white wood fence, white metal door casing	
Summerall & Sharp, 3700s, Group B, 3729E	E-White metal porch facia trim, white metal porch post, white metal door header, white wood fence	E-White wood porch ceiling
Summerall & Sharp, 3700s, Group B, 3731A	E-White wood door casing	E-White metal porch post, white metal door header
Summerall & Sharp, 3700s, Group B, 3732A	E-White metal porch post, white metal window header, white wood fence, white wood door casing	
Summerall & Sharp, 3700s, Group B, 3732E	E-White metal porch support, white wood fence	
Cooper, Bray, Littlebrant, 3700s, Group C, 3740A	E-White wood porch ceiling, white wood window casing, white metal porch support, white wood porch trim	E-White wood fence
Cooper, Bray, Littlebrant, 3700s, Group C, 3742B	E-White metal porch support	E-White wood window sill

APPENDIX C

Appendix C

BUILDINGS/UNITS WHERE LEAD DUST SAMPLE RESULTS EXCEEDED CLEARANCE LEVELS

Building/Unit #	Floor	Window Sill (WS)	Window Well (WW)	Comment
67	134			Stairwell Floor
2299	445			Enrty Area Floor
3319A (3310-3343)	933	4600	7632	BR Floor, Kit WW, BR WS
3530C (3500-3542)	198			Kit Floor
3610B (3610-3673)			1242 1193	DR Bathroom
3626B (3610-3673)			1076 824	Kitchen Child's BR
3640B (3610-3673)			2044 3841	BR Teenager's BR
3659B (3610-3673)			936	Master BR
3664B (3610-3673)			892	Bathroom
3665B (3610-3673)			934 2093	Kitchen BR
3708C (3700-3818)	125			BR
3731H (3719-3732)	109			Stairwell
3737B (3737-3770)			1789	Master BR

Recommended Clearance Levels:

Location	Lead Loading
Uncarpeted Floors	100 $\mu g/ft^2$.
Interior Window Sills	500 $\mu g/ft^2$.
Window Wells	800 $\mu g/ft^2$.

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24 September 1994

SOIL AND DUST SAMPLE DATA FOR
LEAD RISK ASSESSMENT
FORT McCLELLAN AND ANNISTON ARMY DEPOT
ALABAMA

1. Enclosed are the sample results and quality control data for soil and dust (wipe) samples taken for lead risk assessment at Ft. McClellan and Anniston Army Depot Alabama.

2. Soil and dust sampling was conducted in accordance with general procedures in the April 1, 1990 HUD Guidelines (revised September 28, 1990). A lead-based paint (LBP) survey using a SCITEC MAP 3, X-ray Fluorescence Spectrometer (XRF spectrum analyzer) was performed just prior to dust sampling. Therefore, dust samples were taken in areas where lead contaminated dust was more likely to exist.

3. The data is grouped according to the type of sample (soil or dust) and area sampled. Each building is treated as a separate area. Family housing is divided into areas similar in; type and time of construction, location and LBP survey results. For example, Units 25 - 30 on Baltzell Rd. were built in the mid 1950's and have similar floorplans and LBP survey results.

4. This report consists of:

Table 1:	Soil Sample Data for Ft. McClellan
Table 2:	Laboratory Quality Control Data for Ft. McClellan Soil Samples
Table 3:	Dust Sample Data for Ft. McClellan
Table 4:	Laboratory Quality Control Data for Ft. McClellan Dust Samples
Table 5:	Soil, Dust and Quality Control Data for Anniston Army Depot

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CESAD-EN-FL

24 September 1994

Table 3
FORT McCLELLAN DUST DATA
Buildings and Family Housing Groups

Field ID	Sample Date	Sample Time	Lab #		Result	Units	Location of Wipe Sample
BUILDINGS							
Building 67 (Silver Chapel)							
7094.67.1D	94/02/02	850	18876		58.1	ug/Ft^2	Kitchen - Window Sill
7094.67.2D	94/02/02	850	18877		44.6	ug/Ft^2	Basement Entry Area - Floor
7094.67.3D	94/02/02	850	18878		235.0	ug/Ft^2	Basement Entry Area - Top of HVAC Duct
7094.67.4D	94/02/02	850	18879		33.6	ug/Ft^2	Chapel - Floor
7094.67.5D	94/02/02	850	18880		37.6	ug/Ft^2	Chapel - Top of Wall Paneling near Podium
7094.67.6D	94/02/02	850	18881		134.0	ug/Ft^2	Stairwell - Landing Floor
7094.67.7D	94/02/02	850	18882		89.3	ug/Ft^2	Basement Office - Floor
Building 1740 (Soldier's Chapel)							
7094.1740.2D	94/02/25	1715	19468		78.9	ug/Ft^2	Main Chapel - Window Sill
7094.1740.3D	94/02/25	1720	19469	<	25.0	ug/Ft^2	Main Chapel - Floor
7094.1740.4D	94/02/25	1722	19470		156.0	ug/Ft^2	Large Storage Room - Window Sill
7094.1740.5D	94/02/25	1725	19471		41.7	ug/Ft^2	Large Storage Room - Floor
Building 2299 (Chemical Museum)							
7094.2299.2D	94/03/15	1545	19533		445.0	ug/Ft^2	Entry Area - Floor
7094.2299.3D	94/03/15	1550	19534		15.3	ug/Ft^2	Office Area - Window Sill
7094.2299.4D	94/03/15	1555	19535		30.0	ug/Ft^2	Office Area - Floor
7094.2299.5D	94/03/15	1600	19536	<	33.8	ug/Ft^2	Artifact Storage - Window Sill
7094.2299.7D	94/03/15	1610	19538		23.8	ug/Ft^2	Artifact Storage - Window Sill
7094.2299.8D	94/03/15	1615	19539	<	19.8	ug/Ft^2	Artifact Storage - Window Sill
Building 3213 (Army Community Service Center)							
7094.3213.2D	94/02/10	1605	18860		38.8	ug/Ft^2	Children's Playroom - Floor
7094.3213.3D	94/02/10	1606	18861		37.0	ug/Ft^2	Children's Playroom - Floor
7094.3213.4D	94/02/10	1612	18862		27.0	ug/Ft^2	Hallway - Floor
7094.3213.5D	94/02/10	1615	18863	<	25.6	ug/Ft^2	Front Entry - Floor
Building 3293 (Chapel)							
7094.3293.1D	94/02/03	1030	18870	<	40.3	ug/Ft^2	Activity Room - Window Sill
7094.3293.2D	94/02/03	1036	18871		44.6	ug/Ft^2	Activity Room - Floor
7094.3293.4D	94/02/03	1040	18873		29.2	ug/Ft^2	Chapel - Window Sill
7094.3293.5D	94/02/03	1045	18874		44.6	ug/Ft^2	Chapel - Floor
Building 3527 (Scout Building)							
7094.3527.1D	94/02/24	1635	19572		17.3	ug/Ft^2	Large Activity Room - Floor
7094.3527.3D	94/02/24	1640	19574	<	18.5	ug/Ft^2	Large Activity Room - Window Sill
7094.3527.4D	94/02/24	1642	19575		21.2	ug/Ft^2	Small Activity Room - Window Sill
7094.3527.5D	94/02/24	1645	19576		29.2	ug/Ft^2	Kitchen - Floor
Building 3681 (Dependent School)							
7094.3681.1D	94/02/05	1410	18865		48.5	ug/Ft^2	Entry - Floor by North Exit Door
7094.3681.2D	94/02/05	1415	18866		74.1	ug/Ft^2	Entry - Floor by West Exit Door
7094.3681.3D	94/02/05	1417	18867		32.5	ug/Ft^2	Entry - Floor by East Exit Door

Table 3 (continued)
FORT McCLELLAN DUST DATA
Buildings and Family Housing Groups

Field ID	Sample Date	Sample Time	Lab #	Result		Units	Location of Wipe Sample
FAMILY HOUSING GROUPS							
Baltzell Rd. (Units 25 - 30)							
7094.258.1D	94/02/02	1010	18912	<	56.8	ug/Ft^2	Kitchen - Window Sill
7094.258.3D	94/02/02	1020	18914		50.0	ug/Ft^2	Living Room - Floor
Drennen (Units 81 - 107)							
7094.106.5.1D	94/02/09	1030	18907	<	64.1	ug/Ft^2	Bedroom - Floor
7094.106.5.2D	94/02/09	1030	18908	<	58.8	ug/Ft^2	Bedroom - Window Sill
7094.106.5.4D	94/02/09	1035	18910	<	56.8	ug/Ft^2	Bedroom - Floor
7094.106.5.5D	94/02/09	1040	18911		54.9	ug/Ft^2	Kitchen - Window Well
WAC Circle (Units 2235 - 2240)							
7094.2235.2D	94/03/17	917	19437	<	32.9	ug/Ft^2	Bedroom - Floor
7094.2235.3D	94/03/17	920	19438	<	26.9	ug/Ft^2	Kitchen - Window Sill
Avery (Units 3310 - 3343)							
7094.3319A.2.4D	94/02/09	0	18885		7632.0	ug/Ft^2	Kitchen - Window Well
7094.3319A.3.1D	94/02/09	1131	18887	<	40.0	ug/Ft^2	Living Room - Floor
094.3319A.4.7D	94/02/09	1139	18893	<	50.0	ug/Ft^2	Master Bath - Floor
094.3319A.4D	94/02/09	1138	18890		147.0	ug/Ft^2	Master Bath - Window Well
7094.3319A.5.2D	94/02/09	1144	18892	<	100.0	ug/Ft^2	Bedroom - Window Sill
7094.3319A.5D	94/02/09	1142	18891	<	41.0	ug/Ft^2	Bedroom - Closet Floor
7094.3319A.6.3D	94/02/09	1135	18889		933.0	ug/Ft^2	Bedroom - Floor
7094.3319A.6.4D	94/02/09	1134	18888		4600.0	ug/Ft^2	Bedroom - Window Sill
Morton/Church/Baker (Units 3500 - 3542)							
7094.3519B.1D	94/02/22	1627	19427	<	26.0	ug/Ft^2	Kitchen - Window Well
7094.3519B.2D	94/02/22	1632	19428	<	25.0	ug/Ft^2	Kitchen - Floor
7094.3519B.3D	94/02/22	1633	19429	<	25.0	ug/Ft^2	Living Room - Floor
7094.3519B.5D	94/02/22	1642	19431	<	29.1	ug/Ft^2	Living Room - Window Well
7094.3519B.6D	94/02/22	1645	19432	<	25.0	ug/Ft^2	Baby Bedroom - Floor
7094.3519B.7D	94/02/22	1647	19433	<	28.4	ug/Ft^2	Baby Bedroom - Window Well
7094.3519B.8D	94/02/22	1650	19434	<	25.0	ug/Ft^2	Child's Bedroom - Floor
7094.3519B.9D	94/02/22	1655	19435	<	28.4	ug/Ft^2	Child's Bedroom - Window Well
7094.3520E.1D	94/02/23	1147	19299	<	12.4	ug/Ft^2	Kitchen - Floor
7094.3520E.2D	94/02/23	1150	19300	<	19.1	ug/Ft^2	Kitchen - Door
7094.3520E.4D	94/02/23	1153	19302		15.2	ug/Ft^2	Stairwell - Railing Support
7094.3526B.2D	94/02/24	930	19313	<	25.0	ug/Ft^2	Laundry Room - Floor
7094.3530C.2D	94/02/25	1005	19346		198.0	ug/Ft^2	Kitchen - Floor
7094.3530C.3D	94/02/25	1010	19347	<	59.5	ug/Ft^2	Stairwell - Tread
7094.3533E.1D	94/02/26	1215	19356	<	17.6	ug/Ft^2	Floyer - Floor
7094.3533E.2D	94/02/26	1216	19357	<	15.2	ug/Ft^2	Stairwell - Railing Support
7094.3533E.3D	94/02/26	1217	19358	<	28.4	ug/Ft^2	Kitchen - Window Well
7094.3534B.2D	94/02/28	1002	19342	<	59.5	ug/Ft^2	Kitchen - Floor
7094.3534B.3D	94/02/28	1004	19343	<	71.4	ug/Ft^2	Stairwell - Floor

Table 3 (continued)
FORT McCLELLAN DUST DATA
Buildings and Family Housing Groups

Field ID	Sample Date	Sample Time	Lab #		Result	Units	Location of Wipe Sample
			FAMILY HOUSING GROUPS (continued)				
			Wirans/Church/Horton (Units 3610 - 3673) (continued)				
7094.3664B.2D	94/03/07	922	19417		26.3	ug/Ft^2	Kitchen - Window Well
7094.3664B.3D	94/03/07	925	19418	<	36.2	ug/Ft^2	Kitchen - Floor
7094.3664B.4D	94/03/07	927	19419		120.0	ug/Ft^2	Living Roon - Window Sill
7094.3664B.5D	94/03/07	930	19420	<	36.2	ug/Ft^2	Living Room - Floor
7094.3664B.6D	94/03/07	935	19421		60.0	ug/Ft^2	Bedroom - Window Sill
7094.3664B.8D	94/03/07	940	19423	<	40.3	ug/Ft^2	Bedroom - Floor
7094.3664B.9D	94/03/07	942	19424		892.0	ug/Ft^2	Bathroom - Window Well
7094.3664B.10D	94/03/07	945	19425	<	40.3	ug/Ft^2	Bathroom - Floor
7094.3665B.1D	94/03/07	1046	19489		941.0	ug/Ft^2	Kitchen - Window Well
7094.3665B.2D	94/03/07	1047	19490	<	25.0	ug/Ft^2	Kitchen - Floor
7094.3665B.3D	94/03/07	1050	19491		196.0	ug/Ft^2	Living Room - Window Well
7094.3665B.4D	94/03/07	1052	19492	<	24.0	ug/Ft^2	Living Room - Floor
7094.3665B.6D	94/03/07	1056	19494		613.0	ug/Ft^2	Child's Bedroom - Window Well
7094.3665B.7D	94/03/07	1058	19495	<	15.2	ug/Ft^2	Child's Bedroom - Floor
7094.3665B.8D	94/03/07	1102	19496		2093.0	ug/Ft^2	Bedroom - Window Well
7094.3665B.9D	94/03/07	1104	19497	<	13.7	ug/Ft^2	Bedroom - Floor
			Summerall (Units 3700- 3718)				
7094.3700A.2D	94/03/08	1001	19379	<	18.1	ug/Ft^2	Kitchen - Window Sill
7094.3700A.3D	94/03/08	1005	19380	<	36.2	ug/Ft^2	Dining Room - Floor
7094.3700A.4D	94/03/08	1007	19381	<	56.8	ug/Ft^2	Stairwell - Tread
7094.3700A.5D	94/03/08	1010	19382	<	36.2	ug/Ft^2	Bedroom - Floor
7094.3700A.6D	94/03/08	1011	19383	<	45.4	ug/Ft^2	Bathroom - Window Sill
7094.3700D.1D	94/03/08	1022	19475	<	17.4	ug/Ft^2	Kitchen - Floor
7094.3700D.2D	94/03/08	1025	19476	<	17.1	ug/Ft^2	Kitchen - Window Sill
7094.3700D.3D	94/03/08	1030	19477		20.3	ug/Ft^2	Living Room - Window Well
7094.3700D.4D	94/03/08	1035	19478	<	25.0	ug/Ft^2	Dining Room - Floor
7094.3700D.5D	94/03/08	1118	19479		29.8	ug/Ft^2	Child's Bedroom - Window Well
7094.3700D.6D	94/03/08	1120	19480		32.8	ug/Ft^2	Child's Bedroom - Floor
7094.3700D.7D	94/03/08	1126	19481		20.5	ug/Ft^2	Child's Bedroom - Floor
7094.3700D.8D	94/03/08	1130	19482		25.2	ug/Ft^2	Bathroom - Floor
7094.3706D.1D	94/03/09	932	19513		22.9	ug/Ft^2	Kitchen - Window Well
7094.3706D.2D	94/03/09	935	19514	<	17.2	ug/Ft^2	Kitchen - Floor
7094.3706D.3D	94/03/09	936	19515	<	18.9	ug/Ft^2	Dining Room - Window Sill
7094.3706D.4D	94/03/09	938	19516	<	25.0	ug/Ft^2	Dining Room - Floor
7094.3706D.5D	94/03/09	942	19517	<	13.6	ug/Ft^2	Bedroom - Floor
7094.3706D.6D	94/03/09	945	19518	<	14.9	ug/Ft^2	Child's Bedroom - Closet Floor
7094.3708C.2D	94/03/09	940	19450	<	17.6	ug/Ft^2	Kitchen - Window Sill
7094.3708C.3D	94/03/09	942	19451	<	40.3	ug/Ft^2	Living Room - Floor
7094.3708C.4D	94/03/09	945	19452	<	67.6	ug/Ft^2	Stairwell - Tread
7094.3708C.5D	94/03/09	947	19453		125.0	ug/Ft^2	Bedroom - Floor
7094.3708C.6D	94/03/09	950	19454	<	28.4	ug/Ft^2	Bedroom - Window Well
7094.3718A.2D	94/03/10	900	19562	<	20.3	ug/Ft^2	Kitchen - Window Sill
7094.3718A.3D	94/03/10	902	19563	<	24.0	ug/Ft^2	Kitchen - Floor
7094.3718A.4D	94/03/10	904	19564	<	16.9	ug/Ft^2	Living Room - Window Sill
7094.3718A.5D	94/03/10	904	19565	<	25.0	ug/Ft^2	Living Room - Floor
7094.3718A.6D	94/03/10	908	19566		23.3	ug/Ft^2	Child's Bedroom - Closet Floor
7094.3718A.7D	94/03/10	911	19567	<	21.2	ug/Ft^2	Bathroom - Floor
7094.3718A.8D	94/03/10	914	19568	<	10.7	ug/Ft^2	Child's Bedroom - Floor

APPENDIX D

Table 4
QUALITY CONTROL DATA FOR FORT McCLELLAN DUST SAMPLES
Buildings and Family Housing Groups

Spike Field ID (1000 ug/Sample Spike)	Sample Date	Sample Time	Lab #	Result	Units	Spike Percent Recovery
7094.106.5.3D	94/02/09	1035	18909	900.0	ug/Sample	90.0 %
7094.3319A.2.D	94/02/09	0	18886	850.0	ug/Sample	85.0 %
7094.3519B.4D	94/02/22	1640	19430	1020.0	ug/Sample	102.0 %
7094.3520E.3D	94/02/23	1153	19301	1010.0	ug/Sample	101.0 %
7094.3610B.6D	94/03/02	1055	19390	985.0	ug/Sample	98.5 %
7094.3616B.1D	94/03/03	932	19621	1010.0	ug/Sample	101.0 %
7094.3626B.5D	94/03/04	1128	19445	970.0	ug/Sample	97.0 %
7094.3640B.1D	94/03/04	1536	19612	965.0	ug/Sample	96.5 %
7094.3652A.6D	94/03/05	935	19400	975.0	ug/Sample	97.5 %
7094.3659B.9D	94/03/05	1054	19415	1005.0	ug/Sample	100.5 %
7094.3664B.7D	94/03/07	937	19422	1005.0	ug/Sample	100.5 %
7094.3665B.5D	94/03/07	1054	19493	1000.0	ug/Sample	100.0 %
7094.3700A.7D	94/03/08	1015	19384	930.0	ug/Sample	93.0 %
7094.3708C.7D	94/03/09	953	19455	935.0	ug/Sample	93.5 %
7094.3718A.1D	94/03/10	858	19561	925.0	ug/Sample	92.5 %
7094.3742B.2D	94/03/15	1034	19596	970.0	ug/Sample	97.0 %
7094.3766A.1D	94/03/16	1022	19605	995.0	ug/Sample	99.5 %
7094.1740.1D	94/02/25	1712	19467	840.0	ug/Sample	84.0 %
7094.3213.1D	94/02/10	1600	18859	900.0	ug/Sample	90.0 %
7094.3293.3D	94/02/03	1038	18872	900.0	ug/Sample	90.0 %
7094.3527.2D	94/02/24	1638	19573	1010.0	ug/Sample	101.0 %

Field Blank ID	Sample Date	Sample Time	Lab #	Result	Units
7094.25B.2D.BLANK	94/02/02	1015	18913	< 50.0	ug/Sample
7094-D1 BLANK	94/02/02	850	18883	< 50.0	ug/Sample
7094.106.BLANK	94/02/09	1020	18906	< 50.0	ug/Sample
7094.2235.1D BLANK	94/03/17	915	19436	< 25.0	ug/Sample
7094.3319A.BLANK	94/02/09	1020	18884	< 50.0	ug/Sample
7094.3519B.BLANK	94/02/22	1625	19426	< 25.0	ug/Sample
7094.3520E.BLANK	94/02/23	1145	19298	< 25.0	ug/Sample
7094.3526B.1D.BLANK	94/02/24	925	19312	< 25.0	ug/Sample
7094.3530C.1D BLANK	94/02/25	1002	19345	< 25.0	ug/Sample
7094.3533E.BLANK	94/02/26	1210	19355	< 25.0	ug/Sample
7094.3534B.1D BLANK	94/02/28	1000	19341	< 25.0	ug/Sample
7094.3536A.D2.BLANK	94/02/01	1440	18895	< 50.0	ug/Sample
7094.3536A.D8.BLANK	94/02/01	0	18901	< 50.0	ug/Sample
7094.3610B.1D BLANK	94/03/02	1030	19385	< 25.0	ug/Sample
7094.3616B.BLANK	94/03/03	930	19620	< 25.0	ug/Sample
7094.3626B.BLANK	94/03/04	1115	19440	< 25.0	ug/Sample
7094.3640B.BLANK	94/03/04	1535	19611	< 25.0	ug/Sample
7094.3652A.1D BLANK	94/03/05	920	19395	< 25.0	ug/Sample
7094.3659B.BLANK	94/03/05	1035	19406	< 25.0	ug/Sample
7094.3664B.1D BLANK	94/03/07	920	19416	< 25.0	ug/Sample
7094.3665B.BLANK	94/03/07	1045	19488	< 25.0	ug/Sample
7094.3700A.1D BLANK	94/03/08	1000	19378	< 25.0	ug/Sample
7094.3700D.9D BLANK	94/03/08	1132	19483	< 25.0	ug/Sample
7094.3700D.BLANK	94/03/08	1020	19474	< 25.0	ug/Sample
7094.3706D.BLANK	94/03/09	930	19512	< 25.0	ug/Sample
7094.3708C.1D BLANK	94/03/09	937	19449	< 25.0	ug/Sample
7094.3718A.BLANK	94/03/10	855	19560	< 25.0	ug/Sample
7094.3718D.1D BLANK	94/03/10	918	19328	< 25.0	ug/Sample
7094.3725A.1D BLANK	94/03/11	930	19499	< 25.0	ug/Sample
7094.3725D.1D BLANK	94/03/11	1045	19485	< 25.0	ug/Sample
7094.3725D.BLANK	94/03/11	1045	19484	< 25.0	ug/Sample
7094.3732H.1D BLANK	94/03/14	1105	19349	< 25.0	ug/Sample
7094.3737B.BLANK	94/03/14	1405	19626	< 25.0	ug/Sample
7094.3742B.BLANK	94/03/15	1030	19594	< 25.0	ug/Sample
7094.3743B.1D BLANK	94/03/15	1045	19367	< 25.0	ug/Sample
7094.3766A.BLANK	94/03/16	1020	19604	< 25.0	ug/Sample
7094.1740.BLANK	94/02/25	1710	19466	< 25.0	ug/Sample
7094.2299.1D BLANK	94/03/15	1545	19532	< 25.0	ug/Sample
7094.3213.BLANK	94/02/10	1600	18858	< 50.0	ug/Sample
7094.3293.BLANK	94/02/03	1025	18869	< 50.0	ug/Sample
7094.3527.BLANK	94/02/24	1632	19571	< 25.0	ug/Sample
7094.3681.BLANK	94/02/05	1410	18864	< 50.0	ug/Sample

Appendix D

BUILDING AREAS WHERE SOIL LEAD CONCENTRATIONS EXCEED 400 mg/Kg (ppm)

Building/Unit #, Use	Soil Lead Concentration mg/KG (ppm)	Comment
129, Workshop	1810	within 3 ft of Bldg
893, Chapel	4158	within 3 ft of Bldg, interim controls
1740, Soldier's Chapel	1590	within 3 ft of Bldg
2242, Family Housing	2472	within 3 ft of Bldg
2293, WAC Chapel	532	12 - 20 ft from Bldg

Table I--EPA Recommendations for Response Activities for Residential Lead-Contaminated Bare Soil		
Area of Concern	Bare Soil Lead Concentration (ppm)	Recommended Response Activities
Areas expected to be used by children, including: ▸ residential backyards, ▸ daycare and school yards, ▸ playgrounds, ▸ public parks, and ▸ other areas where children gather.	400 - 5000	Interim controls to change use patterns and establish barriers between children and contaminated soil, including: ▸ planting ground cover or shrubbery to reduce exposure to bare soil, ▸ moving play equipment away from contaminated bare soil, ▸ restricting access through posting, fencing, or other actions, and ▸ control further contamination of area. Monitor condition of interim controls. Public notice of contaminated common areas by local agency.
	> 5000	Abatement of soil, including: ▸ removal and replacement of contaminated soil, and ▸ permanent barriers. Public notice of contaminated common areas by local agency.
Areas where contact by children is less likely or infrequent	2000 - 5000	Interim controls to change use patterns and establish barriers between children and contaminated soil, including: ▸ planting ground cover or shrubbery to reduce exposure to bare soil, ▸ moving play equipment away from contaminated bare soil, ▸ restricting access through posting, fencing, or other actions, and ▸ control further contamination of area. Monitor condition of interim controls. Public notice of contaminated common areas by local agency.
	> 5000	Abatement of soil, including: ▸ removal and replacement of contaminated soil, and ▸ permanent barriers. Public notice of contaminated common areas by local agency.

Table 1
FORT McCLELLAN SOIL SAMPLE DATA
Buildings and Family Housing Groups

Field ID	Sample Date	Sample Time	SAD Lab #	Result	Units	Location of Composite Sample
			BUILDINGS			
			Building 66 (Child Development Center)			
66.1	94/03/30	1617	19707	125.0	mg/Kg	0 -3' From Building
66.2	94/03/30	1617	19708	127.0	mg/Kg	10' - 20' From Building
66.3	94/03/30	1620	19709	82.8	mg/Kg	Parking Lot
			Building 67 (Silver Chapel)			
67.1	94/03/30	1600	19794	87.5	mg/Kg	0 - 3' From Building
67.2	94/03/30	1600	19795	37.8	mg/Kg	10' - 20' From Building
			Building 128 (Family Fitness Center)			
128.1	94/03/30	1445	19721	77.3	mg/Kg	0 - 3' From Building
128.2	94/03/30	1450	19722	52.5	mg/Kg	10' - 20' From Building
			Building 129 (Workshop)			
129.1	94/03/30	1452	19796	1810.0	mg/Kg	0 - 3' From Building
129.2	94/03/30	1455	19797	109.0	mg/Kg	10' - 20' From Building
			Building 130 (Miller Gym)			
130.1	94/03/30	1455	19855	219.0	mg/Kg	0 - 3' From Building
130.2	94/03/30	1500	19856	113.0	mg/Kg	10' - 20' From Building
130.3	94/03/30	1505	19857	68.3	mg/Kg	Parking Lot
			Building 292 (Noble Army Hospital)			
292.1	94/03/31	1005	19850	< 25.0	mg/Kg	0 - 3' From Building
292.2	94/03/31	1005	19851	46.9	mg/Kg	10' - 20' From Building
292.3	94/03/31	1005	19852	88.7	mg/Kg	Parking Lots - West Side
			Building 893 (Chapel)			
893.1	94/03/31	945	19830	4158.0	mg/Kg	0 - 3' From Building
893.2	94/03/31	945	19831	215.0	mg/Kg	10' - 20' From Building
			Building 992 (Recreation Center)			
992.1	94/03/31	945	19832	166.0	mg/Kg	0 - 3' From Building
992.2	94/03/31	945	19833	111.0	mg/Kg	10' - 20' From Building
			Building 1740 (Soldier's Chapel)			
1740.1	94/03/31	950	19820	1590.0	mg/Kg	0 - 3' From Building
1740.2	94/03/31	950	19821	90.1	mg/Kg	10' - 20' From Building
			Building 2101 (Post Theater)			
2101.1	94/03/30	1506	19792	142.0	mg/Kg	0 - 3' From Building
2101.2	94/03/30	1510	19793	30.2	mg/Kg	Playground - Near pond
			Building 2102 (Library)			
02.1	94/03/30	1515	19842	193.0	mg/Kg	Beneath Guide Wire Cover

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24 September 1994

SOIL AND DUST SAMPLE DATA FOR
~~LEAD RISK ASSESSMENT~~
FORT McCLELLAN AND ANNISTON ARMY DEPOT
ALABAMA

1. Enclosed are the sample results and quality control data for soil and dust (wipe) samples taken for lead risk assessment at Ft. McClellan and Anniston Army Depot Alabama.

2. Soil and dust sampling was conducted in accordance with general procedures in the April 1, 1990 HUD Guidelines (revised September 28, 1990). A lead-based paint (LBP) survey using a SCITEC MAP 3, X-ray Fluorescence Spectrometer (XRF spectrum analyzer) was performed just prior to dust sampling. Therefore, dust samples were taken in areas where lead contaminated dust was more likely to exist.

3. The data is grouped according to the type of sample (soil or dust) and area sampled. Each building is treated as a separate area. Family housing is divided into areas similar in; type and time of construction, location and LBP survey results. For example, Units 25 - 30 on Baltzell Rd. were built in the mid 1950's and have similar floorplans and LBP survey results.

4. This report consists of:

Table 1:	Soil Sample Data for Ft. McClellan
Table 2:	Laboratory Quality Control Data for Ft. McClellan Soil Samples
Table 3:	Dust Sample Data for Ft. McClellan
Table 4:	Laboratory Quality Control Data for Ft. McClellan Dust Samples
Table 5:	Soil, Dust and Quality Control Data for Anniston Army Depot

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Table 1 (continued)
FORT McCLELLAN SOIL SAMPLE DATA
Buildings and Family Housing Groups

Field ID	Sample Date	Sample Time	SAD Lab #	Result	Units	Location of Composite Sample
			BUILDINGS (continued)			
			Building 2213 (Child Development Center)			
2213.1	94/03/31	850	19843	168.0	mg/Kg	0 - 3' From Building
2213.2	94/03/31	850	19844	95.6	mg/Kg	10' - 20' From Building
2213.3	94/03/31	850	19845	55.5	mg/Kg	Parking Lot
2213.4	94/03/31	850	19846	31.7	mg/Kg	Playground
			Building 2290 (Preventative Medicine)			
2290.1	94/03/31	800	19847	142.0	mg/Kg	0 - 3' From Building
2290.2	94/03/31	800	19848	41.4	mg/Kg	10' - 20' From Building
2290.3	94/03/31	800	19849	106.0	mg/Kg	Parking Lot
			Building 2293 (WAC Chapel)			
2293.1	94/03/31	800	19853	260.0	mg/Kg	0 - 3' From Building
2293.2	94/03/31	800	19854	532.0	mg/Kg	10' - 20' From Building
			Building 2299 (Chemical Museum)			
2299.1	94/03/31	835	19840	117.0	mg/Kg	0 - 3' From Building
2299.2	94/03/31	835	19841	58.1	mg/Kg	10' - 20' From Building
			Building 3182 (MP Museum)			
3182.1	94/03/31	912	19785	76.0	mg/Kg	0 - 3' From Building
3182.2	94/03/31	912	19786	54.1	mg/Kg	10' - 20' From Building
			Building 3213 (Army Community Service Center)			
3213.1	94/03/30	1530	19751	84.2	mg/Kg	0 - 3' From Building
3213.2	94/03/30	1535	19752	< 25.0	mg/Kg	10' - 20' From Building
			Building 3293 (Chapel)			
3293.1	94/03/30	1540	19838	33.1	mg/Kg	0 - 3' From Building
3293.2	94/03/30	1540	19839	31.3	mg/Kg	10' - 20' From Building
			Building 3527 (Scout Building)			
3527.1	94/03/30	1035	19723	190.0	mg/Kg	0 - 3' From Building
3527.2	94/03/30	1038	19724	57.3	mg/Kg	10' - 20' From Building
			Building 3681 (Dependent School)			
3681.1	94/03/30	1120	19725	58.6	mg/Kg	0 - 3' From Building
3681.2	94/03/30	1120	19726	35.8	mg/Kg	10' - 20' From Building
3681.3	94/03/30	1120	19727	31.0	mg/Kg	Playground - Behind Main Building
3681.4	94/03/30	1120	19728	< 25.0	mg/Kg	Ballfield
3681.5	94/03/30	1120	19729	31.2	mg/Kg	Playground - Behind Trailers
3681.6	94/03/30	1120	19730	80.8	mg/Kg	Parking Lot

Table 1 (continued)
FORT McCLELLAN SOIL SAMPLE DATA
Buildings and Family Housing Groups

Field ID	Sample Date	Sample Time	SAD Lab #	Result	Units	Location of Composite Sample
			FAMILY HOUSING GROUPS			
			Buchner Circle (Units 9 and 13)			
9.1	94/03/31	900	19834	78.2	mg/Kg	0 - 3' From Building
9.2	94/03/31	900	19835	76.2	mg/Kg	10' - 20' From Building
13.1	94/03/31	900	19836	68.0	mg/Kg	0 - 3' From Building
13.2	94/03/31	900	19837	55.6	mg/Kg	10' - 20' From Building
			Baltzell Rd. (Units 25 - 30)			
25.1	94/03/30	1615	19753	57.7	mg/Kg	0 - 3' From Building
25.2	94/03/30	1615	19754	75.0	mg/Kg	10' - 20' From Building
27.1	94/03/30	1620	19755	106.0	mg/Kg	0 - 3' From Building
27.2	94/03/30	1620	19756	78.8	mg/Kg	10' - 20' From Building
28.1	94/03/30	1625	19757	47.0	mg/Kg	0 - 3' From Building
28.2	94/03/30	1625	19758	151.0	mg/Kg	10' - 20' From Building
29.1	94/03/30	1630	19759	57.5	mg/Kg	0 - 3' From Building
29.2	94/03/30	1630	19760	< 25.0	mg/Kg	10' - 20' From Building
30.1	94/03/30	1635	19761	37.2	mg/Kg	0 - 3' From Building
30.2	94/03/30	1635	19762	31.1	mg/Kg	10' - 20' From Building
			Drennen (Units 81 - 107)			
81.1	94/03/30	1550	19798	156.0	mg/Kg	0 - 3' From Building
81.2	94/03/30	1555	19799	52.9	mg/Kg	10' - 20' From Building
89.1	94/03/30	1611	19804	94.7	mg/Kg	0 - 3' From Building
89.2	94/03/30	1612	19805	86.6	mg/Kg	10' - 20' From Building
102.1	94/03/30	1604	19800	44.0	mg/Kg	0 - 3' From Building
102.2	94/03/30	1607	19801	32.3	mg/Kg	10' - 20' From Building
104.1	94/03/30	1608	19802	40.1	mg/Kg	0 - 3' From Building
104.2	94/03/30	1610	19803	28.5	mg/Kg	10' - 20' From Building
107.1	94/03/30	1614	19806	73.9	mg/Kg	0 - 3' From Building
107.2	94/03/30	1615	19807	62.3	mg/Kg	10' - 20' From Building
			WAC Circle (Units 2235 - 2240)			
2235.1	94/03/31	820	19824	182.0	mg/Kg	0 - 3' From Building
2235.2	94/03/31	820	19825	65.9	mg/Kg	10' - 20' From Building
2236.1	94/03/31	820	19826	468.0	mg/Kg	0 - 3' From Building
2236.2	94/03/31	820	19827	66.1	mg/Kg	10' - 20' From Building
			Unit 2242			
2242.1	94/03/31	822	19828	2472.0	mg/Kg	0 - 3' From Building
2242.2	94/03/31	822	19829	87.1	mg/Kg	10' - 20' From Building

Table 1 (continued)
FORT McCLELLAN SOIL SAMPLE DATA
Buildings and Family Housing Groups

Field ID	Sample Date	Sample Time	SAD Lab #		Result	Units	Location of Composite Sample
			FAMILY HOUSING GROUPS (continued)				
			Unit 2271				
2271.1	94/03/31	830	19822		197.0	mg/Kg	0 - 3' From Building
2271.2	94/03/31	830	19823		39.9	mg/Kg	10' - 20' From Building
			Avery (Units 3310 - 3343)				
33.1	94/03/30	1225	19710		39.4	mg/Kg	Playground - Near # 3335
3314.1	94/03/30	1215	19719		45.1	mg/Kg	0 - 3' From Building
3314.2	94/03/30	1220	19720		69.9	mg/Kg	10' - 20' From Building
3327.1	94/03/30	1206	19717		75.6	mg/Kg	0 - 3' From Building
3327.2	94/03/30	1208	19718		49.1	mg/Kg	10' - 20' From Building
3328.1	94/03/30	1200	19715		270.0	mg/Kg	0 - 3' From Building
3328.2	94/03/30	1205	19716		65.9	mg/Kg	10' - 20' From Building
3338.1	94/03/30	1150	19713		357.0	mg/Kg	0 - 3' From Building
3338.2	94/03/30	1155	19714	<	25.0	mg/Kg	10' - 20' From Building
3341.1	94/03/30	1140	19711		97.3	mg/Kg	0 - 3' From Building
341.2	94/03/30	1145	19712	<	25.0	mg/Kg	10' - 20' From Building
			Littlebrant (Units 3400 - 3411)				
3401.1	94/03/30	1140	19731	<	25.0	mg/Kg	0 - 3' From Building
3401.2	94/03/30	1140	19732		32.5	mg/Kg	10' - 20' From Building
3402.1	94/03/30	1155	19733		54.5	mg/Kg	0 - 3' From Building
3402.2	94/03/30	1155	19734		42.2	mg/Kg	10' - 20' From Building
3403.1	94/03/30	1145	19735		113.2	mg/Kg	0 - 3' From Building
3403.2	94/03/30	1145	19736	<	25.0	mg/Kg	10' - 20' From Building
3407.1	94/03/30	1200	19737		25.8	mg/Kg	0 - 3' From Building
3407.2	94/03/30	1200	19738	<	25.0	mg/Kg	10' - 20' From Building
3409.1	94/03/30	1205	19739		205.0	mg/Kg	0 - 3' From Building
3409.2	94/03/30	1205	19740		37.9	mg/Kg	10' - 20' From Building
			Morton/Church/Baker (Units 3500 - 3542)				
35.1	94/03/30	955	19901		113.8	mg/Kg	Parking Lot/Roadway In front of # 3540
35.2	94/03/30	1010	19904	<	25.0	mg/Kg	Large Playground
35.3	94/03/30	1020	19905		83.3	mg/Kg	Roadway - Near playground
3503.1	94/03/30	1050	19910		246.0	mg/Kg	0 - 3' From Building
3503.2	94/03/30	1055	19911		36.9	mg/Kg	10' - 20' From Building
3519.1	94/03/30	1025	19906		153.0	mg/Kg	0 - 3' From Building
3519.2	94/03/30	1030	19907	<	25.0	mg/Kg	10' - 20' From Building
3530.1	94/03/30	1040	19908		119.0	mg/Kg	0 - 3' From Building
3530.2	94/03/30	1045	19909		47.9	mg/Kg	10' - 20' From Building

Table 1 (continued)
FORT McCLELLAN SOIL SAMPLE DATA
Buildings and Family Housing Groups

Field ID	Sample Date	Sample Time	SAD Lab #	Result	Units	Location of Composite Sample
			FAMILY HOUSING GROUPS (continued)			
			Horton/Church/Baker (Units 3500 - 3542) (continued)			
3533.1	94/03/30	1000	19902	254.0	mg/Kg	0 - 3' From Building
3533.2	94/03/30	1005	19903	41.5	mg/Kg	10' - 20' From Building
3540.1	94/03/30	945	19899	65.9	mg/Kg	0 - 3' From Building
3540.2	94/03/30	950	19900	76.2	mg/Kg	10' - 20' From Building
			Wirans/Church/Horton (Units 3610 - 3673)			
3615.1	94/03/30	945	19741	64.3	mg/Kg	0 - 3' From Building
3615.2	94/03/30	945	19742	55.2	mg/Kg	10' - 20' From Building
3626.1	94/03/30	1000	19743	52.0	mg/Kg	0 - 3' From Building
3626.2	94/03/30	1000	19744	37.4	mg/Kg	10' - 20' From Building
3629.1	94/03/30	1005	19745	98.6	mg/Kg	0 - 3' From Building
3629.2	94/03/30	1005	19746	50.3	mg/Kg	10' - 20' From Building
3635.1	94/03/30	1020	19747	77.5	mg/Kg	0 - 3' From Building
3635.2	94/03/30	1020	19748	36.1	mg/Kg	10' - 20' From Building
3671.1	94/03/30	1030	19749	57.1	mg/Kg	0 - 3' From Building
3671.2	94/03/30	1030	19750	73.4	mg/Kg	10' - 20' From Building
			Summerall (Units 3700- 3718)			
37A.1	94/03/30	1445	19808	58.6	mg/Kg	Playground - Near # 3712
37A.2	94/03/30	1445	19809	88.4	mg/Kg	Parking Lot - Near # 3708
3700.1	94/03/30	1520	19818	106.0	mg/Kg	0 - 3' From Building
3700.2	94/03/30	1520	19819	93.7	mg/Kg	10' - 20' From Building
3704.1	94/03/30	1510	19816	230.0	mg/Kg	0 - 3' From Building
3704.2	94/03/30	1510	19817	45.9	mg/Kg	10' - 20' From Building
3708.1	94/03/30	1505	19814	63.3	mg/Kg	0 - 3' From Building
3708.2	94/03/30	1505	19815	40.5	mg/Kg	10' - 20' From Building
3714.1	94/03/30	1500	19812	119.0	mg/Kg	0 - 3' From Building
3714.2	94/03/30	1500	19813	50.2	mg/Kg	10' - 20' From Building
3718.1	94/03/30	1450	19810	195.0	mg/Kg	0 - 3' From Building
3718.2	94/03/30	1450	19811	61.9	mg/Kg	10' - 20' From Building
			Sharp/Summerall (Units 3719 - 3732)			
37B.1	94/03/30	1352	19767	152.0	mg/Kg	Playground - Behind # 3729
3720.1	94/03/30	1400	19768	182.0	mg/Kg	0 - 3' From Building
3720.2	94/03/30	1405	19769	< 25.0	mg/Kg	10' - 20' From Building
3722.1	94/03/30	1410	19770	71.2	mg/Kg	0 - 3' From Building
3722.2	94/03/30	1415	19771	< 25.0	mg/Kg	10' - 20' From Building
3725.1	94/03/30	1415	19772	83.2	mg/Kg	0 - 3' From Building
3725.2	94/03/30	1420	19773	65.8	mg/Kg	10' - 20' From Building

Table 1 (continued)
FORT McCLELLAN SOIL SAMPLE DATA
Buildings and Family Housing Groups

Field ID	Sample Date	Sample Time	SAD Lab #	Result	Units	Location of Composite Sample
			FAMILY HOUSING GROUPS (continued)			
			Sharp/Summerall (Units 3719 - 3732) (continued)			
3729.1	94/03/30	1348	19765	188.0	mg/Kg	0 - 3' From Building
3729.2	94/03/30	1350	19766	47.4	mg/Kg	10' - 20' From Building
3732.1	94/03/30	1337	19763	206.0	mg/Kg	0 - 3' From Building
3732.2	94/03/30	1340	19764	29.5	mg/Kg	10' - 20' From Building
			Cooper/Turner/Bray/Littlebrant (Units 3737 - 3770)			
37C.1	94/03/30	1400	19778	< 25.0	mg/Kg	Playground - Behind # 3767
3737.1	94/03/30	1415	19783	128.0	mg/Kg	0 - 3' From Building
3737.2	94/03/30	1415	19784	102.0	mg/Kg	10' - 20' From Building
3744.1	94/03/30	1410	19781	39.8	mg/Kg	0 - 3' From Building
3744.2	94/03/30	1410	19782	104.0	mg/Kg	10' - 20' From Building
3745.1	94/03/30	1405	19779	56.1	mg/Kg	0 - 3' From Building
3745.2	94/03/30	1405	19780	74.7	mg/Kg	10' - 20' From Building
3768.1	94/03/30	1345	19774	66.7	mg/Kg	0 - 3' From Building
8.2	94/03/30	1345	19775	41.4	mg/Kg	10' - 20' From Building
3769.1	94/03/30	1355	19776	114.0	mg/Kg	0 - 3' From Building
3769.2	94/03/30	1355	19777	< 25.0	mg/Kg	10' - 20' From Building

Table 2
QUALITY CONTROL DATA FOR
FORT McCLELLAN SOIL SAMPLES
Buildings and Family Housing Groups

Field ID	SAD Lab #	Result	Duplicate Result	Units	Spike Percent Recovery
3341.2	19712	< 25.0	32.0	mg/Kg	172.0 %
128.2	19722	52.5	42.9	mg/Kg	103.5 %
3401.2	19732	32.5	47.2	mg/kg	109.0 %
3615.2	19742	55.2	60.7	mg/Kg	109.0 %
3213.2	19752	< 25.0	< 25.0	mg/Kg	112.0 %
30.2	19762	31.1	< 25.0	mg/Kg	104.5 %
3725.1	19772	83.2	60.2	mg/Kg	92.0 %
3744.2	19782	104	188	mg/Kg	92.0 %
129.2	19797	109	56.0	mg/Kg	96.5 %
107.2	19807	94.7	86.6	mg/Kg	103.5 %
3704.2	19817	45.9	38.7	mg/Kg	93.5 %
2236.2	19827	66.1	71.7	mg/Kg	101.5 %
13.2	19837	55.6	90.4	mg/Kg	98.5 %
2290.1	19847	142	139	mg/Kg	94.5 %
130.3	19857	68.3	77.2	mg/Kg	101.5 %
3530.2	19908	119	95.9	mg/Kg	100.0 %

Standard Reference Material Manufacturer	Lot Number	Certified True Value (ug/L)	Run Number	Observed Value (ug/L)	Percent Recovery
Environmental Resource Associates	9947	500	1	500	100.0 %
"	"	"	2	555	111.0 %
"	"	"	3	592	118.5 %
"	"	"	4	482	96.5 %
"	"	"	5	488	97.5 %
"	"	"	6	478	95.5 %
"	"	"	7	570	114.0 %
"	"	"	8	480	96.0 %
"	"	"	9	512	102.5 %
"	"	"	10	572	114.5 %
"	"	"	11	510	102.0 %
"	"	"	12	538	107.5 %
"	"	"	13	545	109.0 %
"	"	"	14	500	100.0 %
"	"	"	15	595	119.0 %
"	"	"	16	550	110.0 %
"	"	"	17	530	106.0 %
"	"	"	18	500	100.0 %
"	"	"	19	500	100.0 %

Blank Run Number	Result	Units
1	< 500	ug/L
2	< 500	ug/L
3	< 500	ug/L
4	< 500	ug/L
5	< 500	ug/L
6	< 500	ug/L
7	< 500	ug/L
8	< 500	ug/L
9	< 500	ug/L
10	< 500	ug/L
11	< 500	ug/L
12	< 500	ug/L
13	< 500	ug/L
14	< 500	ug/L
15	< 500	ug/L
16	< 500	ug/L
17	< 500	ug/L
18	< 500	ug/L
19	< 500	ug/L
20	< 500	ug/L
21	< 500	ug/L
22	< 500	ug/L

APPENDIX E

TABLE SUMMARY OF LEAD-BASED PAINT HAZARDS

Building No.	Interior Paint Cond.	Exterior Paint Cond.	LBP Present	LBP Fair Cond.	LBP Poor Cond.	LBP on Friction Surfaces	LBP on Impact Surfaces	LBP on Surface Accessible to mouthing by Children	Lead Dust Exceed Std	Soil Lead Exceed 400 ppm
66 Child Dev. Center	Good Fair Poor	Fair	I-Yes E-ND	I-Yes	I-Yes		Door Jamb, Stall?		NT	NONE
67 Silver Chapel	Good Fair Poor	Good Fair Poor	I-Yes E-Yes	I-Yes	I-Yes		Door & Jamb		Stairwell Floor	NONE
128 Family Fitness Center	Good	Good Fair	I-ND E-Yes	E-Yes			Door & comps.		NT	NONE
129 Workshop	Good Fair Poor	Good Fair Poor	I-Yes E-Yes	I-Yes E-Yes	I-Yes E-Yes		Doors & comp.		NT	0 - 3 ft of Bldg
130 Miller Gym	Good	Good	I-ND E-Yes						NT	NONE
292 Hospital	Good	Good	I-ND E-Not Tested						NT	NONE
893 Chapel	No Obser-vation	Poor	I-Not tested E-Yes	E-Yes	E-Yes	E-Window Sash	Door		NT	0 - 3 ft of Bldg
992 Rec. Center	No Obser-vation	Good Fair Poor	I-Not tested E-Yes	E-Yes	E-Yes				NT	NONE

TABLE SUMMARY OF LE[illegible]-BASED PAINT HAZARDS

Building No.	Interior Paint Cond.	Exterior Paint Cond.	LBP Present	LBP Fair Cond.	LBP Poor Cond.	LBP on Friction Surfaces	LBP on Impact Surfaces	LBP on Surface Accessible to mouthing by Children	Lead Dust Exceed Std	Soil Lead Exceed 400 ppm
1012 Truman Gym	Good Fair Poor	Good	I-Yes E-ND	I-Yes			Orange Metal Doors		NT	NT
1077 WAC Museum	Good	Good	I-ND E-ND						NT	NT
1740 Soldier's Chapel	Good Fair Poor	Good Fair Poor	I-Yes E-Yes	I-Yes	I-Yes E-Yes	Window Sash	Door & Comp.		NONE	10 - 20 ft of Bldg, if children freq.
1928 Bowling Alley	Good to Poor	Fair to Good	I-ND E-ND						NT	NT
1929 Dental Clinic	Good Fair Poor	Fair Poor	I-ND E-ND						NT	NT
2101 Post Theater	Good	Poor to Fair	I-ND E-Yes	E-Yes	E-Yes		Door & comp.		NT	NONE
2102 Library	Good	Good Poor	I-ND E-Yes		E-Yes				NT	NONE
2213 Child Dev. Center	Good to Fair, minor Poor	Good Fair Poor	I-Yes E-Yes	E-Yes	E-Yes		Door & Comp.		NT	NONE

TABLE SUMMARY OF LEAD-BASED PAINT HAZARDS

Building No.	Interior Paint Cond.	Exterior Paint Cond.	LBP Present	LBP Fair Cond.	LBP Poor Cond.	LBP on Friction Surfaces	LBP on Impact Surfaces	LBP on Surface Accessible to mouthing by Children	Lead Dust Exceed Std	Soil Lead Exceed 400 ppm
2242 Family Housing	Good Poor	Good Fair Poor	I-Yes E-Yes	E-Yes	I-Yes E-Yes	Window Sash, etc	Doors		NT	0 - 3 ft of Bldg
2271 Family Housing	Good Fair	Good Fair Poor	I-Yes E-Yes	E-Yes	I-Yes E-Yes		Door & Comp.	Window Sill	NT	NONE
2290 Preventive Medicine	Good Fair Poor	Good Fair Poor	I-Yes E-Yes	E-Yes	E-Yes		Screen Doors, Door & Frame		NT	NONE
2293 WAC Chapel	Good to Fair	Good Fair Poor	I-ND E-Yes	E-Yes	E-Yes	E-Window Sash	Door & Jamb		NT	10 - 20 ft of Bldg, if children frequent
2299 Chemical Corps Museum	Good Fair Poor	Good Fair Poor	I-Yes E-Yes	I-Yes E-Yes	I-Yes E-Yes		Roll-up door		Entry Floor Area	NONE
3182 MP Museum	Good Fair	Good Fair	I-Yes E-Yes	I-Yes E-Yes		Window Sash	Door & Jamb		NT	NONE
3213 Army Comm. Svc Cntr	Good to Fair	Good Fair Poor	I-Yes E-Yes	E-Yes	E-Yes	E-Window Sash	E-Door		NONE	NONE

TABLE SUMMARY OF LEAD-BASED PAINT HAZARDS

Building No.	Interior Paint Cond.	Exterior Paint Cond:	LBP Present	LBP Fair Cond.	LBP Poor Cond.	LBP on Friction Surfaces	LBP on Impact Surfaces	LBP on Surface Accessible to mouthing by Children	Lead Dust Exceed Std	Soil Lead Exceed 400 ppm
3293 Chapel	Good to Fair	Good Fair Poor	I-Yes E-Yes	E-Yes	E-Yes		E-Door & Comp.		NONE	NONE
3527 Scout Building	Good Fair Poor	Fair Poor	I-Yes E-Yes	I-Yes	E-Yes		E-Door & Jamb		NONE	NONE
3681 Elem. School	Good Fair Poor	Good	I-Yes E-Yes				Door Jambs, rear & side entry		NONE	NONE
Buchner Family Housing,	Good	Good Fair Poor	I-Yes E-Yes	I-Yes E-Yes 1/2 units	E-Yes 1/2 units		Door & Comp	Book-Shelves? Window Sill	NT	NONE
Baltzell Family Housing	Good Fair Poor	Good Fair Poor	I-Yes E-Yes	E-Yes 3/5 units			Doors & comp	Window Sill Shelf? Height?	NONE	NONE
Drennen Family Housing	Good Fair Poor	Good Fair Poor	I-Yes E-Yes	I-Yes 3/10 E-Yes 3/10 units	I-Yes 2/10 E-Yes 1/10 units		Door & Comp	Chair Molding? Window Sills	NONE	NONE

TABLE SUMMARY OF LEAD-BASED PAINT HAZARDS

Building No.	Interior Paint Cond.	Exterior Paint Cond.	LBP Present	LBP Fair Cond.	LBP Poor Cond.	LBP on Friction Surfaces	LBP on Impact Surfaces	LBP on Surface Accessible to mouthing by Children	Lead Dust Exceed Std	Soil Lead Exceed 400 ppm
WAC Circle Housing	Good	Good Fair Poor	I-Yes E-Yes	E-Yes 1/2 units	E-Yes 1/2 units		Door & Comp		NONE	NONE
Avery Family Housing, Group 1, 3310-3331	overall good, some fair, little poor	overall good, some fair, little poor	I-Yes E-Yes	I-Yes 1/16 units E-Yes 3/16 units	E-Yes 3/16 units	Window Sash	E-Door Casing		1 FL 1 WW 1WS Unit 3319 1 unit tested	NONE
Avery Family Housing, Group. 2, 3334-3343	Good	Good	I-Yes E-Yes				Door Comp, only in 3340A	Shelves? Height? Curtain Molding?	NT	NONE
Littlebrant Family Housing, 3400-3411	Good	Good Fair Poor	I-Yes E-Yes	E-Yes 1/5 units	E-Yes 2/5 units			Shelves? Height?	NT	NONE
Morton, Church, & Baker Rd Family Housing, 3500-3540	Good to fair	Good Fair Poor	I-Yes E-Yes	E-Yes 8/31 units	E-Yes 11/31 units				1 FL Unit 3530C 8 units tested	NONE

Appendix E

TABLE SUMMARY OF LEAD-BASED PAINT HAZARDS

Building No.	Interior Paint Cond.	Exterior Paint Cond.	LBP Present	LBP Fair Cond.	LBP Poor Cond.	LBP on Friction Surfaces	LBP on Impact Surfaces	LBP on Surface Accessible to mouthing by Children	Lead Dust Exceed Std	Soil Lead Exceed 400 ppm
Wirans, Church, and Morton Rds Family Housing , 3610-3673	Good Fair	Good Fair Poor	I-Yes E-Yes	I-Yes 11/32 units E-Yes 20/32 units	I-Yes 2/32 units E-Yes 16/32	Window Sash	E-Door Comp.	Shelf? Height?	10 WW in 6 units 8 units tested	NONE
Summerall Family Housing, Group A, 3700-3718	Good	Good Fair Poor	I-Yes E-Yes	E-Yes 3/18 units	E-Yes 1/18 units		Door & Comp	Window Sill Shelf? Height?	1 FL Unit 3708C 6 units tested	NONE
Summerall /Sharp Family Housing, Group B, 3719-3732	Good Fair Poor	Good Fair Poor	I-Yes E-Yes	E-Yes 12/21 units	E-Yes 2/21 units		Door & Comp.	Shelf? Height?	1 FL Unit 3731H 3 units tested	NONE
Cooper, Bray, & Littlebrant Family Housing, Group C, 3737-3770	Good	Good Fair Poor	I-Yes E-Yes	E-Yes 2/20 units	E-Yes 2/20 units	Window Sash		Shelf? Height?	1WW Unit 3737B 4 units tested	NONE

ND - None Detected; NT - Not Tested; I - Interior; E - Exterior; WW - Window Well; Comp. - Component/s; WS - Window Sill; FL - Floor

LEAD-BASED PAINT SURVEY REPORT
CHAPEL
BUILDING 1740

CESAD-EN-FL

14 September 1994

Date Surveyed: 25 February 1994
Surveyors: KB, NK

Table 1
Ft. McClellan Building No. 1740
Lead-Based Paint Field Survey Results

ID#	K-Shell mg/cm^2	L-Shell mg/cm^2	Time seconds	Condition	Comments
INTERIOR XRF READINGS					
Room 1 (Chapel)					
1740.1.1	0.0	-0.1	21	Good	White Sheetrock Wall
1740.1.2	0.5	-0.1	85	Good	White Wood Chair Rail
1740.1.3	0.3	-0.1	21	Good	White Sheetrock Wall
1740.1.4	-0.1	-0.1	21	Good	Stained Wood Window Sill
1740.1.5	**2.8**	1.3	85	Poor	White Metal Window Sash
1740.1.6	**12.1**	0.8	85	Fair	White Metal Rafter
1740.1.7	0.3	-0.1	21	Good	White Wood Trim
1740.1.8	0.1	0.0	21	Good	White Wood Door Casing
1740.1.9	-0.6	-0.1	21	Good	White Wood Door
1740.1.10	0.2	-0.1	21	Fair	Black Wood Baseboard
1740.1.11	-0.0	0.1	21	Fair	Brown Wood Baseboard
1740.1.12	0.0	-0.1	21	Good	White Sheetrock Wall
1740.1.13	0.2	0.2	85	Fair	Brown Wood Door Casing
1740.1.14	-0.7	-0.1	21	Good	Stained Wood Door
1740.1.15	0.8(1)	0.4	85	Good	Brown Wood Door Jamb (Inconclusive - scrape sample taken)
Room 2 (Storage)					
1740.2.1	-0.6	-0.1	21	Fair	White Brick Wall
1740.2.2	**3.4**	0.2	21	Good	White Concrete Wall
1740.2.3	**1.8**	0.2	21	Fair	White Metal Door
1740.2.4	**3.7**	0.3	21	Fair	White Metal Door Casing

(1) Lab analysis negative. (Result = 0.23% Lead, Action level = 0.5% Lead)

Positive XRF readings (if any) are in **Bold**.

ell and L-Shell columns are lead concentrations in mg/cm^2. K-Shell i
l lead (multi-layered paint surfaces) and L-Shell is essentially surfac
paint films. The survey results are based on K-shell readings as per HUD
Guidelines.

Paint Condition

12. The paint testing positive for lead on the interior of this building is in poor to fair condition. The remaining non-lead paint on the interior is in fair to good condition. The paint on the exterior is in poor to good condition.

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Keith Bates
Geologist

Reviewed By: _____
Ray Willingham
Geologist

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5. The "action level" defined in the HUD Interim Guidelines is a lead concentration above 1.0 mg/cm^2. Lead concentrations in this report are shown for both K-shell and L-shell in Table 1. The L-shell XRF reading is essentially for the top 1 or 2 surface paint layers, whereas, the K-shell is total lead applicable for multi-layered paint surfaces. HUD Guidelines specify that the K-Shell results be used for evaluating XRF readings.

6. In this report paint condition stated as "good" is defined as intact; "fair" as intact but worn (minor chips from wear and tear but no adhesion or substrate problems); "poor" as severely worn or no longer adhering or, substrate deterioration (e.g., peeling, flaking, cracking, etc.).

Discussion

7. Building 1740 (Soldier's Chapel) was built in 1941. It is a one story concrete and brick structure with concrete trim and metal windows. Doors are painted wood, painted metal and factory finished metal (see Figures).

8. Typical building materials (e.g., concrete, brick, sheetrock, wood and metal doors, metal windows, etc.) were used throughout the interior of this building. The presence of new and old components indicate various renovations.

9. A total of thirty eight (38) XRF readings were made on the interior of this building. Eight (8) were positive for LBP. Nine (9) exterior XRF readings were taken. Two (2) were positive for LBP (see Table 1).

Interior Summary

10. Based on the XRF results, it is resonable to assume that all of the painted concrete walls and white painted wood doors are positive for LBP. All of the painted metal components (e.g., windows, window components, doors, door components, rafters, beams, etc.) should also be considered positive (see Plate 1). All other interior XRF readings were negative.

Exterior Summary

11. All of the painted metal exterior components (e.g., windows, window components, doors, door components, etc.) should be considered positive for LBP. The yellow paint underlying the brown paint on concrete support pads also contains lead (see Plate 1). Positive levels of lead-based paint were not obtained on any other exterior component.

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14 September 1994

LEAD-BASED PAINT SURVEY REPORT FOR BUILDING 1740 SOLDIER'S CHAPEL FT. McCLELLAN, ALABAMA

Introduction

1. This is the lead-based paint (LBP) field survey report for Building 1740 located at Ft. McClellan, Alabama. This report documents the LBP field results for this building.

2. The LBP survey was conducted in accordance with general procedures in the April 1, 1990 HUD Guidelines (revised September 21, 1990) and EPA standard operating procedures (EPA document EPA/600/8-91/214) for this instrument. The survey was performed by certified surveyors using a SCITEC MAP 3, X-ray Fluorescence Spectrometer (spectrum analyzer) XRF instrument.

3. A brief summary of the LBP survey is provided in this report. The actual field XRF readings for this structure appear in Table 1. Photographs of the unit appear as Figures. The building floorplan, showing the locations of the XRF readings testing positive, appears as Plate 1.

4. Positive readings (detectable lead above the action level) with the XRF vary depending on the instrument mode selected. The "test"[1] mode is normally used for routine readings. Readings testing "positive"[2] according to the XRF instrument manufacturer in the test mode are those with a lead concentration greater than 1.0 milligrams per centimeter squared (mg/cm^2), whereas, "negative" refers to readings of 0.7 mg/cm^2 or less. According to the HUD guidelines, positive readings for this instrument are greater than 1.3 mg/cm^2. "Inconclusive" readings are those that fall between 0.7 mg/cm^2 and 1.3 mg/cm^2.

---

(1) The XRF instrument "test" mode is a reading of approximately 60 seconds duration. Test of longer duration increases precision.

(2)

Inconclusive Range For XRF Spectrum Analyzer

Instrument Mode	Range	Units
Screen	0.4 - 1.6	mg/cm^2
Test	0.7 - 1.3	mg/cm^2
Confirm	0.85 - 1.15	mg/cm^2

CESAD-EN-FL 14 September 1994

Table 1 (continued)
Ft. McClellan Building No. 1740
Lead-Based Paint Field Survey Results

ID#	K-Shell mg/cm^2	L-Shell mg/cm^2	Time seconds	Condition	Comments
		Room 2 (Storage - continued)			
1740.2.5	0.3	0.1	21	Fair	White Brick Wall
1740.2.5	0.1	-0.0	21	Fair	Duplicate
7094022594161501	1.2	1.3	85	N/A	Calibration Check
1740.2.6	**4.3**	0.8	21	Poor	White Metal Window Sash
		Room 3 (Storage)			
1740.3.1	0.3	-0.1	21	Fair	Blue Sheetrock Wall
1740.3.2	**2.5**	0.4	21	Fair	Tan Concrete Wall
1740.3.3	-0.1	-0.1	21	Good	Stained Wood Door Jamb
		Room 4 (Men's Restroom)			
1740.4.1	-0.1	0.0	21	Good	White Sheetrock Wall
1740.4.2	-0.0	0.3	21	Good	White Wood Stall
1740.4.3	0.2	0.3	85	Good	White Wood Door Header
1740.4.4	**1.1**(2)	0.3	85	Good	White Wood Door (Inconclusive - scrape sample taken)
		Room 5 (Hallway)			
1740.5.1	0.0	0.0	21	Good	White Sheetrock Wall
1740.5.2	-0.1	0.5	21	Fair	Brown Wood Baseboard
1740.5.3	0.1	-0.1	85	Good	White Wood Door Jamb

(2) Lab analysis positive. (Result = 0.95% Lead, Action level = 0.5% Lead)

Positive XRF readings (if any) are in **Bold**.

hell and L-Shell columns are lead concentrations in mg/cm^2. K-Shell is al lead (multi-layered paint surfaces) and L-Shell is essentially surface aint films. The survey results are based on K-shell readings as per HUD Guidelines.

CESAD-EN-FL 14 September 1994

Table 1 (continued)
Ft. McClellan Building No. 1740
Lead-Based Paint Field Survey Results

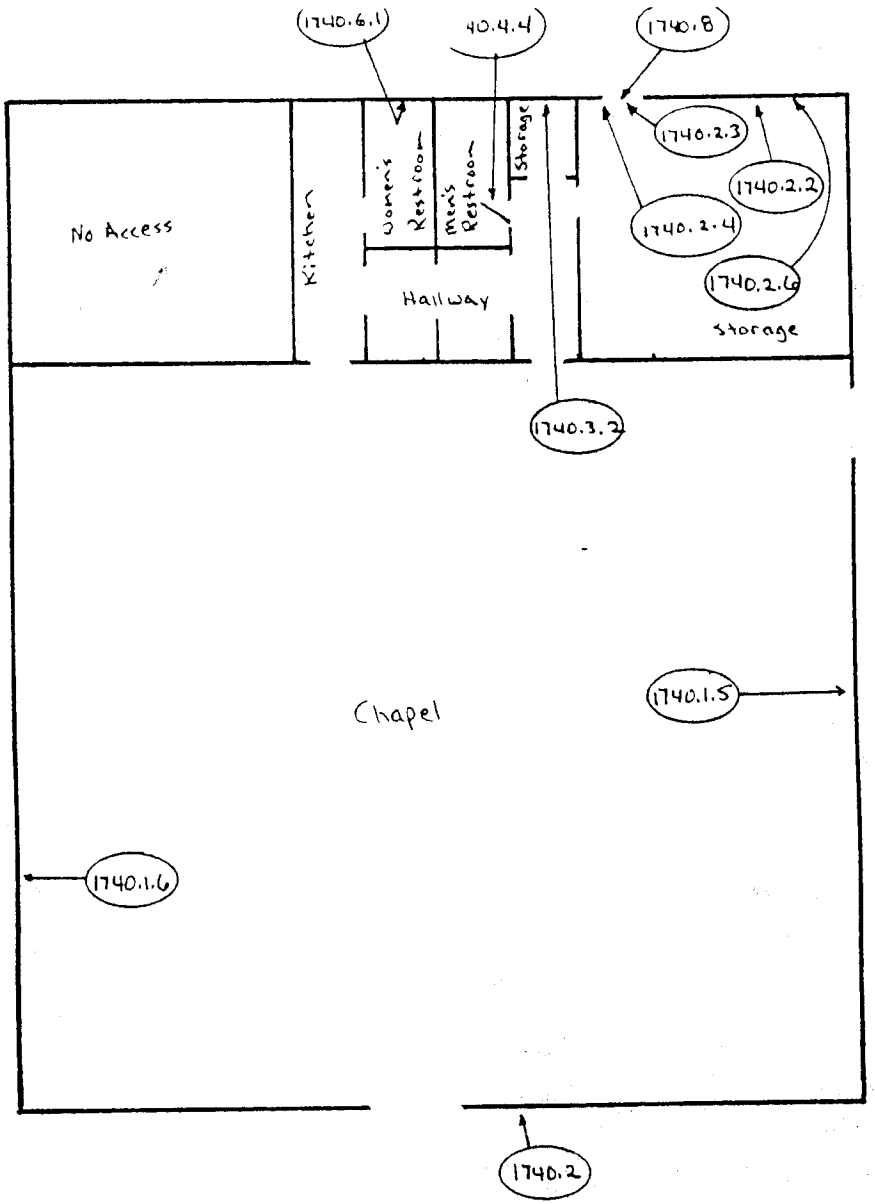
ID#	K-Shell mg/cm^2	L-Shell mg/cm^2	Time seconds	Condition	Comments
Room 6 (Women's Restroom)					
1740.6.1	**2.1**	0.6	21	Poor	White Metal Window Sash
1740.6.2	0.1	-0.1	21	Good	Brown Wood Baseboard
1740.6.3	0.1	0.2	85	Good	White Wood Door Casing
Room 7 (Kitchen)					
1740.7.1	0.8	0.4	85	Good	White Wood Door (Inconclusive - see scrape sample 1740.4.4)
1740.7.3	-0.5	0.1	25	Good	White Brick Wall
1740.7.4	0.1	-0.1	25	Good	White Sheetrock Wall
EXTERIOR XRF READINGS					
1740.1	-1.0	-0.2	25	Poor	White Concrete Foundation
1740.2	**10.9**	0.9	25	Poor	Brown Concrete Pad (Yellow-orange paint visible beneath)
1740.3	0.3	-0.0	25	Fair	White Wood Cross
1740.4	-0.8	-0.1	25	Good	Brown Wood Door
1740.5	0.2	-0.1	25	Good	Brown Wood Roof Support
1740.6	-0.8	-0.1	25	Good	Brown Wood Siding
1740.7	0.1	-0.1	25	Good	Brown Wood Door Casing
1740.8	**1.4**	0.5	100	Good	Brown Metal Door
1740.9	-1.2	-0.2	25	Poor	White Concrete Foundation
7094022594164001	0.2	0.6	100	N/A	Calibration Check
1.02	0.7	1.1	100	N/A	NIST Std. = 1.02

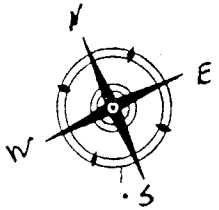
Positive XRF readings (if any) are in **Bold**.

"-Shell and L-Shell columns are lead concentrations in mg/cm^2. K-Shell i
otal lead (multi-layered paint surfaces) and L-Shell is essentially surfac
paint films. The survey results are based on K-shell readings as per HUD
Guidelines.

Figure 1. Front view of Building 1740.

Figure 2. Rear view of Building 1740.





Generalized Floorplan - Not to Scale

Only Locations of Positive XRF Readings (if any) Are Shown

Unit No. 1740

Plate No. 1

LEAD-BASED PAINT SURVEY REPORT
BUILDING 3337

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14 October 1994

LEAD-BASED PAINT SURVEY REPORT
AVERY FAMILY HOUSING GROUP
BUILDINGS 3310 - 3343
FT. McCLELLAN, ALABAMA

INTRODUCTION

1. This is the lead-based paint (LBP) field survey report for the Avery Family Housing Group (Buildings 3310 - 3343) located at Ft. McClellan, Alabama. Twenty five (25) units were selected by Ft. McClellan to be surveyed (see Plate 1). The units are grouped according to style and date of construction, and similarity of survey results. The the units tested in each group appear below.

Units tested in Group 1 (Buildings 3310 - 3331)

3311A	3313A	3314A	3314B	3316A	3316B	3317B
3319A	3319B	3322B	3324A	3325A	3327B	3328B
3330A	3331A					

Units tested in Group 2 (Buildings 3334 - 3343)

3334A	3336A	3337A	3337B	3339A	3340A	3341B
3343A	3343B					

2. A summary of the LBP survey for each group is provided in this report. The components tested appear in Tables 1 and 2. A summary for each unit appears in the Appendix. Included are the actual field XRF readings, a photograph of the unit, and a floorplan of the unit showing the locations of the XRF readings testing positive.

3. The LBP survey was conducted in accordance with general procedures in the April 1, 1990 HUD Guidelines (revised September 28, 1990) and EPA standard operating procedures (EPA document EPA600/8-91/214) for this instrument. The survey was performed by certified surveyors using a SCITEC MAP 3, X-ray Fluorescence Spectrometer (spectrum analyzer) XRF instrument.

5. The "action level" defined in the HUD Interim Guidelines is a lead concentration above 1.0 mg/cm^2. Lead concentrations in this report are shown for both K-shell and L-shell. The L-shell XRF reading is essentially for the top 1 or 2 surface paint layers, whereas, the K-shell is total lead applicable for multi-layered paint surfaces. HUD Guidelines specify that the K-Shell results be used for evaluating XRF readings.

6. Positive readings (detectable lead above the action level) with the XRF vary depending on the instrument mode selected. The "test"[1] mode is normally used for routine readings. Readings testing "positive"[2] according to the XRF instrument manufacturer in the test mode are those with a lead concentration greater than 1.3 milligrams per centimeter squared (mg/cm^2), whereas, "negative" refers to readings of 0.7 mg/cm^2 or less. According to the HUD guidelines, positive readings for this instrument are greater than 1.3 mg/cm^2. "Inconclusive" readings are those that fall between 0.7 mg/cm^2 and 1.3 mg/cm^2.

7. In this report paint condition stated as "good" is defined as intact; "fair" as intact but worn (minor chips from wear and tear but no adhesion or substrate problems); "poor" as severely worn or no longer adhering or, substrate deterioration (e.g., peeling, flaking, cracking, etc.).

DISCUSSION

8. The Avery Family Housing Group (Buildings 3310 -3343) consists of one story, two and three bedroom duplexes. All of the units are of similar construction using typical building materials. The buildings have been updated with vinyl siding and factory finished doors and gutters. Based on the survey results, Avery can be summarized in two groups. The groups are differentiated by floor-plan and dates of construction (Group 1 1959-60, Group 2 1958).

9. In Group 1, a total of seven hundred eighty six (786) XRF readings were made. One hundred fifty four (154) were positive for LBP (see Table 1). In Group 2, a total of four hundred twenty six (426) XRF readings were made. Seventy nine (79) were positive for LBP (see Table 2). The components testing positive for leaded paint are summarized below.

EXTERIOR SUMMARY

Group 1 (Buildings 3310 - 3331)

10. Based on the survey results, it is reasonable to assume that all painted wood components (e.g., door casings and jambs, window components, fences, etc.) contain positive levels of lead-based paint. Lead-based paint was also detected on painted wood exposed beneath the vinyl siding. The metal columns supporting the rear porch roofs should also be considered positive.

---

[1] The XRF instrument "test" mode is a reading of approximately 60 seconds duration. Test of longer duration increases precision.

(2) Inconclusive Range For XRF Spectrum Analyzer

Instrument Mode	Range	Units
Screen	0.4 - 1.6	mg/cm^2
Test	0.7 - 1.3	mg/cm^2
Confirm	0.85 - 1.15	mg/cm^2

EXTERIOR SUMMARY (continued)

Group 2 (Buildings 3334 - 3343)

11. Based on the survey results, it is reasonable to assume that all porch components (e.g., railing, trim, ceiling, columns, etc.) and wood fences contain positive levels of lead-based paint. At Unit 3343B, the green concrete slab also tested positive.

INTERIOR SUMMARY

Group 1 (Buildings 3310 - 3331)

12. On the interior of this group, shelves, shelf supports, window sashes and attic scuttle components should be considered positive for lead-based paint.

Group 2 (Buildings 3334 - 3343)

13. On the interior of this group, shelves, shelf supports, baseboards and curtain moldings should be considered positive for lead based paint. In Unit 3340A, door components (e.g., casing, jamb, header, etc.) were found to be positive.

PAINT CONDITION

14. Overall, the paint on the interior and exterior of Groups 1 and 2 is in good condition.

Prepared By: _____
Keith Bates
Geologist

Reviewed By: _____
Ray Willingham
Geologist

enc

CESAD-EN-FL

Plate 1
Avery Family Housing Group
Group 1 (Buildings 3310 - 3331) Group 2 (Buildings 3334 - 3343)
Buildings In Which Units Were Surveyed Appear In Black

Table 1
Component Summary
Avery Family Housing Group No. 1
Buildings 3310 - 3331

COMPONENT	NUMBER TESTED	NUMBER POSITIVE	PERCENT POSITIVE
Exterior Components			
Porch Column	15	15	100
Window Components (e.g., casing, sill, etc.)	31	30	97
Door Components (e.g., jambs, casings, etc.)	20	19	95
Doors	2	0	0
Fences	6	3	50
Gutters/Exhaust Vent	2	0	0
Exposed Wood Beneath Vinyl Siding	1	1	100
Interior Components			
Doors	78	0	0
Door Components (e.g., jambs, casings, etc.)	91	0	0
Window Components (e.g., sill, casing, apron, etc.)	133	0	0
Window Sashes	42	41	98
Ceilings	89	0	0
Walls	70	0	0
Baseboards	63	0	0
Floors	39	0	0
Shelf Supports	41	30	73
Shelves	39	9	23
Cabinets	16	0	0
Attic Scuttles	7	6	86
HVAC Vent	1	0	0
TOTALS	786	154	20

Table 2
Component Summary
Avery Family Housing Group No. 2
Buildings 3334 - 3343

COMPONENT	NUMBER TESTED	NUMBER POSITIVE	PERCENT POSITIVE
Exterior Components			
Porch Components (e.g., trim, railing, column, ceiling, etc.)	35	30	86
Window Components (e.g., casing, sill, etc.)	15	0	0
Fences	8	8	100
Concrete Slab (only at Unit 3343B)	1	1	100
Interior Components			
Doors	44	0	0
Door Components (e.g., jambs, casings, etc.)	48	3 *	see note
Window Components (e.g., sill, asing, apron, sash, etc.)	78	0	0
Ceilings	44	0	0
Walls	45	0	0
Baseboards	34	10	29
Floors	17	0	0
Shelf Supports	10	8	80
Shelves	22	15	68
Cabinets	9	0	0
Attic Scuttles	8	0	0
Curtain Molding	8	4	50
TOTALS	426	79	18

* All door components testing positive were found in Unit 3340A.

APPENDIX

Group 1

3311A
3313A
3314A
3314B
3316A
3316B
3317B
3319A
3319B
3322B
3324A
3325A
3327B
3328B
3330A
3331A

Group 2

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3339A
3340A
3341B
3343A
3343B

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Fort McClellan LBP Survey Summary
Avery Family Housing Group

Unit 3337A

Type Building: Three Bedroom Duplex
Date Constructed: 1958
Type Construction: Brick and Wood

Survey Summary

1. Unit 3337A is typical of Units 3310 - 3343 (referred to as the Avery Family Housing Group) located on Avery Drive.

2. On the interior of this unit positive XRF readings were obtained on wood shelves, shelf supports, baseboard and curtain molding (see field XRF readings).

3. Based on the survey results, it is reasonable to assume that, except for wood window components, all wood components (e.g., porch ceiling, porch rails, fence, porch trim, etc.) on the exterior of this unit contain positive levels of lead-based paint. The metal poles supporting porch roofs also tested positive (see floorplan).

4. A photograph of Unit 3337A appears below.

CESAD-EN-FL

14 October 1994

Field XRF Readings for Quarters 3337A
Ft. McClellan, Alabama

Date Surveyed: 12 February 1994
Surveyors: BS, JS

ID#	K-Shell mg/cm^2	L-Shell mg/cm^2	Time seconds	Condition	Comments
7094021294071902	0.3	0.6	98	N/A	Calibration Check
7094021294071902	0.5	0.5	98	N/A	Calibration Check
7094021294071902	0.5	0.5	98	N/A	Calibration Check
7094021294071902	0.3	0.6	98	N/A	Calibration Check
7094021294071902	0.3	0.6	98	N/A	Calibration Check
000	-0.0	-0.1	98	N/A	Blank
1.02	0.9	1.1	98	N/A	NIST Standard

INTERIOR XRF READINGS

Room 1 (Foyer)

3337A.1.1	0.1	-0.1	24	Good	White Plaster Ceiling
3337A.1.2	-0.2	-0.1	24	Good	White Wood Door Casing
3337A.1.3	0.1	-0.1	24	Good	White Masonite Door
3337A.1.4	**1.7**	0.3	24	Good	White Wood Shelf Support
3337A.1.5	1.2	0.3	98	Good	White Wood Shelf (Inconclusive-See Sample 3337A.4.2)
3337A.1.6	-0.1	-0.1	24	Good	White Sheetrock Wall
3337A.1.7	**1.6**	0.2	98	Good	White Wood Baseboard
3337A.1.8	-0.7	-0.2	24	Good	Stained Wood Floor
3337A.1.9	0.5	-0.1	98	Good	White Metal Door Casing
3337A.1.10	0.4	-0.1	98	Good	White Metal Door Jamb

Positive XRF Readings (if any) appear in **Bold**.

K-shell and L-shell columns are lead concentrations in mg/cm^2. K-shell is total lead (multi-layered paint surfaces) and L-shell is essentially surface paint films. All positive results are based on K-shell readings as per HUD guidelines.

CESAD-EN-FL 14 October 1994

Field XRF Readings for Quarters 3337A (continued)
Ft. McClellan, Alabama

ID#	K-Shell mg/cm^2	L-Shell mg/cm^2	Time seconds	Condition	Comments
			Room 2 (Kitchen)		
3337A.2.1	0.2	-0.1	24	Good	White Sheetrock Ceiling
3337A.2.2	0.2	-0.1	24	Good	White Wood Cabinet
3337A.2.3	0.2	-0.1	24	Good	White Wood Window Apron
3337A.2.4	0.3	-0.1	24	Good	White Wood Window Sill
3337A.2.5	-0.5	-0.1	24	Good	White Wood Window Casing
3337A.2.6	0.3	-0.1	24	Good	White Wood Window Sash
3337A.2.7	0.0	-0.1	24	Good	White Wood Door
			Room 3 (Living/Dining Room)		
3337A.3.1	-1.0	-0.3	24	Good	White Concrete Block Wall
3337A.3.2	**1.6**	0.1	98	Good	White Wood Curtain Molding
3337A.3.3	0.2	-0.1	24	Good	White Plaster Ceiling
3337A.3.4	0.3	0.2	24	Good	White Metal Door
3337A.3.5	-0.0	-0.1	24	Good	White Sheetrock Wall
3337A.3.5	0.2	-0.1	24	Good	Duplicate
7094120294090902	0.2	0.5	98	N/A	Calibration Check
3337A.3.6	1.1	0.1	98	Good	White Wood Baseboard (Inconclusive-See Sample 3337A.5.6)

Positive XRF Readings (if any) appear in **Bold**.

K-shell and L-shell columns are lead concentrations in mg/cm^2. K-shell is total lead (multi-layered paint surfaces) and L-shell is essentially surface paint films. All positive results are based on K-shell readings as per HUD delines.

CESAD-EN-FL 14 October 1994

Field XRF Readings for Quarters 3337A (continued)
Ft. McClellan, Alabama

ID#	K-Shell mg/cm^2	L-Shell mg/cm^2	Time seconds	Condition	Comments
		Room 4 (Bedroom)			
3337A.4.1	0.9	0.1	98	Good	White Wood Shelf Support (Inconclusive- See Sample 3337A.1.7)
3337A.4.2	**1.5**	0.4	98	Good	White Wood Shelf
3337A.4.3	0.2	-0.1	24	Good	White Wood Window Casing
3337A.4.4	-0.0	-0.0	24	Good	White Wood Window Apron
3337A.4.5	-0.4	-0.2	24	Good	White Sheetrock Wall
3337A.4.6	-0.1	-0.1	24	Good	White Masonite Door
3337A.4.7	0.3	-0.1	24	Good	White Metal Door Jamb
		Room 5 (Bedroom)			
3337A.5.1	-0.2	-0.1	24	Good	White Wood Window Sill
3337A.5.2	0.1	-0.1	24	Good	White Plaster Ceiling
3337A.5.3	-1.2	-0.1	24	Good	Stained Wood Floor
3337A.5.4	-0.0	-0.1	24	Good	White Sheetrock Ceiling
3337A.5.5	0.2	-0.1	24	Good	White Wood Door
3337A.5.6	0.3	0.0	24	Good	White Wood Baseboard
		Room 6 (Bedroom)			
3337A.6.1	1.0	0.1	24	Good	White Wood Shelf Support (Inconclusive- See Sample 3337A.1.7)
3337A.6.2	0.0	-0.1	24	Good	White Wood Window Sash
3337A.6.3	0.3	-0.1	24	Good	White Sheetrock Wall

Positive XRF Readings (if any) appear in **Bold**.

K-shell and L-shell columns are lead concentrations in mg/cm^2. K-shell is total lead (multi-layered paint surfaces) and L-shell is essentially surface paint films. All positive results are based on K-shell readings as per HUD guidelines.

CESAD-EN-FL 14 October 1994

Field XRF Readings for Quarters 3337A (continued)
Ft. McClellan, Alabama

ID#	K-Shell mg/cm^2	L-Shell mg/cm^2	Time seconds	Condition	Comments
Room 7 (Hallway and Bathroom)					
3337A.7.1	0.1	0.0	24	Good	White Wood Baseboard
3337A.7.2	0.0	-0.2	24	Good	White Sheetrock Ceiling
3337A.7.3	-0.3	-0.1	24	Good	White Wood Window Apron
3337A.7.4	0.1	-0.1	24	Good	White Wood Attic Scuttle
EXTERIOR XRF READINGS					
3337A.1	**7.2**	0.4	24	Good	White Wood Porch Ceiling
3337A.2	**6.6**	0.4	24	Good	White Metal Porch Support
3337A.3	**7.2**	0.7	24	Good	White Wood Porch Rail
3337A.4	-0.1	0.0	24	Good	White Wood Window Apron
3337A.5	**5.2**	0.3	24	Good	White Wood Porch Trim
3337A.6	0.1	-0.1	24	Good	White Wood Screen Trim
3337A.7	**10.2**	1.0	24	Good	White Wood Fence
7094120294100902	0.4	0.6	98	N/A	Calibration Check

Positive XRF Readings (if any) appear in **Bold**.

K-shell and L-shell columns are lead concentrations in mg/cm^2. K-shell is total lead (multi-layered paint surfaces) and L-shell is essentially surface paint films. All positive results are based on K-shell readings as per HUD delines.

CESAD-EN-FL 14 October 1994

Fort McClellan LBP Survey Summary
Avery Family Housing Group

Unit 3337B

Type Building: Three Bedroom Duplex
Date Constructed: 1958
Type Construction: Brick and Wood

Survey Summary

1. Unit 3337B is typical of Units 3310 - 3343 (referred to as the Avery Family Housing Group) located on Avery Drive.

2. On the interior of this unit positive XRF readings were obtained on wood shelves, shelf supports, baseboard and curtain molding (see field XRF readings).

3. Based on the survey results, it is reasonable to assume that, except for wood window components, all wood components (e.g., porch ceiling, porch rails, fence, porch trim, etc.) on the exterior of this unit contain positive levels of lead-based paint. The metal poles supporting porch roofs also tested positive (see floorplan).

4. A photograph of Unit 3337B appears below.

CESAD-EN-FL 14 October 1994

Field XRF Readings for Quarters 3337B
Ft. McClellan, Alabama

Date Surveyed: 12 February 1994
Surveyors: BS, JS

ID#	K-Shell mg/cm^2	L-Shell mg/cm^2	Time seconds	Condition	Comments
7094120294100902	0.4	0.6	98	N/A	Calibration Check
INTERIOR XRF READINGS					
Room 1 (Foyer)					
3337B.1.1	0.2	-0.1	24	Good	White Plaster Ceiling
3337B.1.2	0.1	-0.1	24	Good	White Wood Door Casing
3337B.1.3	0.1	-0.1	24	Good	White Masonite Door
3337B.1.4	**1.4**	0.3	98	Good	White Wood Shelf
3337B.1.5	-0.0	-0.1	24	Good	White Plaster Wall
3337B.1.6	**1.4**	0.1	98	Good	White Wood Baseboard
3337B.1.7	0.7	-0.1	98	Good	White Metal Door Jamb (Inconclusive-See Sample 3337B.2.8)
Room 2 (Kitchen)					
3337B.2.1	0.1	-0.1	24	Good	White Wood Window Apron
3337B.2.2	-0.2	-0.1	24	Good	White Wood Window Sash
3337B.2.3	-0.4	-0.1	24	Good	White Wood Window Casing
33272.2.4	-0.3	-0.1	24	Good	White Wood Window Sill
3337B.2.5	-0.1	-0.1	24	Good	White Wood Cabinet
3337B.2.6	0.3	-0.1	24	Good	White Plaster Ceiling
3337B.2.7	-0.1	-0.1	98	Good	White Wood Door
3337B.2.8	0.4	-0.1	98	Good	White Metal Door Jamb

Positive XRF Readings (if any) appear in **Bold**.

K-shell and L-shell columns are lead concentrations in mg/cm^2. K-shell is [illegible] lead (multi-layered paint surfaces) and L-shell is essentially surface paint films. All positive results are based on K-shell readings as per HUD [illegible]delines.

CESAD-EN-FL

14 October 1994

Field XRF Readings for Quarters 3337B (continued)
Ft. McClellan, Alabama

ID#	K-Shell mg/cm^2	L-Shell mg/cm^2	Time seconds	Condition	Comments
Room 3 (Living/Dining Room)					
3337B.3.1	**1.6**	0.3	98	Good	White Wood Curtain Molding
3337B.3.2	0.2	-0.1	24	Good	White Plaster Ceiling
3337B.3.3	0.2	-0.0	98	Good	White Metal Door
3337B.3.4	-1.5	-0.2	24	Good	Stained Wood Floor
3337B.3.5	-0.3	-0.2	24	Good	White Concrete Block Wall
3337B.3.5	-0.9	-0.3	24	Good	Duplicate
7094021294105601	0.3	-0.3	98	N/A	Calibration Check
3337B.3.6	0.1	-0.1	24	Good	White Plaster Wall
3337B.3.7	0.6	0.0	98	Good	White Wood Baseboard
Room 4 (Bedroom)					
3337B.4.1	**1.5**	0.3	98	Good	White Wood Shelf Support
3337B.4.2	1.0	0.3	98	Good	White Wood Shelf (Inconclusive-See Sample 3337B.5.6)
3337B.4.3	0.0	-0.1	24	Good	White Wood Window Apron
3337B.4.4	-0.4	-0.1	24	Good	White Wood Window Casing
3337B.4.5	0.1	-0.1	24	Good	White Plaster Wall
3337B.4.6	0.1	-0.1	24	Good	White Masonite Door
3337B.4.7	0.4	-0.1	98	Good	White Metal Door Casing
3337B.4.8	0.6	-0.1	98	Good	White Metal Door Jamb

Positive XRF Readings (if any) appear in **Bold**.

K-shell and L-shell columns are lead concentrations in mg/cm^2. K-shell is total lead (multi-layered paint surfaces) and L-shell is essentially surface paint films. All positive results are based on K-shell readings as per HUD guidelines.

CESAD-EN-FL 14 October 1994

Field XRF Readings for Quarters 3337B (continued)
Ft. McClellan, Alabama

ID#	K-Shell mg/cm^2	L-Shell mg/cm^2	Time seconds	Condition	Comments
		Room 5 (Bedroom and ½ Bathroom)			
3337B.5.1	-0.2	-0.2	24	Good	White Plaster Ceiling
3337B.5.2	0.3	-0.1	24	Good	White Wood Door
3337B.5.3	-0.1	-0.1	24	Good	White Plaster Ceiling
3337B.5.4	0.2	-0.1	24	Good	White Wood Window Sill
3337B.5.5	**1.2**	0.1	98	Good	White Wood Baseboard
3337B.5.6	**1.4**	0.3	98	Good	White Wood Shelf
		Room 6 (Bedroom)			
3337B.6.1	0.1	-0.1	24	Good	White Wood Window Sash
3337B.6.2	0.3	-0.1	24	Good	White Plaster Wall
3337B.6.3	-0.1	-0.1	24	Good	White Masonite Door
3337B.6.4	0.9	0.2	98	Good	White Wood Baseboard (Inconclusive - See Sample 3337B.1.6)
3337B.6.5	0.4	-0.1	98	Good	White Metal Door Casing
		Room 7 (Hallway and Bathroom)			
3337B.7.1	-0.9	-0.1	24	Good	Stained Wood Floor
3337B.7.1	-1.0	-0.2	24	Good	Duplicate
7094021294115401	0.3	0.5	98	N/A	Calibration Check
3337B.7.2	-0.7	-0.2	24	Good	White Plaster Ceiling
3337B.7.3	-0.3	-0.1	24	Good	White Wood Attic Scuttle

Positive XRF Readings (if any) appear in **Bold**.

K-shell and L-shell columns are lead concentrations in mg/cm^2. K-shell is total load (multi-layered paint surfaces) and L-shell is essentially surface paint films. All positive results are based on K-shell readings as per HUD guidelines.

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14 October 1994

Field XRF Readings for Quarters 3337B (continued)
Ft. McClellan, Alabama

ID#	K-Shell mg/cm^2	L-Shell mg/cm^2	Time seconds	Condition	Comments
EXTERIOR XRF READINGS					
3337B.1	**6.6**	0.8	24	Good	White Wood Porch Rail
3337B.2	**8.1**	0.6	24	Good	White Metal Porch Column
3337B.3	0.3	-0.0	24	Good	White Wood Window Apron
3337B.4	**4.6**	0.4	24	Good	White Wood Porch Ceiling
3337B.5	**6.2**	0.3	24	Good	White Wood Trim
7094021294120701	0.4	0.6	98	N/A	Calibration Check
1.02	0.7	1.0	98	N/A	NIST Standard

Positive XRF Readings (if any) appear in **Bold**.
K-shell and L-shell columns are lead concentrations in mg/cm^2. K-shell is total lead (multi-layered paint surfaces) and L-shell is essentially surface paint films. All positive results are based on K-shell readings as per HUD guidelines.

ATTACHMENT 4

BIOLOGICAL ASSESSMENT REPORT

BIOLOGICAL ASSESSMENT

Disposal and Reuse
of
Fort McClellan, Alabama

April 1998

C7788.11

1 April 1998

BIOLOGICAL ASSESSMENT: DISPOSAL AND REUSE OF FORT MCCLELLAN, ALABAMA

Submitted to:
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Mobile District
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Mobile, Alabama 36628

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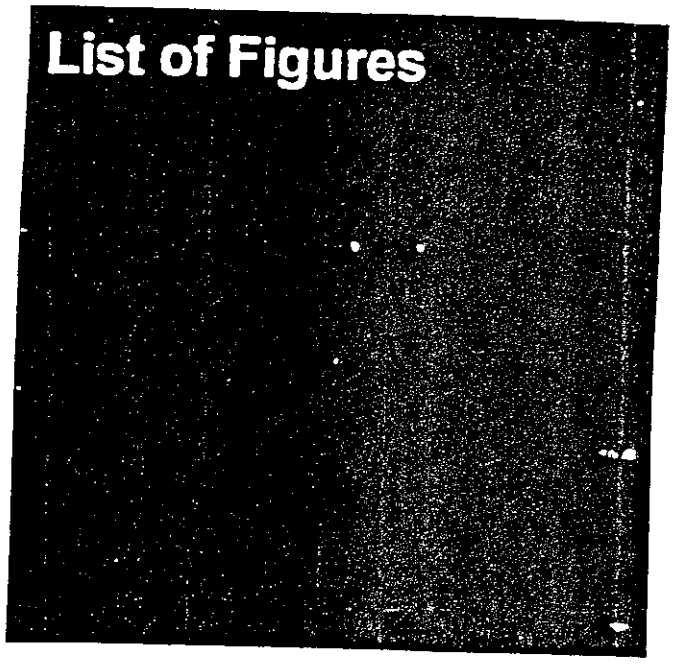

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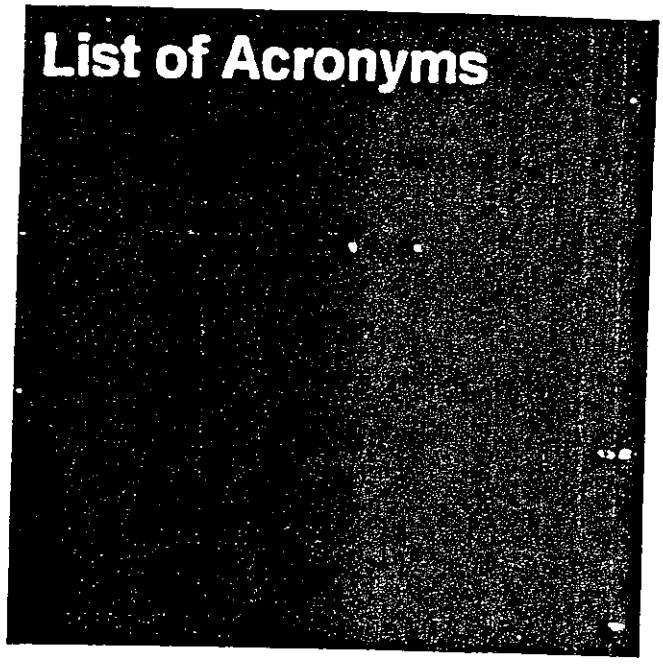
List of Acronyms

List of Acronyms



BA	Biological Assessment
BLM	Bureau of Land Management
BRAC 95	Defense Base Closure and Realignment Act of 1995
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DESMP	Draft Endangered Species Management Plan
DoD	Department of Defense
EBS	Environmental Baseline Survey
EE/CA	Engineering Evaluations/Cost Analysis
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FMC	Fort McClellan (Main Post and Pelham Range)
FMCRP	Fort McClellan Comprehensive Reuse Plan
FMRRA	Fort McClellan Reuse and Redevelopment Authority
FWS	U.S. Fish and Wildlife Service
NPDES	National Pollution Discharge Elimination System
PDF	Project Design Feature
RI/FS	Remedial Investigation/Feasibility Study
SWPPP	Stormwater Pollution Prevention Plan
USFS	U.S. Forest Service
UXO	Unexploded Ordnance

Section 1
Introduction

Section 1: Introduction

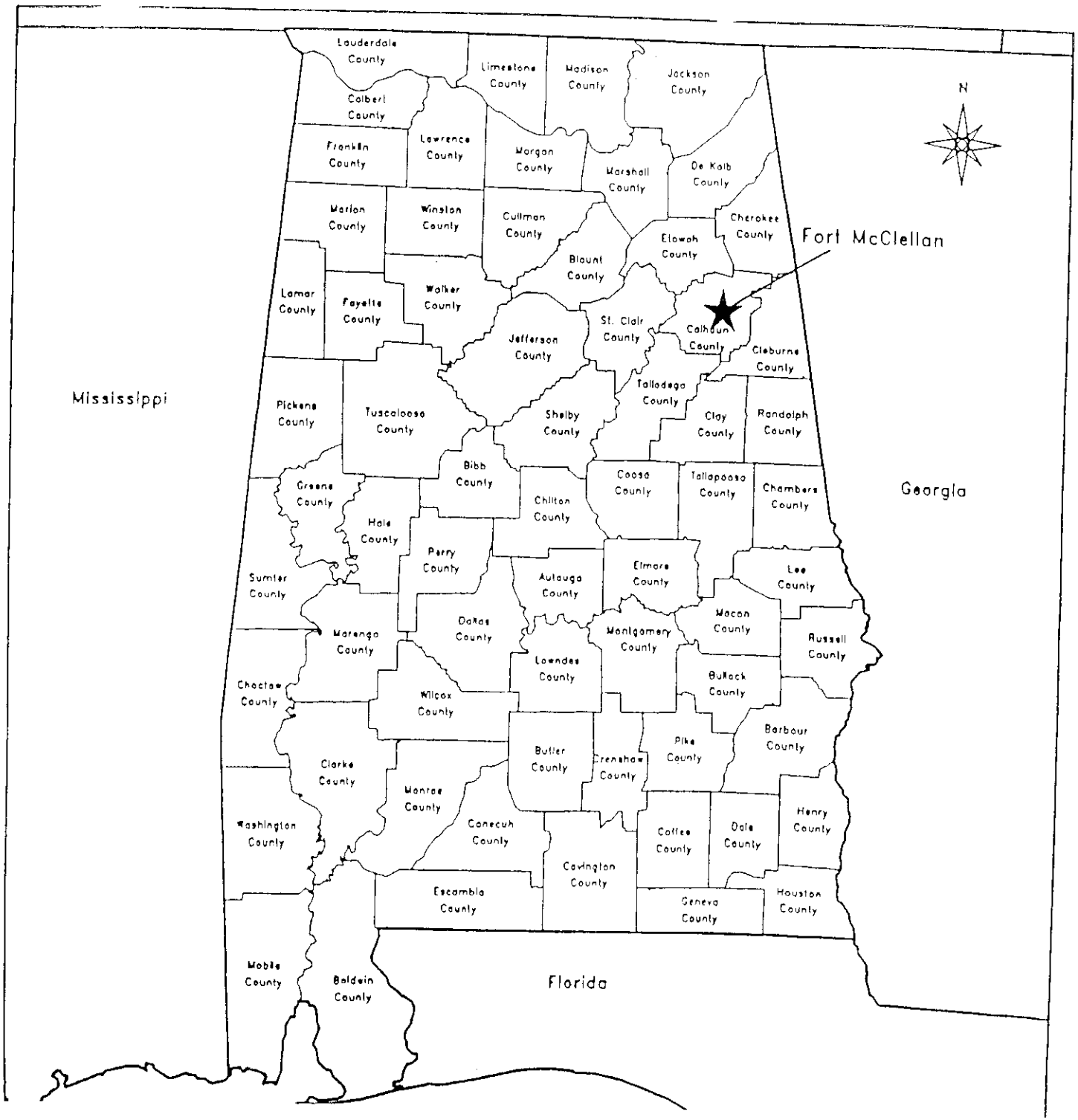
Fort McClellan, Alabama, was recommended for closure by the Defense Base Closure and Realignment Commission in July 1995. This recommendation was accepted by the President and Congress and became legally binding under provisions of Public Law 101-510 on 28 September 1995. Approximately 17,360 acres (7025 hectares) on Main Post have been declared surplus property for disposal by the Army and available for reuse by others. In addition, approximately 1140 acres (461 hectares) of BLM property on Main Post, currently leased by the Army, may also be disposed by the Army as an interrelated action. The Army will retain all of Pelham Range (22,245 acres) and portions of the Main Post cantonment area (approximately 409 acres) for use by the Army Reserve and Alabama Army National Guard.

An Environmental Impact Statement (EIS) is currently in preparation to analyze environmental effects of disposal and reuse alternatives for the surplus property. The Army's proposed action is disposal, while reuse is an interrelated action of others (non-Army). Reuse planning is the responsibility of the Fort McClellan Reuse and Redevelopment Authority (FMRRA) of Alabama, a locally charted entity. In addition to the Army's proposed action of disposal, there is also the Army's interim period between closure of Fort McClellan and disposal of surplus property. During this period there will be caretaker, environmental investigations and remediation, unexploded ordnance investigations and removals, and other actions necessary to prepare the property for transfer. These actions have potential to affect threatened and endangered species.

This Biological Assessment (BA) determines effects on threatened and endangered species resulting from the interim period (caretaker operations) and from proposed disposal and reuse of surplus property. This BA was developed in accordance with 50 CFR Part 402 and the Endangered Species Act of 1973 (ESA), as amended. This BA incorporates information by reference [50 CFR Part 402.12 (g)] from the Draft Environmental Impact Statement for Disposal and Reuse of Fort McClellan, Alabama, hereafter referred to as the DEIS. The DEIS was provided to the FWS, Daphne, Alabama Field Office.

As a result of consultation with the FWS (Appendix A), review of information available regarding the presence of listed species on FMC, and coordination with individuals with related expertise, the BA focuses upon the assessment of effects to gray bats. Potential for effects to federally endangered red-cockaded woodpeckers *(Picoides borealis)* were also evaluated. Effects of the proposed action to these species are unlikely. Effects of disposal and reuse of Main Post to rare species other than federally protected species are addressed in the EIS.

The red-cockaded woodpecker was last detected on FMC in 1968. Subsequent surveys in 1972, 1982, 1985, 1992, and 1997 failed to find red-cockaded woodpeckers on FMC, and the species is considered extirpated on the Installation. The nearest known extant population inhabits the Talladega National Forest, approximately 5 to 7 miles (8 to 11 kilometers) east of Main Post. Based upon guidance described in "Guidelines for Preparation of Biological Assessments and Evaluations for the Red-cockaded Woodpecker" (Henry 1989), and discussions with Mr. Ralph Costa, Recovery Coordinator for the red-cockaded woodpecker, we determined the proposed action is unlikely to affect red-cockaded woodpeckers. Issues regarding suitable red-cockaded woodpecker habitat on Main Post, and potential future recovery of red-cockaded woodpeckers on the installation are addressed in the DEIS.



BIOLOGICAL ASSESSMENT
DISPOSAL AND REUSE OF
FORT McCLELLAN, ALABAMA

FIGURE 1-1. Location of Fort McClellan, Alabama.

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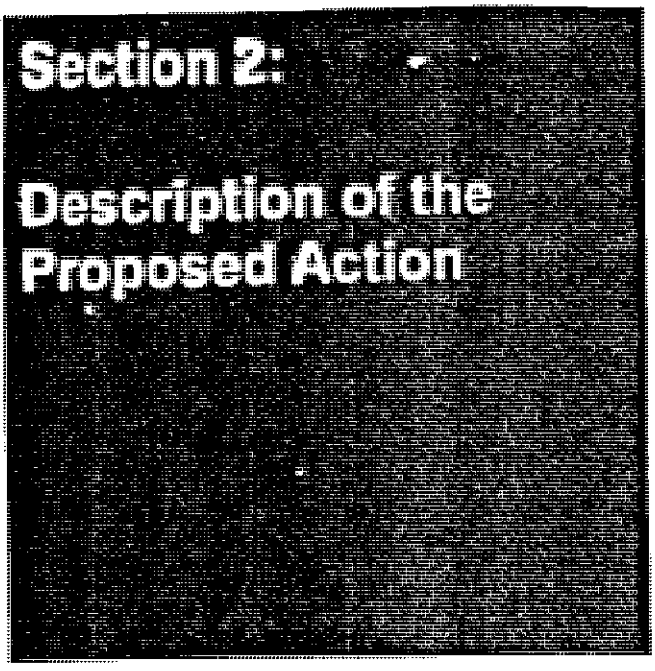
Section 2
Description of the Proposed Action



2.1 INTRODUCTION

Under provisions of the Base Closure and Realignment Act of 1990 (Public Law 101-510), the 1995 Commission recommended closure of FMC, except for land and facilities required for a Reserve Component enclave and minimum essential facilities as required to provide auxiliary support to the chemical demilitarization operation at Anniston Army Depot, Alabama. Consistent with this Congressional mandate, the Army will cease performance of active missions at FMC no later than 12 July 2001.

Pursuant to the Defense Base Closure and Realignment Act of 1990 and recommendations of the Defense Base Closure and Realignment Act of 1995 pertaining to FMC, continuation of operations at the Installation is not feasible. Surplus property at FMC will be disposed or placed in caretaker operations after closure. The Army's preference is to dispose of surplus property.

Depending upon numerous factors, disposal of excess property at FMC is expected to occur as a single event transferring all excess property to one or more owners, or over time with multiple transactions involving the same or different owners. Regardless of the method of disposal, timing, or identity of new owners, reuse of excess property at FMC is reasonably foreseeable. This BA addresses effects of actions required to accomplish the Army's preferred

alternative for disposal and reuse of Fort McClellan: Encumbered Disposal and Medium-High Intensity Reuse.

2.2 LOCATION OF FORT MCCLELLAN

Fort McClellan is in Calhoun County, in northeast Alabama contiguous to the city of Anniston and approximately 65 miles (104 kilometers) east of Birmingham, Alabama (Figure 2-1). Fort McClellan includes three tracts of state and federal government-owned lands in the foothills of the Appalachian Mountains:

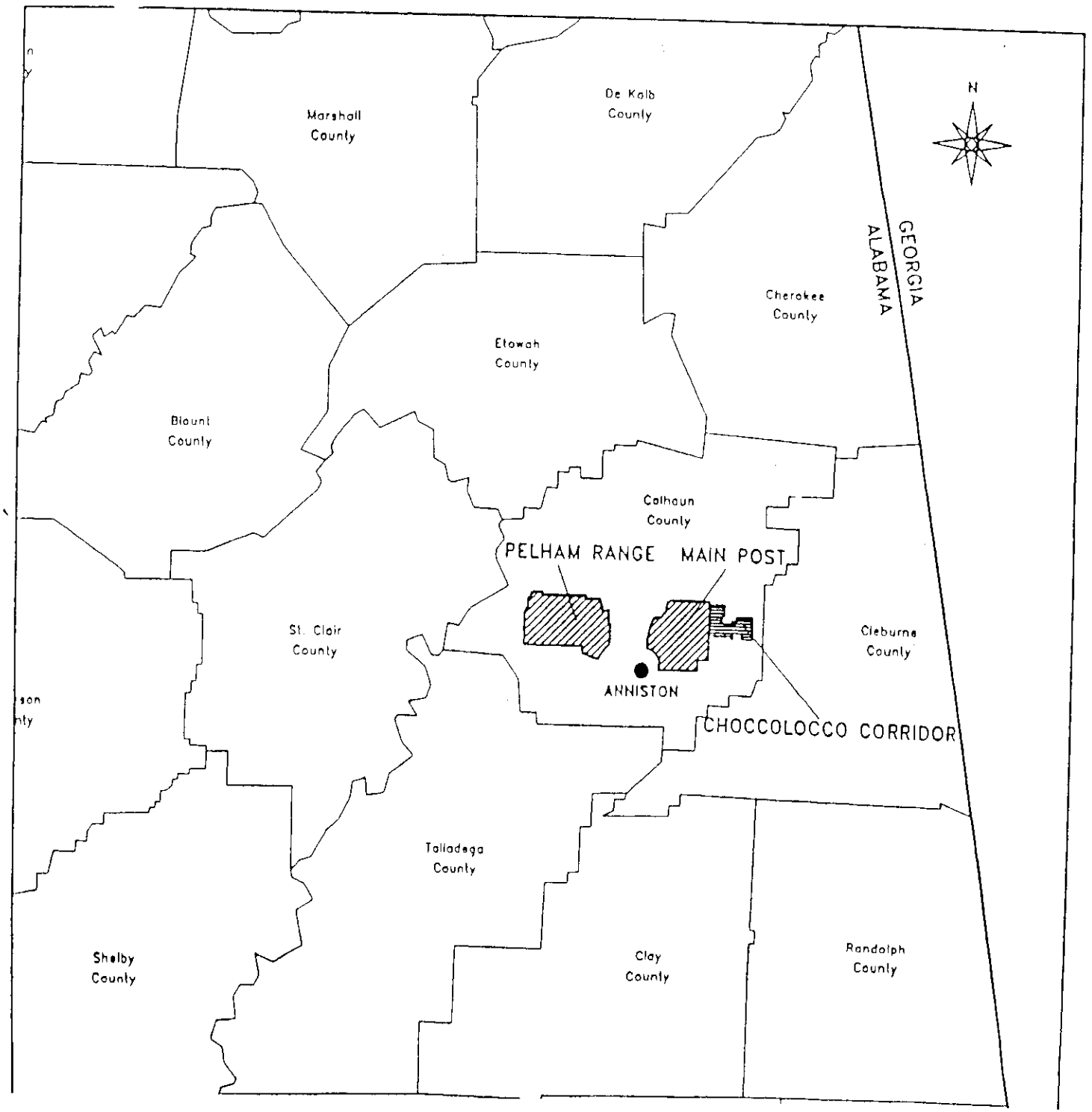
- Main Post, consisting of approximately 18,929 acres (7660 hectares), adjoins Anniston, Alabama, and stretches six miles to the northeast towards Jacksonville, Alabama, in the valley west of the Choccolocco Mountains. Approximately 12,000 acres (4858 hectares) of Main Post are characterized by undeveloped mountains, of which approximately 1140 acres (461 hectares) are public domain lands withdrawn from the Bureau of Land Management (BLM).

- Choccolocco Corridor, consisting of approximately 4388 acres (1775 hectares) leased from the State of Alabama, is east of Main Post and connects FMC with the Talladega National Forest. Within the Talladega National Forest, approximately 100,000 acres (40,470 hectares) of woodlands are accessible for training in the event of national emergency or with approval of the U.S. Forest Service (USFS). The Choccolocco Corridor lease to the Army will not be renewed, and ownership of the land will remain with the State of Alabama.

- Pelham Range, consisting of approximately 22,277 acres (9015 hectares), is located approximately eight miles west of FMC's Main Post cantonment area. Pelham Range, which adjoins Anniston Army Depot one-half mile west of US Highway 431, is used for maneuvers, firing ranges, and field training. The entire Pelham Range will remain as Army property, but will be licensed from the U.S. Army to the Alabama Army National Guard.

2.3 DISPOSAL AND REUSE AREA

The BRAC 95 actions include retention of a Reserve Component Enclave, facilities to support chemical demilitarization operations at Anniston Army Depot, and two cemeteries.



BIOLOGICAL ASSESSMENT
DISPOSAL AND REUSE OF
FORT McCLELLAN, ALABAMA

FIGURE 2-1. Location of Fort McClellan property within Calhoun County, Alabama.

Fort McClellan

Land Leased By FMC From The Alabama Forestry Commission

Miles
0 10 20

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Accordingly, the Army plans to retain approximately 409 acres (165 hectares) of land within Main Post, and the entire Pelham Range area, for these purposes. The Main Post enclave area will include 16 discrete parcels (Table 2-1, Figure 2-2). In addition, BLM owns 1140 acres (461 hectares) in three parcels of land along the eastern boundary of Main Post (Figure 2-2). These BLM lands may be disposed along with the Army's excess property. Approximately 18,500 acres (7486 hectares), including BLM property, are available for disposal and reuse (18,929 acres Main Post total area less 409 acres to be maintained for Reserve training, support facilities for Anniston Army Depot, and two cemeteries).

This 18,500-acre (7486 hectares) area includes the heavily developed area in the flat northwestern portion of FMC. Cane Creek and its tributaries flow west through Main Post. The Main Post's administrative, housing and community service facilities are generally located along the northern and southern banks of Cane Creek. Firing ranges are located north, east, and south of the developed area and have firing fans generally oriented toward the Choccolocco Mountains. The remaining portion of Main Post includes the Choccolocco Mountains and contains large areas of undeveloped, forested tracts historically utilized for training and recreational activities.

The Main Post cantonment area contains various buildings including administration, transportation, maintenance, family housing, barracks, libraries, museums, a post office, banks, recreational facilities, community facilities, an auto craft shop, and health care centers. These buildings vary in condition, size, and reuse potential.

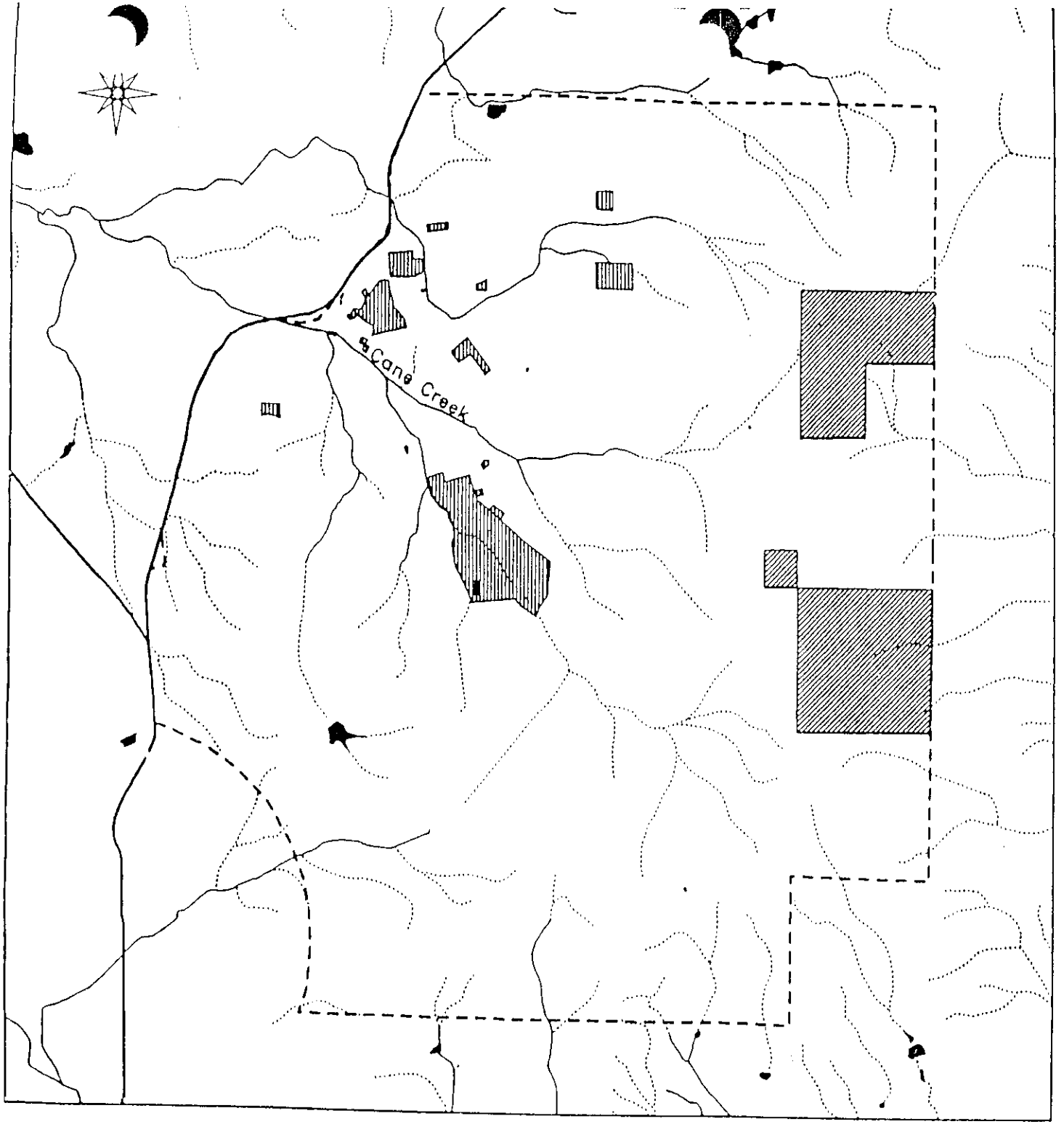
2.4 ENCUMBERED DISPOSAL

The Army's preferred disposal alternative is encumbered disposal. The Encumbered Disposal Alternative incorporates Army-imposed constraints on future owners as a condition of property disposal and reuse. Encumbrances may restrict future land use. Encumbering parcels will result in disposal actions that are timely, support Army requirements, and are compatible with future reuse plans.

Following closure of FMC, and prior to disposal, the Army is responsible for identifying significant cultural, natural, and man-made resources that must be used wisely or protected after ownership is transferred to non-Federal control. If appropriate, constraints protecting

TABLE 2-1. Fort McClellan Army National Guard/Reserve Component enclave property on Main Post.

Area Description	Estimated Size of Area	
	Acres	Hectares
1000 Area, Battalion Headquarters, Parking	24.4	9.9
Building 2290 (Dispensary)	1.4	0.6
Buildings 2281 / 2282	3.4	1.4
Joint Information Center	1.8	0.7
Battalion Headquarters	0.3	0.1
2200 Area and Triangle	53	21.4
Operations and Maintenance Shop # 10	5.4	2.2
Post Cemetery	3.4	1.4
U. S. Army Enclave	18	7.3
Military Operations in Urbanized Terrain Site	7.5	3
Chemical Defense Training Facility	26.5	10.7
Chemical stockpile Emergence Preparedness Program / Emergency Operations Center / Range Control	2	0.8
Boiler Plant	0.5	0.2
Chapel	1.5	0.6
1600 /1700 / 1800 Area	256	103.6
Prisoner of War Cemetery	4	1.6
TOTAL	**409.1**	**165.5**



BIOLOGICAL ASSESSMENT
DISPOSAL AND REUSE OF
FORT McCLELLAN, ALABAMA

FIGURE 2-2. Excess property, BLM land, and Reserve Component Enclave on Main Post.

Reserve Component Enclave

BLM - Public Domain Land

Excess Property

Miles

0 0.5 1 1.5

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these resources may be incorporated as deed encumbrances or covenants during land transfer. The encumbrances placed on parcels of land will depend on the resources present.

After FMC is closed, all excess land will be placed in caretaker status until transfer of ownership. In addition to caretaker activities, the Army may conduct environmental restoration as appropriate before disposing of property.

2.4.1 Caretaker Status

Existing facilities and support equipment and systems at FMC are major assets encouraging and facilitating reuse after the Army completes its disposal action. Following closure, FMC facilities and equipment will be subject to caretaker operations until transfer to new owner(s) occurs. Under caretaker status, the Army will care for vacated facilities, conduct environmental restoration, and as circumstances arise, make interim leasing arrangements to the extent allowed by regulation and available funding.

In consultation with the FMRRA, the Army will determine required levels of maintenance and repair of the Installation's facilities and equipment. Initial levels of maintenance will not exceed the standard of maintenance and repair in effect on the date of closure approval, will not be less than maintenance and repair required to be consistent with government standards for excess and surplus properties, and will not require any property improvements, including construction, alteration, or demolition, except when demolition would be required for health, safety, or environmental purposes, or would be economically justified in lieu of continued maintenance expenditures (DoD 1995).

Typical activities that will continue during the caretaker phase include the maintenance of fenced areas to ensure adequate security, mowing and weed control on grounds within the cantonment area for aesthetics and fire protection, and trimming and maintenance of trees and brush to avoid interference with roadways, fences, or buildings. Diseased trees and vegetation will be identified and removed as appropriate. Irrigation and erosion control will be addressed as necessary. Natural resources management, hunting, and wildlife management would also be continued at a lower level of effort. The level of security at Fort McClellan would be the same as town and county jurisdictions within the surrounding area.

2.4.2 Environmental Restoration

The process leading to transfer of excess Army land includes certification that properties are suitable for disposal, and that environmental restoration of contaminated sites is accomplished to the degree required to protect human health and the environment and support proposed reuse. Environmental restoration activities at FMC will focus on remediating identified hazardous contamination caused by past training and waste disposal. The Environmental Baseline Survey (EBS) for Fort McClellan (Environmental Science and Engineering, Inc. 1997) identified the status of environmental restoration activities. The EBS identifies several sites that still require investigation to determine potential environmental hazards and appropriate restroration measures. Parcels requiring additional investigation and potential remedial actions will be addressed in the BRAC Cleanup Plan.

The presence of unexploded ordnance (UXO) on a BRAC parcel is considered to be a safety hazard. All UXO concerns are addressed on a case-by-case basis. It is anticipated that excess property at FMC will be disposed of in a number of smaller parcels rather than the entire Installation in one transaction. Therefore, specific UXO investigations and remedial actions will be accomplished over a period of several years. Timing of investigations will be based upon the intended reuse, disposal priorities, the complexity of proposed remedial actions, and other pertinent factors. Identifying specific locations and extent of pre-disposal cleanup activities will be accomplished during Remedial Investigations/Feasibility Studies (RI/FS) for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) compliance for hazardous and toxic wastes and Engineering Evaluations/Cost Analysis (EE/CA) compliance for ordnance and explosives, including UXO. These processes and studies provide for public participation and are subject to regulatory review.

2.5 MEDIUM-HIGH INTENSITY REUSE

The Fort McClellan Comprehensive Reuse Plan developed by the FMRRA is used for development of the proposed action, alternatives, and effects analysis for reuse of FMC (FMRRA 1997). Department of Defense policy states the local community's reuse plan will be used to define the proposed reuse action, and will be the basis for analysis of reuse alternatives. In the absence of a final approved local reuse plan, analyses will use the best available information, including draft reuse plans, to describe probable reuse alternatives.

Accordingly, a draft final reuse plan was provided to the Army by the FMRRA in June 1997. The draft final reuse plan prepared by the FMRRA represents the Medium-High Intensity Reuse (MHIR) level described in the DEIS. Medium-High Intensity is the more probable and attainable level of development for FMC based upon FMRRA analysis of the existing market and ability to absorb additional development. The Army has adopted the FMRRA reuse plan as their preferred reuse alternative to be analyzed in the EIS.

The FMRRA draft final reuse plan provides a balance of public and private reuses of the excess property, including residential, office, retail, industrial, training/education, recreation and open space uses; and, retention of certain community facilities. Approximately one-half of the existing 6,083,000 square feet (565,110 square meters) of building space on Main Post is proposed for retention, including the Post Headquarters and adjacent administration buildings; the Military Police School facility; selected instructional, recreational and housing facilities; the Independent School; and the Commissary. Less than 4000 of the 18,500 acres comprising the disposal area is proposed for development, with the remaining area reserved for passive recreation and open space.

2.6 RELATED PROJECT DESIGN FEATURES

In addition to activities necessary to accomplish disposal and reuse of excess property, the Army proposes certain activities to protect gray bats utilizing the property. Project design features (PDFs) described in this section are an integral part of the proposed action. To minimize or avoid potential adverse effects to gray bats, each PDF addresses particular activities associated with disposal and reuse of excess property at FMC (Table 2-2). The Army commits to PDFs intended to protect gray bats during pre-disposal activities (Table 2-2).

Project design features intended to protect gray bats following transfer of excess property will be incorporated into deeds (Table 2-2). "Reuse PDFs" notify new property owners of the presence of gray bats and identify measures necessary to protect gray bats. The wording of reuse PDFs is shown as it will appear in deeds to the FMC golf course and properties within 50 feet of streams identified as moderate quality foraging habitat for gray bats (Cane, Dothard, Remount, South Branch, Ingram, and Twin Mountains creeks) when these properties are transferred out of Army ownership (Figure 2-3).

TABLE 2-2. Pre-disposal and reuse activities addressed by project design features to minimize or avoid potential adverse effects to gray bats.

Activity	During Pre-Disposal Period	Following Disposal
Modification of roost habitat	PDF No. 1	PDF No. 7
Modification of foraging habitat	PDF No. 2	PDF No. 7
Exposure to toxicants	PDF Nos. 3 & 4	PDF No. 8
Modification of water quality	PDF Nos. 4, 5, & 6	PDF Nos. 7 & 8

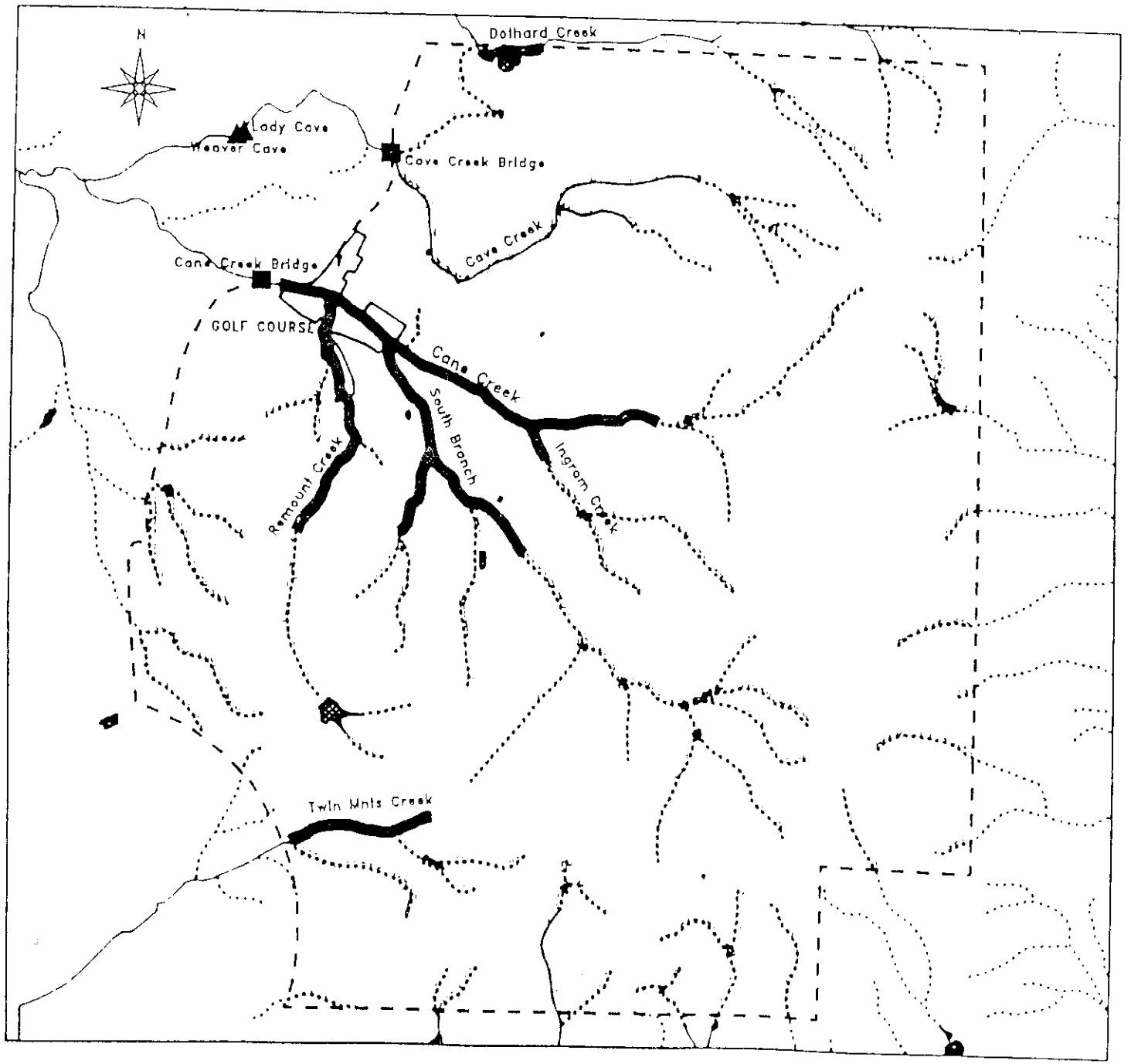
2.6.1 Project Design Feature Number 1

Fort McClellan has conducted extensive studies to determine if gray bats roost on the Installation (3D/I 1996a, 1996b, 1997). There are no caves on FMC and no gray bat roost sites have been identified on the Installation. Gray bats are known to roost in two caves approximately 1 mile (1.5 kilometers) northwest of Main Post, and under two bridges within 160 feet (50 meters) of Main Post. There is potential for gray bats to use similar man-made structures on Main Post. The Army proposes the following measures to minimize potential impacts to roosting gray bats during the period between closure of FMC and disposal of excess property:

- Before any bridge, cistern, or abandoned building is removed or modified, the structure will be inspected for the presence of bats.
- If bats or evidence of their recent use are found within or on a structure to be removed or modified, the species of bat will be identified.
- If gray bats or other federally listed species are present the FWS will be consulted prior to disturbance of the structure.

2.6.2 Project Design Feature Number 2

Fort McClellan will manage gray bat foraging habitat on Main Post. Current guidelines (Garland 1996, 3D/I 1996b) for FMC protect riparian forest by prohibiting tree removal within 50 feet (15.2 meters) of streams on the Installation designated as providing high or moderate quality foraging habitat for gray bats. If an activity required for disposal or reuse of excess



BIOLOGICAL ASSESSMENT
DISPOSAL AND REUSE OF
FORT McCLELLAN, ALABAMA

FIGURE 2-3. Streams on Main Post providing moderate quality foraging habitat for gray bats.

- Golf Course
- Main Post
- Moderate Quality Streams
- Low Quality Streams
- Gray Bat Roost under Bridge
- Gray Bat Roost in Cave

Note : No high quality habitat on Main Post.

Miles
0 0.5 1 1.5

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property involves removal of trees within this 50-foot zone, the Army will consult with the FWS. The FWS has previously concurred that tree clearing outside of this zone or along streams designated as low quality foraging habitat will not affect gray bats, and no consultation is required for such projects (3D/I 1996b). The Army also will consult the FWS if any activity requires alteration of water quality, water flow, or bank stability within streams providing high or moderate quality habitat for gray bats (Figure 2-3).

2.6.3 Project Design Feature Number 3

Pesticide use on Main Post will decrease as Army presence is reduced during caretaker status. However, the FMC golf course will maintain its current level of pesticide use until disposal. Due to the frequency of pesticide use and proximity of the golf course to known roosts and suitable foraging habitat, protective guidelines have been established for pesticide use on the FMC golf course. Appendix B contains a list of pesticides that are expected to be used on the golf course. A product summary, including use guidelines, for each of these pesticides also is included in Appendix B. The product summaries in Appendix B provide background information on each pesticide. Use guidelines listed within the product summaries were primarily derived from product labels, material safety data sheets, and manufacturer's comments, and address both human health and environmental concerns.

Fort McClellan will implement the following guidelines to avoid effects to gray bats from pesticide use on the golf course.

- Do not spray pesticides directly onto or into streams, lakes, ponds, or other bodies of surface water.
- Do not allow pesticides to drift onto water, and do not apply when weather conditions favor drift or runoff from treated areas.
- Do not apply within 20 feet (6 meters) of banks or natural levees associated with streams, lakes, ponds, or other bodies of surface water. Illoxan® should not be applied within 100 feet (30 meters) of surface water.
- Apply pesticides only during daylight hours.
- Apply pesticides only for approved uses.

- Follow all use and disposal directions as specified on labels.

2.6.4 Project Design Feature Number 4

Identifying specific locations and extent of pre-disposal cleanup activities will be accomplished during Remedial Investigations/Feasibility Studies (RI/FS) for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) compliance for hazardous and toxic wastes and Engineering Evaluations/Cost Analysis (EE/CA) compliance for ordnance and explosives, including unexploded ordnance. At sites requiring environmental restoration prior to disposal, potential direct, indirect, and cumulative effects to endangered and threatened species will be assessed. Contaminant type and potential transfer of contaminants into the environment will be identified. If screening level risk assessments indicate a likelihood of exposure exceeding safe levels, Section 7 consultation with the FWS will be initiated.

2.6.5 Project Design Feature Number 5

Surface water quality will be maintained by the Army at or exceeding its current level. Thirty-one industrial stormwater outfalls are identified in the Stormwater Pollution Prevention Plan (SWPPP) for FMC (CH2M Hill 1994). Fort McClellan currently has a National Pollution Discharge Elimination System (NPDES) permit (No. AL0055999) for 14 industrial outfalls and one process water discharge site. To maintain water quality, FMC will continue to implement Best Management Practices identified in the SWPPP and continue to comply with NPDES permit requirements until disposal.

2.6.6 Project Design Feature Number 6

Fort McClellan will implement erosion control measures during environmental restoration activities, including hazardous waste cleanup and UXO removal. These measures will minimize the movement of sediment to streams utilized by foraging gray bats. Standard erosion control measures in place for all BRAC-related environmental restoration activities are described below.

- Vegetative and structural erosion control practices will be constructed and maintained according to standards and specifications of Fort McClellan's Soil Erosion Plan (Nakata Planning Group 1994).

- Construction shall follow Alabama Clean Water Law requirements for construction activities.

- All erosion and sediment control measures are to be in place prior to, or as the first step in construction.

- All areas disturbed by construction activities shall be seeded and mulched or sodded and fertilized unless the area is to be paved or built upon.

2.6.7 Project Design Feature Number 7

Project Design Feature No. 7 advises new property owners of the presence of gray bats and identifies measures necessary to prevent take of gray bats. The following paragraphs will be placed in deeds for parcels within 50 feet of streams identified as moderate quality foraging habitat for gray bats (Figure 2-3).

> Gray bats *(Myotis grisescens)* are known to forage near (insert name of stream(s) with high or moderate quality foraging habitat on this parcel, as shown on page 14 of this BA) or ~~on this parcel of land~~ and are known to roost in caves and under bridges in the vicinity. This parcel has been identified as suitable gray bat foraging habitat. Gray bats are listed as endangered by the U.S. Fish and Wildlife Service (FWS) and are afforded federal protection under the Endangered Species Act (ESA) of 1973, as amended. Section 9 of the ESA prohibits private landowners from "taking" (harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) endangered species.
>
> The following measures will limit potential take of gray bats on this parcel. Failure to follow these measures could subject the violator to criminal sanctions of the ESA.
>
> - Gray bats are known to use man-made structures in the vicinity of this parcel. Prior to removing or altering the structure of a bridge, abandoned building, or cistern, the structure should be checked for the presence of gray bats. The FWS will be contacted if bats are found to be present.

- Trees along (insert name of stream(s) with high or moderate quality foraging habitat on this parcel, as shown on page 14 of this BA) provide protective cover and prey for foraging gray bats. Forest within 50 feet of this stream should not be removed. If removal of dead or live trees within 50 feet of this stream is necessary, the FWS should be consulted prior to cutting.

- Gray bats primarily feed on insects with an aquatic life stage; therefore, water quality and the physical characteristics of streams affect the amount and types of insects available for these bats. State and federal regulations pertaining to water quality and erosion control should be followed. Additionally, modification of stream banks and water flow should be avoided to maintain present water quality and physical structure.

2.6.8 Project Design Feature Number 8

Project Design Feature No. 8 will be incorporated as a deed restriction for disposal of the FMC golf course.

Gray bats are known to forage over the golf course. If you change land use of this area, you must contact the U.S. Fish and Wildlife Service. If land use changes to something other than a golf course, the U.S. Fish and Wildlife Service may require preparation of a Conservation Agreement or Habitat Conservation Plan.

Pesticides currently used on the golf course include: Daconil® 2787; Dursban 50W; 2,4-D Amine 4; MSMA; Pendimethalin; Illoxan® 3EC; Koban 30; Dimension®; and Roundup®. Use of these pesticides in compliance with the following guidelines will not adversely affect gray bats.

- Do not spray pesticides directly onto or into streams, lakes, ponds, or other bodies of surface water.

- Do not allow pesticides to drift onto water, and do not apply when weather conditions favor drift or runoff from treated areas.

- Do not apply within 20 feet (6 meters) of banks or natural levees associated with streams, lakes, ponds, or other bodies of surface water. Illoxan® should not be applied within 100 feet (30 meters) of surface water.

- Apply pesticides only during daylight hours.

- Apply pesticides only for approved uses.

- Follow all use and disposal directions as specified on labels.

Section 3
Scope of Analysis

Section 3: Scope of Analysis

3.1 EFFECTS ANALYSIS AREA

The effects analysis area is defined as all surplus property within Main Post boundaries, including BLM property, and four known gray bat roosts outside Main Post boundaries (Weaver Cave, Lady Cave, Highway 21 bridge over Cave Creek, and Highway 21 bridge over Cane Creek). Effects to gray bats within this area are assessed. This BA does not assess effects of activities on property retained for the National Guard/Reserves.

The BLM may elect to have the Army dispose of the 1140 acres of public domain land within Main Post. The BLM property is included in the effects analysis area. This BA analyzes disposal of BLM property by the Army as an interrelated action.

3.2 EFFECTS ANALYSIS APPROCH

This BA focuses upon aspects of the proposed action with reasonable potential to affect gray bats. We assess potential effects of the Army's preferred alternatives for disposal and reuse of excess property at Fort McClellan. Potential impacts to gray bats analyzed in this BA are characterized in Table 3-1.

TABLE 3-1. Activities and resultant impacts analyzed for the disposal and reuse of Main Post.

Activities	Type of Impact
Exposure to toxicants	Gray bat fatality or illness
Modification of forest cover near stream corridors	Deterioration of foraging habitat
Removal or modification of known/potential roost structures or caves, increased human presence near roosts	Modification or disturbance of roosts
Sedimentation, deterioration of surface water chemistry, deterioration of stream substrate or banks	Reduction of aquatic prey base

Army actions necessary to dispose of excess property and activities to occur during caretaker status are assessed to determine potential effects to roosting and foraging gray bats. The Army has incorporated protective measures into the proposed action as PDFs. The purpose of these PDFs is to reduce or eliminate potential impacts of proposed Army activities. Project Design Features are part of the proposed action and are analyzed as proposed Army activities.

Reuse of excess property is guided by the FMRRA reuse plan. Potential effects of reuse of Main Post by private entities are also addressed in this BA. Additional PDFs have been incorporated into the Army's proposed action regarding reuse of disposed property. Reuse PDFs are intended to inform new property owners of the presence of gray bats, potential impacts to this species from particular activities, and responsibility of the land owner to avoid take as regulated by the ESA. Reuse PDFs will be included in deeds to new property owners.

Section 4
Natural History, Status, and Distribution of Gray Bats *(Myotis grisescens)*

Section 4:

Natural History, Status, and Distribution of Gray Bats *(Myotis grisescens)*

4.1 LEGAL STATUS

Gray bats were listed as endangered by the FWS on 28 April 1976 and are protected under the ESA, as amended (Public Law 93-205). A recovery plan for gray bats was formulated by a FWS-sponsored recovery team (Brady et al. 1982). The recovery plan outlines three primary objectives: (1) prevent disturbance to important roost habitat, (2) maintain, protect, and restore foraging habitat, and (3) monitor population trends.

4.2 PHYSICAL DESCRIPTION

The pelage of gray bats is uniformly gray from the base to the tip of the hair. They have a forearm length of 1.6 to 1.8 inches (40 to 46 millimeters) and a wingspan of 10.8 to 11.8 inches (275 to 300 millimeters; Barbour and Davis 1969). A characteristic distinguishing this species from its congeners is the attachment of the wing membrane to foot at the ankle. In other species of myotine bats, wing membranes attach to the foot at the base of the toe. Additional distinguishing characteristics of gray bats include notched toenails and lack of a keeled calcar (Brady et al. 1982, Barbour and Davis 1969).

4.3 RANGE

Gray bat populations are concentrated in the cave regions of Missouri, Kentucky, Tennessee, and Alabama, with only a few known populations in southern Indiana (Brack et al. 1984, Mumford and Whitaker 1982, Barbour and Davis 1969). The cave regions of the above states comprise the summer and winter range for this species.

4.4 HABITAT REQUIREMENTS

4.4.1 Foraging Requirements

4.4.1.1 Foraging Habitat

Gray bats forage predominantly over water and in adjacent riparian vegetation. Foraging gray bats require open water (e.g., streams and lakes) that produces aquatic-based insects for food, and provides drinking water. Both large and small perennial streams are used by foraging gray bats (LaVal et al. 1977); there are no known limits to the size of streams gray bats will utilize for foraging. LaVal et al. (1977) observed gray bats flying downstream more often than upstream upon departure of a cave near a stream. This suggests a preference for wider downstream areas. Mist netting over streams has indicated some gray bats use even the smallest of permanently flowing streams, but most gray bats appear to use larger streams (LaVal et al. 1977).

Cover provided by riparian vegetation may be an important characteristic of foraging areas. Riparian vegetation provides shelter from predators, especially on nights with a bright moon (Fenton et al. 1977, LaVal and LaVal 1980). Observations of gray bat foraging on nights with a full moon versus nights with a new moon indicate lunar illumination may affect foraging activity. When released near caves, a greater percentage of gray bats flew cross-country from a release site during bright moon conditions than during new moon conditions (LaVal and LaVal 1980). During new moon nights, 62% of gray bats observed were foraging over water or in riparian strips, but on bright moon nights only 23% were seen foraging in these areas. During bright moon nights 20% of gray bats observed were foraging in ridge and hillside forest, while no gray bats were seen foraging in these forests on new moon nights (LaVal and LaVal 1980). Fenton et al. (1977) also observed bat activity in open areas was reduced on nights with a bright moon.

Gray bats utilize open flyways over streams. Gray bats generally forage close to the water surface (Clawson 1984). Foraging usually occurs below treetop height, often lower than 6.5 feet (2 meters) (LaVal et al. 1977). Gray bats foraging over a lake in Missouri were observed feeding from water level up to approximately 4.9 feet (1.5 meters), and occasionally as high as 9.8 feet (3 meters) (Clawson 1984). Large streams and rivers typically provide an abundant food source and ample flight space. Gray bats will use smaller streams if there is enough prey and if the stream corridor provides a clear flyway. Dense, overgrown vegetation along small streams commonly reduces or eliminates open space over the water.

Clawson (1984) observed gray bats foraging adjacent to bluffs near a lake, but concentrations of foraging gray bats were found over deep water in the center of the lake and over shallow, weedy areas. Gray bats foraged alone or in pairs, rarely in groups of three or more (Clawson 1984, LaVal et al. 1977).

LaVal et al. (1977) used a helicopter to observe gray bat foraging activity. The bats foraged over water with brief forays into riparian vegetation. The use of riparian forest likely accounts for the presence of terrestrial-based insects in their diet. The bats tended to be concentrated in groups of two or three adjacent to heavily wooded bluffs and hillsides. Few bats were observed foraging adjacent to pastures. LaVal and LaVal (1980) reported some or all gray bats from a maternity cave may switch from one foraging area to another during the course of a season, even when the change involves flying the opposite direction over pastures to a different body of water.

4.4.1.2 Prey

The diet of gray bats has been characterized from fecal analysis. Gray bats consume both aquatic and terrestrial-based insects. Clawson (1984) analyzed fecal samples taken from reproductively active gray bats captured at four Missouri caves. He identified 53 families comprising 13 orders of insects in the fecal pellets. Size of prey ranged from 0.08 to 1 inch (2 to 25 millimeters), but most were small, 0.08 to 0.4 inches (2 to 10 millimeters). Abundance of terrestrial and aquatic forms was variable due to variation in availability in the habitat occupied by the bats. Overall, Diptera (flies), Coleoptera (beetles), and Homoptera (plant hoppers) were the most frequently observed prey in the diet. Hymenoptera (wasps) and Plecoptera (stoneflies) were less frequent prey items. Ephemeroptera (mayflies) appeared to be a rare

item in the diet of gray bats; however, this may be due to their extreme digestibility. Temporal changes in diet apparently reflected changes in the insect fauna (Clawson 1984).

Brack et al. (1994) collected fecal samples from five gray bat maternity caves in Missouri. At three of these caves, reproductive females consumed predominately aquatic-based insects (orders Trichoptera (caddisflies), Plecoptera, Ephemeroptera, and Diptera) on most sample dates. In contrast, juveniles at these three caves often ate more terrestrial insects (orders Lepidoptera (moths), Coleoptera, Homoptera, Hemiptera (true bugs), and Hymenoptera). At the other two maternity caves, reproductive females and juveniles sometimes consumed more terrestrial-based insects than insects with an aquatic life stage. Males and non-reproductive females at two of the maternity caves typically consumed more aquatic-based than terrestrial-based insects. In all ages and sexes, individual variability in the types of insects eaten was generally high (Brack et al. 1994).

LaVal and LaVal (1980) examined 6272 fecal pellets obtained from 685 gray bats. Results showed insects of the aquatic orders Plecoptera, Ephemeroptera, and especially Trichoptera, are extremely important in the diet, accounting for as much as 98% in some samples. During late summer, small Coleoptera (Asiatic oak weevils) were commonly eaten, accounting for as much as 50% of the diet (Brack et al. 1994, LaVal and LaVal 1980). Asiatic oak weevils are a terrestrial species; therefore, indicating use of riparian forest during foraging. LaVal and LaVal (1980) found that on occasion, Lepidoptera were taken in sizable numbers (more than 50% moths at one site on two nights). At two of five sites, Diptera became important in late June and early July, comprising up to 55% of the diet on one night.

Comparisons of prey selection and prey availability indicate gray bats are opportunistic feeders. They appear to concentrate on aquatic-based insects available where they forage, but take advantage of other insects (especially Lepidoptera and Coleoptera) when they are abundant in their foraging areas (Brack et al. 1994, Clawson 1984, LaVal and LaVal 1980). Clawson (1984) found significant correlation between the types of insect captured in light traps (availability) and the types of insects eaten at foraging sites. Significant correlation of prey availability and prey selection was found for insect orders Coleoptera, Diptera, Hemiptera, and Plecoptera (Clawson 1984).

4.4.1.3 Foraging Travel Distance

Gray bats are known to fly up to 22 miles (35 kilometers) in a single night to forage over large bodies of water (Tuttle 1976). During summer mist netting over streams in eastern Missouri, gray bats were recaptured a mean distance of 6.9 miles (11.1 kilometers) from the cave in which they were banded (LaVal et al. 1977). Bats netted over streams were later recaptured at caves a mean distance of 7.8 miles (12.5 kilometers) from the stream site where they were banded (LaVal et al. 1977). LaVal and LaVal (1980) reported a maximum upstream dispersal distance of 12.4 miles (20 kilometers) from a cave. They also reported gray bats flying cross country as far as 15.4 miles (24.8 kilometers) from a cave to a lake. Gray bats released from Hambrick Cave on Guntersville Reservoir, Alabama, were detected with radiotelemetry at sites up to 18.6 miles (30 kilometers) from the release point (Thomas and Best in press).

Gray bats may fly from summer caves for some distance before foraging. After reaching a suitable foraging area, a gray bat may remain within a limited portion of stream or lake for the remainder of the evening. While observing gray bats foraging along a Missouri stream, LaVal et al. (1977) noted foraging areas of individuals seemed to be less than 0.6 miles (1 kilometer) in length.

4.4.2 Roosting Requirements

With few exceptions (3D/I 1997, Grigsby 1965, Gunier and Elder 1971), gray bats roost in caves year-round (Barbour and Davis 1969). Because of unique habitat requirements, ≤5% of available caves are used as roosts by gray bats (Tuttle 1979). The majority of the population hibernates in five or six caves (Barbour and Davis 1969). Gray bats appear to prefer summer roost caves within 0.6 mile (1 kilometer) of a large river or lake, and rarely roost in caves >2.5 miles (4 kilometers) from these features (Tuttle 1976). Gray bats are intolerant of disturbance and may desert a cave if disturbed (Tuttle 1979). Tolerance level of gray bats using atypical roosts such as bridges is undocumented. During winter, gray bats congregate in large, tight clusters on the cave ceiling. These clusters are sometimes several layers thick (Barbour and Davis 1969). Gray bats tend to select roost sites in hibernacula with a temperature between 7 and 10°C.

In late March or early April, gray bats begin leaving hibernacula, and males and females migrate to summer transient caves (LaVal and LaVal 1980). By the middle of May pregnant

females move from transient caves to maternity caves (LaVal and LaVal 1980). Maternity caves often have large streams running through them. During the maternity season, males and non-reproductive females roost in caves used by transient bats. Caves used by a large number of males during the maternity season are commonly called bachelor caves.

By late July most females and juveniles leave maternity caves (LaVal and LaVal 1980). After this time, maternity caves are often used as transient caves by males and females. During late July and August, gray bats of mixed ages and sexes can be found at many caves throughout the summering area, with frequent movement between caves (LaVal and LaVal 1980). In September females begin to congregate at transient caves, and by the end of the month most females return to hibernacula (LaVal and LaVal 1980). Males remain in the summering areas later than females. Most males leave summering areas by November; however, a small number of males may remain in summer transient caves through winter (LaVal and LaVal 1980).

4.5 REPRODUCTION

Males become reproductively active in October and November (Barbour and Davis 1969). Mating occurs at hibernacula. Females store sperm, and fertilization is delayed until spring. After leaving hibernacula, females migrate to transient caves in summering areas. In May, pregnant females form large colonies at maternity caves. Maternity colonies may contain from a few hundred to a quarter of a million individuals (Barbour and Davis 1969).

Females produce a single young in June (LaVal and LaVal 1980). Neonates are left in the cave while adults forage, but females return frequently to nurse their young (Barbour and Davis 1969). By the middle of July, young forage on their own. At this time the maternity colony disbands and disperses among other caves in the summering area (LaVal and LaVal 1980).

4.6 PRESENCE IN ALABAMA

The range of gray bats includes all of eastern Alabama (Barbour and Davis 1969). Northern Alabama supports the majority of known gray bat populations in the state. Fern Cave, in Jackson County, Alabama supports the largest number of hibernating gray bats range-wide (Figure 4-1). It is located near Paint Rock, approximately 87 miles (140 kilometers) north of

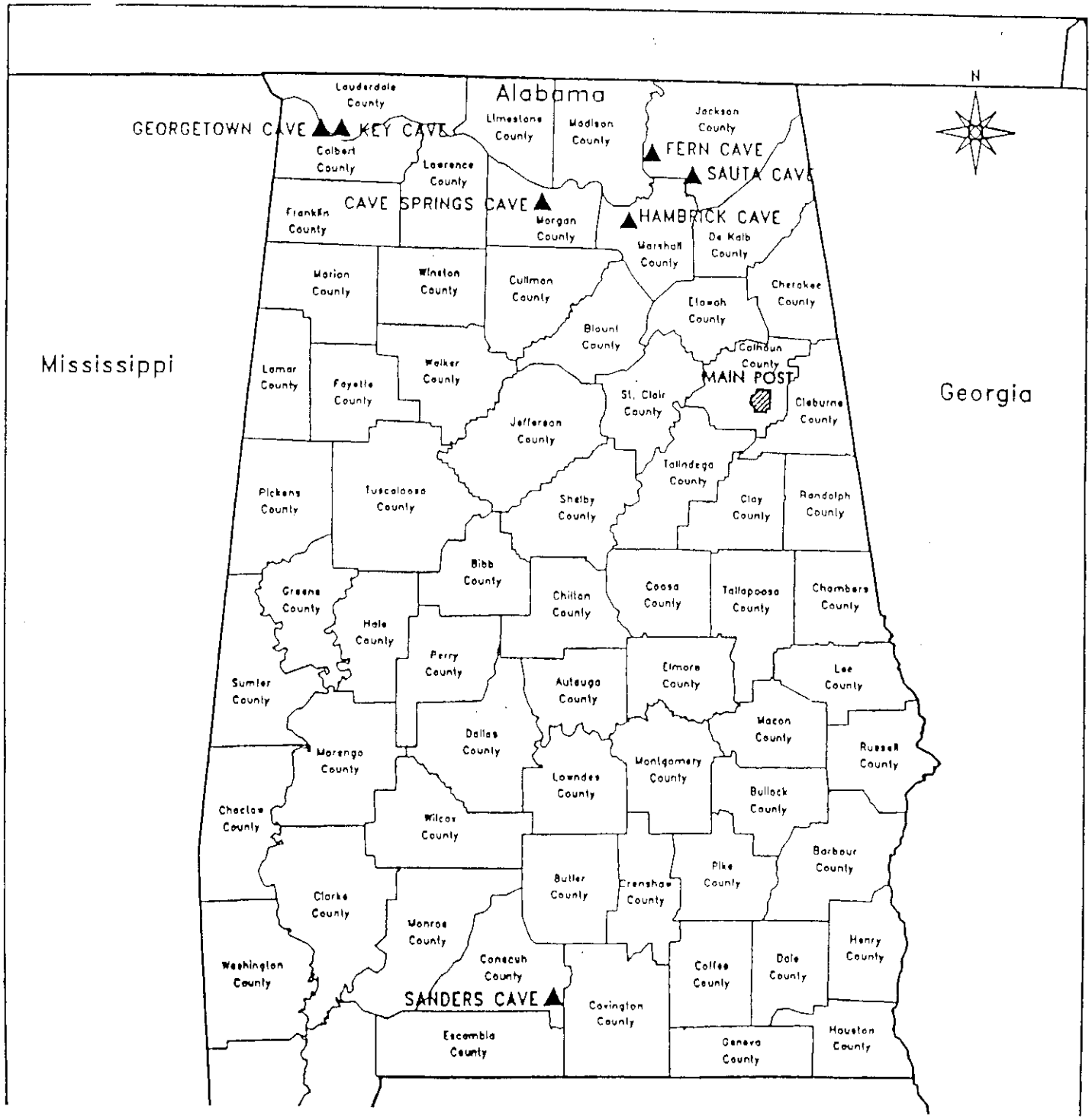

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FIGURE 4-1. Alabama caves historically used by gray bats during summer.

▲ Cave Location

3D/ENVIRONMENTAL

Fort McClellan. About 750,000 gray bats hibernate in Fern Cave (Gray Bat Recovery Team census 1991). In summer, Fern Cave is used by a maternity colony of about 400 gray bats (Hudson 1995).

The largest gray bat summer colonies in Alabama roost in Sauta Cave, Jackson County, and Hambrick Cave, Marshall County (Figure 4-1). Sauta Cave (also named Blowing Wind Cave) is a bachelor cave, housing primarily males during the maternity season. Hudson (1995) reports 105,000 to 180,000 gray bats using Sauta Cave during summer. In 1993, 550 non-volant young were observed in the cave, suggesting a maternity colony was established that year (Hudson 1995). Human disturbance of bats at Sauta Cave is discouraged by gates at both entrances of the cave. Sauta Cave is located on the Wheeler National Wildlife Refuge near Scottsboro, approximately 62 miles (100 kilometers) north of Fort McClellan. The cave is less than 328 feet (100 meters) from North Sauty Creek, a tributary of the Guntersville Reservoir. Both North Sauty Creek and Guntersville Reservoir provide foraging habitat for the colony at Sauta Cave.

Hambrick Cave is primarily a maternity cave. Approximately 55,000-67,000 gray bats roost in the cave during summer months (Hudson 1995). Hambrick Cave is located at Guntersville Reservoir, near the Guntersville Dam, about 43 miles (70 kilometers) north of Fort McClellan. Gray bats fly upstream and downstream from this cave to forage (Thomas and Best in press).

Two other large gray bat maternity caves are known in Alabama. Cave Springs Cave in Morgan County contains a population of approximately 65,400 gray bats (Figure 4-1). It is located about 71 miles (115 kilometers) northwest of Fort McClellan. Key Cave in Lauderdale County is approximately 118 miles (190 kilometers) northwest of the Installation (Figure 4-1). Key Cave houses a maternity colony of 25,000 to 35,000 gray bats (Hudson 1995). Both caves are near the Tennessee River or its tributaries.

Gray bat numbers have decreased over the past two decades; populations in two Alabama caves having decreased dramatically. Georgetown Cave and Sanders Cave once housed maternity colonies consisting of nearly 50,000 gray bats each, but have contained few or no gray bats in recent years (Hudson 1995). At Georgetown Cave in Colbert County, fewer than 10 bats have been observed emerging during each of the past three years (Hudson 1995). Georgetown cave is located over 124 miles (200 kilometers) northwest of Fort McClellar

(Figure 4-1). Sanders Cave in Conecuh County currently contains a large population of the southeastern myotis *(Myotis austroriparius)*, but gray bats have not been documented there in over 20 years (Hudson 1995). Sanders Cave is located more than 124 miles (200 kilometers) south of Fort McClellan (Figure 4-1).

4.7 GRAY BAT OCCURRENCE NEAR FORT MCCLELLAN

During August 1995, 3D/International, Inc. (3D/I) captured two post-lactating female gray bats along Choccolocco Creek in the Choccolocco State Forest (3D/I 1996a). The capture site is approximately 2 miles (3.3 kilometers) from the eastern boundary of Main Post (Figure 4-2).

There is an historical record of a gray bat captured in Anniston (Hall 1981). No data exist describing the gender or season of capture for this specimen.

In July 1997, 3D/I found gray bats roosting in four locations near Main Post (Figure 4-3). The Highway 21 bridge over Cane Creek approximately 160 feet (50 meters) outside Main Post served as a bachelor roost for at least seven adult males during the maternity season (4 July 1997), and served as a transient roost for at least 17 gray bats (males and females) on 29 July 1997. A single gray bat of unknown sex was found under the Highway 21 bridge over Cave Creek approximately 160 feet (50 meters) outside Main Post on two occasions during summer 1997.

On 29 July 1997, 3D/I discovered adult male, adult female, and juvenile gray bats roosting in Weaver Cave and Lady Cave, both located approximately 1 mile (1.5 kilometers) from the northwestern boundary of Main Post (Figure 4-3). Two clusters (n = 4, 6) and one solitary gray bat were found in Weaver Cave. Two clusters (n = 6, 7) of gray bats were found in Lady Cave. Additional gray bats may roost in reaches of the caves not investigated. The time of year and mix of ages and sexes in these colonies indicates these bats were transitory. Weaver Cave and Lady Cave had previously been investigated for the presence of gray bats during the maternity season (early July 1997), but no individuals or sign of gray bats were found (3D/I 1997). These caves may serve as roosts for maternity colonies in the future.

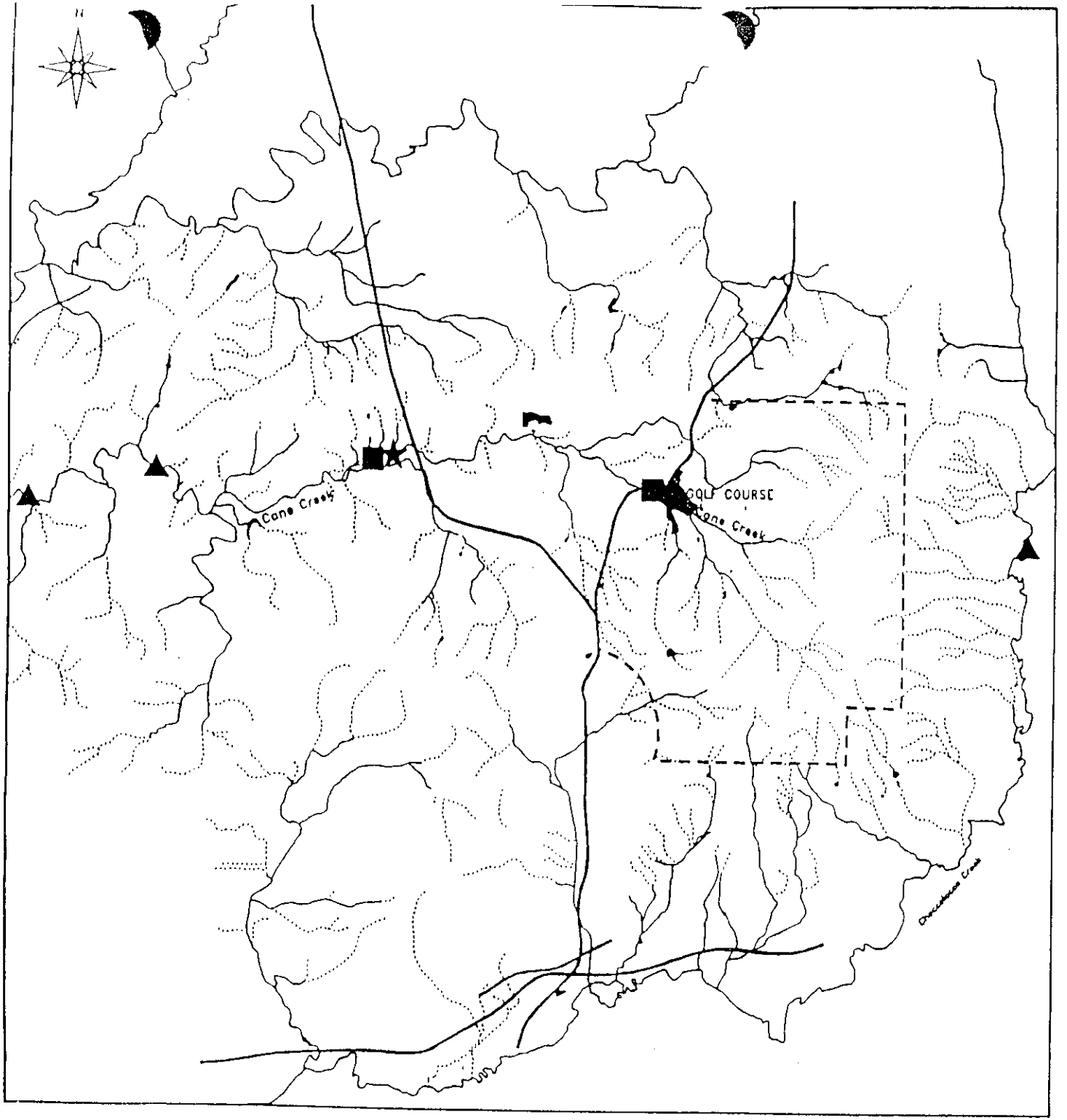

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FIGURE 4-2. Location of gray bats captured on or near Main Post during mist net surveys in 1995, 1996, and 1997.

1995 capture site

1996 capture site

1997 capture site

1996 and 1997 capture site

Miles
0 1 2 3

3D/INTERNATIONAL, INC.

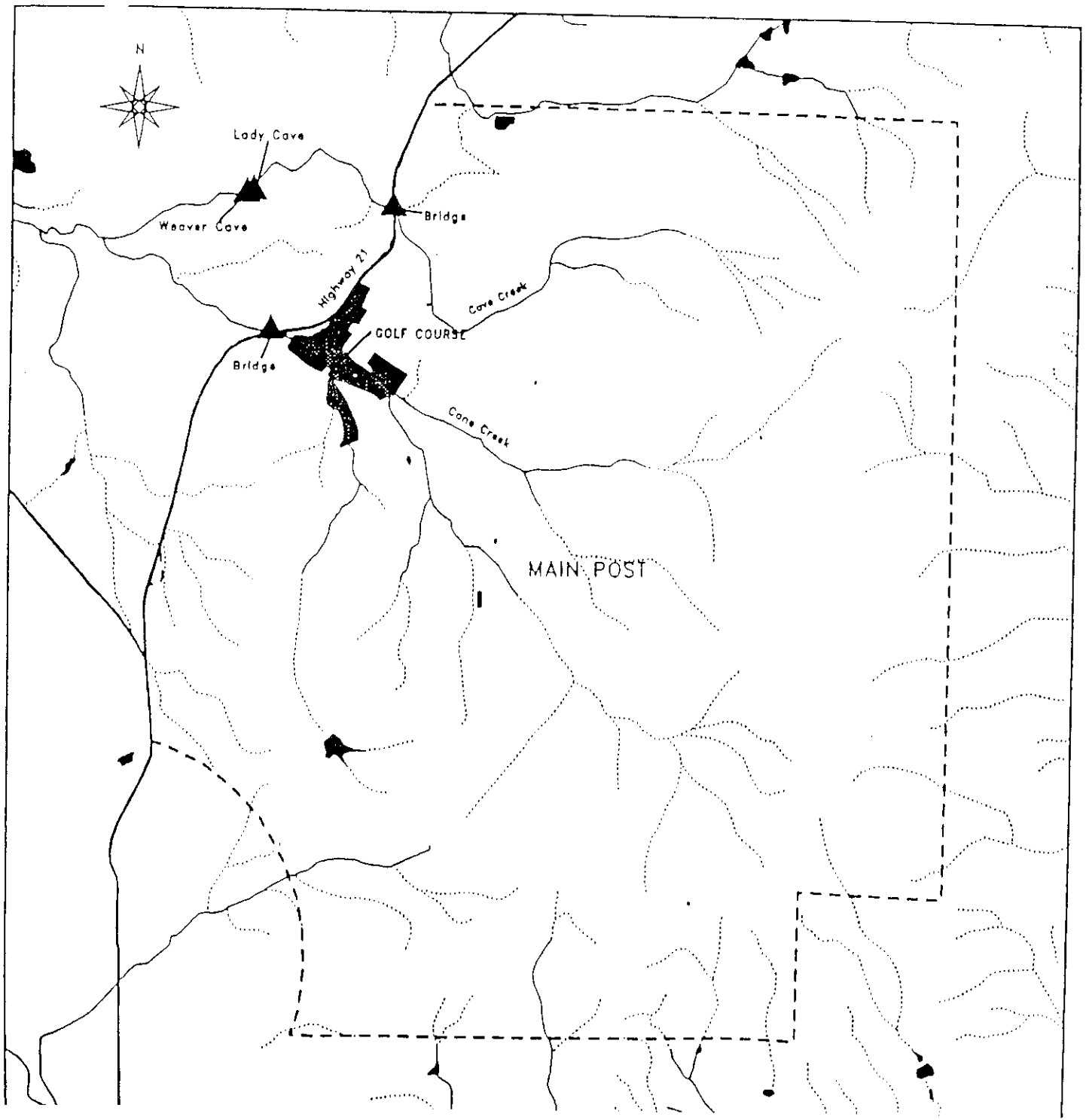

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FIGURE 4-3. Known gray bat roosts on or near Fort McClellan.

▲ Gray bat roosts

Miles
0 0.5 1 1.5

3D/INTERNATIONAL, INC.

4.8 GRAY BAT OCCURRENCE ON FORT MCCLELLAN

3D/International documented gray bats using Fort McClellan during mid- and late-summer (3D/I 1996a, 1996b, 1997). Reproductive and transient adults have been captured over Cane Creek. Mist net surveys conducted during August 1995 resulted in capture of 13 gray bats (five post-lactating females, seven adult males, and one of undetermined sex) on Cane Creek within Pelham Range (Figure 4-2). Mist net surveys conducted in June and July 1996 resulted in the capture of two gray bats (a lactating female and an adult male) on Pelham Range and two adult male gray bats on Main Post along Cane Creek at the golf course (Figure 4-2). Mist net surveys conducted in June and July 1997 resulted in the capture of one adult male on Cane Creek near the golf course and two post lactating females on Cane Creek just within the eastern boundary of Pelham Range (Figure 4-2).

The capture of a reproductive female and three adult males during summer 1996 indicated at least one maternity colony and one bachelor colony is located within approximately 22 miles (35 kilometers) of the Installation. Gray bats may travel as far as 22 miles from a roost site to a foraging area in a single night (Tuttle 1976). Radiotelemetry studies conducted by 3D/I in 1997 revealed one bachelor roost under a bridge, a second bridge roost for a single gray bat, and two transitional cave roosts outside FMC boundaries (Figure 4-3); no roosts were found on the Installation.

The August 1995 captures of post reproductive females and adult males indicate gray bats also forage on the Installation during the transient period following the maternity season. After the maternity season, females and juveniles generally disperse to caves other than the maternity cave. Therefore, several different caves or structures may be used near or on the Installation throughout summer and fall. This information is important for determining potential effects of seasonally dependent activities on foraging and roosting gray bats.

Section 5
Relevant Studies Completed on Fort McClellan

Section 5:

Relevant Studies Completed on Fort McClellan

This BA analyzes potential for, and magnitude of, direct, indirect, and cumulative effects based upon the best available scientific and commercial data, including studies described in this document. Fort McClellan has completed studies to:

- Assess the location and quality of suitable gray bat habitat on FMC
- Document presence and distribution of gray bats on FMC
- Assess the environmental fate of certain training chemicals used on FMC
- Identify roost sites used by gray bats foraging on FMC

This assessment incorporates results of these studies to identify potential effects of disposal and reuse of the Installation on gray bats.

5.1 LITERATURE REVIEW AND HABITAT CHARACTERIZATION

To assess the current status of gray bats on and near Fort McClellan, 3D/I reviewed published and unpublished literature pertaining to cave locations and bat occurrence in Calhoun and surrounding counties (3D/I 1996a). 3D/International also solicited information regarding these

issues from state and local agencies and private organizations, including the National Speleological Society.

A search for caves was conducted on FMC between 1 and 4 March 1996 (3D/I 1996a). The search revealed no caves within FMC boundaries. 3D/International also searched historical records for caves near the Installation. Thirty-five caves were recorded within 22 miles (35 kilometers) of gray bat capture sites on Main Post (Table 5-1 and Figure 5-1).

In February and July 1996, 3D/I assessed the quality of habitat on Main Post and Pelham Range for foraging gray bats. Streams, lakes, and ponds on the Installation were ranked as providing high, moderate, or low quality habitat for gray bats. High quality habitat was found only on Pelham Range along Cane Creek. Moderate and low quality foraging habitat was identified on Main Post (Figure 5-2). 3D/International provided recommendations for management of high and moderate quality habitat to be incorporated into the FMC Endangered Species Management Plan (3D/I 1996a).

5.2 INVESTIGATIONS TO DETERMINE PRESENCE OF GRAY BATS AT FORT MCCLELLAN

During 1996, 3D/I investigated the presence of gray bats at potential roosting and foraging sites on and near FMC (3D/I 1996b). Caves near the Installation, and man-made structures on Main Post were searched for signs of gray bat colonies. The distribution of gray bats on Main Post and Pelham Range was investigated by mist netting stream corridors identified as moderate or high quality foraging habitat.

During February and March 1996, four caves just outside Main Post and Pelham Range were searched for hibernating bats or signs of summer use by gray bats. No gray bats or guano accumulation were found (3D/I 1996b).

Structures on main post such as bunkers, storm sewers, and abandoned cisterns were investigated for live bats, guano, stains on ceilings or beams, bat carcasses, and other evidence indicating bats currently or historically used these features. No gray bats were observed roosting in man-made structures on the Installation. However, fresh bat guano found in an abandoned cistern in February 1996 indicates an undetermined species of bat had been using this structure. Fort McClellan personnel reported seeing bats roosting within the cistern

TABLE 5-1. Names and locations of caves within 22 miles (35 kilometers) of gray bat capture sites on Main Post (3D/I 1996a, Vamedoe 1973).

Cave Name	County	Location Relative to Main Post Capture Sites		
		Distance		Direction
		kilometers	miles	
Unnamed Cave	Calhoun	0.9	0.6	North
Little Weaver Cave	Calhoun	1.0	0.6	North
Weaver Cave	Calhoun	1.9	1.2	Northwest
Lady Cave	Calhoun	1.9	1.2	Northwest
Meadows Cave	Calhoun	5.0	3.1	Northwest
Erby Cave	Calhoun	11.0	6.8	North
Oxford Cave	Calhoun	12.7	7.9	South
Wilson Cave	Calhoun	14.3	8.9	North
Cedar Mountain Cave	Calhoun	17.9	11.2	Northwest
Maxwellborn Cave	Calhoun	18.1	11.3	Northeast
Daugette No.2 Cave	Calhoun	18.8	11.7	Northeast
Daugette No.1 Cave	Calhoun	18.8	11.7	Northeast
Baswell Cave	Calhoun	20.0	12.4	West
Millers Cave	Calhoun	20.7	12.9	Southwest
Green Valley Cave	Calhoun	25.1	15.6	Northwest
Small Cave	Etowah	25.1	15.6	Northwest
Lin and Randys Pit	Calhoun	25.3	15.7	Northwest
Short Cave	Calhoun	25.3	15.7	Northwest
Greens Creek MT. Cave	Calhoun	25.4	15.8	Northwest
Joint Cave	Etowah	25.5	15.8	Northwest
Little Sink Cave	Etowah	25.5	15.8	Northwest
Crawl Cave	Etowah	25.5	15.9	Northwest
Abrupt End Cave	Etowah	25.6	15.9	Northwest
Quarry Side Cave	Etowah	26.3	16.3	Northwest
Mule Glove Pit	Etowah	26.3	16.3	Northwest
Zuber Quarry No.1 Cave	Etowah	26.3	16.4	Northwest
Cedar Tree Pit	Etowah	26.4	16.4	Northwest
Zuber Quarry No. 2 Cave	Etowah	26.4	16.4	Northwest
Coluin Cave	Etowah	26.4	16.4	Northwest
Coluin Pit No.2	Etowah	26.4	16.4	Northwest
Spiral Cave	Etowah	26.5	16.5	Northwest
Robertson Cave	Calhoun	26.6	16.5	Northeast
Wrights Cave	Calhoun	26.8	16.6	Northeast
Dulaney Cave	Talladega	26.8	16.6	Southwest
Merit Cave	Etowah	33.1	20.5	Northwest

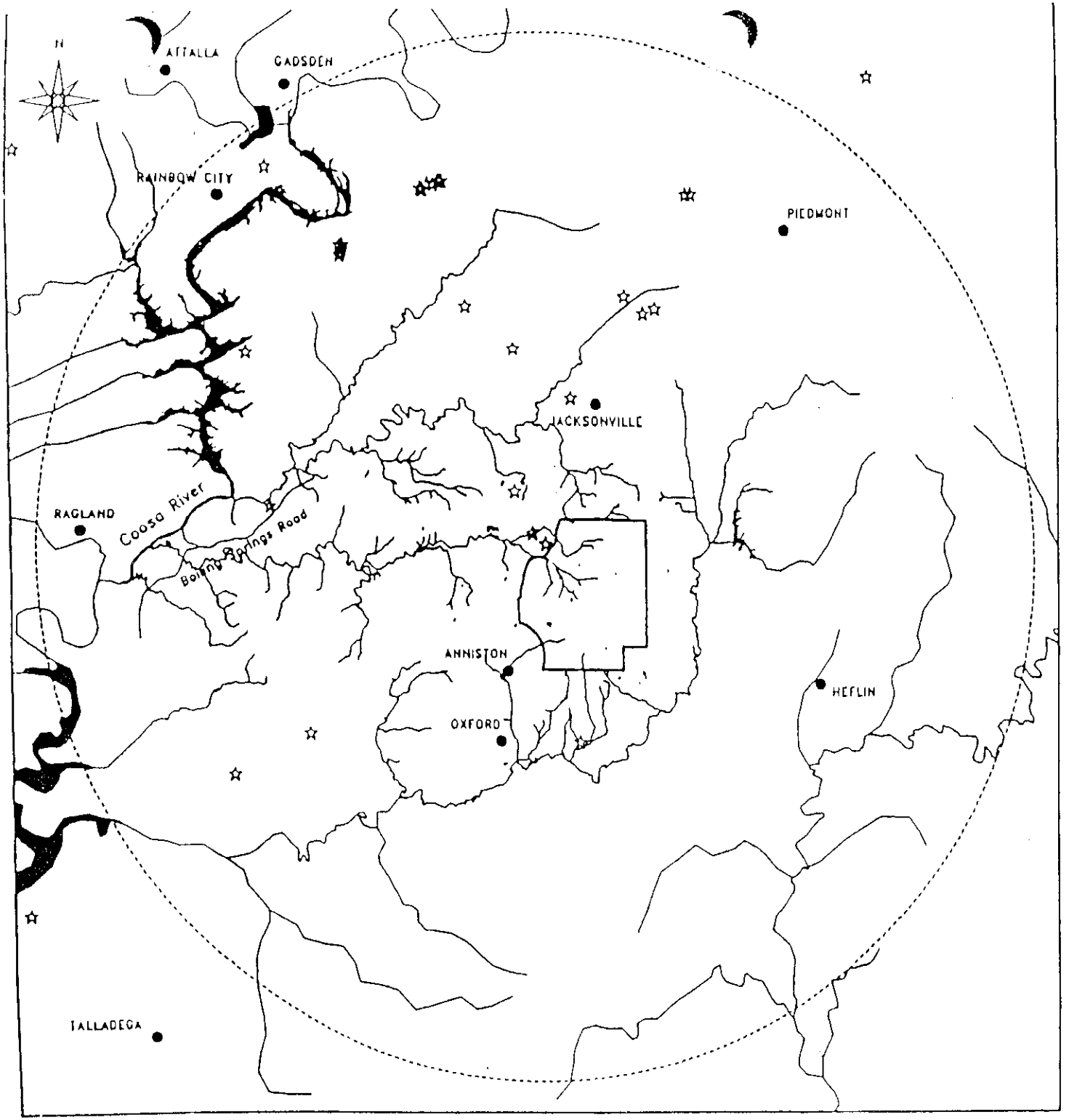

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FIGURE 5-1. Caves within 22 miles (35 kilometers) of gray bat capture sites on Main Post.

- Cave
- Main Post
- 22-mile radius buffer
- Stream
- Town

Miles
0 4 8 12

3D/INTERNATIONAL, INC.

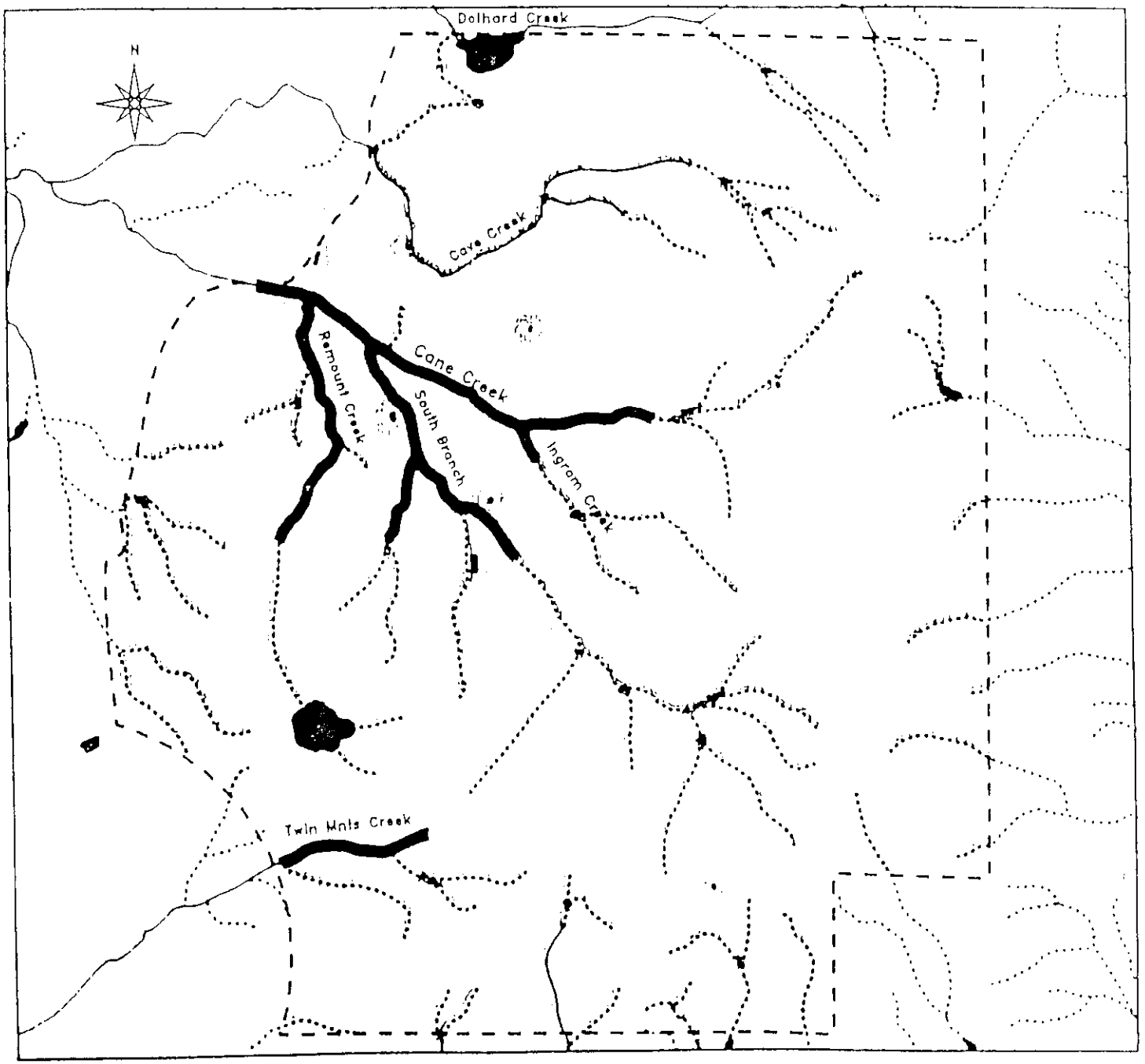

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FIGURE 5-2. Quality of habitat for foraging gray bats on Main Post.

Excess Property

Moderate Quality Habitat

Low Quality Habitat

Note : No high quality habitat on Main Post.

Miles

0 0.5 1 1.5

3D/INTERNATIONAL, INC

during summer 1995. 3D/International conducted additional investigations of this cistern during June and July 1996 and July 1997; no bats or fresh sign was found within the cistern (3D/I 1996b, 1997).

From 25 June to 17 July 1996, mist net surveys were conducted at 17 sites on Pelham Range and Main Post (3D/I 1996b). A total of 102 bats of five species were captured, including four gray bats (one lactating female and three adult males). On Pelham Range, a lactating female and an adult male gray bat were captured over Cane Creek near the eastern boundary. Two adult male gray bats were captured over Cane Creek near the golf course on Main Post (Figure 5-3).

5.3 RADIOTELEMETRY STUDIES OF GRAY BATS AT FORT MCCLELLAN

3D/International tracked gray bats captured on FMC to determine roost locations (3D/I 1997). Mist nets were used to capture gray bats foraging on Main Post and Pelham Range (Figure 5-3). Four gray bat roosts, two caves and two bridges, were successfully located during this study.

An adult male gray bat captured over Cane Creek near the FMC golf course was tracked to a roost site under a bridge (3D/I 1997). This gray bat was found roosting with approximately six other adult males during the maternity season (4 July 1997) under the Highway 21 bridge over Cane Creek approximately 160 feet (50 meters) outside the Baltzell gate to Main Post (Figure 3-4). One of the bats found in this colony had a red arm band (band number 1862). 3D/International confirmed this bat was one captured near the FMC golf course during 1996. On 29 July 1997, during the transitory season following the maternity season, approximately 17 gray bats (males and females) were found roosting under the bridge. The gray bats were roosting in holes on the underside of the concrete bridge.

During this study an additional bridge roost was found while searching for roosting gray bats. On two occasions (3 & 29 July 1997), a gray bat was observed roosting on the Highway 21 bridge over Cave Creek (Figure 5-4). The bridge is approximately 160 feet (50 meters) outside the western boundary of Main Post. This study establishes knowledge of gray bats using man-made structures in Alabama. The study also documents use of a bridge during maternity and transitory seasons.

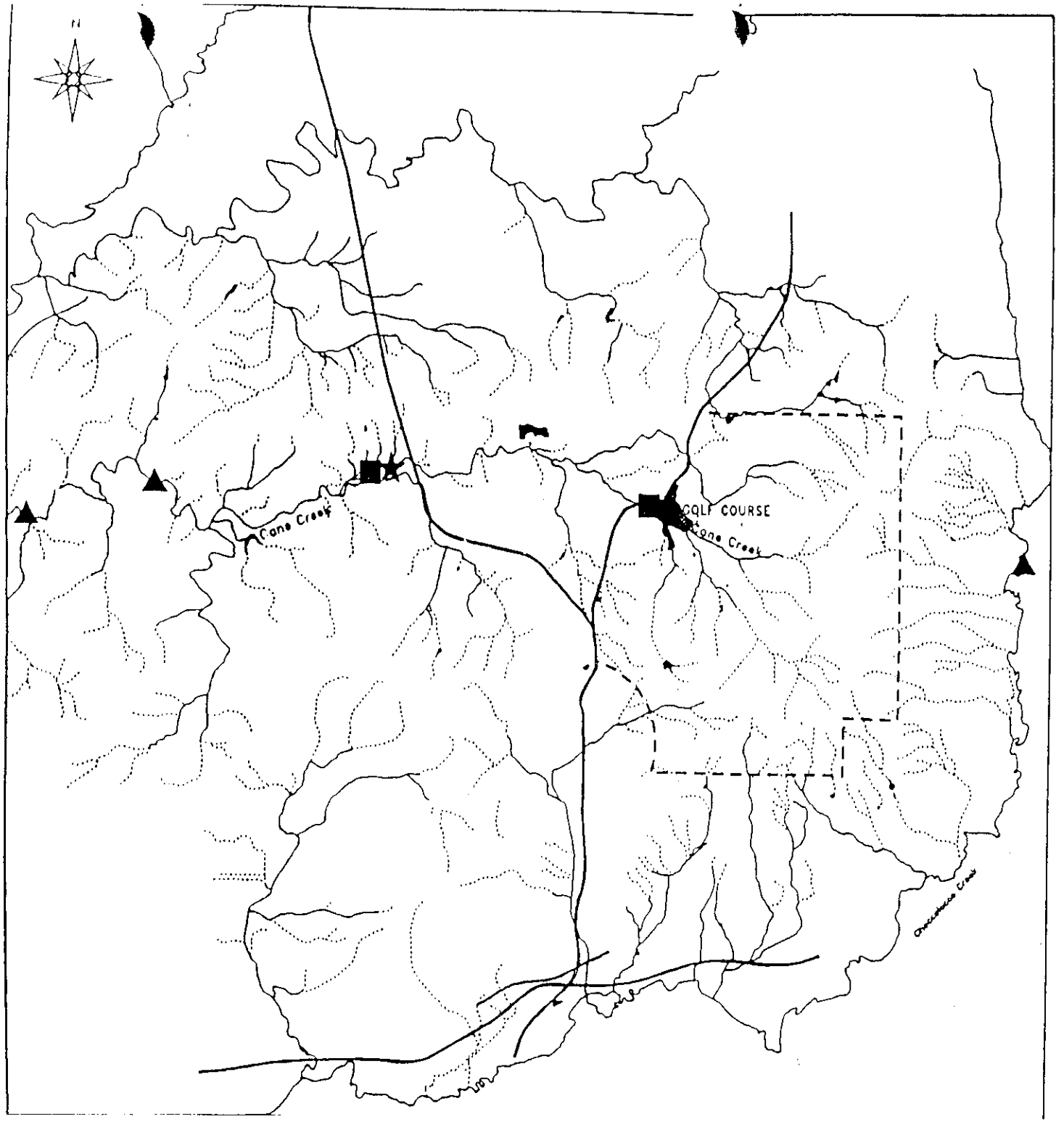

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FIGURE 5-3. Location of gray bats captured on or near Main Post during mist net surveys in 1995, 1996, and 1997.

▲ 1995 capture site

● 1996 capture site

★ 1997 capture site

■ 1996 and 1997 capture site

Miles
0 1 2 3

3D/INTERNATIONAL, INC.

3D/International tracked two post-lactating females and one adult male captured over Cane Creek on Pelham Range to the region of Weaver Cave and Lady Cave (Figure 5-4). Previous investigations of these caves (4 July 1997) revealed no gray bats. On 29 July 1997, 3D/I discovered gray bats roosting in both caves. Seven gray bats, including the adult male and one of the post-lactating females with transmitters, were roosting in Weaver Cave. Thirteen gray bats were roosting in Lady Cave. The clusters of gray bats in these caves contained a mix of adult males, adult females, and juveniles.

5.4 ENVIRONMENTAL FATE OF FOG OIL AT FORT MCCLELLAN

3D/International assessed the environmental fate of certain chemicals used in training at Fort McClellan (3D/I 1996c). This study was completed to support the Biological Assessment for relocation of Fort McClellan training activities to Fort Leonard Wood. Soil, water, and vegetation samples were collected and analyzed for the presence of chemicals used during military training. Insects and bats also were collected and analyzed for presence of these chemicals in body tissues to determine potential effects to endangered bat species. Gray bats were first discovered on Fort McClellan during this study in August 1995. Gray bats were captured on Pelham Range and Choccolocco Creek (Figure 5-3).

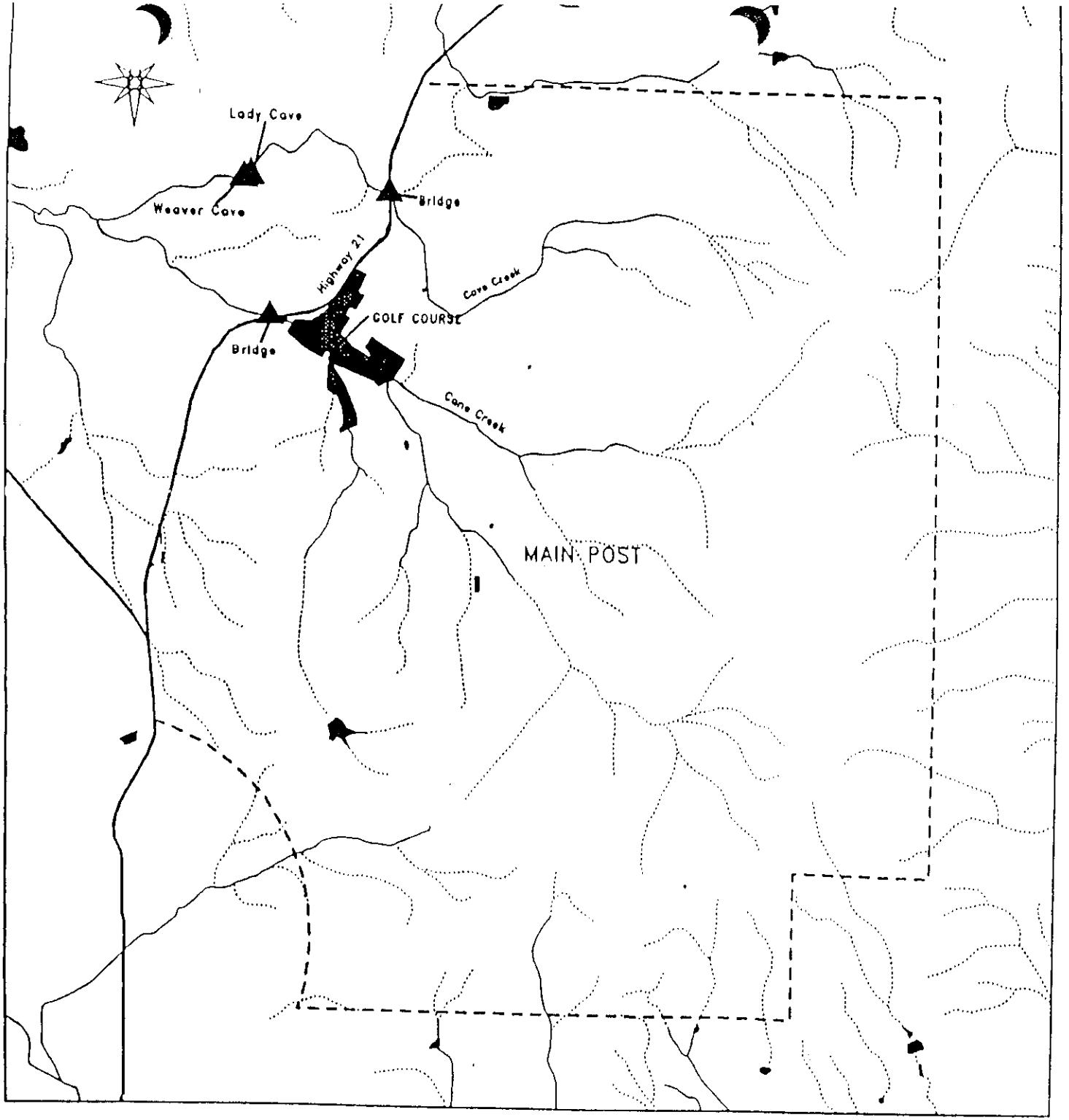

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FIGURE 5-4. Known gray bat roosts on or near Fort McClellan.

▲ Gray bat roosts

Miles
0 0.5 1 1.5

3D/INTERNATIONAL, INC.

Section 6
Affected Environment

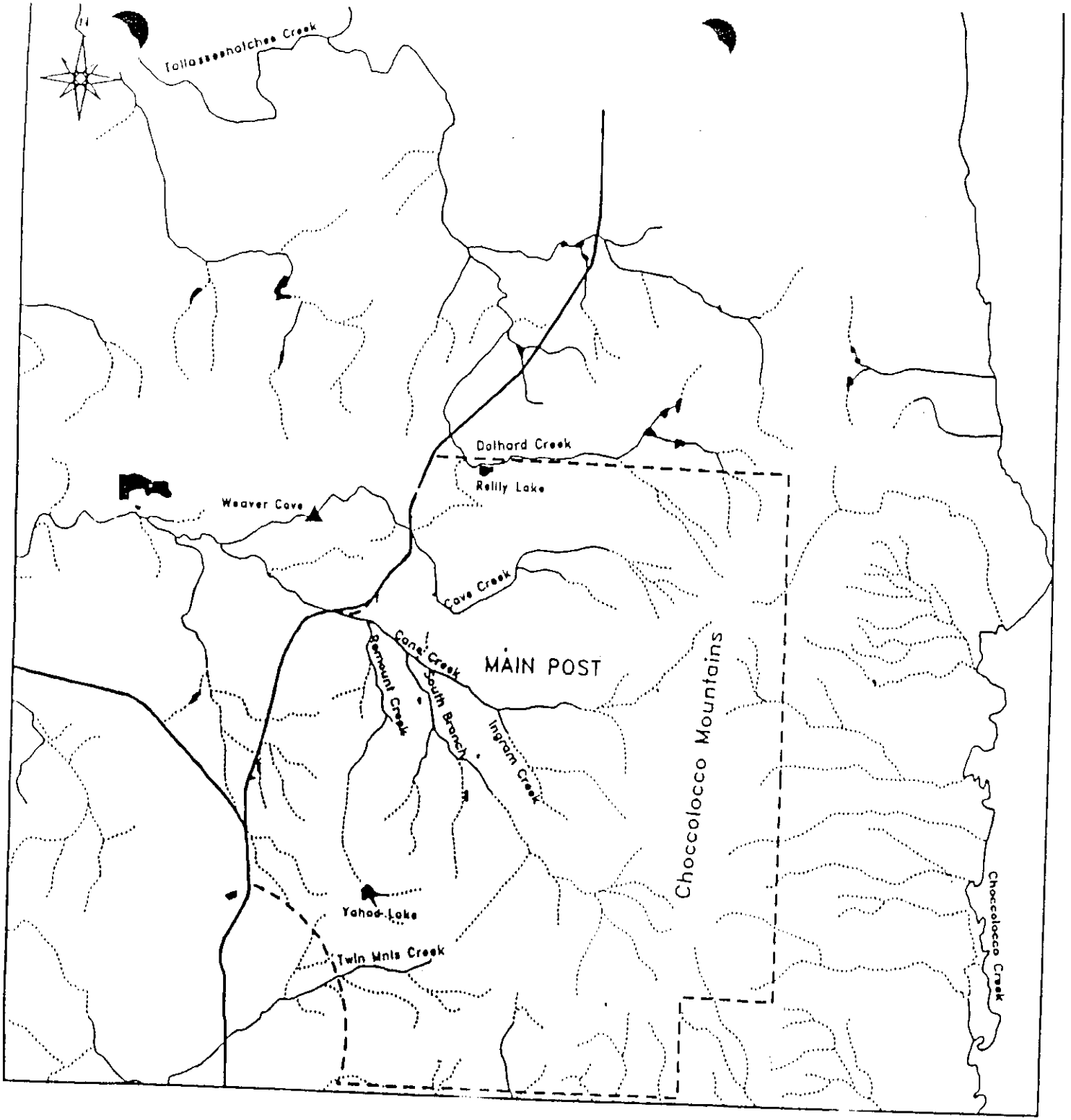
Section 6:

Affected Environment

6.1 PHYSIOGRAPHY AND SURFACE DRAINAGE

All but the eastern most portion of FMC lies within the Valley and Ridge physiographic province of the Appalachian Highlands. The portion of FMC west of Choccolocco Creek lies within the Piedmont province. The lower elevations [700 feet (210 meters) above mean sea level (MSL)] occur along Cane Creek, near Baltzell Gate Road, while the maximum elevations [2063 feet (619 meters) above MSL] occur on Choccolocco Mountain, which traverses the installation and the area in a north-south direction, with the steep easterly slopes grading abruptly into Choccolocco Valley. The western slopes are more gradual, with the southern extension maintaining elevations up to 900 feet (270 meters) above MSL near the western installation boundary. The northern extension decreases in elevation in the vicinity of Reilly Army Airfield. The central portion of FMC is characterized by flat to gently sloping land.

The Choccolocco Mountains, located in the eastern portion of FMC, form a major surface water divide. Choccolocco Creek and its tributaries drain this portion of FMC and flow southward to the Coosa River. FMC west of the drainage divide is drained by three creek systems, Cane, Choccolocco, and Tallasseehatchee creeks (Figure 6-1).



BIOLOGICAL ASSESSMENT
DISPOSAL AND REUSE OF
FORT McCLELLAN, ALABAMA

FIGURE 6-1. Main Post Drainages.

Main Post Boundary

Pond / Lake

Perennial Stream

Intermittent Stream

Miles

0 0.5 1 1.5

3D/INTERNATIONAL, INC.

6.1.1 Surface Water

The Cane Creek watershed is among six major watersheds occurring within Calhoun County. Cane Creek, with its tributaries (Cave, Remount, South Branch, and Ingram creeks), originates on FMC (Figure 6-1). Cane Creek flows westerly across Main Post and Pelham Range and drains the majority of the installation [approximately 20 square miles (52 square kilometers)].

South Branch receives runoff from the south-central portion of Main Post, then joins Cane Creek before leaving Main Post on the western boundary. Cane Creek receives surface runoff from the central portion of Main Post. The north-central portion of Main Post is drained by Cave Creek, which leaves Main Post on the northwestern boundary. A small portion of the area along the northern installation boundary and north of the Cave Creek watershed, drains into the Tallasseehatchee Creek watershed (including its southern tributaries, Little Tallasseehatchee, Weaver's and Dothard creeks). Dothard Creek has headwaters originating both on and off the installation and drains the area around Reilly Lake (Figure 6-1). These creek systems originate on the western side of the Choccolocco Mountains and flow west through Main Post. They are fed by springs originating from underlying limestone strata.

Choccolocco Creek occurs to the east of the Choccolocco Mountains, passing along the eastern and southern portions of FMC. The Choccolocco Creek drainage includes four small tributaries originating near the southern boundary (Faison, Davis-Silver, Royal-Davis, and Twin Mountains creeks).

Surface water features other than streams and creeks within Main Post boundaries include Lake Yahou [13.5 acres (5.4 hectares)], Reilly Lake [8.5 acres (3.4 hectares)], Cappington Ridge [0.3 acres (0.12 hectares)], and Duck Pond [0.5 acre (0.2 hectares)]. Surface drainage is collected in small, independent networks that drain areas varying from 20 to 60 acres (8 to 24 hectares; Science Applications International Corporation 1993).

Freshwater springs occur throughout Calhoun County, often appearing along the trace of thrust faults (Moser and DeJarnette 1992). On FMC, the springs appear as seeps and include the Marcheta Orchid Seep, Bains Gap Seep, Cave Creek Seep, and Marcheta Hill Crow Poison Seep. Unmapped springs and seeps potentially occur over much of the FMC area. Karst features, including sinkholes, have been identified in the area of FMC (U.S. Army Corps

of Engineers 1992). Weaver Cave interrupts the drainage of Cave Creek from FMC prior to it reemergence approximately 1300 feet (390 meters) downstream (Figure 6-1).

6.1.2 Surface Water Quality

Water quality on FMC has been characterized as predominantly good and provides for a suitable gray bat prey base as evident from the presence of this species. If water quality declines, aquatic-based prey could decrease, resulting in less suitable foraging habitat.

The State of Alabama has classified streams in this area as suitable for fish and wildlife use. Water quality surveys over the past 20 years have shown good water quality at most locations surveyed.

A number of studies provide baseline data on water chemistry and quality at FMC. A survey conducted by the U.S. Army Environmental Hygiene Agency (1976) found the streams of FMC to be of good chemical quality and in good biological condition. In this study, profiles at FMC sampling stations, had average water temperatures of 17.8°C, dissolved oxygen levels at 9.3 ppm, and average pH values of 7.5.

Environmental Science and Engineering studied surface water quality at four sites on the Installation in 1980. Data indicated the water had no unusual concentrations of organic or inorganic constituents. Dissolved oxygen was at or near saturation (range 7.8 to 12.1 mg/l), and specific conductance was very low for all samples (range 18 to 21 µmhos/cm). Zinc and hydrocarbon concentrations were also low (range of <0.01 to 0.02 mg/l and 0.27 to 1.0 mg/l, respectively). Two sampling sites were located on Cane Creek, which drains FMC, including the golf course, the wastewater treatment plant, and urbanized areas surrounding Anniston, Jacksonville, and Pelham Range. The creek was found to be highly mineralized and the specific conductivity was elevated (range of 215 to 270 µmhos/cm). Dissolved oxygen varied from 7.8 to 12.2 mg/l, indicating sufficient degradation of organic compounds. Dissolved zinc and hydrocarbon concentration were low (Ogden Environmental and Energy Services 1992).

Biotic surveys of Cane Creek were conducted in the fall of 1992 and again in the winter of 1993, at six sites along Cane Creek from the headwaters to the confluence with the Coosa River (Weninegar 1993). Surface water quality data was collected concomitant with the

biological surveys. Parameters examined included ammonia, carbon dioxide, chloride, dissolved oxygen, hardness, nitrites, pH, temperature, and turbidity. Ammonia concentrations ranged from 0.0 to 0.1 mg/l. Carbon dioxide levels varied from a low of 5 mg/l to a high of 20 mg/l. Chloride concentrations varied from lows of 15 mg/l at several stations to a high of 30 mg/l at an effluent dumpsite several meters below the Highway 21 bridge. Dissolved oxygen values ranged from a low of 6 mg/l to highs of 11.0 mg/l at the two stations closest to the headwaters. Nitrite values were low and ranged from 0.0 mg/l at several locations to a high of 1.2 mg/l. Values for pH were usually alkaline (7.4 to 8.2 pH units) at all stations except the one closest to the headwaters where the waters were slightly acidic (6.3 to 6.5 pH units). Temperatures ranged from 11.0° to 21.1°C. Only one station, that was closest to the mouth, had any measurable turbidity with a concentration of 1.0 NTU (Weninegar 1993).

Surface water quality data was collected as part of a multifaceted study done to characterize the geochemical signature of mineralized and highly altered rocks at FMC (Tucker et al. 1995). Results show the streams sampled to generally be of good water quality. Several of the springs sampled had slightly alkaline, mineralized water. One spring, on Range 21 had slightly elevated lead and copper values averaging about 16 and 6.1 parts per billion (ppb), respectively (Tucker et al. 1995). The study also stated that high levels of heavy metals could be a natural result of mineralization of the rocks and soils of the area. The study concluded that since springs and seeps are particularly influenced by the chemical composition of associated rocks and soils, high lead values at some sites could be the result of these nonanthropogenic processes (Tucker et al. 1995).

6.1.3 Geologic Structure

Fort McClellan lies almost entirely in the Valley and Ridge physiographic province of the Appalachian Highlands, where southeastward dipping thrust faults with associated minor folding are the predominate structural features. Consolidated rocks ranging in age from Precambrian to Pennsylvanian have sharply folded into northeastward-trending synclines and anticlines complicated by thrust faults that have a general northeastward-trending strike and southeasterly dip. These thrust faults are the predominant structural features of the Calhoun County area. The extreme eastern portion of FMC lies within the Piedmont physiographic province.

The Jacksonville Fault is a major thrust fault within the fold and thrust belt of the Appalachian

Highlands in Alabama. This fault is the most significant structural geological feature due to its role in determining the stratigraphic relationships in the area and for its contribution to regional water supplies. Cambrian and Ordovician rocks associated with the fault and adjacent structures include the Chilhowee Group; Shady Dolomite; Rome Formation; Conasauga Formation; Knox Group, undifferentiated; Newala and Little Oak Limestones, undifferentiated; and Athens Shale.

Changes in the structural style of the fault along the strike suggest a complex history of deformation. Stratigraphic separation on the fault decreases toward Bynum, Alabama, where the fault dies out on the foreland side of an apparently imbricated, southwestern plunging anticlinal fold making Coldwater Mountain and the southwestern end of Choccolocco Mountain. Hydrologic conditions in areas adjacent to the fault are controlled by both stratigraphy and structure. The permeability of rock units in the area is the result of secondary openings. The rock types with the greatest permeability are the highly fractured quartzite beds of the Weisner Formation and the fractured dolomite beds within the solution cavities of the Knox Group. All the other rock units have very low primary and secondary porosity and permeability. The greatest porosity and permeability occurs in a wide zone of fracturing where quartzite and dolomite are juxtaposed along the Jacksonville Fault. The wide fracture zone is most prominent southwest of FMC on the northwestern sides of the Choccolocco and Coldwater Mountains.

The Weisner Formation, characteristic of FMC, occurs to 2500-foot (750-meter) depths and consists of buff shale, siltstone, sandstone, quartzite, and conglomerate. Outcrops form hills or mountains of great relief. Quartzite and conglomerate are most conspicuous where they form crests or ledges along the southeastern side of Choccolocco Mountain. This mountain runs north to south, forming the eastern boundary of FMC. Locally, the Weisner Formation contains deposits of limonite, manganese, bauxite, and hematite.

6.2 LAND COVER

Main Post land cover consists of three general types associated with the level of existing disturbance and land management programs in place: improved grounds; semi-improved grounds; and unimproved grounds. Improved and semi-improved grounds have limited ecological resources value because of the high level of habitat disturbance and human activity. Unimproved grounds offer much higher ecological resource value.

Topography ranges from relatively level areas through much of the developed part of Main Post to hills and mountainous ridges. The oak-pine forest region dominates the general area containing Main Post. The area is transitional between north central deciduous forests and southern pine forests.

Most of the forested areas of Main Post have been cut in the past, leaving only very small stands of original timber in more rugged areas of the Choccolocco Mountains. The Alabama Natural Heritage Program (1994) conservatively identified eight general upland ecosystem community types occuring on FMC. Upland Ecological Plant Community Types for FMC include: Typic Mesophytic Forest; Piedmont Monadnock Forest; Interior Calcareous Oak-Hickory Forest; Basic Oak-Hickory Forest; Loblolly Pine-Shortleaf Pine-Oak Forest; Xeric Virginia Pine Ridge Forest; Dry Virginia Pine-Oak Forest; and Mountain Longleaf Pine Forest.

Forest types on Main Post vary according to local topography, soils, and ecological successional stage. An active tree planting program has been in operation for nearly 40 years. The forestry program at FMC has modified the commercial forest land cover through harvesting, thinning, strip disking, applying fertilizer and lime, prescribed burning, and planting activities.

The forest block on Main Post is ecologically important due to its large size and unfragmented condition, diversity and uniqueness of species and communities, rare species of animals and plants present, and general lack of exotics and disturbance. Decreased logging frequencies and periodic range fires that have allowed the plant communities to be maintained under natural conditions add to the ecological importance of this complex.

Virginia pine *(Pinus virginiana)* is found along ridges, and longleaf pine *(Pinus palustris)* occurs along the lower slopes of hills and ridges. Short-leaf pine *(Pinus echinata)* is most commonly encountered on more infertile soils.

Upland hardwoods are dominated by oak and hickory species. Mountainous hardwoods are dominated by chestnut oak *(Quercus prinus)*, scarlet oak *(Q. coccinea)* and pignut hickory *(Carya glabra)*. Hardwoods on upland slopes and hills are dominated by southern red oak *(Quercus falcata)*, post oak *(Q. stellata)*, chestnut oak, black oak *(Q. velutina)*, blackjack oak *(Q. marilandica)*, pignut hickory, and dogwood *(Cornus florida)*. American beech *(Fagus grandifolia)*,

tuliptree *(Liriodendron tulipifera)*, white ash *(Fraxinus americana)*, maple *(Acer* spp.*)*, white *(Q. alba)*, American holly *(Ilex opaca)*, and redbud *(Cercis canadensis)* are present in ravi
Soil type and fire history are major factors in determining the composition of forests on Main Post.

Open areas also constitute a component of land cover. Open areas include upland oldfields, shrubland, and mowed fields. In each case, ongoing activities on Main Post either continually or occasionally manage the land in early ecological successional conditions. Generally open areas are used for training programs and as weapon firing impact areas.

The primary creek system on Main Post is Cane Creek. Springs and seeps occur throughout the area. There are also about 22 acres (8.9 hectares) of impoundments on the Main Post.

Relatively little is documented regarding vegetation communities associated with the creeks, springs, and seeps on Main Post. Ongoing research is underway to accurately map and characterize vegetation communities along springs and seeps in this area.

6.3 GRAY BAT HABITAT

6.3.1 Roosting

Gray bats typically roost in caves year round, though different caves are used at different times of the year. There are no known caves on Main Post. No habitat on or near Main Post has been designated as critical habitat by the Secretary of the Interior. In general, geomorphology of Main Post is not conducive to cave formation. Searches for karst features on Main Post during 1996 revealed no caves (3D/I 1996a).

Gray bats may travel as far as 22 miles (35 kilometers) from a roost to forage each night. Therefore, roosts used by gray bats foraging on Main Post are most likely within 22 miles of capture locations. Thirty-five caves are known within 22 miles of the gray bat capture sites on Main Post (Table 5-1; Figure 5-1). Eighteen of these caves are within Calhoun County. It is likely that other caves exist within 22 miles of Main Post.

Historical records suggest some caves near Main Post such as Weaver Cave and Lady Cave were previously occupied by large numbers of bats (McCalley 1897). Four caves near Installation boundaries were investigated for presence or sign of gray bats in February 19

(3D/I 1996b). Baswell Cave, Weaver Cave, Little Weaver Cave, and an unnamed cave approximately 164 feet (50 meters) south of Little Weaver Cave were entered and searched for gray bats or guano accumulation. No gray bats were found during the winter searches; however, gray bats were found roosting in Weaver Cave an Lady Cave on 29 July 1997 (3D/I 1997).

Gray bats occasionally roost in man-made structures (Barker 1986, Grigsby 1995, Hays and Bingman 1964). A colony of six adult male gray bats were found using the Highway 21 bridge over Cane Creek and a single gray bat was found using the Highway 21 bridge over Cave Creek (3D/I 1997). Both bridges are located just outside the western boundary of Main Post.

6.3.2 Foraging

Although no critical habitat for gray bats exists on or near Main Post, removal or degradation of suitable habitat in areas known to be used by gray bats may constitute take, which is prohibited by the ESA. 3D/International (1996a) characterized suitability of habitat on Main Post and Pelham Range to support foraging gray bats. Six streams and two lakes on Main Post were characterized as providing moderate quality habitat for gray bats (Figure 5-2). All other streams and ponds on Main Post provide low quality habitat due to their small size and lack of flight space. Of the six moderate quality streams, only Cane Creek is known to be used by gray bats (3D/I 1996b).

6.4 CURRENT MANAGEMENT GUIDELINES

The Draft Endangered Species Management Plan (DESMP) for FMC addresses the current status and management of endangered species found on the Installation (Garland 1996). The DESMP provides for protection of gray bat foraging habitat through protection of riparian forest. Forest management guidelines in the DESMP state only floodplain terraces that contain a major pine component undergo timber harvesting. The DESMP states management will focus on maintaining existing forested corridors along Cane Creek. These guidelines are to be revised and updated to include information attained from studies of gray bats completed after the DESMP was written.

After completion of the 1996 mist net surveys for gray bats, the following guidelines were proposed by the Army to aid in protecting foraging gray bats at FMC (3D/I 1996b):

- Fort McClellan will initiate ESA Section 7 consultation with the FWS for actions requiring tree clearing within 50 feet (15.2 meters) of streams designated as high or moderate quality gray bat foraging habitat, and for actions outside the stream border suspected of affecting gray bats.

- Conclusions of gray bat studies completed at Fort McClellan (3D/Environmental 1996a, 1996b) indicate activities along streams with low quality habitat will not affect gray bats. The FWS will not be consulted on tree clearing activities along streams designated as low quality foraging habitat for gray bats.

These guidelines have been reviewed and approved by the FWS (Appendix A), and will be incorporated in the Final ESMP.

Section 7
Effects Analysis/Discussion

Section 7:

Effects Analysis/Discussion

7.1 EFFECT OF DISPOSAL AND REUSE ACTIVITIES TO GRAY BATS

Because specific actions that will occur during the caretaker period, during disposal, and following encumbered disposal are not fully characterized, this analysis reflects avoidance of effects through application of PDFs (Section 2.6). These PDFs are an integral part of the proposed action.

Below, we assess the likelihood of direct, indirect, and cumulative effects to gray bats. We focus upon effects to summer and winter roosting habitat and summer foraging habitat, and exposure to unsafe concentrations of environmental contaminants.

7.1.1 Direct Effects

7.1.1.1 Roost Habitat

In general, activities that affect gray bats at maternity caves or hibernacula have potential to be most harmful to the species because large numbers of gray bats congregate at such roost sites. Four roost sites have been identified near FMC (3D/I 1997): Weaver Cave, Lady Cave, the Highway 21 bridge over Cane Creek, and the Highway 21 bridge over Cave Creek (Figure 5-4). These roosts support bachelor and/or transient roost sites located outside Installation boundaries. Because there are no known roosts within Installation boundaries, no caves exist

on Main Post, and no critical habitat exists within the action area, it is unlikely the proposed action will affect gray bats through modification of winter or summer roost habitat (caves and similar structures), or disturbance of roosting bats.

Caretaker and environmental restoration activities will not result in modification or disturbance to known gray bat roosts. All caretaker and restoration activities will be conducted within the boundaries of Main Post. All known gray bat roosts within the action area are outside of Main Post boundaries.

Potential exists for gray bats to use man-made structures within Main Post boundaries. During caretaker and environmental restoration activities, the Army will avoid effects to gray bats potentially roosting in man made structures by investigating presence of the bats prior to disturbance or removal of structures such as buildings, bridges, or cisterns. Project Design Feature No. 1 ensures the Army will conduct such investigations and avoid effects to gray bats roosting in man made structures within the action area.

Reuse of Main Post will not result in disturbance or modification of Weaver Cave or Lady Cave due to their distance from Main Post. However, road construction or improvements necessary for accommodating reuse of Main Post may require disturbance to bridges, including the two bridges outside the installation known to house gray bats. Resurfacing of the bridges, or other work of the type, if conducted when gray bats are present, may disturb the bats and cause at least temporary abandonment of the roost. Removal of bridges used by gray bats would destroy the roost. Project Design Feature No. 7 advises future property owners that gray bats are known to roost under bridges near Main Post and that alteration of man made structures should be completed only after investigations for gray bat presence. Direct effects to gray bat roosts from reuse are unlikely if protective measures in PDF No. 7 are employed by future landowners.

7.1.1.2 Foraging Habitat

Fort McClellan currently implements a management strategy developed in consultation with the FWS to avoid effects to high or moderate quality gray bat foraging habitat (Appendix A). Main Post contains no high quality foraging habitat, but does have moderate quality habitat. Project Design Feature No. 2 reflects the Army's commitment to continue the existing approach to protecting foraging habitat during caretaker operations and environmental restoration activities.

The Army will avoid effects to foraging habitat by protecting forest within 50 feet of streams providing moderate quality foraging habitat (Figure 5-2). Prior to disposal, the Army will consult with the FWS if construction, remediation, or other ground-disturbing activities are necessary within this 50-foot buffer zone.

Project Design Feature No. 7 advises future property owners that suitable foraging habitat for gray bats is present on their property and removal of trees within 50 feet of streams may constitute take of gray bats. Direct effects to gray bat foraging habitat from reuse are unlikely if protective measures in PDF No. 7 are employed by future landowners.

7.1.1.3 Exposure to Environmental Contaminants

In general, the potential for gray bats to be exposed to environmental contaminants used by the Army on FMC will be reduced as activities on Main Post move into caretaker status, environmental restoration is completed, and land is transferred to non-Army ownership.

The potential for Army environmental restoration activities to affect gray bats will be determined through site-specific assessments during the RI/FS phase. Environmental restoration procedures defined in Army Regulation 200-1 commit the Army to site-specific analyses and Section 7 consultation if assessments completed at the time of remediation indicate a likelihood of exposures exceeding safe levels (PDF No. 6). Screening level risk assessments will be completed to determine the likelihood of unsafe exposure. Potential exposure routes to be considered will include ingestion of contaminated prey and inhalation or dermal absorption of vapors or contaminated dust.

Pesticide use on Main Post will decrease as Army presence is reduced during caretaker status. However, the FMC golf course will maintain its current level of pesticide use until disposal. Pesticides use on the golf course was analyzed to determine potential adverse effects to gray bats. Guidelines for proper use of each pesticide used on the golf course were developed from product labels, material safety data sheets, and gray bat exposure risk factors (PDF No. 3). Pesticides are applied during daylight hours using broadcast spreaders, hand sprayers, and boom sprayers. Application method and timing eliminate potential inhalation and dermal absorption effects to foraging and roosting gray bats. Applying pesticides listed in Appendix B in accordance with protective measures in PDF No. 3 will prevent potential effects to gray bats due to ingestion of contaminated aquatic-based prey. Additionally, protective measures in

PDF No. 3 will avoid changes in prey abundance or diversity due to pesticide use on the golf course.

The future presence of environmental contaminants on Main Post lands and the potential that gray bats will be affected by exposure to unsafe concentrations, is difficult to predict. Reuse of Main Post lands will include a variety of industrial, commercial, residential, and recreational uses. Following transfer of property deeds, environmental protection and compliance with state and federal regulations will be the responsibility of the new landowners.

When portions of Main Post become the property of non-Army entities, pesticide use may be common and widespread. Use of commercially available pesticides on lands within Main Post may change following disposal. Regardless of future ownership, it is reasonable to expect relatively extensive use of pesticides on the golf course. Project Design Feature No. 8 notifies the future golf course owner of measures necessary to protect gray bats. Adverse effects to gray bats from future pesticide use on the golf course are unlikely if protective measures in PDF No. 8 are employed by the future owner.

7.1.2 Indirect Effects

Gray bats may be indirectly affected by modification of aquatic habitat supporting insects upon which gray bats feed. Habitat for gray bat prey may be adversely affected by environmental contaminants (discussed above), degradation of water quality, and adverse changes in stream channel structure.

Surface water quality will be maintained by the Army at its current status through application of PDF Nos. 4, 5, and 6. Potential effects resulting from contaminant release during environmental restoration will be evaluated during investigations prior to restoration activities (PDF No. 4). Compliance with NPDES permits and existing pollution prevention guidelines will continue until disposal (PDF No. 5). Erosion control measures described in PDF No. 6 will control and reduce transfer of soil into streams during ground disturbing activities.

The morphology of stream channels may be adversely modified through actions in and near the stream. Changes in morphology commonly include or lead to stream incision or stream channel widening, sedimentation, loss of channel stability, loss of flood plain function, and an increase in stream temperature. Adverse changes are commonly initiated by seemingly

benign activities, including misplacement of culverts in streams, poorly designed bridge crossings, unbridged road crossings, and individually minor but cumulatively damaging changes in watersheds. The Army proposes no activities requiring stream channel alterations.

Project Design Feature No. 7 advises future property owners that suitable foraging habitat for gray bats is present on their property and changes to stream morphology or water quality may result in adverse effects to gray bats. Indirect effects to gray bats from reuse are unlikely if protective measures in PDF No. 7 are imployed by future landowners.

7.1.3 Cumulative Effects

Effects of the proposed action are described in this BA. Because the proposed action includes future "state and non-federal actions," the distinction between the direct and indirect effects analyzed above, and cumulative effects as defined by the ESA (see 50 CFR Ch. IV Part 402, Subpart A, Section 402.02) is less apparent than in a BA addressing site-specific actions.

Because the proposed action, including reasonably foreseeable future state and private actions will not affect gray bats, the proposed action will not contribute to cumulative effects of activities in the action area; no cumulative effects are anticipated. Federal actions not addressed in this analysis require action-specific assessment for ESA compliance.

7.2 STATEMENT OF FINDING

Disposal and reuse of Ft. McClellan is not likely to adversely affect gray bats in the action area.

Section 8
Literature Cited

Section 8:

Literature Cited

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Appendix A
Correspondence with the U.S. Fish and Wildlife Service

Appendix A:

Correspondence with the U.S. Fish and Wildlife Service

United States Department of the Interior

FISH AND WILDLIFE SERVICE
2001-A Highway 98
P. O. Drawer 1190
Daphne, Alabama 36526

IN REPLY REFER TO

July 25, 1996

Mr. Robert B. Bax
Vice President, Harland Bartholomew and Associates, Inc.
400 Woods Mill Road South
Suite 330
Chesterfield, MO 63017

Dear Mr. Bax:

This replies to your July 19, 1996 letter to Ms. Noreen K. Clough, Regional Director, U. S. Fish and Wildlife Service (Service) concerning a notification of intent to prepare an Environmental Impact Statement (EIS) for Fort McClellan, Alabama. This will confirm our receipt of your letter and to notify you that the Daphne Field Office at the letterhead address will serve as lead office for the Service on this issue. I plan to attend the prescoping meeting you have scheduled for August 6, at Fort McClellan.

You asked for a preliminary identification of key issues that should be considered in the EIS. At this time, we have identified on a preliminary basis two general issues, with many potential associated possible issues.

One major issue is the potential impact of alternatives on species listed by the Service as endangered or threatened. Information is already in the hands of the U. S. Army (Army) regarding these species and we understand that the Army is supporting information gathering on some species. The EIS should examine both impacts to listed species as a result of the Army possibly releasing this land as well as any needs for listed species recovery that might be forgone as a result of an ownership change. Likely direct and indirect impacts, including both on base and off base, should be considered.

The second major issue is the potential loss of the unique long leaf pine ecosystem found on large parts of the Main Post tract of land. This tract has been described as the best remaining example of the montane long leaf pine ecosystem in the world, thanks to the periodic fires that have run through the area as an indirect effect of military activities. Careful attention should be devoted in the EIS process to assembling information and expertise so that the value of this ecosystem and its needs are fully factored into the decision process. One important component from the Service's viewpoint is the value of the area to neotropical migratory birds and other avifauna that use the area. The Service believes it important that these natural values be sustained into the future, regardless of land ownership.

Corollary to these issues is the need to understand the likely environmental impact of any development are of the Main Post tract. The presence of what is thought to be a vast amount of unexploded ordnance in the undeveloped part of this tract presents a major question in terms of analyzing environmental impacts associated with development scenarios. If development of the currently forested lands is considered, then a detailed evaluation of the impact resulting from the associated ordnance removal would be an absolute necessity in order to understand the offsite impacts, particularly to listed aquatic mollusks and fish that are found in drainages around Fort McClellan. Since extensive earth moving would likely be necessary with this option, the effects to terrestrial wildlife could be severe.

We emphasize that this information is very preliminary and our position may change as new information is received. If you have any further questions, please contact me at (334) 441-5181.

Sincerely,

Larry E. Goldman
Field Supervisor

United States Department of the Interior

FISH AND WILDLIFE SERVICE
2001-A Highway 98
P. O. Drawer 1190
Daphne, Alabama 36526

IN REPLY REFER TO

February 6, 1997

Mr. Bill Garland, Biologist
Office of the Directorate of the Environment
Fort McClellan
Fort McClellan, Alabama 36205-5000

Dear Mr. Garland:

This concerns the document entitled *Investigations for the Presence of Gray Bats (*Myotis grisescens*) at Fort McClellan, Alabama* dated November 25, 1996 conducted by 3D/Environmental (3D/E) and a meeting at this office involving yourself, representatives of 3D/E and Sharon Delchamps of my staff on January 21, 1997.

Based on the study results and meeting discussions, we have the following comments and recommendations:

1. We concur with page 25 of the report which states that Endangered Species Act Section 7 consultation between Fort McClellan and this office will be conducted for actions requiring tree clearing within 50 feet of streams designated as high or moderate quality gray bat foraging habitat and for actions outside the stream border suspected of affecting gray bats. For low quality gray bat foraging habitat, Section 7 will not be conducted.

2. As discussed in the meeting, we recommend that a radiotagging study be conducted for the gray bat on Main Post, particularly the golf course, to further aid in delineating foraging and roosting areas. We understand this study will take place during the summer of 1997. This will be the last effort to quantify this species and habitat utilization on Fort McClellan. No further gray bat studies on Pelham Range will be required.

3. The results of the study entitled *Environmental Fate of Fog Oil at Fort McClellan* conducted by 3D/E dated August 6, 1996 show that the components in the fog oil to be used on Fort McClellan are neither persistent in soils and water nor bioaccumulative in receptor organisms. Therefore, Section 7 consultation will not be required for fog oil exercises conducted at Fort McClellan. However, we recommend notifying our office immediately should the fog oil components or training exercises show adverse effects to this species or its habitat.

Should you require further information, please contact Ms. Delchamps at 334/441-5181 ext. 31.

Sincerely,

Larry E. Goldman
Field Supervisor

DEPARTMENT OF THE ARMY
U.S. ARMY CHEMICAL AND MILITARY POLICE CENTERS & FORT McCLELLAN
FORT McCLELLAN, ALABAMA 36205-5000

REPLY TO
ATTENTION OF

May 1, 1997

Directorate of Environment

Mr. Larry E. Goldman
Field Supervisor
U.S. Fish and Wildlife Service
P.O. Drawer 1190
Daphne, AL 36526

Dear Mr. Goldman:

Fort McClellan was recommended for closure by the Defense Base Closure and Realignment Commission during the summer of 1995. These recommendations became law under signature of the President on September 28, 1995. Approximately 18,500 acres on Main Post have been declared surplus property available for disposal by the Army and for reuse by others. The Army will retain all of Pelham Range (22,245 acres) and portions of the Main Post cantonment area (427 acres) for use by the Army Reserve/National Guard.

An Environmental Impact Statement (EIS) is currently in preparation to analyze the environmental effects of disposal and reuse alternatives for the surplus property. The Army's proposed action is disposal while reuse is a secondary action of others (non-Army). Reuse planning is the responsibility of the Fort McClellan Reuse and Redevelopment Authority of Alabama which is a locally chartered entity. A public scoping meeting was held on September 25, 1996, to obtain input from review agencies, interested groups and concerned individuals. U.S. Fish and Wildlife Service (USFWS) comments regarding this scoping meeting were provided in a letter to Mr. Robert Bax, dated July 25, 1996.

Fort McClellan would like to open informal discussions under Section 7 of the Endangered Species Act (ESA). While the Army intends to prepare a Biological Assessment (BA) to include listed species, early discussions will facilitate and ensure that all concerns are included in the consultation process. The attached Description of Proposed Action and Alternatives (DOPAA) provides a preliminary overview of the Army's proposed action of disposal and possible reuse alternatives. Irrespective of the reuse alternative, we believe the real key and focus of consultations should be the disposal action and the types of protection measures (deed covenants) to be placed on the specific parcels of property for protection of threatened and endangered species or their

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habitat. In addition to the Army's proposed action of disposal, there is also the Army's interim period between closure and disposal. During this period there will be caretaker, environmental investigations and remediation, unexploded ordnance removal, and other actions to prepare property for transfer that may impact on threatened and endangered species. The impacts of these actions should also be part of our consultations.

Fort McClellan has completed a Draft Endangered Species Management Plan (ESMP) that describes federally endangered/threatened species along with unique biological communities on the installation. The USFWS has reviewed this plan and provided concurrence within a letter dated April 18, 1996. This document will provide biological information for initiating informal consultation under Section 7 of the ESA. Some of the issues that we believe should be included in preliminary discussions deal with impacts to the following species during the interim period and protection measures to be established for disposal:

1. Gray Bat (*Myotis grisescens*) - Documented to utilize lower reaches of Cane Creek for foraging, particularly on the golf course. Mist netting and habitat suitability studies have been completed throughout the installation. A single male was captured at dusk on the golf course, which indicates a roosting cave in the local vicinity.

2. Red-cockaded Woodpecker (*Picoides borealis*) - This woodpecker has not been reported on Fort McClellan for several decades. A Piedmont Recovery Population is located adjacent to the installation within the Talladega National Forest. Active clusters are documented within 5-7 miles and potential habitat exists within Main Post. As specified within the ESMP, surveys are to be conducted on five year intervals (1997) to identify pioneering birds and possible new clusters.

3. White Fringeless Orchid (*Platanthera integrilabia*) - A species of concern that is undergoing status review by the USFWS. Indications from the USFWS are that this species could be listed in the foreseeable future. The plant has been located at two separate sites and studies are in place to locate possible new populations this summer.

4. Hawthorn (*Crataegus triflora*) - This plant occurs on limestone outcroppings at two locations on Main Post. Currently, this species is undergoing a status review by USFWS. Preliminary findings indicate this plant is more uncommon than previously believed. Depending on the outcome of the status review and recommendations by the USFWS, this species could be listed in the foreseeable future.

Fort McClellan looks forward to working with your office to assure the Army fulfills their obligations under Section 7 of the ESA. By initiating discussions early in the closure and disposal process, the Army can insure that all concerns involving endangered and threatened species are considered in assessing and selecting appropriate actions during the interim period and appropriate protection measures for disposal and reuse alternatives. If you should have any questions or require additional information, please contact the undersigned or Mr. Luke Owen at (205) 848-3539/5663.

Sincerely,

Ronald M. Levy
BRAC Environmental Coordinator

Enclosure

Copies Furnished:

U.S. Army Training and Doctrine Command, ATTN: Mr. David Taylor
U.S. Army Corps of Engineers, ATTN: Mr. Curtis Flakes

United States Department of the Interior

FISH AND WILDLIFE SERVICE
2001-A Highway 98
P. O. Drawer 1190
Daphne, Alabama 36526

IN REPLY REFER TO

May 27, 1997

Commander
U.S. Army Chemical and Military Police Centers & Fort McClellan
ATTN: ATZN-EM (Ron Levy)
Fort McClellan, AL 36205-5000

Dear Mr. Levy:

Thank you for the letter, dated May 1, 1997, concerning the disposal and possible reuse of Fort McClellan. The Service would welcome the opportunity to open informal discussions under Section 7 of the Endangered Species Act. Fort McClellan represents an important landscape scale remnant of the mountain longleaf pine ecosystem. Main Post on Fort McClellan has been described as the finest remaining example of this very rare cover type. We commend the Army for including both federally listed species, as well as, those species undergoing status reviews in these discussions.

Please contact Mr. Bill Garland of my office, (334) 441-5181 ext. 33, to coordinate the meeting time and place. We look forward to participating in these discussions and formulating a plan that insures the protection of endangered/threatened species, and the future of lands they inhabit.

Sincerely,

Larry E. Goldman
Field Supervisor

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

REPLY TO
ATTENTION OF:

July 24, 1997

Environment and Resources Branch
Planning and Environmental Division

Mr. Larry Goldman
U.S. Fish and Wildlife Service
Post Office Drawer 1190
Daphne, Alabama 36526

Dear Mr. Goldman:

Please find enclosed the minutes from our July 1, 1997, meeting in the Mobile District. The meeting involved discussions of procedures to comply with the Endangered Species Act as related to the Fort McClellan Base Realignment and Closure action and the Disposal and Reuse Environmental Impact Statement.

Thank you and Mr. Bill Garland for contributing to a positive and successful meeting. We look forward to continuing to work with you to address the fish and wildlife concerns at Fort McClellan.

Sincerely,

Curtis M. Flakes
Chief, Environment and
Resources Branch

Enclosure

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Contact Memorandum

EIS for Disposal and Reuse of Fort McClellan, Alabama

Memo Number: 31
Person Contacted: See List Below
Organization: US Fish & Wildlife Service
Location: Mobile, Alabama
Date: July 1, 1997
Subject: T&E Species Coordination

A meeting was held at the US Army Corps of Engineers, Mobile District Offices on July 1, 1997 to discuss procedures to be used to comply with the Endangered Species Act as part of the EIS for the Disposal and Reuse of Fort McClellan (FMC), Alabama. Meeting participants included:

Name	Organization	Phone	Fax
B. David Taylor	HQ US Army Training & Doctrine Command, BRAC Office Fort Monroe, VA	757-727-4350	757-727-4374
Larry E. Goldman	US Fish & Wildlife Service Daphne, AL	334-441-5181 Ext. 30	334-441-6222
Curtis M. Flakes	US Army COE, Mobile	334-690-2693	334-690-2727
Brian Peck	US Army COE, Mobile	334-690-2750	334-694-3815
Bill Garland	US Fish & Wildlife Service Daphne, AL	334-441-5181	334-441-6222
John Esson	TRADOC Env. Office, Ft. Monroe	757-727-3335	757-727-2362
Karen Tyrell	3D/International	423-922-4306	423-922-8495
Ron Levy	BRAC Env. Coordinator Fort McClellan, AL	205-848-3539	205-848-5517
Russ Romme	3D/International	513-922-8199	513-922-9150
Greg Knauer	Parsons Engineering Science, Inc.	314-576-7330	314-576-2702
Bob Bax	Parsons Harland Bartholomew & Associates, Inc.	314-434-2900	314-576-2702

Introductions & Meeting Objective. All parties introduced themselves. Mr. Flakes (COE Project Manager for the Fort McClellan Disposal and Reuse EIS) provided introductory comments. He stressed the desire of the Mobile Corps to enter into a "partnering" relationship with the USFWS for the successful completion of an EIS for the Disposal and Reuse of Fort McClellan and related Endangered Species Act compliance. He confirmed that the primary goal of this coordination meeting was to discuss and agree on an approach to compliance that

was acceptable to both parties.

Army's Position on BRAC Threatened & Endangered (T&E) Species. Mr. Taylor stressed the need to comply with the President's "5-Point Plan" which is designed to emphasize prompt disposal and reuse of DOD property to the extent practicable within the confines of existing statutes and restoration procedures. He noted that the Army's direct action is to dispose of surplus property at FMC. Generally, Army policy is to support the Local Reuse Authorities reuse plan where it does not conflict with other federal statue or regulations. The desire is to transfer property with as few encumbrances as possible and, if encumbrances are required, that they have a foundation in federal regulatory requirements. After closure, but prior to disposal, the property will be maintained in "caretaker status", with a significantly reduced level of maintenance. Remediation and unexploded ordnance (UXO) removal of various parcels of surplus property will be completed consistent with the local communities proposed reuse, and within the limits and provisions established by law. After transfer of the property toa new owner(s), the Army's goal is to minimize their involvement. Therefore, the Army intends to transfer land management and development responsibilities to future owners to the maximum extent possible. Mr. Taylor pointed out that the NEPA process is important tool for informing the FMRRA and the public of potential impacts of their reuse plans.

Mr. Taylor also noted that the Army Reserve will maintain control and management responsibility of a substantial portion of the current FMC lands including the entire Pelham Range area. He noted that the Federal property screening process had been completed, and that no Federal agency expressed a formal interest in any of the surplus property at FMC. The Fort McClellan Reuse and Redevelopment Authority (FMRRA) is continuing to consider various requests from State and local entities as part of their ongoing reuse planning process. The Army anticipates that the FMRRA will request an "Economic Development Conveyance" of most or all of the surplus property for which there is no approved public benefit conveyance. Mr. Taylor closed by stressing that the Army will not have any direct control over the surplus property once it is disposed of. Therefore, it is critically important to identify constraints, or "encumbrances" that should be placed on the property as a condition of disposal as required to comply with applicable laws and regulations. Mr. Taylor also noted that the Army will not be in a position to enforce deed covenants and restrictions; rather, the regulatory agencies responsible for the enforcement of the stature or regulations which drive the restriction would be responsible.

Status of EIS. Mr. Bax provided an overview of the status of the EIS using the slides included as Attachment A to this memo. These comments addressed the EIS completion timeline, the structure of the alternatives analysis to be included in the EIS, the status of the FMRRA's reuse planning process, federally-listed T&E species of concern at FMC, and other species and resources of concern that could be impacted by the proposed Army disposal action, and reuse of the property by other (non-Army) parties.

It was noted that the environmental restoration process (including cleanup of unexploded ordnance, etc.) has the potential to have an adverse impact on numerous natural resource values at FMC. The environmental restoration process will continue well beyond the time allowed for the completion of the EIS and the T&E Biological Assessment; and that the restoration process has it's own provisions for full disclosure of proposed actions, alternatives

Contact Memorandum
EIS for Disposal and Reuse of Fort McClellan, Alabama

and environmental impacts to the public and regulatory agencies. This process will be fully documented in the EIS.

The alternative structure was described in detail, including provisions for a No Action Alternative which involves maintaining surplus lands in "caretaker" status after closure but prior to disposal. It was noted that caretaker status could have an impact on T&E species at FMC. For example, if cessation of military operations reduced the occurrence of fires on training lands, and if no controlled burns were conducted under caretaker status (over long periods of time) fire-maintained habitat that potentially supports T&E species could be degraded or lost.

The approach to property disposal was described including consideration of "encumbered" and "unencumbered" disposal alternatives. Several examples were provided to help explain this process. It was explained that reuse alternatives to be considered in the EIS were all based on the most current reuse plan developed by the FMRRA. Furthermore, reuse alternatives are based on general "intensity-based" levels of redevelopment rather than site-specific, detailed reuse plans. It was noted that this intensity approach is used by the Army due to the uncertainty of future reuse actions.

A copy of the Preliminary Draft Environmental Impact Statement (PDEIS) (June 1997) was provided to Mr. Goldman at the conclusion of this coordination meeting. It was explained that this is an internal working document that is currently being reviewed by various Army entities, and that information within the document should not be released to any other parties at this time. No formal review by the FWS is required or requested. However, it was noted that any comments or concerns that may be identified by the FWS on the PDEIS should be directed by Mr. Fiekes at the Mobile COE, and that any such comments would be fully considered as the Army proceeds with the preparation of the Draft EIS to be released to the public at a later date. In order to be considered by the Army review team, comments from the FWS should be provided no later than July 18, 1997. Comments received after that date will not be discussed by the total Army review team, but will still be considered and incorporated to the extent possible.

Mr. Bax noted that the PDEIS reuse alternatives were based on the latest plan provided by the FMRRA. Therefore, the plan focused on approximately 7,200 acres of land primarily within the existing cantonment area at FMC. Minimal definition of proposed reuse of approximately 10,000 acres of more remote training areas has been provided to date. It was agreed by all that the Army must inform the FMRRA that the EIS team needs additional details regarding the proposed reuse of the "natural" land areas at FMC. If this definition is not forthcoming in time to be incorporated in the DEIS, the EIS team will take the initiative to define the type and extent of land use activities to occur for these lands under the low, medium and high intensity reuse alternatives.

In order to allow for the concept currently being considered by the FWS (as summarized below), the Low Intensity Reuse Alternative would logically be defined as establishing a major part of these lands as a preserve area through a Public Benefit Conveyance (under direction of the state, a trust for public land, the Nature Conservancy, or some other entity). This alternative would result in very minimal human access and use, and would include provisions to continue land management procedures (such as prescribed burning) as required to protect and

enhance unique and sensitive resources. Under a Medium Intensity Alternative, the EIS would define a higher level of public access that could occur is the area is transferred to the FMRRA under an Economic Development Conveyance. This alternative would include provisions for access roads, trails and associated staging areas and support facilities consistent with an overall land use designation of "passive recreational use". Finally, under the High Intensity Reuse Alternative, the EIS may assume a higher level of passive recreation use, or may even consider use of area ridgetops for the development of low-density residential development (which has been considered by the FMRRA). This option would obviously increase the degree of associated passive recreation use of the remaining natural areas.

Status of T&E Studies at FMC. Mr. Levy provided an overview of the status of a number of biological studies that are ongoing at FMC to support the EIS process and associated T&E evaluations. A copy of the handout provided by Mr. Levy has been included as Attachment B to this memo. Studies described by Mr. Levy included: 1) Radio Telemetry Survey of Gray Bats; 2) Red-cockaded Woodpecker Survey on Main Post; 3) Reptile and Amphibian Survey of Fort McClellan; 4) Wetland Seep Survey; 5) Mollusk Survey of Aquatic Systems on Main Post and Pelham Range; 6) Willett Springs Ecological Surveys (Pelham Range); 7) Integrated Natural Resource Management Plan; 8) Longleaf Pine Studies.

USFWS Concerns with T&E Species at FMC. Mr. Goldman discussed the FWS's position regarding T&E species issues that must be considered as part of the EIS for the Disposal and Reuse of FMC. Stated that the FWS concurs with the Army's intent to prepare a Biological Assessment (BA) that will focus on the gray bat, and that consideration of this species will meet the Army's legal obligation under the provisions of the Endangered Species Act (ESA). Mr. Goldman stated that the FWS would like to see the Army include provisions as encumbrances, or at least as recommendations to future owners, to keep "options open" with regard to the status of the Red Cockaded Woodpecker (RCW) in the region. Mr. Bax commented that the EIS team welcomed comments from the FWS regarding future management recommendations that could be included in the EIS as a "recommended" course of action for future property owners, but that it was not likely that the Army could include these provisions as formal encumbrances to future property reuse.

Other USFWS Concerns. Mr. Goldman went on to explain that the FWS has scheduled a meeting for July 97 to discuss the White Fringeless Orchid, and steps that could be taken to avoid listing of this species. The population of these orchids at FMC is one of the top 2-3 known to occur, and past surveys have indicated that FMC property includes a considerable amount of habitat that could support this species. He also stressed that the EIS should make special note of the significance of the FMC ecosystem as a whole, and the adverse impacts associated with fragmentation of the resource on the total resource. Also, the EIS should identify what management procedures must be implemented in the future (after Army disposal) to maintain this resource (primarily prescribed burning program).

Mr. Goldman stated that the FWS has had numerous discussions with the local office of the Alabama Game & Fish Commission (AG&FC) regarding the concept of establishing a nature preserve to protect major portions of the FMC surplus property areas, and that the AG&FC has been very enthusiastic about this concept. (Note: the Alabama Forestry Commission had expressed interest in surplus property at FMC, but has recently declined further pursuit of these

Contact Memorandum

EIS for Disposal and Reuse of Fort McClellan, Alabama

lands)

The FWS has a written preliminary document (presented as an ecosystem preservation project) that describes this option. Mr. Goldman indicated that this was not the traditional type FWS refuge project but that the Service has adopted ecosystems in principle. Under this option, the Army could grant a Public Benefit Conveyance to the US Department of Interior, who could then lease the property to the Alabama Game & Fish Commission. This preliminary document is currently under review by the FWS Atlanta office and that the Regional director had not made a decision. He noted that the State of Alabama has lost a considerable part of their lands that are available to the public for hunting, and that a preserve at FMC could help offset these losses. The timing of a final decision by FWS on this issue is unknown at this time. Therefore, the EIS will need to proceed on the basis of best available information. Mr. Taylor indicated that he was confident that the Army would support such a proposal and he would begin to lay the foundation for Headquarters, Department of the Army support of such a project. He noted that support of such a concept from the FMRRA and inclusion in their reuse plan would also facilitate acceptance by the Army. Mr. Taylor noted that FMRRA has hired Jacksonville State University to conduct a study on a wildlife refugee concept.

Discussion of T&E Issues. A variety of issues were discussed at this point to ensure that all parties had a common understanding. It was agreed that the existing information on the environment at FMC, in association with additional information to be provided by ongoing studies referenced above should be adequate to support the EIS and specifically, compliance with the Endangered Species Act. It was agreed that the BA would only address the gray bat, and that other species of interest or concern would be addressed in the EIS. It was understood by all that the BA will focus primarily on property disposal, which is the action to be taken by the Army. Protection of listed species from various reuse activities that could occur will be discussed primarily as recommendations to be included in the EIS for consideration by future owners, and the requirement for any such future owners to comply with the provisions of the Endangered Species Act as they apply to private (non-federal) property owners. It was agreed that the goal of the EIS/BA study team is to complete the BA prior to completion of the Draft EIS, and to reflect the findings of the BA in the Draft EIS. Finally, it was agreed that the BA for the proposed action may conclude with informal consultations with the FWS. Formal consultation and formulation of a Biological Opinion are not anticipated at this time. However, this could change based on the results of ongoing studies and surveys.

There was also discussion of the potential impact of environmental remediation and ordnance removal on T&E, other species of concern, and potential ecological damage in general. Mr. Taylor suggested that FWS should be actively involved in the public and regulatory review process for these actions.

Summary of Approach to Ensure Compliance with Endangered Species Act (ESA). Based on discussions that occurred during this meeting, Mr. Romine led the group through the key elements of the approach to be used to ensure that the Army's planned property disposal action complies with the provisions of the ESA. This approach is described below:

Goal. Conclude ESA compliance through the completion of a Biological Assessment within the established EIS schedule. Tentative completion date for the BA of September 1,

1997 (one month prior to scheduled completion of Draft EIS). The BA may be published as a separate technical study, or included as a background data appendix to the Draft EIS.

Species to be Addressed in the BA. The only listed species known to occur on Main Post is the gray bat (federally endangered). RCW last occurred on Main Post in 1968. Potentially suitable habitat for the RCW is present on Main Post. Nearest occurrence is approximately 6 miles to the east, and therefore, the proposed BRAC action will not affect the RCW. Hence, the potential for effects to RCW will not be analyzed in the BA. Issues involving potentially suitable habitat at FMC for RCW, and other sensitive species, will be addressed through the NEPA process and documented in the EIS.

Action to be Assessed in the BA. The action to be evaluated at FMC includes three distinct components:

1. **No Action (Caretaker Status).** Potential caretaker actions (including property remediation and ordnance and explosive removal) will be described in as much detail as possible. However, the detail of this description will be limited by the fact that actual cleanup and removal actions are dependent on final reuse plans, and these actions will not be fully defined prior to the required completion of the BA and EIS process. Project design features (PDFs) in the BA and NEPA documents will be developed to avoid negative effects to the gray bat.

2. **Property Disposal.** Property Disposal is the primary Army action to be addressed in the EIS and BA. Project design features in the BA and NEPA document will be developed to avoid negative effects to the gray bat; and these features may include specific encumbrances in the form of deed restrictions, covenants, notifications, etc.

3. **Property Reuse.** The EIS will define the general type and intensity of reuse that is likely to occur on lands to be disposed of. However, the precise nature of reuse plans will not be known to the EIS/BA team, and therefore, the potential effects of these future actions on gray bats can't be fully characterized. The BA and EIS will note this fact, and explain that additional ESA compliance efforts may be required by reuse proponents as specific actions are identified for implementation. These future ESA compliance efforts, if any, will be the responsibilities of future (non-Army) owners.

The meeting was concluded by Mr. Taylor thanking Mr. Goldman for his participation and the open and positive discussions. The Army looks forward to a continuing dialouge and a positive working relationship for the completion of Endangered Species Act and the EIS, and USFWS involvement in seeking ways to preserve the unique natural resources at Fort McClellan while balancing economic recovery of the community. A win-win-win solution for the FMRRA, USFWS, and the environment.

List of Attachments:

A. EIS Overview Slides
B. Status of Fort McClellan Biological Studies

Appendix B
Product Summary and Guidelines for Pesticides Used on FMC Golf Course

Appendix B:

Product Summary and Guidelines for Pesticides Used on FMC Golf Course

Product Summary and Guidelines

for

Roundup® Herbicide

Roundup® is a herbicide that provides selective control of many annual and perennial grasses and broadleaf weeds. This herbicide is water-soluble and mixes readily with water to be applied as a foliar spray for the control and destruction of most herbaceous plants. The active ingredient, glysophosphate (isopropyl amine salt of N-phosphonomethhyl glycine), is absorbed by the plant and attaches to growth sites within plant cells. The plant dies due to lack of certain amino acids. There is little or no residual from this herbicide and any of the product that is sprayed onto or reaches the soil will bind to the soil. The rainfastness of this herbicide is approximately two hours. Biodegradation rate in soil is approximately 45 to 60 days. Fort McClellan uses this herbicide to control winter weeds on fairways at the golf course.

Health Hazards

Roundup® may cause temporary eye damage or conjunctivitis. Roundup® herbicide can be absorbed through skin and cause skin irritation and dermatitis. Ingestion can cause gastrointestinal discomfort, nausea, vomiting, and diarrhea. Inhalation may cause upper respiratory irritation.

Environmental Hazards

There are no known hazardous decomposition products from Roundup®. Roundup® is moderately to slightly toxic to most species of fish. Roundup® is reported to be practically nontoxic to bees and crayfish.

Personal Protective Equipment

Respiratory = Use NIOSH approved cartridge type respirator when required

Eye = Chemical goggles or face shield; protective eyewear

Skin = Fabric coveralls over a long sleeved shirt and long pants, chemical resistant gloves, chemical resistant footwear plus socks, chemical resistant apron during mixing, cleaning, or loading.

Fort McClellan currently (1998) uses or anticipates using the following pesticides on the FMC golf course until the property is disposed.

Pesticide	Active Ingredient	Application Method	Target Pest	Areas Used	Manufacturers	Phone Nos. for Information
Daconil® 2787	Chlorothanil, Tetrachloroisophthalonitrile	Broyhill boom sprayer	Brown Patch	Greens and Tees	SDS Biotech Corporation (Agricultural Chemicals Business)	(440) 357-4182
Dursban 50W	Chlorpyrifos: (O,O-diethyl O-3,5,6-trichloro-2-pyridinylo	Broyhill boom sprayer	Armyworms and Cutworms	Greens and Tees	DowElanco	(800) 352-6776
2,4-D Amine 4	Dimethlyamine salt of 2,4-Dichloro-phenoxyacetic acid	Broyhill boom sprayer	Weeds	Fairways	Riverside/Terra Corporation	(712) 277-1340
MSMA (Red Panther Super Juice)	Monosodium Acid Methane-arsonate	Broyhill boom sprayer	Weeds	Fairways	Green Light	(800) 424-9300
Pendimethalin (Pendulum® Herbicide)	N-(1-ethylpropyl)-3, 4-dimethyl-2,6-dimitrobenxamine	Broadcast spreader	Weeds	Fairways	American Cyanamid	(973) 683-3100
Illoxan® 3EC	2-[4-(2,4-dichloro-phenoxy) phenoxy] propanoate	Broyhill boom sprayer	Goose grass	Greens and Tees	AgrEvo	(800) 843-1702
Koban 30	Etridiazole	Broyhill boom sprayer	Crown and root rot (Pythium)	Greens and Tees	The Scotts Company	(703) 527-3887
Dimension®	Dithiopyr	Broyhill boom sprayer	Crabgrass	Fairways, Greens, and Tees	Rohm and Haas Company	(215) 592-3000
Roundup®	Ethoxylated Tallowamines	Handpump sprayer	Winter Weeds	Fairways	Monsanto Company	(314) 694-6661

Product Summary and Guidelines

for

Daconil® 2787 Fungicide

Daconil® 2787 is a broad-spectrum fungicide formulated for use on golf course greens, tees, and fairways. Fort McClellan's golf course uses this fungicide to control and treat Brown Patch. This protectant fungicide affects fungal spore germination. The fungicide is never absorbed into the plant. The active ingredient, chlorothanil, disrupts glutathion metabolism in the fungus. Daconil adheres to the plant (turf) and dissipates in about seven days. The fungicide is usually removed from the turf when mowing occurs. If the fungicide enters the soil, it binds to soil particles and may be present (undegraded) for up to 28 days. Biodegradation is dependent upon weather, temperature, sunlight, and microbes present. This product remains active for about seven days after application.

Health Hazards

Daconil® is corrosive and can cause severe eye damage. If ingested, it can cause irritation of the gastrointestinal tract. Daconil is considered an irritant of the respiratory tract, and chronic (repeated exposure) inhalation exposure can cause mild bronchial irritation. Chronic exposure to the skin has resulted in dermal irritation. This fungicide is not oncogenic, teratogenic, or carcinogenic.

Environmental Hazards

Daconil may decompose under fire conditions emitting toxic gases and vapors. This fungicide is toxic to fish, aquatic invertebrates, and marine/estuarine organisms. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas.

Personal Protective Equipment

Respiratory = NIOSH approved dust respirator or pesticide respirator

Eye = Chemical goggles or face shield

Skin = Protective rubber gloves

Application Guidelines

1. Do not spray directly onto or into water.
2. Do not spray when drift could carry fungicide into water.
3. Do not apply when weather conditions favor drift or runoff from treated areas.
4. Apply only to areas specified on label (golf course tees, fairways, and greens).
5. Must be used with good turf management practices.
6. On greens and tees, should follow a seven-day schedule.
7. Do not use Daconil® through sprinkler irrigation system on golf course.
8. Do not apply product through irrigation system connected to public water system.
9. Posting of areas to be treated is required if any part of the treated area is within 300 feet of (a) sensitive areas (residential, labor camps, business, daycares, schools, parks, playgrounds, or other public facilities not including roads; or (b) when chemigated area is open to the public (e.g., greenhouses).
10. Posting requirements = Posting at all points of entry and likely routes of approach or posted corners. Must be posted prior to application. Printed side to face away from area to be treated. Signs must be printed in English. Must remain in place indefinitely until foliage has dried and soil surface water has disappeared. All words and letters must be at least 2.5 inches tall. Colors must contrast. Top of sign must say keep out, followed by octagon sign saying stop. Octagon should be at least 8 inches in diameter. Sign should say pesticides in irrigation water.
11. Apply during daylight hours.
12. Mix as directed on label.
13. Apply only for approved uses.
14. Follow all general use directions as specified on label.

Disposal Guidelines

Completely empty bag into formulation equipment. Dispose of empty bag in a sanitary landfill or by incineration. Burning empty bag can be done if allowed by local and state authorities. Do not contaminate water supplies, water sources, or feed sources. Triple rinse container, puncture it, and place it in a landfill.

Effects to Gray Bats

Compliance with application guidelines and disposal guidelines as presented above, and strict adherence to application and mixing guidelines on the pesticide label will avoid potential direct and indirect effects to gray bats from use of Daconil® 2787.

Product Summary and Guidelines

for

Dursban 50W

Dursban 50W is a specialty insecticide formulated to control various pests injurious to tress, turf, and ornamental plants. It is an organophosphate insecticide with chloropyrifos as the active ingredient. This product affects insects by ingestion and contact through cholinesterase inhibition in the insect's metabolism. Dursban 50W is effective on over 140 pests. Fort McClellan uses this insecticide on the golf course to control and treat armyworm and cutworm infestations. Dursban binds tightly to organic matter in the soil and will not leach from the soil after application, even during heavy rainfall.

Health Hazards

Dursban may cause slight eye irritation and pain. Dursban can cause skin irritation. Ingestion of large amounts may result in serious injury or death. Single exposure to Dursban dust is not likely to be hazardous, but repeated or prolonged exposure may cause lung irritation or chemical pneumonia. Dursban is not known to be oncogenic, teratogenic, mutagenic, or carcinogenic.

Environmental Hazards

Dursban may decompose under fire conditions, emitting toxic gases and vapors. Dursban is toxic to birds and other wildlife. Dursban is extremely toxic to fish and aquatic invertebrates. Runoff from treated areas may be hazardous to aquatic organisms. Dursban is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow drift to blooming crops or weeds if bees are visiting the treated areas.

Personal Protective Equipment

Respiratory = MSHA/NIOSH approved dust respirator or pesticide respirator if applying in confined spaces

Eye = Chemical goggles or face shield

Skin = Waterproof gloves, long-sleeved shirt and long pants

Application Guidelines

1. Do not spray directly onto or into water.
2. Do not spray this product in a way that it will contact workers or other persons directly or through drift.
3. Adults, children, and pets should not contact treated surface until the spray has dried.
4. Keep out of fish pools and other bodies of water.
5. Do not spray when drift could carry Dursban into water.
6. Do not apply when weather conditions favor drift or runoff from treated areas.
7. Do not treat vegetable gardens.
8. Do not allow livestock to graze in treated area.
9. Do not feed treated grass cuttings to or seed screenings to livestock or use hay for livestock bedding.
10. Do not use in poultry houses or greenhouses.
11. Do not formulate this product into other end-use products (use only as specified on label).
12. Do not apply until winter rains or irrigation has replenished soil moisture such that bark and twigs are not desiccated.
13. Follow pest-specific directions.
14. Apply during daylight hours.
15. Mix as directed on label.
16. Apply only for approved uses.
17. Follow all general use directions as specified on label.

Disposal Guidelines

Do not contaminate water, food, or feed by disposal. Waste resulting from this product may be disposed of on-site or at an approved waste disposal facility. Dispose of all empty packages in a sanitary landfill or by incineration. Burning empty bag can be done if allowed by local and state authorities. Avoid inhalation of smoke if the container is incinerated.

Effects to Gray Bats

Compliance with application guidelines and disposal guidelines as presented above, and strict adherence to application and mixing guidelines on the pesticide label will avoid potential direct and indirect effects to gray bats from use of Dursban 50W.

Product Summary and Guidelines

for

2,4-D Amine 4

2,4-D Amine 4 is a postemergent herbicide. The active ingredient in 2,4-D Amine 4 is dimethylamine salt of 2,4-dichlorophenoxyacetic acid. Fort McClellan uses this herbicide to control weeds on golf course fairways. The herbicide is absorbed into the plant and residue or excess is biodegraded after three days. Besides biodegradation, 2,4-D Amine 4 is degraded by ultra violet light. The rain fastness of this herbicide is approximately six hours, but is dependent upon soil type, weather conditions, and temperature at the time of application.

Health Hazards

2,4-D amine 4 is corrosive and can cause severe, irreversible eye damage (blindness). This herbicide can be absorbed through skin and cause skin irritation. If ingested, 2,4-D Amine 4 can be absorbed through the stomach and intestinal wall. Avoid breathing mists or vapors during application. Inhalation may cause upper respiratory irritation. Excessive exposure may cause liver, kidney, blood, gastrointestinal, muscular, and respiratory effects.

Environmental Hazards

2,4-D amine 4 may decompose under fire conditions emitting toxic gases and vapors. This herbicide is toxic to aquatic invertebrates. Runoff from treated areas may adversely affect aquatic invertebrates and nontarget plants. This product may injure cotton, beans (certain legumes), other vegetables, and ornamentals. Treatment of aquatic weeds with 2,4-D Amine 4 can reduce the water's oxygen content, which may cause fish to suffocate.

Personal Protective Equipment

Respiratory = Use approved respirator when required

Eye = Chemical goggles or face shield

Skin = Coveralls over a long sleeved shirt and long pants, waterproof gloves, chemical resistant footwear plus socks, chemical resistant apron during mixing.

Application Guidelines

1. Do not spray directly onto or into water.
2. Do not apply within 20 feet of banks or natural levees associated with streams, ponds, or lakes.
3. Do not enter the treated area without protective clothing until the area is dry.
4. Keep unprotected persons and pets out of the treated area until sprays have dried.
5. Keep out of fish pools and other bodies of water.
6. Do not spray when drift could carry 2,4-D Amine 4 into water.
7. Do not apply when weather conditions favor drift or runoff from treated areas.
8. Contain all spills to prevent contamination of groundwater.
9. Do not spray this product in a way that it will contact workers or other persons directly or through drift.
10. Follow pest-specific directions.
11. Apply during daylight hours.
12. Mix as directed on label.
13. Apply only for approved uses.
14. Follow all general use directions as specified on label.

Disposal Guidelines

Do not contaminate water, food, or feed by disposal. Waste resulting from this product may be disposed of on-site or at an approved waste disposal facility. Dispose of all empty packages in a sanitary landfill or by incineration. Burning empty bag can be done if allowed by local and state authorities. Avoid inhalation of smoke if the container is incinerated.

Effects to Gray Bats

Compliance with application guidelines and disposal guidelines as presented above, and strict adherence to application and mixing guidelines on the pesticide label will avoid potential direct and indirect effects to gray bats from use of 2,4-D Amine 4.

Product Summary and Guidelines

for

MSMA (Red Panther Super Juice)

MSMA (monosodium acid methanearsonate) is a postemergent herbicide. The active ingredient, monosodium acid methanearsonate) is mixed with a surfactant. MSMA works particularly well on grassy weeds. Fort McClellan uses this herbicide to control weeds on the golf course fairways. The herbicide's phytotoxic properties are quickly activated upon contact with soil. This herbicide works best on young actively growing weeds. It is absorbed into the plant and the soil. The herbicide remains active for approximately ten days after application.

Health Hazards

MSMA can cause mild eye damage. MSMA herbicide can be absorbed through skin and cause skin irritation. If ingested, MSMA can cause burning of the throat and stomach, intense abdominal pain, and gastrointestinal irritation. Avoid breathing mists or vapors during application. Inhalation may cause upper respiratory irritation, dizziness, stupor, vomiting, diarrhea, convulsions, paralysis, or death.

Environmental Hazards

MSMA may decompose and emit arsenic in the presence of acids and certain metals. This herbicide is toxic to aquatic organisms. Runoff from treated areas may adversely affect aquatic invertebrates and nontarget plants. Arsenic in this herbicide may accumulate in biota if used extensively.

Personal Protective Equipment

Respiratory = Use NIOSH approved dust and mist respirator when required

Eye = Chemical goggles or face shield

Skin = Coveralls over a long sleeved shirt and long pants, chemical resistant gloves, chemical resistant footwear plus socks, chemical resistant apron during mixing.

Application Guidelines

1. Do not spray directly onto or into water.
2. Do not feed treated grass to livestock.
3. Do not enter the treated area without protective clothing until the area is dry (12 hours after application).
4. Do not allow unprotected persons in area to be treated during application.
5. Keep unprotected persons and pets out of the treated area until sprays have dried.
6. Keep out of fish pools and other bodies of water.
7. Do not spray when drift could carry MSMA into water.
8. Do not apply when weather conditions favor drift or runoff from treated areas.
9. Contain all spills to prevent contamination of groundwater.
10. Do not spray this product in a way that it will contact workers or other persons directly or through drift.
11. Mow lawns 1 to 1.5 inches before treatment.
12. Apply during daylight hours.
13. Mix as directed on label.
14. Apply only for approved uses.
15. Follow all general use directions as specified on label.

Disposal Guidelines

Do not contaminate water, food, or feed by disposal. Waste resulting from this product may be disposed of on-site or at an approved waste disposal facility. Do not use empty containers. Triple rinse (or equivalent) and dispose by recycling, in a sanitary landfill or by incineration. Burning empty bag can be done if allowed by local and state authorities. Avoid inhalation of smoke if the container is incinerated.

Effects to Gray Bats

Compliance with application guidelines and disposal guidelines as presented above, and strict adherence to application and mixing guidelines on the pesticide label will avoid potential direct and indirect effects to gray bats from use of MSMA.

Product Summary and Guidelines

for

Pendimethalin (Pendulum® WDG Herbicide)

Pendimethalin (Pendulum Herbicide) is a root and shoot inhibitor. The active ingredient is N-(1-ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzene amine. This herbicide works inside the plant. It is a pre-emergent herbicide. Pendimethalin attaches to the roots of emergent weeds. It binds to the organic component of the soil. Generally, pendamethalin has a 14 to 21 day residual time, but this is dependent upon the organic content of the soil and other environmental characteristics of the area to be treated. Soil moisture is an extremely important factor in the ability of this herbicide to function. Pendimethalin comes in various forms; Fort McClellan uses the form coated on a fertilizer (Scotts 14-0-14).

Health Hazards

Pendimethalin is an eye irritant. This herbicide can be absorbed through skin and cause skin irritation. Single doses to skin may cause irritation. Ingestion of Pendimethalin may cause diarrhea, vomiting, and nausea. Ingestion or inhalation may cause nose, throat, or mouth irritation. Pendimethalin is reported to be nogenotoxic, nonteratogenic, and nononcogenic.

Environmental Hazards

Combustion of Pendimethalin may produce oxides of carbon and nitrogen. Pendimethalin is toxic to fish. Because Pendamethalin contains ethylene dichloride, it is regulated as a hazardous waste in the Untied States. Runoff from treated areas may adversely affect aquatic invertebrates and nontarget plants.

Personal Protective Equipment

Respiratory = Use pesticide cartridge respirator when required

Eye = Chemical goggles or face shield

Skin = Chemical resistant gloves, long-sleeved shirt and pants, shoes plus socks and chemical resistant apron

Application Guidelines

1. Do not spray directly onto or into water.
2. Keep out of lakes, streams, ponds, and other bodies of water.
3. Do not apply when weather conditions favor drift or runoff from treated areas.
4. Do not apply within 20 feet of banks or natural levees associated with streams, ponds, or lakes.
5. Do not use during gusty conditions.
6. Do not apply this product through any type of irrigation system.
7. Do not use this product in a way that will contact workers or other persons directly or through drift.
8. Do not use in manufacturing products for weed control.
9. Do not enter treated area until spray has dried.
10. Follow all application rates for weed control.
11. Apply during daylight hours.
12. Mix as directed on label.
13. Apply only for approved uses.
14. Follow all general use directions as specified on label.

Disposal Guidelines

Do not contaminate water, food, or feed by disposal. Waste resulting from this product may be disposed of on-site or at an approved waste disposal facility. Dispose of all empty packages in a sanitary landfill or by incineration. Burning empty bag can be done if allowed by local and state authorities. Avoid inhalation of smoke if the container is incinerated.

Effects to Gray Bats

Compliance with application guidelines and disposal guidelines as presented above and strict adherence to application and mixing guidelines on the pesticide label will avoid potential direct and indirect effects to gray bats from use of Pendimethalin.

Product Summary and Guidelines

for

Illoxan® 3EC Herbicide

Illoxan® is used for postemergent control of goosegrass (silver crabgrass) in Bermuda grass turf at golf courses. This herbicide is absorbed through leaves of the target pest and disrupts cellular function inside the plant. The active ingredient is diclofop-methyl. Little residue is left to enter the soil because of foliar absorption. If Illoxan is sprayed onto the soil, it will bind to the soil until biodegraded. Illoxan remains active for seven to fourteen days after application. Illoxan does not bioaccumulate.

Health Hazards

Illoxan® can cause eye damage. Illoxan herbicide can be absorbed through skin and cause skin irritation and prolonged exposure may lead to dermatitis. If ingested, Illoxan can cause muscle weakness, tremors, diarrhea, and weight loss. Avoid breathing mists or vapors during application. Inhalation may cause upper respiratory irritation, dizziness, vomiting, and loss of consciousness. Diclofop-methyl has been shown to cause cancer in laboratory rats. No embryotoxic or fetotoxic effects are noted for this product.

Environmental Hazards

Illoxan® is toxic to fish. This herbicide is toxic to aquatic organisms. Runoff from treated areas may adversely affect aquatic invertebrates and nontarget plants.

Personal Protective Equipment

Respiratory = Use NIOSH approved cartridge type respirator when required

Eye = Chemical goggles or face shield

Skin = Fabric coveralls over a long sleeved shirt and long pants, chemical resistant gloves, chemical resistant footwear plus socks, chemical resistant apron during mixing.

Application Guidelines

1. Do not spray within 100 feet of aquatic habitat.
2. Use with care when applying in areas near water bodies.
3. Avoid mowing treated area for 36 hours after application.
4. Do not apply if rainfall is expected within 1 hour of application.
5. Do not apply Illoxan® through any type of irrigation system.
6. Do not enter the treated area without protective clothing until the area is dry.
7. Do not allow unprotected persons to come in contact with product during application.
8. Keep unprotected persons and pets out of the treated area until sprays have dried.
9. Do not spray when drift could carry Illoxan into water.
10. Do not apply when weather conditions favor drift or runoff from treated areas.
11. Contain all spills to prevent contamination of groundwater.
12. Do not spray this product in a way that it will contact workers or other persons directly or through drift.
13. Apply during daylight hours.
14. Mix as directed on label.
15. Apply only for approved uses.
16. Follow all general use directions as specified on label.

Disposal Guidelines

Do not contaminate water, food, or feed by disposal. Waste resulting from this product may be disposed of on-site or at an approved waste disposal facility. Do not use empty containers. Triple rinse (or equivalent) and dispose by recycling, in a sanitary landfill or by other procedures approved by state and local authorities.

Effects to Gray Bats

Compliance with application guidelines and disposal guidelines as presented above and strict adherence to application and mixing guidelines on the pesticide label will avoid potential direct and indirect effects to gray bats from use of Illoxan®.

Product Summary and Guidelines

for

Koban 30 Fungicide

Koban 30 is a preventative and curative fungicide that controls crown rot and root rot caused by Pythium. The active ingredient is 5-ethoxy-3-trichloromethyl-1,2,4-thiadiazole (etridiazole). This fungicide remains active approximately seven to ten days after application. It is effective as a seed treatment. Koban 30 is intended for use on ornamental turf subject to Pythium blight, damping off, cottony blight, and Pythium root and crown rot. Fort McClellan uses this fungicide to control Pythium on the greens and tees at the golf course.

Health Hazards

Koban 30 is a slight eye irritant. Koban herbicide can be absorbed through skin and cause skin irritation, and prolonged exposure may lead to dermatitis. Prolonged exposure to Koban 30 may lead to liver damage. Ingestion of large amounts can cause throat irritation, nausea, and diarrhea. Avoid breathing mists or vapors during application. Inhalation may cause upper respiratory irritation. Etridiazole has been shown to cause cancer in laboratory rats. Mutagenic effects were seen in bacteria mutagenicity tests conducted with etridiazole.

Environmental Hazards

Koban 30 may release toxic chlorine and oxides of sulfur and nitrogen when heated. Koban 30 is toxic to fish and aquatic organisms. Runoff from treated areas may adversely affect aquatic invertebrates and nontarget plants.

Personal Protective Equipment

Respiratory = Use NIOSH approved cartridge type respirator when required

Eye = Chemical goggles or face shield; protective eyewear

Skin = Fabric coveralls over a long sleeved shirt and long pants, chemical resistant gloves, chemical resistant footwear plus socks, chemical resistant apron during mixing, cleaning, or loading.

Application Guidelines

1. Do not apply this product directly onto or into surface water.
2. Do not apply within 20 feet of banks or natural levees associated with streams, ponds, or lakes.
3. Use with care when applying in areas near water bodies.
4. Do not apply Koban 30 through any type of irrigation system.
5. Do not enter the treated area without protective clothing until the area is dry.
6. Do not allow unprotected persons in area to be treated during application.
7. Keep unprotected persons and pets out of the treated area until sprays have dried.
8. Do not spray when drift could carry Koban 30 into water.
9. Do not apply when weather conditions favor drift or runoff from treated areas.
10. Contain all spills to prevent contamination of groundwater.
11. Do not spray this product in a way that it will contact workers or other persons directly or through drift.
12. Apply during daylight hours.
13. Mix as directed on label.
14. Apply only for approved uses.
15. Follow all general use directions as specified on label.

Disposal Guidelines

Do not contaminate water, food, or feed by disposal. Waste resulting from this product may be disposed of on-site or at an approved waste disposal facility. Do not use empty containers. Triple rinse (or equivalent) and dispose by recycling, in a sanitary landfill or by other procedures approved by state and local authorities. Empty container may be burned if allowed by local or state authorities. Avoid inhalation of smoke if the container is incinerated.

Effects to Gray Bats

Compliance with application guidelines and disposal guidelines as presented above and strict adherence to application and mixing guidelines on the pesticide label will avoid potential direct and indirect effects to gray bats from use of Koban 30.

Product Summary and Guidelines

for

Dimension® Herbicide

Dimension® is a turf herbicide that provides selective control of certain annual grasses and broadleaf weeds. It is formulated for use on established lawns, ornamental turf including golf course fairways, roughs, tee boxes, and putting greens. Dimension® herbicide remains active for up to 17 days in the soil after application. The active ingredient in Dimension® is dithilopyr (3,5-pyridinesdicarbthioic acid). Dimension® is absorbed by plants and interrupts mitosis. Soil microbes eventually degrade any residual herbicide that remains in the soil. Fort McClellan uses this herbicide to control crabgrass on fairways, greens, and tees at the golf course.

Health Hazards

Dimension® may cause substantial but temporary eye damage. Dimension® herbicide can be absorbed through skin and cause skin irritation, dermatitis, and reddening. Repeated exposure to Dimension may lead to kidney effects, liver effects, blood disorders, thyroid damage, and adrenal effects. Ingestion of large amounts can cause throat irritation, nausea, and diarrhea. Inhalation may cause upper respiratory irritation, dizziness, headache, nausea, drowsiness, slurred speech, stupor, and unconsciousness.

Environmental Hazards

There are no known hazardous decomposition products from Dimension®. Dimension® is toxic to fish. This herbicide is toxic to aquatic organisms, including shrimp and oysters. Runoff from treated areas may adversely affect fish and aquatic invertebrates in neighboring areas.

Personal Protective Equipment

Respiratory = Use NIOSH approved cartridge type respirator when required

Eye = Chemical goggles or face shield; protective eyewear

Skin = Fabric coveralls over a long sleeved shirt and long pants, chemical resistant gloves, chemical resistant footwear plus socks, chemical resistant apron during mixing, cleaning, or loading.

Application Guidelines

1. Do not apply this product directly onto or into surface water.
2. Do not apply within 20 feet of banks or natural levees associated with streams, ponds, or lakes.
3. Use with care when applying in areas near water bodies.
4. Do not apply Dimension through any type of irrigation system.
5. Do not enter the treated area without protective clothing until the area is dry.
6. Do not allow unprotected persons to come in contact with product during application.
7. Keep unprotected persons and pets out of the treated area until sprays have dried.
8. Do not spray when drift could carry Dimension into water.
9. Do not apply when weather conditions favor drift or runoff from treated areas.
10. Contain all spills to prevent contamination of groundwater.
11. Do not spray this product in a way that it will contact workers or other persons directly or through drift.
12. Mix as directed on label.
13. Apply during daylight hours.
14. Follow all application guidelines on label; including frequency and timing.
15. Apply only for approved uses.
16. Follow all general use directions as specified on label.

Disposal Guidelines

Do not contaminate water, food, or feed by disposal. Waste resulting from this product may be disposed of on-site or at an approved waste disposal facility. Do not use empty containers. Triple rinse (or equivalent) and dispose by recycling, in a sanitary landfill or by other procedures approved by state and local authorities. Empty container may be burned if allowed by local or state authorities. Avoid inhalation of smoke if the container is incinerated.

Effects to Gray Bats

Compliance with application guidelines and disposal guidelines as presented above and strict adherence to application and mixing guidelines on the pesticide label will avoid potential direct and indirect effects to gray bats from use of Dimension®.

Product Summary and Guidelines

for

Roundup® Herbicide

Roundup® is a herbicide that provides selective control of many annual and perennial grasses and broadleaf weeds. This herbicide is water-soluble and mixes readily with water to be applied as a foliar spray for the control and destruction of most herbaceous plants. The active ingredient, glysophosphate (isopropyl amine salt of N-phosphonomethhyl glycine), is absorbed by the plant and attaches to growth sites within plant cells. The plant dies due to lack of certain amino acids. There is little or no residual from this herbicide and any of the product that is sprayed onto or reaches the soil will bind to the soil. The rainfastness of this herbicide is approximately two hours. Biodegradation rate in soil is approximately 45 to 60 days. Fort McClellan uses this herbicide to control winter weeds on fairways at the golf course.

Health Hazards

Roundup® may cause temporary eye damage or conjunctivitis. Roundup® herbicide can be absorbed through skin and cause skin irritation and dermatitis. Ingestion can cause gastrointestinal discomfort, nausea, vomiting, and diarrhea. Inhalation may cause upper respiratory irritation.

Environmental Hazards

There are no known hazardous decomposition products from Roundup®. Roundup® is moderately to slightly toxic to most species of fish. Roundup® is reported to be practically nontoxic to bees and crayfish.

Personal Protective Equipment

Respiratory = Use NIOSH approved cartridge type respirator when required

Eye = Chemical goggles or face shield; protective eyewear

Skin = Fabric coveralls over a long sleeved shirt and long pants, chemical resistant gloves, chemical resistant footwear plus socks, chemical resistant apron during mixing, cleaning, or loading.

Application Guidelines

1. Do not apply this product directly onto or into surface water.
2. Do not apply within 20 feet of banks or natural levees associated with streams, ponds, or lakes.
3. Use with care when applying in areas near water bodies.
4. Do not apply Roundup® through aerial spray equipment, unless specified on the label.
5. Do not enter the treated area without protective clothing until the area is dry.
6. Do not allow unprotected persons to come in contact with product during application.
7. Keep unprotected persons and pets out of the treated area until sprays have dried.
8. Do not spray when drift could carry Roundup® into water.
9. Do not apply when weather conditions favor drift or runoff from treated areas.
10. Contain all spills to prevent contamination of groundwater.
11. Do not spray this product in a way that it will contact workers or other persons directly or through drift.
12. Do not apply at excessive pressure or speed.
13. Do not mix, store, or apply this product or spray solutions in galvanized steel or unlined steel (except stainless steel) containers.
14. Do not apply during low-level inversion conditions.
15. Apply during daylight hours.
16. Mix as directed on label.
17. Follow all application guidelines on label.
18. Apply only for approved uses.
19. Follow all general use directions as specified on label.

Disposal Guidelines

Do not contaminate water, food, or feed by disposal. Waste resulting from this product may be disposed of on-site or at an approved waste disposal facility. Do not reuse empty plastic containers. Triple rinse (or equivalent) (drums or cans) and dispose by recycling, in a sanitary landfill or by other procedures approved by state and local authorities. Empty container may be burned if allowed by local or state authorities. Avoid inhalation of smoke if the container is incinerated.

Effects to Gray Bats

Compliance with application guidelines and disposal guidelines as presented above and strict adherence to application and mixing guidelines on the pesticide label will avoid potential direct and indirect effects to gray bats from use of Roundup®.

ATTACHMENT 5

FORT MCCLELLAN COMPREHENSIVE REUSE PLAN

Fort McClellan Comprehensive Reuse Plan

Fort McClellan Reuse and Redevelopment Authority of Alabama

Implementation Strategy

November 1997

EDAW

This study was prepared under contract to the Calhoun County Commission with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of the Calhoun County Commission and does not necessarily reflect the views of the Office of Economic Adjustment.

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1.0 INTRODUCTION

In 1995 the Department of Defense announced that Fort McClellan would close by October 1999. The Fort is an active military installation operated by the Training and Doctrine Command (TRADOC), Department of Army. Fort McClellan, consisting of 45,000 acres of developed and undeveloped land, represents one of the largest base closures in the Base Realignment and Closure (BRAC) group of 1995.

The BRAC Commission recommended closure of the installation, except for minimum essential land and facilities for a Reserve Component Enclave and essential facilities needed to provide support for the chemical demilitarization operation at Anniston Army Depot.

The Pelham Range portion of Fort McClellan comprises 22,000 acres and will be licensed to the Army National Guard. The Choccolocco corridor, about 5,000 acres to the east of the main cantonment, will revert to the State of Alabama.

This study has addressed the approximately 18,000 acres that comprise the main post of Fort McClellan.

The planning process consisted of three stages; first, a detailed data collection stage; second, the definition of a preferred land use plan; and third, the refinement of the Preferred Plan.

Pursuant to State enabling legislation, the Fort McClellan Reuse and Redevelopment Authority (FMRRA) became the Fort McClellan Development Commission (FMDC) on October 1, 1997. For continuity, this document refers to the Local Reuse Authority (LRA) as the FMRRA. However, use of the FMRRA and FMDC designations are synonymous.

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2.0 OBJECTIVES AND UNDERLYING ECONOMIC ASSUMPTIONS

A wide range of information about land and facilities at Fort McClellan, as well as regional market data, was collected. Two public meetings were held in order to present the emerging findings to the community and to establish a set of goals and objectives. The objectives of the community, through its Reuse Authority, are to:

- Provide a unified, logistical master plan
- Replace military and civilian jobs
- Enhance economic opportunities for Calhoun County and the surrounding region
- Recommend uses consistent with market demand
- Provide a logical strategy for phasing and marketing
- Balance public and private uses
- Emphasize sustainable development and recruit environment-friendly employers
- Maintain the natural beauty of Fort McClellan
- Retain its historic core
- Provide opportunities for public recreation
- Ensure interim leasing is consistent with the long-term plan

In addition, the team created a broad economic framework which became an essential tool in developing the master plan for Fort McClellan. The framework consisted of the following assertions:

- Future use strategies should recognize the weaknesses of the Calhoun County economy while building on the potential of Fort McClellan to become a regional centerpiece for development.
- Growth in the local economy in recent years can be mostly attributed to the development of Quintard Mall close to Interstate 20 and a buoyant health and medical service sector. A development strategy for Fort McClellan, therefore, should discount the possibility of any significant pent-up local

demand for land or property at Fort McClellan within these specific sectors.

- Local agencies project a decline in the population of Calhoun County, as well as an aging demographic profile. Therefore skill shortages are likely to increase as the labor pool shrinks in size.

- The average household income in Calhoun County has grown little over the last 17 years, reflecting a gradual substitution of lower-paid part-time service jobs for higher-paid full-time manufacturing and professional jobs. Fort McClellan could provide new industrial and commercial development opportunities to reverse this trend.

- The planned Eastern Bypass would significantly improve the attraction of the Fort to industrial developers.

- Improved links between business and education are essential to the region's competitiveness

- The current stock of buildings will be difficult to match to the needs of the market. Greenfield areas of the Fort are likely to prove more attractive to developers.

- A number of unique factors challenge the development, including the campus-like nature of the Fort, uncertainties inherent in the military's departure and the future of the Chemical Defense Training Facility ((CDTF), unexploded ordinance (UXO) and the chemical incinerator at Anniston Army Depot.

- The housing stock at Fort McClellan represents an essential element of the job creation strategy by ensuring short-term cash flows and by becoming the centerpiece of the retirement community.

- Personal property at Fort McClellan is essential to job creation. If the Base is denuded of personal property, job creation is specious at best, and the Base reuse will be compromised.

- The Center for Domestic Preparedness (CDP) represents a rare opportunity to initiate an important R&D and training element of the program fully two years before Base closure. It underpins the concept of a seamless transition and serves as a catalyst for future industry clustering.

3.0 THE PREFERRED LAND USE PLAN

The goals and conclusions of Phase 1 were used to develop three different future visions of Fort McClellan. These alternative "snapshots" showed what the Fort might look like in 2020, and each responded in a different way to the current market realities:

Option A: Assumed that the current market trends continue; that all of the public sector requests which had been tabled, at the time, are accommodated; that public investment in infrastructure is minimized

Option B: Assumed that Fort McClellan's history as a training facility becomes the main marketing asset; that the majority of new activity at the Fort centers on public and private sector training initiatives.

Option C: Assumed that the Fort becomes a regional employment center; that investment in infrastructure is high, but that so also is the return on that investment.

These three alternative scenarios were presented at three workshops in January 1997. The first involved members and staff of the Reuse Authority. The second workshop involved the public. The third workshop involved an invited panel of developers from other parts of the Southeast.

The reaction of the three disparate groups to the three options was remarkably similar. Most participants preferred Option C, expressing the desire for a bold vision for Fort McClellan as a catalyst for regional economic development. On the other hand, enthusiasm was tempered by the desire to see refined market data and costs.

The consultant team took away the results of the workshops and embarked on a detailed analysis of the three alternatives, including market assessment, job creation potential, infrastructure costs, and potential tax yields and revenues. Analysis also included prioritization of environmental cleanup areas, estimation of demolition costs, a description and cost of new road construction, and land use requirements.

The Preferred Land Use Plan fulfills the objectives of the community, while addressing constraints that include market size, environmental disposition, and capital and revenue costs. It forms the base upon which the phased implementation plan has been developed.

The key physical features of the Preferred Land Use Alternative are:

- A mix of uses, with a majority of the living areas south of Cane Creek and the majority of the working areas north of Cane Creek

- The creation of a series of living, working, learning and shopping neighborhoods that create a mixed-use community
- An open space network that links the various neighborhoods and provides a valuable public amenity
- A corridor cleared of UXO and along which the Eastern Bypass is built
- A four-lane parkway (largely following the existing road network) that joins the Eastern Bypass
- An upgrading of the rail line and its extension to the north, to provide rail access to five of the industrial sites
- The creation of a separate truck route, using an existing road to link the proposed spine road at the Rail Industrial Park with the Eastern Bypass south of Yahoo Lake
- Access points to the property at five locations along Highway 21. Two of these entrances provide access directly to the spine road, the other three provide access to specific neighborhoods.
- A nature reserve in the Choccolocco Mountains

3.1 RESIDENTIAL

Economic analyses identified the potential for a small but active market for homes at Fort McClellan and the opportunity to create a retirement community for the purposes of job creation. As development at the Fort accelerates, it is likely to generate a further, internal, demand for homes of various types. Several residential areas have been identified in the Preferred Land Use Alternative, including:

Baker Estates and Homes Adjacent to Summerall Gate

This area includes a combination of existing housing units and potential new development that includes both single-family attached and detached units.

Buckner Circle

This historic housing area includes renovated and reused single family housing in a high quality historic neighborhood.

A Planned Retirement Community

Economic analyses have highlighted the striking demographic trends that will affect senior age groups over the next 25 years. There is an opportunity for Fort McClellan to exploit these trends by establishing, with private sector

developers, a planned retirement community. The community would be aimed at the Southeastern United States and would support the State of Alabama's objective to attract increasing numbers of retirees to the region.

The retirement community comprises:

The Buckner Retirement Development, which includes the reuse of approximately 60 existing single story housing units in Avery Drive, with the potential to construct an additional 440 units. This component is intended to serve the 70- to 85-year-old retirees, most of whom will be attracted from within 100 miles of Fort McClellan. In addition, a new executive golf course adjacent to these homes provides the potential to create a high quality, single-family residential community aimed primarily at 50- to 70-year-old retirees from the wider Southeast region.

Assisted Care Retirement (clustered around the hospital). This community is provided with a relatively high degree of assisted care and includes retirees 80 years old and above who move to the community from within a 50-mile radius. The hospital is a focal point of this complex and could provide medical care to the residents of this community as well as the other retirement communities.

3.2 RETAIL

Two types of retail development have been identified; small-scale service retailing to support the immediate needs of local residents and workers and the longer-term opportunity to support larger, regional shopping needs. The Preferred Land Use Alternative, therefore, provides:

- A series of retail sites throughout the property to serve the proposed neighborhoods as well as serve surrounding communities.
- Two sites along Highway 21, one at the southern end of the property adjacent to the Baker Estates community and one at the northern end near the office and industrial employment areas.
- A small town center, close to the current heart of the Fort. The town center would include community uses such as a post office, meeting hall, commercial recreation (i.e. bowling alley/roller skating rink) and retail uses such as restaurants and a convenience store.
- A large reserve site, at the intersection of the Eastern Bypass and the McClellan Parkway, which would provide the opportunity to develop a commercial complex to serve the wider region.

3.3 INDUSTRIAL, OFFICE AND RESEARCH

Economic analyses have identified the opportunity to position Fort McClellan as a regional employment center. There are few serviced sites in single ownership, of 1,000 acres or more, in Alabama. In addition, the Eastern Bypass will provide rapid access to Interstate 20, which connects Birmingham and Atlanta. Provision of one or more large reserve sites, close to enhanced road and rail facilities, will help place Fort McClellan high on the list of preferred industrial locations in the Southeast. In order to establish the Fort's identity as an employment location, the Preferred Land Use Alternative provides:

- Several large parcels, intended for employment uses, north of Cane Creek
- The McClellan Office and Research Park, directly north of Cane Creek, including Sibert Hall and Truman Gymnasium
- Research uses
- Several large industrial parcels north of the McClellan Office and Research Park
- The McClellan Rail Industrial Park, east of the Parkway

These parcels will benefit from access to the upgraded and extended rail line. East of the Parkway, several other industrial parcels provide good access to the Parkway and Highway 21.

3.4 AGRICULTURE AND AGRIBUSINESS

Agriculture and agribusiness are important facets of the regional economy and provide opportunities for the interim use of parts of Fort McClellan. The northern section of the Fort, indicated on the Preferred Plan as industrial land, could be allocated for agriculture use in the short term, prior to industrial development. Management of forest lands at the Fort should also be continued to ensure sound land stewardship.

3.5 TRAINING/EDUCATION

Fort McClellan is a training establishment with many campus-style features. It is well served by its environment, facilities, and size to be a potential location for several private and public sector national and regional training centers. To this end the Preferred Land Use Alternative provides:

- Two training/education areas, one south and one north of Cane Creek. The area south of Cane Creek is focused around the existing MP School and Polygraph institute area. This campus is intended to serve the

Education Consortium. The area to the north of Cane Creek is located within the existing Reception Center and is intended to provide a special training and conference facility.

- The Reuse Authority, in agreement with the Department of Justice, has established the National Center for Domestic Preparedness at Fort McClellan (CDP). Individual sites and buildings have been earmarked for this activity. The Reuse Plan provides sufficient flexibility for this initiative to be accommodated.

3.6 RECREATION/OPEN SPACE

The amount of land available at Fort McClellan enables the adoption of relatively low development densities, thus improving the amenity available to each of the preferred land uses and helping to build the long-term value of the area. The community also benefits from provision in the Preferred Land Use Alternative of:

- Open space that is a network of passive and active recreation areas. In this way, each of the neighborhoods is linked to the larger open space system surrounding the site.

- Active recreation areas, including Cane Creek Golf Course, the proposed new executive golf course adjacent to the retirement community, and Guillion Recreation Fields, which serve as a major active recreation area for both the proposed neighborhoods as well as the surrounding communities.

- Town Center Park, which primarily provides a natural amenity for the Town Center.

- Buckner Park, which is located in Buckner Circle and provides an amenity for this historic housing area.

- A Trail system which connects these different open spaces with their surrounding neighborhoods.

3.7 SPECIAL USE AREAS/SPECIAL USE BUILDINGS

In addition to the main economic drivers described above, and identified by economic analyses, several special uses are accommodated in the Preferred Plan. It is imperative that the personal property contained in special use buildings be retained to support job creation. Without the personal property in special use buildings these facilities will not be reused and lost jobs will not be replaced. These include:

- The existing school and youth services facility that will provide a community amenity for the Baker Estates Community as well as surrounding neighborhoods
- Lagarde Park Expansion. The property adjacent to Lagarde Park will be utilized for additional cultural and recreation facilities.
- Yahoo Lake and Retreat Center, which will serve as a recreation and retreat complex for local, regional, and national groups
- The WAC museum, which ideally will continue in its current facility
- The National Guard, which will utilize facilities in several locations for administration and training
- A local Veteran's Cemetery
- Additional land for Camp Lee
- Additional land for Coosa Valley Youth Services
- Noble Army Hospital
- The Dental Facility
- The Heavy Vehicle Maintenance Facility (350)
- Central Shipping and Receiving
- The Elementary School

4.0 PHASING

The implementation of the Preferred Use Plan is carried out over three phases, or periods. The first phase begins on January 1, 2000.

4.1 PHASE 1

The first phase of this implementation plan lasts 5 years and includes that part of the Fort that is bounded to the north by Cane Creek, to the east and south by Summerall Gate Road, and to the west by Highway 21. This phase contains over 1,000 acres, 700 acres of which are already developed. Phase 1 includes the following:

- Existing housing and the potential for further housing development, aimed at the retirement community
- The CDP
- Buildings with the potential for reuse as:
  - ⇒ Educational facilities
  - ⇒ Manufacturing and warehousing
  - ⇒ Office space
  - ⇒ Retailing
  - ⇒ Homeless assistance facilities
- Publicly accessible active recreation areas
- An existing golf course and the potential for a second course
- The wastewater treatment facility adjacent to the Base, north of Baker Gate
- A historic core which forms the heart of a potential town center

This first phase is defined by its marketing potential, its clearly defined areas of environmental cleanup, its ability to offer a mix of uses and a range of reusable buildings, its proximity to relatively well developed infrastructure, its sense of place (in the form of a definable town center), and its quality of open space.

Phase 1 has been divided into two parts, a and b. Phase 1a comprises those parcels of land that offer immediate opportunities for disposal. **Simply, the Reuse Authority on receipt from the Army should be able to dispose of**

them on a back-to-back basis. Phase 1b, it has been assumed, will require 5 years to be sold, let, or developed (depending on the use in question).

Current estimates of the rate of absorption for industrial buildings show that, of the existing reused buildings, about 12,000 square feet will be absorbed in 2000, rising to 15,000 a year by 2004. Land for new industrial buildings is expected to generate 35,000 to 45,000 square feet of demand per year for 5 years. Phase 1, therefore, is projected to yield about 275,000 square feet of demand for industrial space over a 5-year span.

Office space in Phase 1 is expected to show a weaker absorption rate. Existing buildings will attract about 21,000 square feet of demand during Phase 1. No demand for land to build new office space is forecast.

Phase 1 is forecast to generate demand for 58,000 square feet of retail, all in existing buildings.

Development opportunities in Phase 1 parcels are forecast to eventually create about 2,300 jobs. Many of these jobs will be created in the later stages of the overall development program, and beyond.

The Business Plan Pro Forma estimates that Phase 1 will generate an income of $15.6 million during its notional 5-year time frame. Approximately $5.5 million is expected to be earned in the form of nonresidential revenue. This includes rent from successfully let industrial, office and retail premises, non-residential land, and building sales. The remaining $10.1 million is generated by the sale of residential units to retirement developers.

Phase 1 costs, compared to income, are substantial. Management, mothballing of retained buildings, maintenance of part-occupied buildings, and the demolition of unwanted structures amounts to $15 million in Phase 1. Transportation improvements, including maintenance, improvement, closure and demolition of roads, parking lot construction, new or improved sidewalks, bike and walking paths, bridges, and traffic control are projected to cost $30 million. Utility improvements, including water supply, wastewater management, stormwater management, electrical, gas, communications, and solid waste management and special utilities, cost almost $13 million.

When summing costs and subtracting revenue; the deficit generated in Phase 1 is about $42 million.

An alternative approach to infrastructure development (outlined in detail in Chapter 5) enables costs to be reduced radically in the early phases of this development. Adopting the alternative strategy, the deficit generated in Phase 1 falls to $7.4 million. This deficit could be closed by several potential sources of funding. First, transportation funding of $3 million should be sought from State and Federal sources, spread over the 5-year period. Second,

utility funding of up to $8 million should be sought from private sector, Federal, and State sources, depending on the precise nature of the costs.

4.2 PHASE 2

The second phase of the implementation plan will commence in January 2005 and last 7 years. The majority of Phase 2 is located to the north of Cane Creek and runs in a broad band southeastward from Highway 21 at Galloway Gate to the point at which Baines Gap Road crosses Rocky Hollow Road. Phase 2 parcels which occur outside this area do so because expected market conditions preclude them being part of the earlier Phase 1.

Phase 2 includes just over 600 acres, 88 of which may be defined as developed. Phase 2 contains:

- Two key buildings that have reuse potential:
  - ⇒ Sibert Hall
  - ⇒ The Noble Army Hospital
- Land allocated for two greenfield retail developments along Highway 21
- Sites for at least six industrial parks
- Sites for two office parks
- Land allocated for development as a retirement community
- An elementary school

Phase 2 is defined by its potential for meeting the needs of an established and maturing market for industrial, office, retail space, and retirement housing at Fort McClellan. Phase 2, therefore, builds on the first 5 years of development. The success of marketing Phase 2 will depend on the successful development of a town center with a sense of place at the heart of Fort McClellan.

Phase 2 includes existing buildings for which demand is likely to be relatively slow to develop and includes areas where remediation by the Army is assumed to be more problematic (and will, therefore, take longer to implement).

Estimates of the absorption rate for industrial buildings and land forecast that Phase 2 will generate demand for a total of 1.06 million square feet; 265,000 square feet of reused property at Fort McClellan and a little over 796,000 square feet of new greenfield industrial and warehouse development.

Demand for office space is forecast to total 220,000 square feet in Phase 2. About 80,000 square feet will be absorbed by the reuse of existing buildings and a further 140,000 square feet by greenfield development.

Phase 2 will generate demand for about 395,000 square feet of retail space, virtually all of which will be in the form of greenfield development.

Approximately 6,200 jobs are expected to be created in Phase 2 parcels. Much of this estimate depends on the successful reuse of Sibert Hall, which is unlikely to be achieved before the completion of the development program outlined in this Reuse Plan.

The Business Plan Pro Forma for Phase 2 covers 7 years of development. The market at Fort McClellan will be, by definition, more mature, and therefore absorption rates are assumed to be stronger. Phase 2, therefore, is estimated to generate $18 million of revenue between 2005 and 2011. Almost $16.5 million of this will be from non-residential sources, while the remaining $1.5 million enters the cash flow in the third year of the Phase, following the sale of the remaining residential land reserve.

Phase 2 costs, compared to income, are, once again substantial. Mothballing of retained buildings, maintenance of part-occupied buildings, and the demolition of unwanted structures amounts to over $18 million in Phase 2. Transportation improvements, including maintenance, improvement, closure and demolition of roads, parking lot construction, new or improved sidewalks, bike and walking paths, bridges, and traffic control are projected to cost $49 million. Utility improvements, including water supply, wastewater management, stormwater management, electrical, gas, communications, and solid waste management and special utilities, cost $23 million.

When summing costs and subtracting revenue, the cumulative deficit generated by the end of Phase 2 is $115 million.

The alternative approach to infrastructure development (outlined in detail in Chapter 5) enables costs to be reduced in the early phases of this development. The cumulative deficit generated at the end of Phase 2, as a result of the alternative cost structure, is $38 million. Half of this deficit could be closed by further funding of transportation costs. Just over $2 million per year, for 7 years, should be sought from State and Federal sources. Second, the ongoing need to renew utility funding means that up to $20 million should be sought from the private sector, State, and Federal sources, depending on the precise nature of the costs.

4.3 PHASE 3

Phase 3 commences in January 2013 and lasts 5 years. Though Phase 3 is the final phase of the plan, it is expected that Fort McClellan will continue to be

developed beyond 2017. The Preferred Land Use Plan, for instance, assumes that all of its components will be in place by 2020 but that there will be land available for development within many of the parcels beyond that date.

Phase 3 comprises those parts of Fort McClellan which, because of their location and the rate of land absorption, are likely to be the last areas of the Fort to attract development. In other words, the development program for Fort McClellan will be mature before these sites are required to meet market demand.

This Phase, therefore, contains:

- Large contiguous greenfield sites appropriate for industrial development close to Reilly Lake and the airfield
- A development reserve close to the town center of Fort McClellan and served by 8th Avenue

Phase 3 is defined by its peripheral location and relative isolation from the remainder of Fort McClellan, its dependence on a maturing market for its various uses, and its lack of existing buildings suitable for reuse.

About 833,000 square feet of industrial demand will be generated during Phase 3; 208,000 square feet will be absorbed by existing buildings (mostly in Phase 2 parcels), while 625,000 square feet will be developed on greenfield sites.

Demand for office space is forecast to total 250,000 square feet. About 62,500 square feet will be accommodated in Phase 2's existing buildings, while the remaining 187,500 square feet will be new development.

Phase 3 parcels could eventually generate 1,400 jobs, mostly beyond the span of the program outlined in this Reuse Plan.

The 15-year Business Plan Pro Forma (Chapter 9) identifies an income stream for the first 3 years of this 5-year phase. This stream consists solely of nonresidential income and totals a little over $17 million. This income stream assumes a reduced flow of rental income accruing to the Reuse Authority, as well as several substantial capital injections from the sale of buildings or land.

Phase 3 costs, compared to income, are once again substantial. Management, mothballing of retained buildings, maintenance of part-occupied buildings and the demolition of unwanted structures totals $4 million in Phase 3. Transportation improvements, including maintenance, improvement, closure and demolition of roads, parking lot construction, new or improved sidewalks, bike and walking paths, bridges, and traffic control are projected to cost over $15 million. Utility improvements, including water supply, wastewater

management, stormwater management, electrical, gas, communications, and solid waste management and special utilities, cost almost $9 million.

When summing costs and subtracting revenue, the cumulative deficit generated by the end of Phase 3 is almost $126 million.

The alternative cash flow for Phase 3 of the Comprehensive Reuse Plan shows a substantial variation from this shortfall. Total costs for Phase 3 are $22 million and the cumulative deficit at the end of the Phase is $42 million, though the shortfall *within* the Phase is less than $5 million for the 3-year period. Once again, the once-only improvements to the transportation system account for half the costs of this Phase. If half the proposed improvements could be financed from State and Federal sources, the deficit in Phase 3 would be eliminated.

4.4 OPEN SPACE

The Preferred Land Use Plan highlighted the importance of open space. The Plan has attempted to enhance the value of developed parcels by including open space areas within their boundaries and ensuring that, wherever practically possible, open space parcels are created adjacent to developed parcels.

The development densities in most parcels are sufficiently low to enable green buffer zones to be created when carrying out detailed planning of each parcel.

The open space parcels highlighted in the parcelization process fulfill one or more of several functions. An open space parcel may:

- Accommodate an active use such as a golf course or recreation field
- Protect a wetland or follow the course of a floodplain
- Include a significant quantity of UXO or other material requiring remediation
- Include a landfill
- Serve as a buffer between traditionally incompatible land uses.

Open Space parcels should be tied to the phasing of adjacent development parcels in order to ensure continuity of maintenance and a rational 'opening up' of the Fort as reuse accelerates. Maintenance clearly becomes an important issue given the amount of shrubs, trees, and grass within each open space parcel. The degree of maintenance to which each parcel is subjected will depend on its location in relation to adjacent development parcels. Three levels of maintenance have been identified:

- Basic maintenance, which will be applied to those areas that are less visible and/or will not offer public access. This category also applies to those parcels which are predominantly woodland and which will require normal arboreal inspection regimes.

- Moderate maintenance, which generally applies to those parcels to which the public has access, but which are for informal recreation

- High level maintenance, which applies to parcels that accommodate active, organized recreation and/or are highly visible to visitors to Fort McClellan

4.5 THE RESERVE COMPONENT ENCLAVE

The enclave comprises a number of discontiguous parcels which will accommodate National Guard training activities and, therefore, are not deemed surplus property. The proposed new truck route provides the largest of these parcels with access to the new Eastern Bypass. The remaining parcels will use Galloway Gate for traffic movements in and out of Fort McClellan. The National Guard will be prohibited from using Summerall, Batzell, and Baker Gates.

The CDP and the National Guard will, initially, have joint use of the CDTF and Buildings 472 to 487 (the Military Operations on Urban Terrain [MOUT]). As the CDP increases its activities, it will require sole use of these facilities, and the National Guard will be provided with alternative training sites.

4.6 REMEDIATION RESERVE PARCELS

The scale of remediation required has yet to be defined, but it is likely that a lengthy and costly cleanup program will be required. The Preferred Land Use Plan has identified a number of uses that are highly compatible with the natural environment contained in this part of Fort McClellan. The Remediation Reserve includes:

- Land which provides the ideal setting for a retirement golf community

- A strategically-placed area for further retail development

- A remote lakeside retreat

- Extensive wooded areas suitable for passive recreation

- The creation of a National Wildlife Refuge (see Appendix 1)

- Expansion land for Lagarde Park

- The route of the planned Eastern Bypass

The benefits of the natural environment in this part of Fort McClellan are, currently, outweighed by the fundamental environmental shortcomings manifest in the, as yet, undefined quantities of UXO, chemical, and biological hazards which pervade the area.

Upon completion of the removal of UXO and other contaminants, parcels in the Remediation Reserve will be absorbed by the Reuse Authority. These parcels are forecast to generate almost 500 jobs at some indeterminate date.

5.0 COSTS AND REVENUES

5.1 THE PREFERRED PLAN

REVENUES	PHASE ONE					
	Year 1	Year 2	Year 3	Year 4	Year 5	
	2000	2001	2002	2003	2004	Phase Total
RESIDENTIAL	336,000	4,055,000	2,060,000	2,435,000	1,250,000	10,136,000
INDUSTRIAL	83,160	116,310	146,310	184,830	214,830	745,440
OFFICES	32,500	65,000	147,500	146,250	1,656,545	2,047,795
RETAIL	66,000	132,000	1,164,080	132,000	1,236,240	2,730,320
Annual Total Revenue	517,660	4,368,310	3,517,890	2,898,080	4,357,615	15,659,555
Cumulative Total Revenue	517,660	4,885,970	8,403,860	11,301,940	15,659,555	

COSTS	PHASE ONE					
	Year 1	Year 2	Year 3	Year 4	Year 5	
	2000	2001	2002	2003	2004	Phase Total
TRANSPORTATION	21,375,217	2,552,820	1,887,264	1,887,264	1,887,264	29,589,830
UTILITIES	7,053,876	1,914,503	1,315,629	1,327,312	1,339,579	12,950,900
BUILDING/MISC.	3,311,720	663,770	663,770	663,770	663,770	5,946,800
MOTHBALLING	1,035,680	918,680	823,115	726,240	658,004	4,161,718
MANAGEMENT	3,277,649	604,977	468,978	460,459	454,862	5,266,925
Annual Total Costs	36,054,142	6,654,750	5,158,756	5,065,045	5,003,479	57,936,172
Cumulative Total Costs	36,054,142	42,708,892	47,867,648	52,932,693	57,936,172	

Annual Surplus/Deficit	-35,536,482	-2,286,440	-1,640,866	-2,166,965	-645,864
Cumulative Surplus/Deficit	-35,536,482	-37,822,922	-39,463,788	-41,630,753	-42,276,617

REVENUES

	PHASE TWO							
	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	
	2005	2006	2007	2008	2009	2010	2011	Phase Total
RESIDENTIAL	0	0	1,575,000	0	0	0	0	1,575,000
INDUSTRIAL	291,960	507,450	567,450	627,450	672,450	6,167,982	1,393,118	10,227,860
OFFICES	281,800	195,000	292,500	390,000	677,580	585,000	855,668	3,277,548
RETAIL	13,552	98,560	1,170,000	0	0	1,170,000	520,000	2,972,112
Annual Total Revenue	587,332	801,010	3,604,950	1,017,450	1,350,030	7,922,982	2,768,786	18,052,540
Cumulative Total Revenue	16,246,887	17,047,897	20,652,847	21,670,297	23,020,327	30,943,309	33,712,095	

COSTS

	PHASE TWO							
	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	
	2005	2006	2007	2008	2009	2010	2011	Phase Total
TRANSPORTATION	7,572,417	6,959,339	6,959,339	6,959,339	6,959,339	6,959,339	6,959,339	49,328,449
UTILITIES	12,451,722	1,762,870	1,777,071	1,791,982	1,807,638	1,824,077	1,841,338	23,256,698
BUILDING/MISC.	2,727,107	698,107	1,915,107	698,107	698,107	698,107	698,107	8,132,750
MOTHBALLING	580,754	532,004	483,254	434,504	393,254	356,895	306,060	3,086,722
MANAGEMENT	1,993,230	845,947	946,435	840,134	837,959	836,265	833,412	7,133,393
Annual Total Costs	25,315,720	10,798,267	12,081,226	10,724,065	10,696,296	10,674,683	10,638,255	90,928,011
Cumulative Total Costs	103,251,392	94,049,659	106,130,885	116,854,950	127,551,245	138,225,928	148,864,184	

Annual Surplus/Deficit	-24,727,888	-9,997,257	-8,476,276	-9,706,615	-9,346,266	-2,751,701	-7,869,469
Cumulative Surplus/Deficit	-67,004,505	-77,001,762	-85,478,038	-95,184,653	-104,530,918	-107,282,619	-115,152,089

REVENUES

	PHASE THREE			
	Year 13	Year 14	Year 15	
	2012	2013	2014	Phase Total
RESIDENTIAL	0	0	0	0
INDUSTRIAL	589,950	4,678,346	8,542,866	13,811,162
OFFICES	845,000	975,000	1,105,000	2,925,000
RETAIL	0	975,000	0	975,000
Annual Total Revenue	1,434,950	6,628,346	9,647,866	17,711,162
Cumulative Total Revenue	35,147,045	41,775,391	51,423,257	

COSTS

	PHASE THREE			
	Year 13	Year 14	Year 15	
	2012	2013	2014	Phase Total
TRANSPORTATION	7,729,482	3,967,591	3,967,591	15,664,663
UTILITIES	3,917,236	2,343,267	2,363,248	8,623,751
BUILDING/MISC.	657,270	407,270	407,270	1,471,810
MOTHBALLING	254,810	207,209	164,518	626,537
MANAGEMENT	941,910	519,400	517,697	1,979,007
Annual Total Costs	13,500,708	7,444,737	7,420,323	28,365,768
Cumulative Total Costs	162,364,891	169,809,628	177,229,951	

Annual Surplus/Deficit	-12,065,758	-816,391	2,227,543
Cumulative Surplus/Deficit	-127,217,846	-128,034,237	-125,806,694

5.2 THE ALTERNATIVE CASH FLOW

REVENUES	PHASE ONE					
	Year 1	Year 2	Year 3	Year 4	Year 5	
	2000	2001	2002	2003	2004	Phase Total
RESIDENTIAL	336,000	4,055,000	2,060,000	2,435,000	1,250,000	10,136,000
INDUSTRIAL	83,160	116,310	146,310	184,830	214,830	745,440
OFFICES	32,500	65,000	147,500	146,250	1,656,545	2,047,795
RETAIL	66,000	132,000	1,164,080	132,000	1,236,240	2,730,320
Annual Total Revenue	517,660	4,368,310	3,517,890	2,898,080	4,357,615	15,659,555
Cumulative Total Revenue	517,660	4,885,970	8,403,860	11,301,940	15,659,555	

COSTS	PHASE ONE					
	Year 1	Year 2	Year 3	Year 4	Year 5	
	2000	2001	2002	2003	2004	Phase Total
TRANSPORTATION	1,654,788	499,512	251,744	251,744	251,744	2,909,531
UTILITIES	3,877,907	1,406,147	872,274	883,957	896,224	7,936,509
BUILDING/MISC.	3,311,720	663,770	663,770	663,770	663,770	5,966,800
MOTHBALLING	1,035,680	918,680	823,115	726,240	658,004	4,161,718
MANAGEMENT	988,009	348,811	761,090	252,571	246,974	2,097,456
Annual Total Costs	10,868,104	3,836,920	2,871,993	2,778,282	2,716,715	16,812,840
Cumulative Total Costs	10,868,104	14,705,024	17,577,017	20,355,298	23,072,014	
Annual Surplus/Deficit	-10,350,444	531,390	645,897	119,798	1,640,900	
Cumulative Surplus/Deficit	-10,350,444	-9,819,054	-9,173,157	-9,053,358	-7,412,459	

REVENUES	PHASE TWO						
	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
	2005	2006	2007	2008	2009	2010	2011
RESIDENTIAL	0	0	1,575,000	0	0	0	0
INDUSTRIAL	291,960	507,450	567,450	627,450	672,450	6,167,982	1,393,118
OFFICES	231,820	195,000	292,500	390,000	677,580	585,000	855,668
RETAIL	13,552	98,560	1,170,000	0	0	1,170,000	520,000
Annual Total Revenue	587,332	801,010	3,604,950	1,017,450	1,350,030	7,922,982	2,768,786
Cumulative Total Revenue	16,246,887	17,047,897	20,652,847	21,670,297	23,020,327	30,943,309	33,712,095

COSTS	PHASE TWO						
	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
	2005	2006	2007	2008	2009	2010	2011
TRANSPORTATION	2,269,931	2,062,838	2,062,838	2,062,838	2,062,838	2,062,838	2,062,838
UTILITIES	11,803,548	1,194,696	1,208,897	1,223,807	1,239,463	1,255,903	1,273,164
BUILDING/MISC.	2,727,107	698,107	1,915,107	698,107	698,107	698,107	698,107
MOTHBALLING	580,754	532,004	483,254	434,504	393,254	356,895	306,060
MANAGEMENT	1,484,214	381,452	481,958	375,637	373,461	371,768	368,914
Annual Total Costs	18,945,554	4,869,095	6,152,054	4,794,893	4,767,123	4,745,512	4,709,084
Cumulative Total Costs	35,758,394	40,627,489	46,779,543	51,574,436	56,341,560	61,087,071	65,796,155
Annual Surplus/Deficit	-18,358,222	-4,068,085	-2,547,104	-3,777,443	-3,417,093	3,177,470	-1,940,298
Cumulative Surplus/Deficit	-25,770,681	-29,838,766	-32,385,870	-36,163,313	-39,580,406	-36,402,936	-38,343,233

REVENUES	PHASE THREE			
	Year 13	Year 14	Year 15	
	2012	2013	2014	Phase Total
RESIDENTIAL	0	0	0	0
INDUSTRIAL	589,950	4,678,346	8,542,866	13,811,162
OFFICES	845,000	975,000	1,105,000	2,925,000
RETAIL	0	975,000	0	975,000
Annual Total Revenue	1,434,950	6,628,346	9,647,866	17,711,162
Cumulative Total Revenue	35,147,045	41,775,391	51,423,257	

COSTS	PHASE THREE			
	Year 13	Year 14	Year 15	
	2012	2013	2014	Phase Total
TRANSPORTATION	6,167,167	2,811,261	2,811,261	11,789,689
UTILITIES	3,315,501	1,741,532	1,761,513	6,818,546
BUILDING/MISC.	657,270	407,270	407,270	1,471,810
MOTHBALLING	254,810	207,209	164,518	626,537
MANAGEMENT	779,606	387,545	385,842	1,552,994
Annual Total Costs	11,174,353	5,554,818	5,530,404	22,259,575
Cumulative Total Costs	76,970,509	82,525,326	88,055,730	

Annual Surplus/Deficit	-9,739,403	1,073,528	4,117,462
Cumulative Surplus/Deficit	-48,082,637	-47,009,109	-42,891,646

6.0 FINANCING PLAN

The Fort McClellan Comprehensive Reuse Strategy shows a deficit after 15 years and three phases of development of almost $126 million.

This large deficit arises because Fort McClellan will generate substantial infrastructure and management costs in order for it to be marketable in a semi-rural economy. Unlike many base reuse examples, the Fort does not have a ready supply of good quality building stock for which there is a pent-up local demand. Furthermore, the Army has reduced its investment in the Base's infrastructure over a number of years, leaving the community to step in and fill the investment gap.

Income from activities such as the sale and lease of residential property, industrial premises, office space, and agricultural opportunities will be difficult to realize. The cash flow analysis that appears in this Reuse Plan is conservative. It recognizes the risk that the community will be taking on, as well as the uncertainties associated with remediation. The difference between the streams of expenditure and income will be negative throughout the three phases of development unless significant injections are made from several quarters.

Support to cover the fundamental infrastructure costs generated by this Reuse Strategy will be sought from Federal economic development programs wherever possible. However, in an effort to minimize essential costs while achieving forecast revenues and meeting the aspirations of the community, this plan includes an alternative cash flow.

The alternative cash flow defers certain key expenditures and is based on a reduced commitment to new infrastructure construction, while fulfilling the underlying objectives of the Preferred Land Use Plan. The 15-year cumulative deficit generated by the alternative cash flow is a little less than $43 million, or an average of almost $3 million per year. The upgraded transportation network and utility infrastructure costs account for much of the deficit, and it will be to State and Federal funding sources, over a 15-year period, to which the community will turn. While the $43 million gap is daunting, attempts to close the gap by implementing further reductions in infrastructure investment are likely to lead to a reduction in income.

The pro forma does not include the financing of the construction of a new Eastern Bypass, which the community expects to be funded to a level of $50 million.

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APPENDICES

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Appendix 2 Pro Forma Backup Tables

Appendix 3 The Demolition Plan

1.0 IMPLEMENTING THE PREFERRED LAND USE PLAN

Two key phases of work by the consultant team have been crucial in enabling the following Implementation Plan to be devised. First, an analysis of existing conditions was carried out by the team. Second, this analysis was used to inform the local community and its leaders, enabling them to participate in a process that resulted in a series of redevelopment options for Fort McClellan. The culmination of this process was the definition of a Preferred Land Use Plan.

The Preferred Land Use Plan forms the basis for a phased implementation strategy which also draws heavily on several key components. These components, which use the Preferred Land Use Plan as a starting point, include:

- Real and Personal Property Acquisition Plan
- Phasing Plan
- Capital Improvements Strategy
- Infrastructure Privatization Plan
- Financing Plan
- Target Market Strategy
- Business Plan Pro Forma
- Demolition Plan

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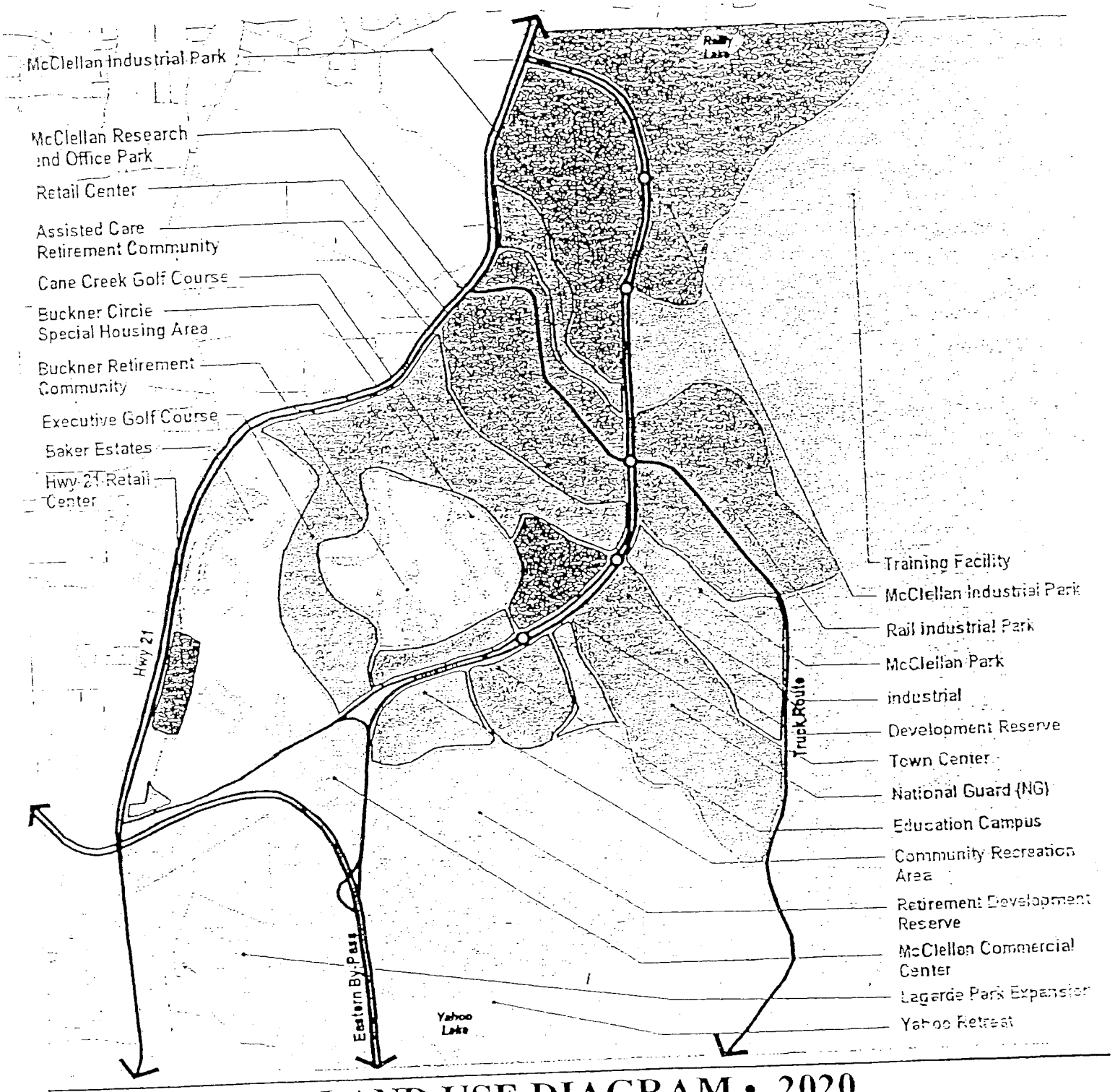

LAND USE DIAGRAM • 2020

LEGEND

- Commercial
- Training/Education
- Residential
- Business/Industrial
- Remediation Reserve
- Open Space/Recreation
- Lake

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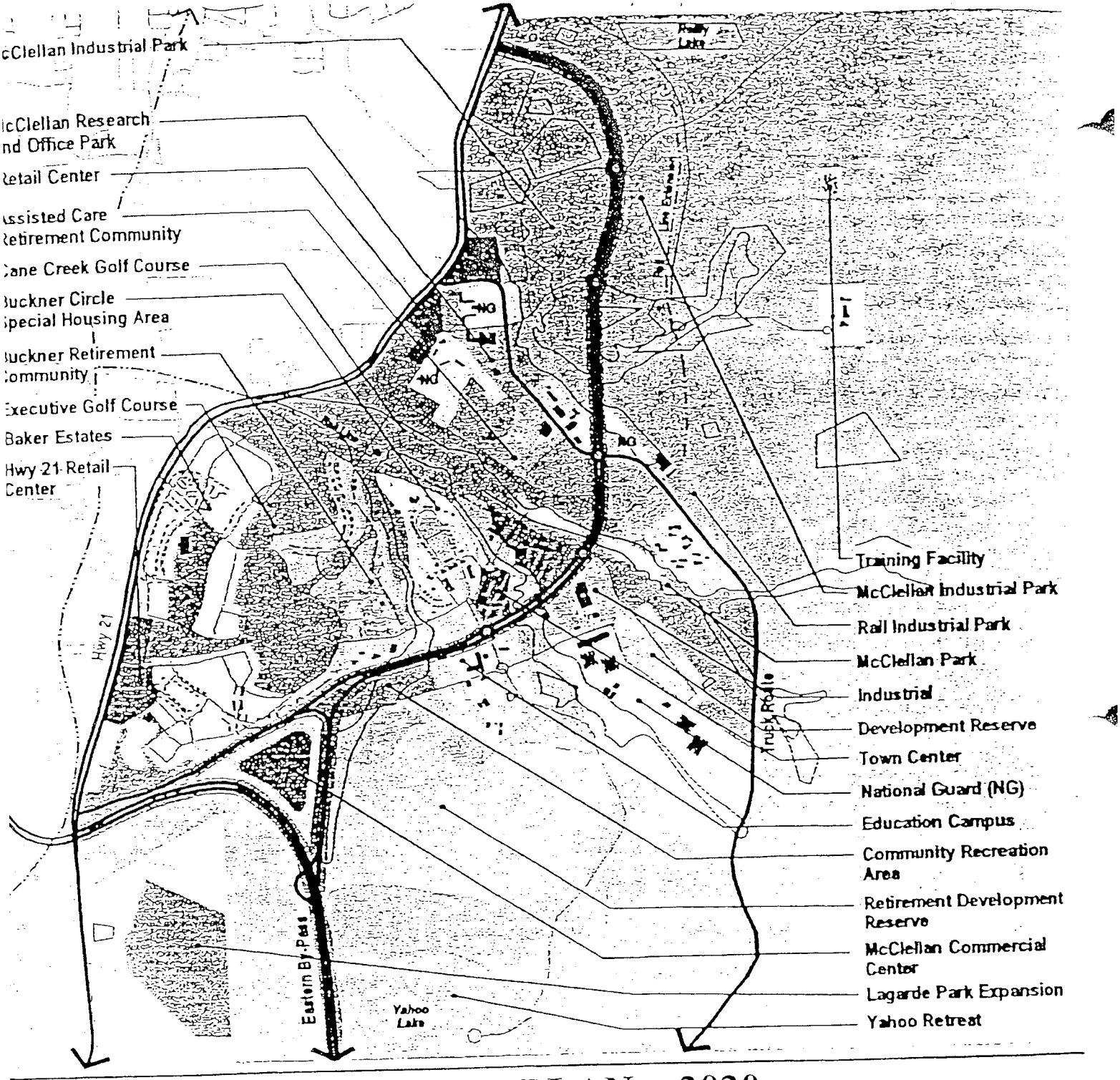
ECG



LAND USE PLAN • 2020

LEGEND

- Retail
- Office
- Residential
- Retirement
- Industrial
- Education/Training
- Public Use
- Active Recreation
- Passive Recreation
- Cultural
- National Guard
- Retreat
- Development Reserve
- Lake

Prepared by:
EDAW, Inc
ECG

2.0 IMPLEMENTATION

This phase of the Comprehensive Reuse Plan fulfills two main objectives. First, it brings together a series of key elements which can be found in Chapters 3 through 9. Second, Phase 3 synthesizes these key elements to produce an Implementation Plan. This Implementation Plan takes as its starting point the Preferred Land Use Plan which, in turn, was the culmination of the first two phases of the Fort McClellan Comprehensive Reuse Plan. It is structured in two parts. The first part outlines the underlying **implementation principles** of management structure and strategy, phasing, environmental issues, and marketing. The second part of the plan uses the **parcelization** process as a framework for implementation.

2.1 IMPLEMENTATION PRINCIPLES

2.1.1 STRUCTURE AND MANAGEMENT STRATEGY OF THE REUSE AUTHORITY

Chapter 3 addresses the acquisition strategy for Fort McClellan in detail. In addition, the following principles or assumptions underpin this Implementation Plan:

- **That implementation of the Preferred Land Use Plan takes into account the momentum that has already been built up by the Reuse Authority.** Even though staffed to the minimum, and with a strictly limited constitution, the Reuse Authority has built substantial momentum within the local community and further afield. The most impressive manifestation of this momentum is the fast-developing plans for the establishment of a national Center for Domestic Preparedness (CDP), to be located at Fort McClellan. This initiative has been community-wide in its development, but began as a potential reuse option for part of the Fort. The Reuse Authority and its Board will continue to be particularly active in establishing the CDP, contributing time and resources to building local private and public sector partnerships and increasing the already large stock of credibility among Federal agencies and elected representatives.

- **That the Reuse Authority will be entering a new phase of increased activity in accomplishing the reuse of Fort McClellan.** This new phase (which builds on the accelerating activity of the last 12 months) begins in October 1997 and continues for 2 years until Base closure and handover in October 1999.

- **That momentum will be maintained throughout this pre-closure period by an expanded staffing capability**

- That the Reuse Authority will relocate to the heart of Fort McClellan, close to Buckner Circle

- **That the Reuse Authority will launch a number of further momentum-building strategies.** These strategies will address, in greater detail, issues of marketing, environmental cleanup, building reuse, interim leases, public benefit conveyances (PBCs), and economic development conveyances (EDCs). This Implementation Plan addresses these momentum-building strategies further, below.

- **That the Reuse authority acquires an interim masterlease for Fort McClellan by adopting the Memphis Model.** That is, the immediate execution of an interim masterlease with no costs charged to the Reuse Authority until end-users have been found and until the land and/or buildings in question have been legally conveyed to the end user. Only at that point will the interim masterlease expire on the property in question. It is recognized that this form of acquisition has serious shortcomings that reduce the marketability of the property. The most pertinent is the length of lease—55 years—and the difficulty a potential tenant will have in financing such an instrument.

- **That the Reuse Authority conveys all property intended for Public Benefit on a leaseback basis (notwithstanding the Remediation Reserve)**

- **That all property conveyed to the Reuse Authority is done so with a complete inventory of personal property.** It will be difficult to find tenants for the diverse and mostly obsolete buildings at Fort McClellan. If the marketability of these buildings is further hampered because they have been stripped of their personal property, it is unlikely that they will ever find tenants. The personal property of Fort McClellan, therefore, becomes a key device or incentive for attracting new organizations, jobs, and people. Several buildings at Fort McClellan have specific uses. These include the hospital, reception center, clinics, gymnasiums, shops, fire station, office buildings, and dedicated warehouse space. These buildings include detailed inventories of equipment that must be retained by the Reuse Authority in order to fulfill its primary role—.to attract jobs and investment.

- **That the Reuse Authority is also able to exercise the option to acquire parts of Fort McClellan using the Economic Development Conveyance mechanism.**

- **That, following an Economic Development Conveyance, the Reuse Authority is able to fulfill various roles with respect to the property it acquires.** These roles include:

⇒ The ability to dispose of land and/or buildings directly to developers for a capital sum

⇒ The ability to maintain existing buildings, while marketing them to potential tenants, earning revenue in the form of rent and service charges, and incurring building maintenance costs

⇒ The ability to dispose of part- or fully-let property to interested investors as soon as is practically possible, in return for capital sums

⇒ The ability to retain certain key buildings, earning revenues in the form of rent

⇒ The ability to dispose of public facilities, such as educational premises and land, to local government as soon as possible

⇒ The ability to retain certain common areas of the Fort, incurring maintenance costs but also earning revenues through service charges

⇒ The ability to enter into covenants with developers and end-occupiers for the upkeep of landscaping adjacent to their properties

- **That the Reuse Authority will execute a Community Co-operative Caretaker Agreement in order to assume control of the maintenance of Fort McClellan from the Army**

- **That the Reuse Authority has the ability to lease to occupiers on a short-term, interim basis, property which is earmarked in this Implementation Plan for demolition.** Interim maintenance standards and the status of personal property associated with buildings planned for demolition will be the subject of negotiation between the Reuse Authority and the Army. Personal property contained in buildings earmarked for demolition should not automatically be considered abandoned or unwanted.

- **That the Reuse Authority, as representatives of the community, assume from the Army all environmental permits currently in place at Fort McClellan**

- **That the Reuse Authority takes a prominent role in the transfer of utilities.** It is assumed that the Reuse Authority will not be required to invest in the gas and electrical supply infrastructure; but, on the contrary, qualified vendors will pay a premium for access to a new customer base at Fort McClellan. The basis for a relationship between the Authority and qualified vendors is explored in Chapter 6.

2.1.2 THE STRATEGY OF PHASING FORT McCLELLAN

In terms of acreage, Fort McClellan is one of the largest Base reuses in the country. It is located in a semi-rural community where the impact of closure will be substantial and where the market for land and buildings of any kind is relatively small. The Fort suffers a complex array of environmental cleanup issues. All of these factors point to the need for a carefully defined phasing plan. The following principles or criteria of phasing underpin this Implementation Plan:

- Phasing is responsive to market demand.
- Phasing is responsive to environmental issues.
- Phasing must accommodate initiatives already set in train by the Reuse Authority.
- Phasing must focus the economic development task by grouping contiguous, compatible parcels of land.
- Phasing should generate revenue early, while spreading costs as widely as possible across the coming years.
- Phasing acknowledges the program for constructing the Eastern Bypass.
- Phases are manageable in their size and scope.
- Phasing helps promote a sense of place early at Fort McClellan.
- Buildings suitable for reuse are acquired in early phases.

The priority of this phasing plan is to provide the Reuse Authority and the community with a plan which **best meets market needs** and therefore has the greatest chance of replacing the jobs that will be lost as a result of the Army's abandonment of the Base. Inevitably, however, some compromise has been made, particularly with respect to the environmental cleanup issues which appear to be substantial in some highly marketable areas. Areas which require a lengthy and detailed cleanup program have been phased for acquisition late in the Implementation Plan and, in the case of sites in the Remediation Reserve, at an indeterminate date.

2.1.3 ADDRESSING ENVIRONMENTAL ISSUES

At least two-thirds of Fort McClellan's land area is rough, wooded mountainous terrain that accommodated a variety of gunnery ranges and chemical and biological weapon testing areas in the past. The remaining third, where virtually all future development will be clustered, is subject to a range

of environmental issues that will require various degrees of Remediation before acquisition by the Reuse Authority is possible.

This Implementation Plan proposes, through the Phasing process, a set of priorities for negotiation with the Army. The Phasing Plan presented here attempts to maximize early revenues for the Reuse Authority and defer costs wherever possible, thus creating a manageable cash flow (albeit negative).

Revenue streams will be generated by the effective and timely market-driven economic development of Fort McClellan. However, revenues do not offset costs.

While this Implementation Plan acknowledges that some environmental remediation at Fort McClellan will be extremely complex, expensive, and time-consuming, the remediation schedule set by the Army must, wherever possible, match market demand. In other words, those parcels which appear to be the most attractive to the market should be subject to clean-up first.

This Implementation Plan acknowledges that the Army's remediation budget is not unlimited. Therefore, the plan has identified a number of land parcels which, though appearing on the Preferred Land Use Plan, are unlikely to be cleaned up within the foreseeable future. These parcels, which are outlined in detail below, have effectively been deprioritized and placed in a Remediation Reserve. In simple terms, the Remediation Reserve comprises the land once used as gunnery ranges to the south and east of Summerall Gate Road and the proposed new spine route. The Remediation Reserve contains an undefined quantity of unexploded ordnance (UXO) for which cleanup schedules have yet to be set.

While it is accepted that this reserve of land cannot be transferred to the Reuse Authority within the foreseeable future, it is essential that a remediated buffer zone is created where the Remediation Reserve meets development and open space parcels of land. The precise characteristics of this buffer will require careful definition, but certain principles may be established as part of this Implementation Strategy. The remediated buffer zone should be acquired from the Army in the following condition:

- Cleared of all UXO and other toxic materials, and of dimensions to be determined by surrounding uses
- Landscaped to a high standard and with ground cover or other organic material designed to deter public entry
- Clearly identifiable as a "safe" zone
- With clearly defined boundaries

The UXO immediately adjacent to Summerall Gate Road represents one of these buffer priorities and must be cleared to maximize development.

2.1.4 MARKETING FORT McCLELLAN

Fort McClellan offers some unique marketing opportunities, as well as several fundamental marketing constraints. Most experts agree that delay, following closure announcement, is the greatest threat to a successful Base reuse. A number of factors ensure a marketplace stigma for the reuse of the property. The uncertain program for removal of Army activities to Fort Leonard Wood, Missouri, represents a serious impediment that will almost certainly lead to delay. Second, Fort McClellan comprises approximately 10,000 acres of UXO with no clear, costed strategy for its removal. Third, chemical weapon incineration at Anniston Army Depot places a major stigma on the Base that will only be removed by a carefully designed communications strategy. Finally, the sheer size of Fort McClellan, and its narrow educational mission, differentiates it from those reused bases which have been close to large urban areas and which have offered a wide range of adaptable and readily exploitable technical, industrial, and real estate assets.

Each of these constraints must be overcome by the community if it is to carry out a successful reuse of Fort McClellan. The Reuse Authority must ensure its communications and marketing strategy focuses on clear and attainable targets, given the limitations outlined above.

The Reuse Authority, since its establishment, has been actively marketing Fort McClellan, with its most visible effort being the ongoing strategy to establish the CDP. This highly focused strategy is now attracting significant financial support. The 24-month pre-closure countdown is about to begin; therefore, it is highly appropriate that the Reuse Authority will soon be relocating from the center of Anniston to property close to Buckner Circle.

This Implementation Plan is underpinned by the following marketing principles:

- The heart of Fort McClellan, for the majority of visitors, is the historic district surrounding Buckner Circle. This area is planned to be the new town center for the Fort. An effective marketing strategy will exploit the sense of place (and, to a lesser extent, sense of history) that is Buckner Circle. The Reuse authority, therefore, should take every opportunity to strengthen and exploit the ambiance of Buckner Circle and its historic surroundings. This area appears in the First Phase of acquisition because of its importance to the overall marketing strategy.

- The approach route to Buckner Circle, through Summerall Gate and along Summerall Gate Road, must support and strengthen the impact of the historic district. This means that landscaping, signposting, and the establishment of a remediated buffer zone are important elements of Phase 1 implementation.

- The marketing strategy for Fort McClellan must have clear target markets, and well-defined products to meet target market needs. Phasing and implementation must provide a well defined product with a clear market focus.

- The CDP provides the opportunity for spin-off uses to be targeted and attracted to Fort McClellan. The Implementation Plan must accommodate the spin-off uses.

- Certain activities at the CDP may be incompatible with some of the uses that are proposed in the Preferred Land Use Plan. The size of Fort McClellan, however, is such that, in reality, accommodating what appear to be incompatible uses may not prove problematic. In marketing Fort McClellan, it will be essential to communicate to potential investors clear, controlled messages of the opportunities particularly relevant to them. This compartmentalization, achieved by controlled and clear communication of the product, is enhanced by the Phasing and Parcelization processes. In practical terms, marketing tours and supporting information should be focused on precise needs.

- The marketing strategy, outlined in detail in Chapter 8, has been costed at $160,000 per annum.

2.2 PARCELING FORT MCCLELLAN

The Phasing Plan is a strategy for the manageable operations and maintenance of the installation following its closure. It is not a proposal for the community's phased ownership of property in fee simple via a multi-tiered EDC. It is not the intent of the Reuse Authority to acquire property in a tiered, or phased, manner. All of the property on the installation will be acquired at the same time through a single EDC, notwithstanding contaminated property, including the Remediation Reserve, and public benefit property.

The Phasing Plan serves as an internal tool to allow the Reuse Authority to better understand the dynamics of each parcel of property at Fort McClellan and to comprehend the property in its totality. It serves as a benchmark for what the marketplace will likely absorb within the given time frames. The Phasing Plan is also a measure for more effectively managing both cash flow and the operations and maintenance of the installation.

Finally, the phasing strategy focuses limited resources on areas of the development that are most likely to yield the greatest benefits, beginning with the residential units in Phase 1a. through the reuse of contaminated property in Phase Four (the Remediation Reserve).

The current real estate market in Calhoun County and its surrounding region reflects the predominantly rural nature of the area. The annual absorption rate

of industrial and warehousing land in Calhoun County has been about 30 acres over the last few years; about 10,000 square feet of new office space is absorbed every year, and building permits for about 200 homes are issued annually. There appears to be a ready availability of industrial land, empty office space, and new homes throughout the region. Regional land and home sale prices are very competitive and relatively lower than the Birmingham and Atlanta markets. Against this backdrop, the 18,000 acres of potential development land at Fort McClellan are substantially in excess of market requirements, particularly as the population in Calhoun County is projected to decline as a result of base closure and other trends.

Projected future growth patterns appear to follow historic trends. During the past 110 years, the Anniston Urbanized Area has developed from a planned industrial community to a sprawling metropolitan center providing regional as well as local economic functions. Anniston and the nearby communities of Oxford, Hobson City, and Weaver comprise about 37,000 acres, including vacant properties. Fort McClellan comprises about 18,000 acres. Therefore, the post has enough land to accommodate most of the growth and development that has historically occurred in the Anniston area over the last century.

With over 18,000 acres of land available for development, a realistic rate of absorption suggests that the Fort will require a 20-year development program. This represents a substantial commitment of management time and energy if the development program is to be completed successfully and without substantial costs falling on the community. A phased takeover by the Reuse Authority of the Fort's operations, rather than all at once, would reduce the inherent risks and overall management costs.

An immediate assumption by the Reuse Authority of 18,000 acres will kill the reuse process before it ever begins. Projections indicate immediate absorption of 18,000 acres will severely depress the regional real estate market, causing a deflationary spiral to the micro-economy. Additionally, the Reuse Authority's ability to maintain, operate, and secure 18,000 acres and 6.5 million square feet of facility floor space would be marginalized. The community simply does not possess the financial and staff resources to absorb so much space so fast. Exacerbating matters is the campus-like character of Fort McClellan. The installation represents excessive office space, dormitory space, and classroom space for the regional market. A phased takeover of operations is the only option.

It is proposed that Fort McClellan is acquired by the community as a single EDC comprising four operational phases. Table 2.1 illustrates how the Phasing Plan influences the way in which the community, through the Reuse Authority, will manage the Fort following its acquisition.

Table 2.1. Phasing Plan Milestones

YEAR	MILESTONE
1999	A single EDC is completed. It comprises the parcels outlined in the Comprehensive Reuse Plan.
2000-2004	Operational responsibility for parcels in Phases One A & B passes to the FMRRA and development commences, as described in the Reuse Plan.
2000-2004	Parcels in Phases Two & Three are maintained under a Co-operative Community Caretaker Agreement.
2000-2004	The Army begins clean-up of the parcels contained in the Remediation Reserve.
2005	Operational responsibility for parcels in Phase 2 passes to the FMRRA and development commences, as described in the Reuse Plan. Revenues from Phase 1 help finance maintenance and infrastructure development.
2005	Parcels in Phase 3 are maintained under a Community Cooperative Caretaker Agreement
2005-2011	Army continues clean-up
2012 -	Operational responsibility for Phase 3 passes to the FMRRA and development commences, as described in the Reuse Plan
When Appropriate	Army hands over clean parcels in the Remediation Reserve to the community for development.

The milestones outlined above are flexible. It is implicit in this Phasing Plan that the Reuse Authority and the Army will respond to the market and the inevitable changing external circumstances as appropriate.

The implementation of the Preferred Use Plan is carried out over three phases, or periods. The first phase begins on the closure date of Fort McClellan which, for the purposes of the Comprehensive Plan, is assumed to occur in October 1999. Of course, the Reuse Authority is active now and will escalate its activities up to the closure date.

2.2.1 PHASE 1

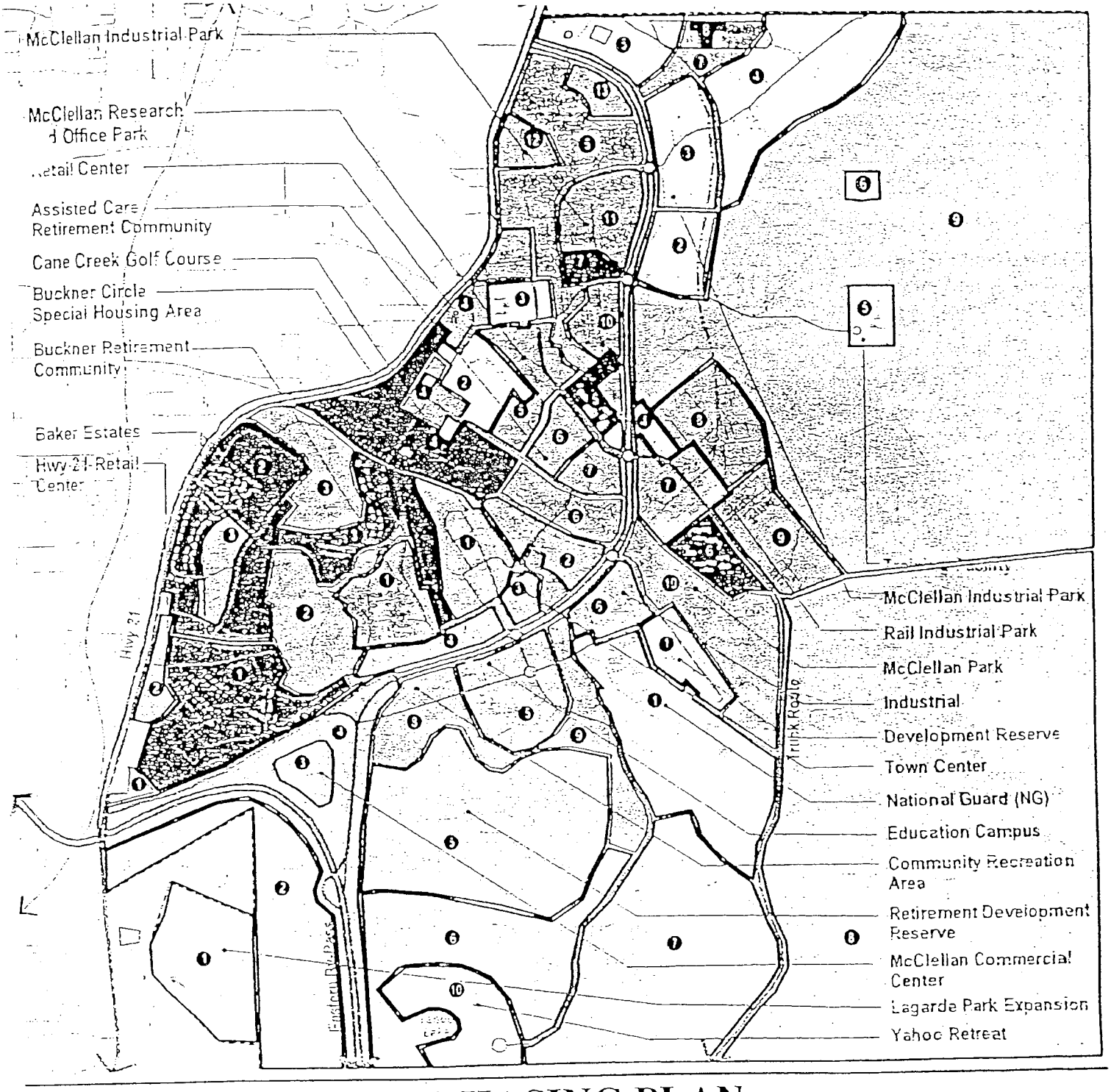
The first phase of this Implementation Plan lasts 5 years and includes that part of the Fort that is bounded to the north by Cane Creek, to the east and south by Summerall Gate Road, and to the west by Highway 21. This phase contains over 1,000 acres, 700 acres of which are already developed. Phase 1 includes the following:

- Existing housing and the potential for further housing development, aimed at the retirement community
- The Center for Domestic Preparedness
- Buildings with the potential for reuse as:
  - ⇒ Educational facilities
  - ⇒ Manufacturing and warehousing
  - ⇒ Office space
  - ⇒ Retailing
  - ⇒ Homeless assistance facilities
- Publicly accessible active recreation areas
- An existing golf course and the potential for a second course
- The wastewater treatment facility adjacent to the base, north of Baker Gate
- Access to open water
- A historic core that forms the heart of a potential town center

This first phase is defined by its marketing potential, its clearly defined areas of environmental cleanup, its ability to offer a variety of uses and a range of reusable buildings, its proximity to relatively well developed infrastructure, its sense of place (in the form of a definable town center), and its quality of open space.

Phase 1 has been divided into two parts, 1a and 1b. Phase 1a comprises those parcels of land that offer immediate opportunities for disposal. Simply, the Reuse Authority on receipt from the Army should be able to dispose of them on a back-to-back basis. Phase 1b, it has been assumed, will require 5 years to be sold, let, or developed (depending on the use in question).

Current estimates of the rate of absorption for industrial buildings show that, of the existing reused buildings, about 12,000 square feet will be absorbed in



PHASING PLAN

FORT MCCLELLAN REUSE PLAN

LEGEND

- Phase IA
- Phase IB
- Phase II
- Phase III
- Remediation Reserve Parcel
- National Guard Parcel
- Open Space Parcel
- Parcel Number

Prepared by:
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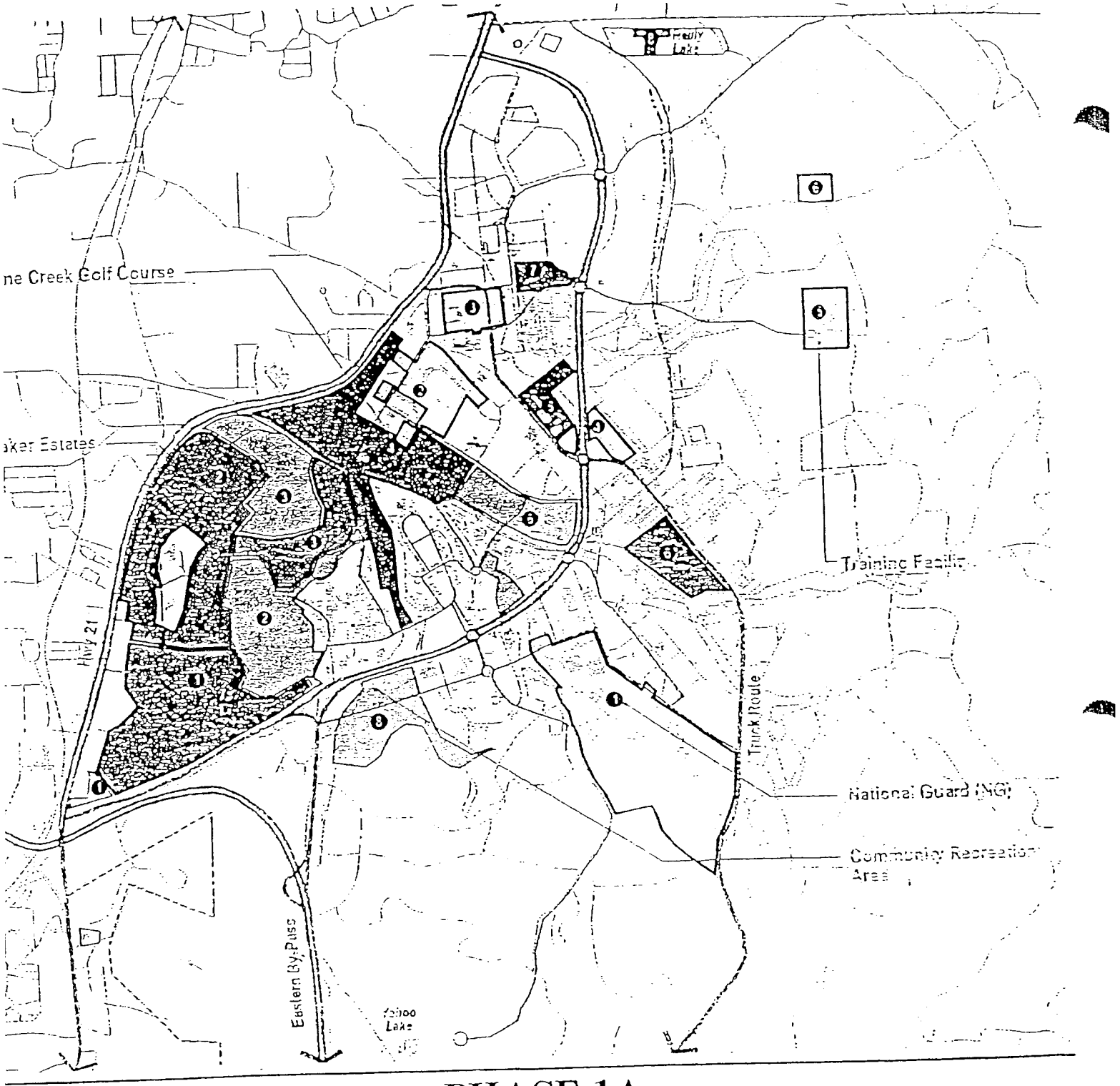
KPS Group, Inc.
ECG
WB Bishop & Associates

FORT MCCLELLAN REUSE AND REDEVELOPMENT PLAN



PHASE 1A

LEGEND

- Phase IA
- National Guard Parcel
- Open Space Parcel
- Parcel Number

Prepared by:
EDAW, Inc

2000, rising to 15,000 a year by 2004. Land for new industrial buildings is expected to generate 35,000 to 45,000 square feet of demand per year for 5 years. Phase 1, therefore, is projected to yield about 275,000 square feet of demand for industrial space over a 5-year span.

Office space in Phase 1 is expected to show a weaker absorption rate. Existing buildings will attract about 21,000 square feet of demand during Phase 1. No demand for land to build new office space is projected.

Phase 1 is projected to generate demand for 58,000 square feet of retail, all in existing buildings.

The Business Plan Pro Forma projects that Phase 1 will generate an income of $15.6 million during its notional 5-year timeframe. Approximately $5.5 million is expected to be earned in the form of nonresidential revenue. This includes rent from successfully let industrial, office and retail premises, non-residential land and building sales. The remaining $10.1 million is generated by the sale of residential units to retirement developers.

Phase 1 costs, compared to income, are substantial. Management, mothballing of retained buildings, maintenance of part-occupied buildings and the demolition of unwanted structures amounts to $15 million in Phase 1. Transportation improvements, including maintenance, improvement, closure and demolition of roads, parking lot construction, new or improved sidewalks, bike and walking paths, bridges, and traffic control are projected to cost $30 million. Utility improvements, including water supply, wastewater management, stormwater management, electrical, gas, communications, and solid waste management and special utilities, cost almost $13 million.

When summing costs and subtracting revenue, the deficit generated in Phase 1 is about $42 million.

An alternative approach to infrastructure development (outlined in detail in Chapter 5) enables costs to be reduced radically in the early phases of this development. Adopting the alternative strategy, the deficit generated in Phase 1 falls to $7.4 million. This deficit could be closed by several potential sources of funding. First, transportation funding of $3 million should be sought from State and Federal sources, spread over the 5-year period. Second, utility funding of up to $8 million should be sought from private sector and State sources, depending on the precise nature of the costs.

2.2.1.1 Parcel 1, Phase 1a

Parcel 1 is 180 acres and comprises 180 existing dwelling units, mostly arranged in multifamily units, dating from 1936. These military homes form a neighborhood set in pleasant, gently undulating woodland and open space. The parcel also offers 100 acres of potential housing development land. This parcel is defined by its marketability. Specialty housing developers, including

retirement community developers, have indicated varying levels of interest to purchase the existing housing for a negotiated unit price, carry out essential renovations, and resell the homes to local purchasers at relatively low prices. This process has been completed successfully at other base closures throughout the United States.

The sale of Parcel 1 in this manner has several advantages. First, it has the potential to inject, quickly and simply, a relatively large capital sum into the Reuse Authority's cash flow. This is essential to the Reuse Authority's strategy to attract jobs to the Fort. Second, the developers involved have experience and a track record of performance, essential to the effective development of this asset. Third, Phase 1 is close to Summerall Gate, and its development would provide the Authority with an early demonstration project and a sense of business underway. Fourth, the housing will generate an early, positive socioeconomic impact on the Fort and its surrounding communities by attracting new residents from outside the area.

The main disadvantages of disposing of this parcel to a housing developer are, first, the demand for these types of low-cost refurbished homes is unproven and the sudden availability of several hundred units could undermine a segment of the local residential real estate market. Second, disposal implies a loss of control by the Authority on a key area of the Fort. These two disadvantages may be mitigated by:

A. Agreeing with the developer a phased takeover and sale of existing units, in line with projected market demand. This will result in a slower cash flow for the Reuse Authority, but will assuage fears of a local slump in the real estate market. This process is reflected in the Business Plan Pro Forma (see Chapter 9)

B. Ensuring definition by the Reuse Authority of a set of covenants that contain appropriate property management principles.

C. Marketing these units to the retirement market

A small portion of the extreme southwestern corner of this parcel may be acquired by Coosa Valley Youth Services.

Environmental problems with this parcel are limited to the existence of lead paint and asbestos within the existing housing stock.

2.2.1.2 Parcel 2, Phase 1a

Parcel 2 has 262 existing military housing units, 96 acres of additional development land, and appears on the Preferred Reuse Plan as Baker Estates. It is similar to Parcel 1 (above) in that it provides the Reuse Authority with a chance to generate early income through disposal to a practiced military housing developer. The caveats outlined above apply to Parcel 2. Its main

advantage over Parcel 1 is its closer proximity to Highway 21, thus offering greater visibility of progress in the reuse of Fort McClellan.

2.2.1.3 Parcel 3, Phase 1a

Parcel 3, like Parcels 1 and 2, comprises existing military housing set in pleasant surroundings. Parcel 3 has 64 single-story ranch-style homes located on Avery Drive and 10 acres of additional development land. This Parcel, with its existing housing, lends itself particularly well to development as a retirement community. At least two retirement community developers have been attracted by the assets of Fort McClellan and have shown an active interest in the refurbishment and resale of the Avery Drive units to retirees from the Southeast. The Phase 2 Report of this Comprehensive Plan includes an analysis of the retirement market. This analysis identified members of the 70-84 year old age group living within 100 miles of the Fort as being targets for this type of property. It is recommended that the Reuse Authority actively market this parcel to retirement community developers over the next 24 months with a view to disposal early in 2000.

A significant environmental problem currently undermines the implementation of Parcel 3. A landfill has been identified at the western end of Avery Drive. This landfill should be included in the first phase of the Army's cleanup of Fort McClellan. Avery Drive is too valuable an asset to be blighted by the landfill. It offers the Reuse Authority vital cash flow and the opportunity for the early establishment of a retirement community, a key part of the Fort's reuse strategy. In addition, the landfill in question poses a threat (and therefore the potential for economic blight) to surrounding land parcels. It is strongly recommended that the Avery Drive landfill be removed.

2.2.1.4 Parcel 4, Phase 1a

The Cane Creek Golf Course, with its clubhouse, comprises the whole of Parcel 4, which totals 168 acres. The course is a valuable social and landscape asset that has the potential to greatly enhance the Fort's sense of place; an early objective of this Implementation Plan. The course is established, and the clubhouse is relatively new and highly attractive. The uses proposed for parcels adjacent to the course will benefit from its early acquisition, particularly the retirement community proposed for Parcel 3.

The main drawback for the Reuse Authority in acquiring the golf course lies in the inherent risks associated with its operation. The Phase 2 Report showed that there appears to be a surfeit of courses in Alabama, with tee-off times being readily available at several local courses, even during peak periods. The ready availability of Cane Creek to retirees and other local residents, however, may offer the Reuse Authority a marketing tool of sufficient value to justify a degree of subsidy. This assumes that a licensee course operator, prepared to absorb losses as well as earn profits, cannot be found following active

marketing of the opportunity. The role of Cane Creek is sufficiently important to justify the Reuse Authority seeking potential operators as early as is practically possible.

Environmental problems are limited to the historical use of herbicides and pesticides on the course and some undefined concerns about the use of certain outbuildings.

The golf course is an integral component of the Reuse Plan. It is imperative that its development is directed by the private sector in a fashion that complements large scale reuse. At least initially, the golf course should not be conveyed to a municipal jurisdiction for use solely as a municipal club. Rather, the course should be used to leverage private sector development.

Fort McClellan's wastewater treatment facility lies across Highway 21 from Parcel 4. This Implementation Plan proposes that it is acquired, or otherwise disposed of, as part of Phase 1.

2.2.1.5 Parcel 5, Phase 1a

This parcel comprises two separate areas. The most northerly area contains a group of buildings that will be transferred, via a PBC, to an alliance of local providers of assistance to the homeless. In order to meet the legal requirements associated with the transfer, a detailed Homeless Assistance Plan has been prepared under separate cover.

The southerly part of this parcel is 18 acres and consists entirely of the Battalion Personnel Reception Center and its adjacent grounds. The Center is the most modern, complete group of buildings at Fort McClellan and includes dormitory, auditorium, gymnasium, dining, and administrative facilities supported by loading docks, access routes, and surrounding landscaped areas all connected by covered walkways. Its previous use as a one-stop facility ensured that it was designed to provide comprehensive facilities within a relatively small site area.

The Reuse Authority has formed a special partnership with a number of local joint venture partners and has been successful in building political and financial momentum for the CDP. The purpose, objectives, and constitution of this public/private partnership are better presented elsewhere, but its main aim is to bring to the region a national training center that supports all of the reuse planning objectives of Fort McClellan. It is difficult to characterize the scale of this education and training initiative at this stage of its development, but early estimates suggest that it has the potential to directly replace up to 20 percent of the jobs that will be lost by the Base closure. Indirect employment will also be generated, particularly in surrounding communities such as Anniston and Jacksonville.

The Preferred Reuse Plan highlighted Parcel 5, Phase 1a as a prime location for training and education. The reuse of this collection of buildings, in normal circumstances, might take several years to complete, particularly where such a specific use is targeted. It is now likely that the CDP will accelerate significantly the occupation of this parcel and two facilities which are located in Open Space Parcel 9. The Military Operations on Urban Terrain (MOUT) and the Chemical Defense Training Facility (CDTF) are designated in the Preferred Land Use Plan as education and training areas. These areas will be part of the CDP and will, initially, be shared with the National Guard. For this reason, it is important that the continued use of the MOUT and CDTF is protected by their inclusion in the Department of Defense Environmental Impact Statement for the base conversion.

Parcel 5 is deemed environmentally clean.

2.2.1.6 Parcel 6, Phase 1a

Parcel 6 is 43 acres and consists of the 900 series of buildings. The 900 series is approximately 270,000 square feet of informally laid-out dormitory space, very similar to modern college campus dorms, split between 14 buildings. The buildings are in excellent condition, having been completed in the last decade, but because of their particular internal arrangement, have specialized reuse potential.

The CDP will generate substantial demand for relatively cheap short-course accommodation, little of which could be accommodated within the local lodging market. The 900 series would require little or no adaptation to meet the accommodation needs of the CDP. It is proposed that the Reuse Authority seeks an experienced transient lodging operator for this collection of buildings.

There appear to be no fundamental environmental issues associated with Parcel 6.

Plans for Parcel 7 are contained in a separate homeless assistance application. Parcel 8 will form part of the CDP.

2.2.1.7 Parcel 1, Phase 1b

Parcel 1 of the second part of the first phase offers the community and its Reuse Authority its greatest potential asset as well as one of its most difficult challenges. The 77-acre parcel is referred to in the Preferred Land Use Plan as Buckner Circle, Special Housing Area. The historic heart of the Post is dominated by the highly attractive officer housing that clusters round the small grassed parade ground. Few visitors to Fort McClellan can fail to be impressed by the 36 homes on Buckner Circle, by its small chapel, and by the collection of administrative buildings which encircle the larger, more formal parade ground to the south.

More than any other, this parcel offers a mix of potential uses, most of which are associated with the concept of a traditional small town. In addition to housing, the parcel includes buildings with potential reuse as office space, retailing, and public facilities. This range of uses and the age of the buildings in question presents the Reuse Authority with its greatest marketing challenge.

Housing on Buckner Circle will always attract the attention of potential individual purchasers because of its unique qualities. The relatively limited stock enables the Reuse Authority to sell units on the open market without having to absorb prohibitive carrying costs. The age, construction, and historic status of the houses limit their appeal to those able to invest in a degree of refurbishment and upkeep. External maintenance of this type of historic housing may be better accomplished by the establishment of a Trust to which every house owner contributes and which carries out painting, maintenance of the stucco, and landscaping of the whole Circle on a regular basis. The Trust would also establish, through consultation with the appropriate regulatory bodies, basic rules for external refurbishment to which all residents would be required to adhere.

An alternative role for the Authority would be to market the individual buildings to individual developer/operators, though the age and condition of each building ensures such a strategy will be difficult and time-consuming. The importance of this Parcel, however, is such that careful development of its assets are essential. As a marketing tool, Buckner Circle and its surrounding buildings offer the Reuse Authority an unmatched opportunity.

Environmental issues are limited to the historic use of lead-based paint and asbestos in the housing on Buckner Circle and some indeterminate concerns about the use of buildings secondary to the overall strategy outlined here. A chemical spill at its southern edge may require a slight redefinition of the boundaries of this parcel.

2.2.1.8 Parcel 2, Phase 1b

Parcel 2 is 46 acres and comprises a collection of industrial and warehouse buildings from a variety of eras, many of them having been poorly converted to office use. This area is referred to in the Phase 2 Report as the Warehouse District. One cluster of the oldest buildings has been deemed to be of historic significance. The significance of this parcel lies in its proximity to the proposed town center of the reused Fort McClellan. Though several of the buildings in this parcel have been identified for demolition, a detailed inspection identified several that are appropriate for reuse as light industrial or warehouse space. By attracting local businesses to these premises through the use of a competitive rental structure, it will be possible for the Reuse Authority to reinforce the activity generated in other areas of the town center.

Building 256 has the highest chance of early reuse because it is modern and possesses all of the facilities expected of a high-bay warehouse (see Phase 2 Report for a full description of Building 256). The main advantage of this parcel, therefore, is the speed at which it could potentially attract occupiers. Its disadvantages include the age of much of its building stock, several undefined environmental problems, its partial location in a flood plain and the time it is likely to take to find suitable occupants for the historic cluster.

These historic buildings comprise a group of brick stables arranged around a courtyard. The buildings are relatively small, and their location is within sight and walking distance of the eastern edge of Buckner Circle. In a more urban setting, with a greater pedestrian footfall, these buildings would be ideally adapted to retail or small workshop/art studio use, forming the center of a historic district. A longer term vision for Fort McClellan, with a built-out town center, would accommodate this type of complementary use.

The importance of this parcel in providing a new employment area at Fort McClellan is such that a remediation study should be completed by the Army as soon as possible. The reuse possibilities offered by Building 256, for instance, should not be blighted by a failure to clean up the parcel in the short term.

2.2.1.9 Parcel 3, Phase 1b

This 14-acre parcel is referred to in the Preferred Land Use Plan as the Town Center. It comprises a group of "public" buildings including the Base fire station, a gas station, a small Base hotel, and a bank. It is the natural pivot around which parcels with different uses revolve, each strengthening the sense of place that is established by Buckner Circle. While reuse of the particular buildings mentioned above may prove difficult, especially as population densities for Fort McClellan will take many years to grow, this parcel should be carefully maintained and its uses sensitively chosen because of its high visibility.

Environmental problems associated with this parcel are indeterminate, although some buildings have lead paint and asbestos, and the gas station has polluted part of the parcel.

2.2.1.10 Parcel 4 Phase 1b

This parcel is 35 acres and is closely related to Parcel 5, Phase 1b which lies across Summerall Gate road to the southeast. This parcel comprises several buildings which are planned to be reused as part of the higher education campus that will occupy the MP School. Environmental problems are limited to the historic use of asbestos and lead-based paint in the buildings at the parcel's western edge.

As it forms part of the higher education campus, this parcel will be subject to a PBC.

2.2.1.11 Parcel 5, Phase 1b

This 92-acre parcel is dominated by the MP School, the Polygraph Institute, and the high-rise Officer Quarters. The MP School will be the subject of a PBC to Ayres State Technical College or other qualified educational entities. It will form a new campus and bring a substantial amount of activity at various times of the day and year to the Fort McClellan town center.

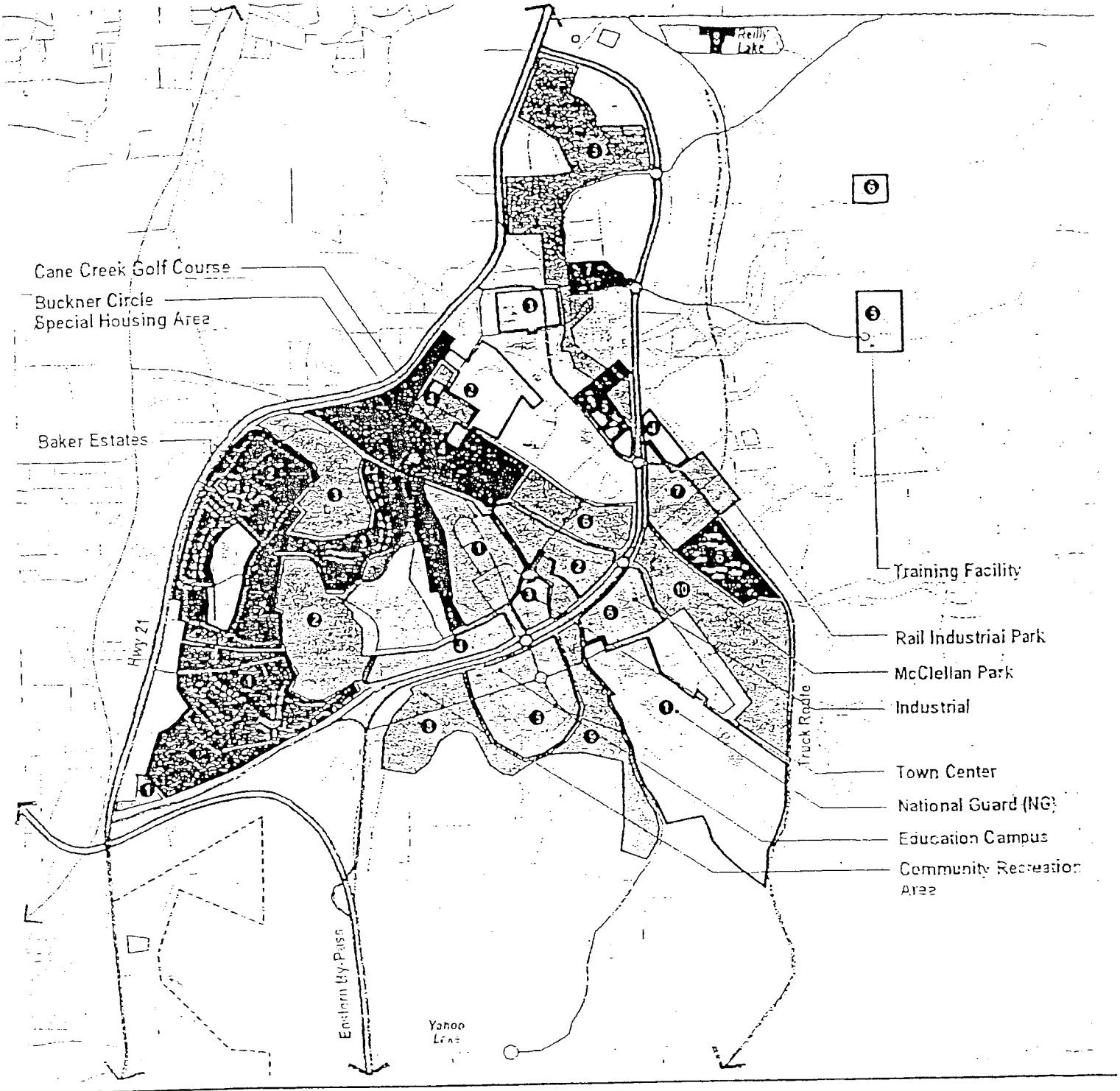
The Polygraph Institute is an attractive, modern office building with a linked annex that, despite its shortcomings (see Phase 2 Report), could be marketed to potential office users. This building is NOT included in the PBC outlined above.

The Officer Quarters could form part of the assisted living element of the proposed retirement community development. The internal spaces have been well maintained, are flexible, and are served by services such as a laundry, bar, and patio area. Car parking is also available. The buildings are connected by footpath to the Base "hotel" which forms part of the town center. These buildings are NOT included in the PBC outlined above.

The area to the south of and adjacent to the MP School contains a combination of UXO and radiological contaminants. It is essential for the successful reuse of this parcel and its surroundings that remediation by the Army begins as soon as possible and is completed before Base closure. The use of this and adjacent parcels should not be blighted by the lack of a short-term remediation strategy for cleaning up Parcel 5.

2.2.1.12 Parcel 6, Phase 1b

Parcel 6 is the last of the Phase 1 parcels key to the development of the town center. It is 39 acres and comprises two substantial buildings—the Base PX and its Commissary. The potential reuse of these buildings for retailing purposes following Base closure has been explored in some depth in the Phase 2 Report. It is proposed there, and reinforced here, that both buildings are offered to the market for conversion as light industrial and/or warehousing space.



PHASES 1A AND 1B

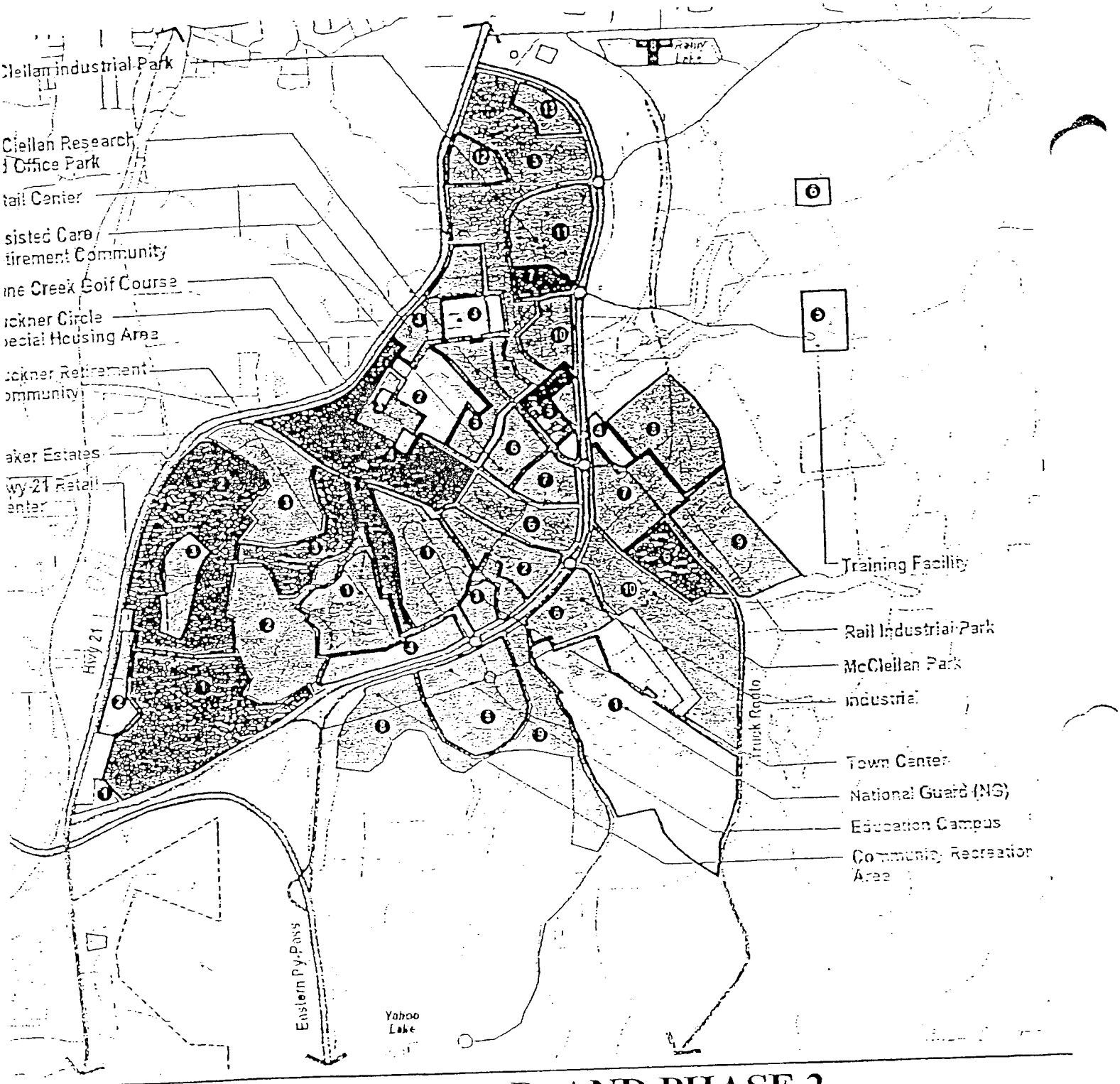
FORT MCCLELLAN REDEVELOPMENT PLAN

LEGEND

- Phase IA
- Phase IB
- National Guard Parcel
- Open Space Parcel
- Parcel Number

Prepared by:
EDAW, Inc
Knott Rock
Hammer Siler George
EPS Group, Inc.
ECG
WB Blakey & Associates

FORT MCCLELLAN REDEVELOPMENT AUTHORITY



PHASES 1A, 1B, AND PHASE 2

FORT MCCLELLAN REUSE PLAN

EGEND

- Phase IA
- Phase IB
- Phase II
- National Guard Parcel
- Open Space Parcel
- Parcel Number

Prepared by:
EDAW, Inc
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FORT MCCLELLAN REUSE AND REDEVELOPMENT AUTHORITY

There are few buildings of recent construction available at Fort McClellan to meet this demand, so it is important that these buildings form part of the first phase of acquisition and development. Conversion costs could be rentalized, but the initial priority will be to find end-users that do not require extensive refurbishment of the buildings. Readily available space such as these buildings provide enable employers to relocate quickly with minimum investment. This type of building may often become a temporary solution for its occupier, offering urgently required space while a new greenfield development is planned and constructed. It would not be unusual, therefore, for the initial occupier of the reused PX, for instance, to develop a larger facility on a later phase of the Fort McClellan reuse.

Some environmental problems in the area of Parcel 6 may require its boundaries to be adjusted. This, however, would have little or no impact on its development potential.

2.2.1.13 Parcel 7, Phase 1b

Parcel 7 is 63 acres and is divided from the remainder of Phase 1 (1a and 1b) by the Cane Creek floodplain. This parcel has been included in the first phases of the implementation strategy because it contains a building that has potential for reuse as a heavy engineering or vehicle maintenance facility, is served by the existing railway line, and includes about 45 acres of land for further industrial development.

The Consolidated Maintenance Facility (Building 350) is examined more closely in the Phase 2 Report. A short, highly targeted, marketing strategy for this building would determine within a relatively short period the building's potential for simple adaptive reuse. Its quality is unquestionable and its range of maintenance facilities unrivaled in the region, but it may be these precise factors which limit its target market to a handful of firms able (and willing) to exploit its facilities.

Environmental issues within this parcel are indeterminate, although it is known to contain underground storage tanks, maintenance areas, and motor pools. Phase 1 is strengthened by the proximity of this parcel to the town center and the apparent availability of developable land for industrial and/or warehouse use.

2.2.2 PHASE 2

The second phase of the Implementation Plan will commence in January 2005 and last 7 years. The majority of Phase 2 is located to the north of Cane Creek and runs in a broad band southeastward from Highway 21 at Galloway Gate to the point at which Baines Gap Road crosses Rocky Hollow Road. Phase 2 parcels which occur outside this area do so because expected market conditions preclude them being part of the earlier Phase 1.

Phase 2 includes just over 600 acres, 88 of which may be defined as developed. Phase 2 contains:

- Two key buildings that have reuse potential:
  - ⇒ Sibert Hall
  - ⇒ The Noble Army Hospital
- Land allocated for two greenfield retail developments along Highway 21
- Sites for at least six industrial parks
- Sites for two office parks
- Land allocated for development as a retirement community
- An elementary school
- The WAC Museum building

Phase 2 is defined by its potential for meeting the needs of an established and maturing market for industrial, office, retail space, and retirement housing at Fort McClellan. Phase 2, therefore, builds on the first 5 years of development. The success of marketing Phase 2 will depend on the successful development of a town center with a sense of place at the heart of Fort McClellan.

Phase 2 includes existing buildings for which demand is likely to be relatively slow to develop and includes areas where remediation by the Army is assumed to be more problematic (and will, therefore, take longer to implement).

Estimates of the absorption rate for industrial buildings and land project that Phase 2 will generate demand for a total of 1.06 million square feet; 265,000 square feet of reused property at Fort McClellan and a little over 796,000 square feet of new greenfield industrial and warehouse development.

Demand for office space is projected to total 220,000 square feet in Phase 2. About 80,000 square feet will be absorbed by the reuse of existing buildings and a further 140,000 square feet by greenfield development.

Phase 2 will generate demand for about 395,000 square feet of retail space, virtually all of which will be in the form of greenfield development.

The Business Plan Pro Forma for Phase 2 covers 7 years of development. The market at Fort McClellan will be, by definition, more mature, therefore, absorption rates are assumed to be stronger. Phase 2, therefore, is projected to generate $18 million of revenue between 2005 and 2011. Almost $16.5 million of this will be from non-residential sources, while the remaining $1.5

million enters the cash flow in the third year of the Phase, following the sale of the remaining residential land reserve.

Phase 2 costs, compared to income, are once again substantial. Mothballing of retained buildings, maintenance of part-occupied buildings, and the demolition of unwanted structures amounts to over $18 million in Phase 2. Transportation improvements, including maintenance, improvement, closure and demolition of roads, parking lot construction, new or improved sidewalks, bike and walking paths, bridges, and traffic control are projected to cost $49 million. Utility improvements, including water supply, wastewater management, stormwater management, electrical, gas, communications and solid waste management, and special utilities, cost $23 million.

When summing costs and subtracting revenue, the cumulative deficit generated by the end of Phase 2 is $115 million.

The alternative approach to infrastructure development (outlined in detail in Chapter 5) enables costs to be reduced in the early phases of this development. The cumulative deficit generated at the end of Phase 2, as a result of the alternative cost structure, is to $38 million. Half of this deficit shortfall could be closed by further funding of transportation costs. Just over $2 million per year, for 7 years, should be sought from State and Federal sources. Second, the ongoing need to renew utility funding means that up to $20 million should be sought from the private sector, State and Federal sources, depending on the precise nature of the costs.

2.2.2.1 Parcel 1, Phase 2

This Parcel is 69 acres and comprises, at present, an array of buildings that have been identified for demolition. Though its location close to the historic heart of the Post suggests that it should fall within an earlier phase, the market demand for Parcel 1 is projected to take some time to develop. The Preferred Land Use Plan shows that this parcel is an essential element of the Buckner Retirement Community, which is initially established in the adjacent parcel, number 3, Phase 1a and which involves the refurbishment of existing housing.

Parcel 1 meets the needs of the retirement community markets outlined in the Phase 2 Report by providing cleared development sites for several styles of living. Homes may be targeted at either the 50- to 70-year-old age group who currently live within the Southeast region (larger homes) or the 70- to 84-year-old segment, who currently live within 100 miles of the Fort (smaller patio, garden, or condominium accommodation), or a combination of both.

Part of this parcel contained a motor pool which is likely to require some cleanup. The boundary of this parcel could be adjusted to exclude the cleanup area, if necessary.

Parcel Number	5 -	Phase Number		2
Main Uses		Office, research including Sibert Hall		
Total Acreage of the Parcel		67		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
4	300,709	21	0	0

Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	46	500,000			
Office, research	26	283,140	20	0.25	

Development Timetable		
Commence Marketing	Marketing Period	Build-out /Disposal Target date
2000	2000-2011	2011

Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
		$782,000	$4.2 million	

Maximum Jobs and population generated by the activities in this parcel	
Jobs	Population
1583	1978

Parcel Number	5	Phase Number		1a
Main Uses		Education & training (current site of CDP)		
Total Acreage of the Parcel		18		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
7	189,640	18	0	0

Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	0				

Development Timetable		
Commence Marketing	Marketing Period	Build-out /Disposal Target date
2000	2000-	2000

Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
		$285,000	$1.3 million	

Maximum Jobs and population generated by the activities in this parcel	
Jobs	Population
200	250

Parcel Number	6	Phase Number	2
Main Uses		Hospital and assisted retirement community	
Total Acreage of the Parcel		28	
Buildings to be retained		Buildings to be demolished	
Number	Square feet	Acres	Number	Square feet
1	159,766	6	0	0
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	22	164,691			
Housing	22	164,691		5.0	110
Development Timetable					
Commence Marketing		Marketing Period		Build-out /Disposal Target date
2000		2000-2011		2011
Financial data					
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
		$240,000		
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
450		53		

Parcel Number	7	Phase Number	2
Main Uses		Office park	
Total Acreage of the Parcel		23	
Buildings to be retained		Buildings to be demolished	
Number	Square feet	Acres	Number	Square feet
0			2	13,800
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	23	250,000			
Offices	13	141,570	10	0.25	
Development Timetable					
Commence Marketing		Marketing Period		Build-out /Disposal Target date
2000		2000-2011		2011
Financial data					
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$100,000		0		
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
745		931		

Parcel Number	8	Phase Number		2
Main Uses		Industrial park		
Total Acreage of the Parcel		82		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
0			7	16,115

Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	82	893,000			
Industrial	32	348,480	50	0.25	

Development Timetable		
Commence Marketing	Marketing Period	Build-out /Disposal Target date
2000	2000-2011	2011

Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$117,000		0		

Maximum Jobs and population generated by the activities in this parcel	
Jobs	Population
516	645

Parcel Number	9	Phase Number		2
Main Uses		Industrial park		
Total Acreage of the Parcel		87		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
7	19,447		34	96,324

Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	87	948,000			
Industrial	37	402,930	50	0.25	

Development Timetable		
Commence Marketing	Marketing Period	Build-out /Disposal Target date
2000	2000-2011	2011

Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$700,000		$30,000	$40,000	

Maximum Jobs and population generated by the activities in this parcel	
Jobs	Population
626	782

Parcel Number	10	Phase Number	2
Main Uses		Industrial/office/research park	
Total Acreage of the Parcel		33	
Buildings to be retained		Buildings to be demolished	
Number	Square feet	Acres	Number	Square feet
0	0		53	122,977
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	33	360,000			
Industrial	23	250,470	10	0.25	
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
2000		2000-2011		2011
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$892,000		0	$40,000	
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
372		464		

Parcel Number	11	Phase Number	2
Main Uses		Industrial/office/research park	
Total Acreage of the Parcel		75	
Buildings to be retained		Buildings to be demolished	
Number	Square feet	Acres	Number	Square feet
12	95,134		0	0
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	63	686,000			
Industrial	27	294,030	40	0.25	
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
2000		2000-2011		2011
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
0		$143,000	$200,000	
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
577		721		

Parcel Number	12	Phase Number		2
Main Uses		Industrial/office/research park		
Total Acreage of the Parcel		22		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	22	240,000			
Industrial	12	130,680	10	0.25	
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
2000		2000-2011		2011
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
194		242		

Parcel Number	13	Phase Number		2
Main Uses		Industrial/office/research park		
Total Acreage of the Parcel		19		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	19	207,000			
Industrial	9	98,010	10	0.25	
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
2000		2000-2011		2011
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
145		182		

Parcel Number		1	Phase Number		3
Main Uses			Development Reserve		
Total Acreage of the Parcel			44		
Buildings to be retained			Buildings to be demolished		
Number	Square feet		Acres	Number	Square feet
3	16,063		2		
Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	42				
To be decided			42		
Development Timetable					
Commence Marketing			Marketing Period		Build-out /Disposal Target date
To be decided in response to market					
Financial data					
Demolition Costs	Annual Maintenance Costs		Annual Holding costs	Annual Rental Revenue	Land value at build out
			$25,000		
Maximum Jobs and population generated by the activities in this parcel					
Jobs			Population		
TBD			TBD		

Parcel Number		2	Phase Number		3
Main Uses			Industrial Park		
Total Acreage of the Parcel			54		
Buildings to be retained			Buildings to be demolished		
Number	Square feet		Acres	Number	Square feet
None				None	
Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	54	588,000			
Industrial	19	206,910	35	0.25	
Development Timetable					
Commence Marketing			Marketing Period		Build-out /Disposal Target date
2009			2011-onwards		2016
Financial data					
Demolition Costs	Annual Maintenance Costs		Annual Holding costs	Annual Rental Revenue	Land value at build out
Maximum Jobs and population generated by the activities in this parcel					
Jobs			Population		
307			383		

Parcel Number	3	Phase Number		3
Main Uses		Industrial Park		
Total Acreage of the Parcel		73		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
None			1	1,200
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	73	795,000			
Industrial	23	250,470	50	0.25	
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
2009		2011-onwards		2016
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
371		464		

Parcel Number	4	Phase Number		3
Main Uses		Industrial Park		
Total Acreage of the Parcel		176		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
None			None	
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	176	1,900,000			
Industrial	26	283,140	150	0.25	
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
2009		2011-onwards		2016
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
419		524		

Parcel Number		5	Phase Number		3
Main Uses			Industrial Park		
Total Acreage of the Parcel			64		
Buildings to be retained			Buildings to be demolished		
Number	Square feet		Acres	Number	Square feet
None				None	
Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	64	697,000			
Industrial	19	206,910	45	0.25	
Development Timetable					
Commence Marketing			Marketing Period		Build-out /Disposal Target date
2009			2011-onwards		2016
Financial data					
Demolition Costs	Annual Maintenance Costs		Annual Holding costs	Annual Rental Revenue	Land value at build out
Maximum Jobs and population generated by the activities in this parcel					
Jobs			Population		
307			383		

Parcel Number		1	Phase		Remediation Reserve
Main Uses			Extension to Lagarde Park		
Total Acreage of the Parcel			137		
Buildings to be retained			Buildings to be demolished		
Number	Square feet		Acres	Number	Square feet
None				None	
Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	None				
Development Timetable					
Commence Marketing			Marketing Period		Build-out /Disposal Target date
Not applicable			Not applicable		Depends on Army remediation program
Financial data					
Demolition Costs	Annual Maintenance Costs		Annual Holding costs	Annual Rental Revenue	Land value at build out
None	None		None	None	Public conveyance
Maximum Jobs and population generated by the activities in this parcel					
Jobs			Population		
No impact			No impact		

Parcel Number	2	Phase		Remediation Reserve
Main Uses		Passive open space		
Total Acreage of the Parcel		512		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
None			None	

Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	None				

Development Timetable		
Commence Marketing	Marketing Period	Build-out /Disposal Target date
Not applicable	Not applicable	Depends on Army remediation program

Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
None	None	None	None	Public conveyance

Maximum Jobs and population generated by the activities in this parcel	
Jobs	Population
No impact	No impact

Parcel Number	3	Phase		Remediation Reserve
Main Uses		Retail		
Total Acreage of the Parcel		27		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
None			None	

Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	27	294,000			
Retail	20	217,800	7	0.25	

Development Timetable		
Commence Marketing	Marketing Period	Build-out /Disposal Target date
Not applicable	Not applicable	Depends on Army remediation program

Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
None	None	None	None	

Maximum Jobs and population generated by the activities in this parcel	
Jobs	Population
363	454

Parcel Number	4	Phase		Remediation Reserve
Main Uses		Eastern Bypass		
Total Acreage of the Parcel		137		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
None			None	
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	None				
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
Not applicable		Not applicable		Depends on Army remediation program
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
None	None	None	None	Public conveyance
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
No impact		No impact		

Parcel Number	5	Phase		Remediation Reserve
Main Uses		Retirement Golf Community		
Total Acreage of the Parcel		378		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
None			TBD	
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	378				
Housing	258	898,313	120	2.33	600
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
Not applicable		Not applicable		Depends on Army remediation program
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
None	None	None	None	
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
70		288		

Parcel Number	6	Phase		Remediation Reserve
Main Uses		Passive Open Space		
Total Acreage of the Parcel		265		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
None			None	
Land Available for development				
	Acres / Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	None			
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
Not applicable		Not applicable		Depends on Army remediation program
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
None	None	None	None	Public conveyance
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
No impact		No impact		

Parcel Number	7	Phase		Remediation Reserve
Main Uses		Passive Open Space		
Total Acreage of the Parcel		444		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
None			None	
Land Available for development				
	Acres / Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	None			
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
Not applicable		Not applicable		Depends on Army remediation program
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
None	None	None	None	Public conveyance
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
No impact		No impact		

Parcel Number	8	Phase		Remediation Reserve
Main Uses		Passive Open Space		
Total Acreage of the Parcel		1000		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
None			None	
Land Available for development				
	Acres / Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	None			
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
Not applicable		Not applicable		Depends on Army remediation program
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
None	None	None	None	Public conveyance
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
No impact		No impact		

Parcel Number	9	Phase		Remediation Reserve
Main Uses		Passive Open Space		
Total Acreage of the Parcel		1000		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
None			None	
Land Available for development				
	Acres / Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	None			
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
Not applicable		Not applicable		Depends on Army remediation program
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
None	None	None	None	Public conveyance
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
No impact		No impact		

Parcel Number		10 -	Phase		Remediation Reserve
Main Uses			Business or religious retreat		
Total Acreage of the Parcel			93		
Buildings to be retained			Buildings to be demolished		
Number	Square feet		Acres	Number	Square feet
None				TBD	
Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	93				
Retreat	93	50,000			
Development Timetable					
Commence Marketing			Marketing Period		Build-out /Disposal Target date
Not applicable			Not applicable		Depends on Army remediation program
Financial data					
Demolition Costs	Annual Maintenance Costs		Annual Holding costs	Annual Rental Revenue	Land value at build out
None	None		None	None	Public conveyance
Maximum Jobs and population generated by the activities in this parcel					
Jobs			Population		
53			66		

5.0 CAPITAL IMPROVEMENTS STRATEGY

The capital improvements strategy builds on the infrastructure inventory (Phase 1) and the infrastructure alternatives evaluation (Phase 2).

5.1 APPROACH

The capital improvements strategy was developed in five steps:

1. Identify Infrastructure Categories—Based on previous infrastructure analyses in Phases 1 and 2, three primary infrastructure categories the Project Team identified are: (1) transportation; (2) utilities; and (3) buildings and miscellaneous. See Section 5.2 for a list of the categories.

2. Identify and Assemble Relevant Information—The Project Team assembled relevant information in each major area of work and developed computer-based spreadsheet databases containing the information. For example, spreadsheet databases were created for buildings and their characteristics, land use projections, and socioeconomic projections. The databases were reviewed by the Project Team and revised as appropriate.

3. Develop Fort McClellan Capital Improvements Computer Model—A computer-based spreadsheet model was created to analyze and project capital improvements requirements for redevelopment of Fort McClellan. The model was developed using EXCEL (Microsoft Windows 95). The model was designed in interdependent modules (separate spreadsheets) linked to each other and other spreadsheet databases developed as part of this Reuse Plan. The model is controlled by a master module that summarizes the results of the three major infrastructure categories. Each of the three categories—transportation, utilities, and buildings and miscellaneous—is managed by separate spreadsheets linked to the Master module. The model also links to two land use and socioeconomic projection spreadsheet databases. The model design and construction offers the FMRRA an ability to revise individual numerical assumptions for exploring alternatives and sensitivities. The model allows a wide range of detail to be printed as required. Also, the results can be shown as printed and/or graphics reports.

4. Test and Refine Model—The model, as each infrastructure category module is developed, is checked for accuracy and errors. As the model is reviewed by Project Team members and the FMRRA, it will be revised to better represent the desired capital improvements strategy for Fort McClellan.

5. Provide Capital Improvements Requirements—The capital improvements model has been developed in increasing levels of detail. For example, the first model version reflects capital improvements requirements and costs

by major phase of implementation. Parcels within a specific phase are addressed as appropriate for the category of infrastructure under consideration. Some infrastructure subcategories do not fit neatly into a specific parcel. These subcategories are managed separately and later integrated into the major implementation phase. For example, arterial roads do not relate directly to specific parcels. The development costs for the arterial roads are calculated and the results are divided among the appropriate phases for implementation. As the results of the model are seen and interpreted, each implementation phase is further divided into years of implementation (from 2000 through 2014). The top down approach prevents wasting resources in developing too much detailed information where it is not needed or wanted.

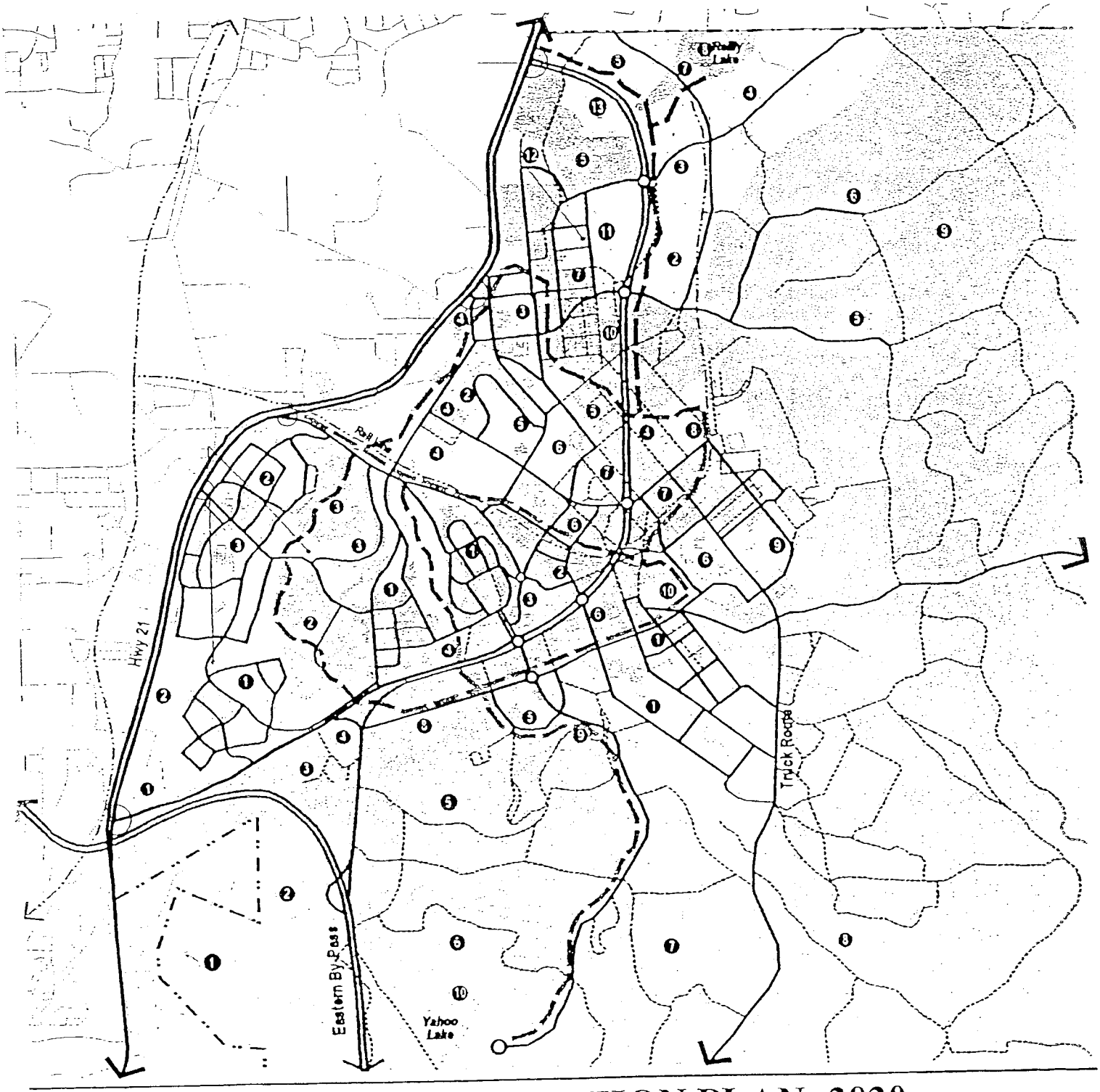
5.2 INFRASTRUCTURE CATEGORIES

Table 5.1 lists the three major infrastructure categories and subcategories addressed at Fort McClellan.

Transportation—The transportation category consists of roads, parking lots, railroad, sidewalks, bike/walking paths, bridges, and traffic control. The roads subcategory is further divided into existing roads (all 2-lanes), new 2-lane roads, new 4-lane roads, and roads converted from 2-land to 4-lane. Existing roads are subdivided into roads scheduled for maintenance only, roads requiring improvements, roads scheduled for demolishing, and roads requiring interim closures. Other forms of transportation that will be included in the Reuse Plan are the railroad, sidewalks, and bike/walking paths. Bridges and traffic control are part of the transportation system and require maintenance and replacement.

Utilities—The utilities category includes potable water supply, wastewater management, stormwater management, electrical and gas energy systems, communications systems, solid waste management, and special utilities. Although the utilities are considered opportunities for privatization, the FMRRA must understand the costs associated with management of the utilities.

Buildings and Miscellaneous—The category of Buildings and Miscellaneous includes buildings and other related infrastructure management subcategories. Costs for demolishing buildings and mothballing unused structures are included in the socioeconomic model. The capital improvements strategy model includes additional costs for remediation of asbestos and lead paint as appropriate. Other subcategories of infrastructure include street lighting, signage, landscaping, natural resources management, and property management. These represent relatively small but important expenses related to the appearance, health and safety, environmental management, and administration of Fort McClellan during implementation of the Reuse Plan.



PHASED CIRCULATION PLAN: 2020

FORT McCLELLAN REDEVELOPMENT PLAN

LEGEND

- Retained Existing Roads
- Demolished Roads
- New Roads
- Rail Line
- Trail System
- Site Access
- Phase 1a
- Phase 1b
- Phase 2
- Phase 3
- Remediation Phase
- National Guard

Prepared by:
EDAW, Inc
Kotak Rock
Hammer Siler George
KPS Group, Inc.
ICG
WB Bishop & Associates

FORT McCLELLAN REUSE AND REDEVELOPMENT AUTHORITY

DEMOLITION PLAN

GEND

Buildings to be Demolished

Buildings to be Retained

Prepared by:

EDAW, Inc

Hammer Siler George

ECG

Kwak Rock

KPS Group, Inc.

WB Bishop & Associates

Demolition—A detailed list of those buildings earmarked for demolition may be found in Appendix 2.

Table 5.1. Capital Improvements Strategy Infrastructure Categories

TRANSPORTATION
Roads (Existing and New)
Parking Lots
Railroad
Sidewalks
Bicycle/Walking Paths
Bridges
Traffic Control
UTILITIES
Potable Water Supply
Wastewater Management
Stormwater Management
Electrical System
Gas System
Communication System
Solid Waste Management
Special Utilities (Steam Heating/Chilled Water Plants)
BUILDINGS AND MISCELLANEOUS
Buildings (Existing historic and non-historic)
Street Lighting
Signage
Landscaping
Natural Resources Management
Property Management
DEMOLITION

5.3 EXISTING MAINTENANCE AND REPAIR BACKLOG

As part of the Army's operation of Fort McClellan, an annual evaluation and inventory of required infrastructure replacement, maintenance, and repair is developed. The inventory is a list of specific projects, ranked by priority, with estimated costs. The RPMA Maintenance and Repair (MAR) Project Update Report for Fort McClellan (September 30, 1997) totals $16,878,000 in 46 high priority projects. The list was reorganized by the major categories used in the capital improvements strategy approach—buildings and miscellaneous, transportation, and utilities. The major categories are summarized below.

Buildings and Miscellaneous—The category was responsible for over 16 percent ($2,798,000) of the total maintenance and repair list. The highest five ranked required repairs on the list were in this category. Items included heating, ventilation, and air conditioning (HVAC) and air conditioner (A/C) repairs, replacement of water heaters and furnaces, painting, roof repairs, floor repairs, swimming pool repair, and miscellaneous maintenance and repair.

Transportation—The category included items ranked 6th through 9th and totaled $1,222,000. Repairs included a bridge, railroad post-wide, and roads post-wide.

Utilities—The category represented 23 of 46 projects (50 percent) and 76 percent of the required funds ($12,857,344). Categories listed included the electrical distribution system, HVAC, special utilities (steam and chilled water), wastewater conveyance system, and water distribution system. Of the repair projects, projects with the highest individual costs were underground HVAC lines (7 projects), steam lines (2 projects), sanitary sewer system (4 projects), and water distribution system (5 projects).

The maintenance and repair list of projects may or may not be funded and completed by October 1, 1999. Those projects that are funded and completed will subtract from the overall required maintenance and repairs for the main post. Projects remaining on the list unfunded and not completed would be high on a priority list for completion after Army withdrawal. The individual projects must be more closely examined and compared to the FMRRA's capital improvements strategy and phasing plan before implementation. For example, buildings that require HVAC or A/C repairs that are scheduled by the FMRRA for mothballing could have the maintenance and repair requirements delayed. Another example is the projected post-wide road repairs. The transportation category of the capital improvements strategy includes line items for maintenance and/or improvements for all roads on the main post, an obvious overlap.

5.4 CAPITAL IMPROVEMENTS RECOMMENDATIONS FOR THE PREFERRED LAND USE PLAN

Capital improvements recommendations are summarized within the redevelopment phases that comprise the Preferred Alternative or, in other words, the plan which reflects the community's aspirations for the future redevelopment of Fort McClellan. The Phased Circulation Plan: 2020 shows the roads and paths that have been highlighted for construction and/or maintenance in each Phase.

5.4.1 PHASE 1a

Phase 1a begins in the Year 2000 and includes those parcels that are expected to be developed quickest. Phase 1a and Phase 1b commence simultaneously.

Transportation

General Transportation—As the infrastructure category with the largest capital investment in Fort McClellan's Reuse Plan, transportation expenditures in Phase 1a exceed the combination of all other infrastructure categories. Expenditures are focused on roads (2-lane, 2-lane to 4-lane expansion), sidewalks, bicycling/walking paths, bridges, and traffic control. No actions are planned for parking lots and railroad improvements. Phase 1a is scheduled to last 1 year and includes the initial activities to begin marketing the main post.

2-lane Roads—The proposed major investment in roads includes maintenance activities for 50,000 feet of existing 2-lane roads, demolition of 4,400 feet of existing 2-lane roads, and construction of almost 16,000 feet of new 2-lane roads in Parcels 1a.1 and 1a.2. Maintenance is included for 14,100 feet of roads in the Army National Guard (ARNG) parcels. The Army should assume financial responsibility for the ARNG parcels. Development of new 2-lane roads beginning in Phase 1a would be focused on developable areas in Parcels 1a.1 and 1a.2.

2-lane to 4-lane Road Expansion—An estimated 12,000 feet of existing 2-lane road will be expanded to 4-lane as part of the spine of the Fort McClellan transportation system. This is an important part of the early marketing strategy for Fort McClellan. The spine road should be developed beginning with Phase 1a and continued into Phase 1b.

Sidewalks—Sidewalks will complement construction of the new 2-lane and 2-lane to 4-lane roads.

Bicycling/Walking Paths—Over 15,000 feet of bicycling/walking paths will be developed beginning in Phase 1a. The focus of bicycling/walking path development links parcels 1 through 4 in Phase 1a. Phase 1a, Parcel 4, is the

Cane Creek Golf Course which offers an excellent opportunity for developing bicycling/walking paths combined with the golf cart paths extending through the golf course.

Bridges—Bridges located throughout Fort McClellan will require implementation of an inspection and maintenance program for health and safety. Existing bridges will require routine maintenance, increasing as the bridges age. Replacement of bridges would be determined by periodic assessment and evaluation and would be based on factors such as age, condition, traffic volume, location, safety risk, and cost.

Traffic Control—The existing traffic control system must be maintained throughout the Main Post area. Changes in the road network will require additions and removal of traffic control devices. New road construction will include traffic control additions to the existing system. The 1-year duration of Phase 1a reduces requirements for major attention to the traffic system, with the exception of spine road development.

Utilities

Potable Water Supply—The existing water supply source is the City of Anniston. The source and distribution system capacity will be adequate for Phase 1a. Existing storage can meet the early development needs. However, the existing system will require an assessment of future requirements.

Wastewater Management—The existing collection, conveyance, pumping, and treatment system capacity can handle the expected flows generated in Phase 1a. An assessment of the existing wastewater management system is required before or immediately after plan implementation. Based on the assessment's outcome, major investments may be required for system refurbishing. Investments are expected to include reduction of infiltration/inflow into the pipe conveyance network. The wastewater management system offers an opportunity for privatization. If the system is privatized, the Authority will not be required to actively manage the wastewater issues.

Stormwater Management—No stormwater management plan exists to adequately address the planned new development and redevelopment at Fort McClellan. A comprehensive watershed plan will be required prior to and early in the Phase 1a process. Based on the results of the plan, major regional stormwater investments are proposed to management runoff quality and quantity. Included is the development of a multipurpose lake system that will serve as both a stormwater management network and recreational/aesthetic features. The stormwater management system could be assumed by a local or independent government agency or private company.

Electrical Energy System—The existing system will adequately meet demands created in Phase 1a. The existing electrical distribution system will require

routine maintenance and expansion to meet the need of proposed development. Individual meters to measure actual electrical consumption must be installed at all residences, commercial, industrial, and institutional buildings, as required by the development phasing process. The electrical energy system offers an opportunity for privatization.

Gas Energy System—The existing gas supply and distribution system is adequate to meet demands of Phase 1a. The gas distribution system offers an opportunity for privatization.

Communications System—The existing copper cable-based communications system is adequate to meet demands from Phase 1a. However, the on-post system will require routine maintenance. Also, the phased land development process will require expansion and extension of the communications system. The communications system offers an opportunity for privatization.

Solid Waste Management System—The solid waste management system will include on-post collection of waste and recyclables and off-post disposal and marketing of recycled materials. Costs are included for residential areas. Commercial, industrial, and educational activities are expected to pay for solid waste management services. Solid waste management activities offer an opportunity for privatization.

Special Utilities—The special utilities are the four heating plants located on the main post that generate steam for heating and chilled water for cooling to centrally located customers. Of the four plants, three plants will remain operational during Phase 1a. Plant No. 4 near the Starship Area (Building No. 1876) will be closed in either Phase 1a or 1b. Plant No. 3 near the MP School Area (Building No. 3176) will remain operational over the long-term. The remaining two Plant Nos. 1 and 2 (Building Nos. 2278 and 1076), which have interconnected systems, will operate until funding is available to separate them from the buildings using steam heat and chilled water cooling. The plants will require operations personnel, fuel, replacement parts and equipment, and routine maintenance. The existing facilities are adequate for Phase 1a requirements. The plants offer an opportunity for privatization. A privatization example of steam heat/chilled water cooling plants at a BRAC installation is the Fort Ben Energy Management (FBEM), a subsidiary of Indianapolis Power and Light Company (IPL). FBEM currently operates and maintains the steam and chilled water plant on Fort Benjamin Harrison, Indiana.

The ARNG will separate the buildings it occupies from the steam heat/chilled water cooling plants. The ARNG will install equipment to provide heating and cooling that uses electricity and/or natural gas. Although the lines from the steam heat/chilled water cooling plants will be severed at the ARNG buildings, the lines will be the responsibility of the Fort McClellan Development Commission (FMDC).

Buildings and Miscellaneous

Street Lighting—Existing street lighting will require routine maintenance and replacement. As new streets are constructed, new lighting will be required and added to the maintenance inventory. The existing lighting inventory is adequate to meet the needs of Phase 1a.

Landscaping—General landscaping is an important part of Phase 1a activities. The landscaping includes general grounds management, special landscaping at entrances and major focus locations, and in areas being marketed. Landscaping management services must be established with schedules that match phasing activities.

Signage—The role of proper signage in actively reusing Fort McClellan is critical to successful plan implementation. A signage plan should be developed prior to Phase 1a for implementation in Phase 1a. Signs are required for major entrances to the Fort, land parcel identification, directions, special applications, and other general applications. Phase 1a will require entrance signs, parcel identification signs for those parcels being actively marketed, directional applications, and other special purposes.

Natural Resources Management—Fort McClellan is rich in natural resources that include forests, wetlands, streams, sensitive environmental areas, and wildlife. A continuing program will be established in Phase 1a that actively manages these resources. Close coordination with local, State, and Federal natural resource management agencies will be required. A continued process of planning will be required that includes surveying, inventorying, and assessment of resources.

Property Management—The process of transferring land parcels and facilities requires property management tools and activities. A geographic information system (GIS) is proposed for managing the Fort's land. The surveying and management process will continue through the implementation process.

5.4.2 PHASE 1b

Phase 1b begins in 2000 and lasts for 5 years, ending in 2004.

Transportation

General Transportation—During Phase 1b, the investment in transportation begun in Phase 1a will be continued. The focus will emphasize roads (existing and new 2-lane), sidewalks, bike/walking paths, bridges, and traffic control. No actions are planned for new parking lots and railroad improvements.

2-lane Roads—A total of 12,500 feet of existing 2-lane roads will be maintained. If resources are not available to perform road the required road

maintenance early in Phase 1b, the 12,500 feet in Phase 1b could be combined with the 50,000 feet in Phase 1a and spread over the entire 5-year period. Maintenance could also be programmed to extend into Phase 2 as resources are available. As land parcels are held for later development and land use changes are required, 15,300 feet of existing 2-lane roads will be demolished. A total of 7,800 feet of new 2-lane roads will be constructed to accommodate projected new development.

4-lane Roads—4,000 feet of new 4-lane roads are scheduled to be built during Phase 1b. The road will expand the spine of the Fort to the north. The spine road forms a major focal point for marketing Fort McClellan and is a high priority for development.

Sidewalks—New sidewalks will be constructed as part of the new road development.

Bicycling/Walking Paths—A total of 12,000 feet of bicycling/walking paths will be constructed throughout the open space system. The paths should be constructed in segments that emphasize linking residential areas to retail, support services, office, light industrial, retail, cultural, and other related areas of the main post. The core area around Buckner Circle should be a major focus for the paths.

Bridges—The program of bridge maintenance for existing bridges will continue. New bridges will be built as required by road expansion. The cost for new bridges would be included in the cost for new roads.

Traffic Control—Continued management will be required for the existing traffic control system. Construction of new or expanded roads will include traffic control costs for system additions.

Utilities

Potable Water Supply—The existing water supply source is the City of Anniston. The source and distribution system capacity will be adequate for Phase 1b. Peak daily demand during Phase 1b will require planning for new storage capacity additions early in Phase 2. The existing potable water supply and available storage are adequate to support activities for the proposed CDP scheduled to begin during Phase 1b. Activities will involve reuse of existing facilities in Parcels 7 and 8 in Phase 1b.

Wastewater Management—The existing system capacity can handle the expected flows generated in Phase 1b. Based on the outcome of the wastewater management system assessment, major investments may be required for system refurbishing, including further reduction of infiltration/inflow. The wastewater management system offers a good opportunity for privatization. The existing wastewater management system

can adequately handle activities of the proposed CDP scheduled to begin during Phase 1b.

Stormwater Management—A comprehensive watershed plan developed early in the Phase 1a process will guide the stormwater management implementation process. Based on the results of the plan, major regional stormwater investments are proposed, including the development of a multipurpose lake network for stormwater management and recreation. If developed during Phase 1b, the lakes will be focal points in the development of the new town center. Projected development during Phase 1b will also require installation of on-site and other watershed management practices. The stormwater management system offers a potential for privatization. Development and implementation of the comprehensive watershed management plan for Fort McClellan can adequately address the impacts from the proposed CDP scheduled to begin during Phase 1b. CDP activities will primarily occupy existing developed space on the main post.

Electrical Energy System—The existing system will adequately supply demands created in Phase 1b. The existing electrical distribution system will require routine maintenance and expansion to meet the need of proposed development. Individual meters must be installed at all residences, commercial, industrial, and institutional buildings as required by the development phasing process. The electrical energy system offers an opportunity for privatization. The existing electrical supply and distribution system can adequately support activities of the proposed CDP scheduled to begin during Phase 1b.

Gas Energy System—The existing gas supply and distribution system is adequate to meet demands of Phase 1b. The gas distribution system offers an opportunity for privatization. The existing gas supply and distribution system is adequate to support the requirements of the proposed CDP scheduled to begin during Phase 1b.

Communications System—The existing copper cable-based communications system is adequate meet demands from Phase 1b. However, the on-post system will require routine maintenance. Also, the phased land development process will require expansion and extension of the communications system. The communications system offers an opportunity for privatization. The existing communications system is adequate to meet requirements of the proposed CDP, scheduled to begin operations during Phase 1b.

Solid Waste Management System—The solid waste management system will include on-post collection of waste and recyclables and off-post disposal and marketing of recycled materials. Costs are included for residential areas. Commercial, industrial, and educational activities are expected to pay for solid waste management services. Solid waste management activities offer an opportunity for privatization. Services to collect, recycle, and dispose of

wastes generated by the proposed CDP activities in Phase 1b are available to meet expected demands.

Special Utilities—Of the four plants, three plants will remain operational during Phase 1b. Plant No. 4 near the Starship Area (Building No. 1876) will be closed in either Phase 1a or 1b. Plant No. 3 near the MP School Area (Building No. 3176) will remain operational over the long-term. The remaining two Plant Nos. 1 and 2 (Building Nos. 2278 and 1076), which have interconnected systems, will operate until funding is available to separate them from the buildings using steam heat and chilled water cooling. The plants will require operations personnel, fuel, replacement parts and equipment, and routine maintenance. The existing facilities are adequate for Phase 1b requirements. The plants offer an opportunity for privatization.

Buildings and Miscellaneous

Street Lighting—Existing street lighting will require routine maintenance and replacement. As new streets are constructed, new lighting will be required and added to the maintenance inventory. The existing lighting inventory is adequate to meet the needs of Phase 1b. The street lighting system offers an opportunity for privatization as part of the electrical distribution system or more general energy management system.

Landscaping—General landscaping is an important part of Phase 1b activities. The landscaping includes general grounds management, special landscaping at entrances and major focus locations, and in areas being marketed. Landscaping management services must be established with schedules that match phasing activities.

Signage—The signage plan developed prior to Phase 1a will be implemented in Phase 1b. Signs are required for major entrances to the Fort, land parcel identification, directions, special applications, and other general applications. Phase 1a will require entrance signs, parcel identification signs for those parcels being actively marketed, directional applications, and other special purposes.

Natural Resources Management—Fort McClellan is rich in natural resources that include forests, wetlands, streams, sensitive environmental areas, and wildlife. A continuing program will be continued in Phase 1b that actively manages these resources. Close coordination with local, state, and Federal natural resource management agencies will be required. A continued process of planning will be required that includes surveying, inventorying, and assessment of resources.

Property Management—The process of transferring land parcels and facilities requires property management tools and activities. A (GIS) is proposed for managing the Fort's land. Active surveying of land parcels will include

current state-of-the-art technology receivers. The surveying and management process will continue through the implementation process.

5.4.3 PHASE 2

Phase 2 begins in January 2005 and extends for 7 years until 2011.

Transportation

General Transportation—Phase 2 will generate the largest investment in roads of all development phases as new development parcels are made available. Parking lot construction is another transportation investment in Phase 2.

Roads—Activities will include maintenance of existing roads, demolishing unused and unneeded roads, construction of new 2-lane roads, interim closures of unused 2-lane roads, and construction of new 4-lane roads. The road management activities would be coordinated with the level of development activity in Phase 2. The proposed CDP would take advantage of parcels assigned to Phase 2. Road management activities proposed for Phase 2 are capable of handling the proposed training and possible spin-off activities from the CDP.

2-lane Roads—A total of 45,300 feet of existing roads will require maintenance. Maintenance activities could be spread over the 7-year period of Phase 2 on a priority schedule. Over 24,900 feet of existing roads will be demolished. Demolition activities would be timed to occur with the projected development. Approximately 39,700 feet of new 2-lane roads will be constructed as part of the projected development of unused developable land. Over 13,800 feet of 2-lane roads that are unused and not included as part of the phasing plan will be closed for later use. Road closures could be optional if resources are not available to fund interim closures.

New 4-lane Roads—The final 10,520 feet of new 4-lane roads will be constructed to complete the planned spine system through the Fort. The spine road is a major feature in marketing and transportation movement through the Fort and, as a result, a high funding priority.

Parking Lots—A total of almost 1,750,000 square feet of new parking lots are planned for Phase 2. The parking lots are based on projected new retail space and can be constructed to correspond with development of new retail space.

Sidewalks—New sidewalks will be constructed as part of the new 2-lane road construction. An alternative to construction of some or all sidewalks is the strategic use of bicycling/walking paths within parcels or links to other parcels. Existing sidewalks will need maintenance and would be scheduled based on periodic assessment and assignment of priority.

Bicycling/Walking Paths—The largest amount of bicycling/walking path construction (25,200 feet) will occur during Phase 2. The location of bicycling/walking paths should correspond to projected development and providing links to existing development.

Bridges—Continuing bridge maintenance and replacement will be required throughout the installation. New bridges will be required as part of new road construction and be included as part of the design and construction costs.

Traffic Control—The existing traffic control system will require maintenance, with costs increasing as the existing system ages and expands. New roads will require traffic control additions. Implementation of the phasing plan in Phase 2 will require special traffic control during road demolishing and interim road closures.

Utilities

Potable Water Supply—The existing water supply source is the City of Anniston. The source and distribution system capacity will be adequate for Phase 2. Additional storage capacity on-post will be required to meet peak daily and fire fighting demands. The proposed CDP projects adding the following buildings to activities begun in Phase 1b: the headquarters buildings (Area 500) (Parcel 6, Phase 2), the MOUT (Parcel 6, Phase 2), the Emergency Operations Center, the Hospital (Parcel 7, Phase 2), and Sibert Hall (Parcel 5, Phase 2). Because the activities focus on reuse of existing facilities, the potable water supply, with addition of supplemental storage, is expected to adequately meet expected requirements.

Wastewater Management—If growth during Phase 2 as expected, the existing system treatment capacity cannot handle the expected flows generated in Phase 2. New treatment plant capacity will be required. Capacity could be added by increasing the size of the existing treatment plant, construction of a new treatment plant, or directing flows to another treatment plant. The requirement for additional treatment capacity offers an opportunity for privatization. If additional treatment capacity is provided to meet the expected demands of Phase 2 activities, the projected Phase 2 CDP operations will be adequately supported.

Stormwater Management—The comprehensive watershed plan developed early in Phase 1a will guide the stormwater management implementation process.

Electrical Energy System—The existing system will adequately supply demands created in Phase 2. However, the substation will require replacement or upgrading. The existing electrical distribution system will require routine maintenance and expansion to meet the need of proposed development. Individual meters must be installed at all residences, commercial, industrial,

and institutional buildings as required by the development phasing process. Planned activities to improve and maintain the electrical supply and distribution system will be adequate to meet demands of the proposed CDP Phase 2 actions.

Gas Energy System—The existing gas supply and distribution system is adequate to meet demands of Phase 2. However, construction of a parallel main will be required to meet demands from Phase 2. The gas distribution system offers an opportunity for privatization. Planned activities to improve and maintain the gas supply and distribution system will be adequate to meet demands of the proposed CDP Phase 2 actions.

Communications System—The existing copper cable-based communications system is adequate meet demands from Phase 2. The on-post system will require routine maintenance. The phased land development process will require expansion and extension of the communications system. The communications system offers an opportunity for privatization. Planned activities to improve and maintain the communications system will be adequate to support the proposed CDP Phase 2 activities.

Solid Waste Management System—The solid waste management system will include on-post collection of waste and recyclables and off-post disposal and marketing of recycled materials. Costs are included for residential areas. Commercial, industrial, and educational activities are expected to pay for solid waste management services. Solid waste management activities offer an opportunity for privatization. Services are expected to be adequate to manage wastes generated from proposed CDP activities in Phase 2.

Special Utilities—Of the four plants, only Plant No. 3 near the MP School Area (Building No. 3176) will remain operational over the long-term. The remaining two Plant Nos. 1 and 2 (Building Nos. 2278 and 1076), which have interconnected systems, will operate until funding is available to separate them from the buildings using steam heat and chilled water cooling. No schedule has been developed that determines when Plants Nos. 1 and 2 will be closed. The plants will require operations personnel, fuel, replacement parts and equipment, and routine maintenance. The existing facilities may, due to their ages by Phase 2, require major renovations, equipment replacement, or other changes. The operating plants offer an opportunity for privatization.

Buildings and Miscellaneous

Street Lighting—The existing lighting inventory, with new additions from new development, will be adequate to meet the needs of Phase 2. Existing street lighting will require routine maintenance and replacement. As new streets are constructed, new lighting will be required and added to the maintenance inventory. The street lighting system offers an opportunity for

privatization as part of the electrical distribution system or more general energy management system.

Landscaping—General landscaping assumes a different role in Phase 2 activities. The landscaping includes general grounds management, special landscaping at entrances and major focus locations, and in areas being marketed. However, more emphasis will be required for areas that are being held from active marketing.

Signage—The signage plan developed prior to Phase 1a will be implemented in Phase 2. Signs are required for major entrances to the Fort, land parcel identification, directions, special applications, and other general applications. Phase 1a will require entrance signs, parcel identification signs for those parcels being actively marketed, directional applications, and other special purposes.

Natural Resources Management—Fort McClellan is rich in natural resources that include forests, wetlands, streams, sensitive environmental areas, and wildlife. A continuing program will be continued in Phase 2 that actively manages these resources. Close coordination with local, State, and Federal natural resource management agencies will be required. A continued process of planning will be required that includes surveying, inventorying, and assessment of resources.

Property Management—The process of transferring land parcels and facilities requires property management tools and activities. A GIS is proposed for managing the Fort's land. Active surveying of land parcels will include current state-of-the-art technology (e.g., GPS receivers, EDMs, etc.). The surveying and management process will continue through the implementation process.

5.4.4 PHASE 3

Phase 3 is a 5-year period extending from 2012 through 2016. Long term implementation follows Phase 3.

Transportation

General Transportation—Phase 3 activities will include investments in all subcategories of transportation (roads, parking lots, railroad, sidewalks, bicycle/walking paths, bridges, and traffic control).

Roads—Road activities will include maintenance of existing 2-lane roads, demolishing roads, construction of new roads, and interim closures of roads.

2-lane Roads—Approximately 7,500 feet of existing roads will require maintenance. If adequate resources had not previously been available for road maintenance during Phases 1a, 1b, and 2, additional lengths of roads may

require maintenance in Phase 3. Over 11,800 feet of existing roads will be demolished to accommodate projected development. Approximately 20,200 feet of new roads will be constructed in Phase 3 parcels to accommodate projected development. Another 11,800 feet of existing roads will require interim closures. The interim closure process could be optional if resources are not available.

4-lane Roads—No new 4-lane roads are planned for Phase 3.

Parking Lots—A total of almost 564,000 square feet of new parking lots are planned to accommodate retail, commercial, educational, and industrial development in Phase 3.

Railroad—A new railroad spur is planned for Phase 3 that will extend from the existing line located off-post to the planned industrial park area at the northern end of the main post.

Sidewalks—New road construction will include sidewalk construction.

Bicycling/Walking Paths—A total of 19,600 feet of bicycling/walking paths will be constructed during Phase 3.

Bridges—Continuing maintenance and replacement of existing bridge will be required. New bridges will be required as part of new road construction.

Traffic Control—The existing traffic control system will require maintenance and replacement. New road construction and plan implementation will require traffic control investments.

Utilities

Potable Water Supply—The existing water supply source is the City of Anniston. The source will be adequate for Phase 3. However, depending on the level of industrial demand, additional capacity from the City's mains will be required. A new main would be constructed from the City's existing line along Highway 21 across the Main Post to the industrial area. Additional storage will be required. The proposed water supply, with planned additions, will be adequate to meet requirements from the CDP's addition of Parcels 6 and 7 in Phase 3 (Reilly Field).

Wastewater Management—New treatment plant capacity provided in Phase 2 will be adequate to handle flows generated in Phase 3 and over a longer period. The CDP's proposed Phase 3 addition can be managed by the wastewater management system.

Stormwater Management—Major regional stormwater management lakes constructed during Phase 1b will require active management. Projected development during Phase 3 will also require installation and maintenance of

on-site and other watershed management practices. Implementation of the stormwater management plan will adequately manage runoff from proposed activities of CDP in Phase 3.

Electrical Energy System—The existing system will require installation of an additional substation to supply demands created in Phase 3. The existing electrical distribution system will require maintenance and expansion to meet the needs of proposed development. As the system ages, the costs for routine maintenance will increase. Individual meters must be installed at all residences, commercial, industrial, and institutional buildings as required by the development phasing process. The proposed upgrades and maintenance of the electrical system will be adequate to meet requirements of CDP's Phase 3 activities.

Gas Energy System—The upgraded gas supply and distribution system will be adequate to meet demands of Phase 3. Construction of a parallel main in Phase 2 will meet demands from Phase 2 and 3. The proposed upgrades and maintenance of the gas system will be adequate to meet requirements of CDP's Phase 3 activities.

Communications System—The existing copper cable-based communications system will require expansion and extension to meet demands from Phase 3. The on-post system will require routine maintenance. The communications system offers an opportunity for privatization. The proposed upgrades and maintenance of the communications system will be adequate to meet requirements of CDP's Phase 3 activities.

Solid Waste Management System—The solid waste management system will include on-post collection of waste and recyclables and off-post disposal and marketing of recycled materials. Costs are included for residential areas. Commercial, industrial, and educational activities are expected to pay for solid waste management services. Solid waste management activities offer an opportunity for privatization. Adequate services will be available to meet the needs of CDP's Phase 3 activities.

Special Utilities—Of the four plants, only Plant No. 3 near the MP School Area (Building No. 3176) will remain operational over the long-term. The remaining two Plant Nos. 1 and 2 (Building Nos. 2278 and 1076), which have interconnected systems, will operate until funding is available to separate them from the buildings using steam heat and chilled water cooling. No schedule has been developed that determines when Plants Nos. 1 and 2 will be closed. The plants will require operations personnel, fuel, replacement parts and equipment, and routine maintenance. The existing facilities may, due to their ages by Phase 3 if not previously addressed in Phase 2, require major renovations, equipment replacement, or other changes. The operating plants offer an opportunity for privatization.

Buildings and Miscellaneous

Street Lighting—The existing lighting inventory, with new additions from new development, will be adequate to meet the needs of Phase 2. Existing street lighting will require increased routine maintenance and replacement as the system ages. As new streets are constructed, new lighting will be required and added to the maintenance inventory. The street lighting system offers an opportunity for privatization as part of the electrical distribution system or more general energy management system.

Landscaping—Long-term general landscaping will continue in Phase 3 activities. The landscaping includes general grounds management, special landscaping at entrances and major focus locations, and in areas being marketed. However, more emphasis will be required for areas that are being held from active marketing.

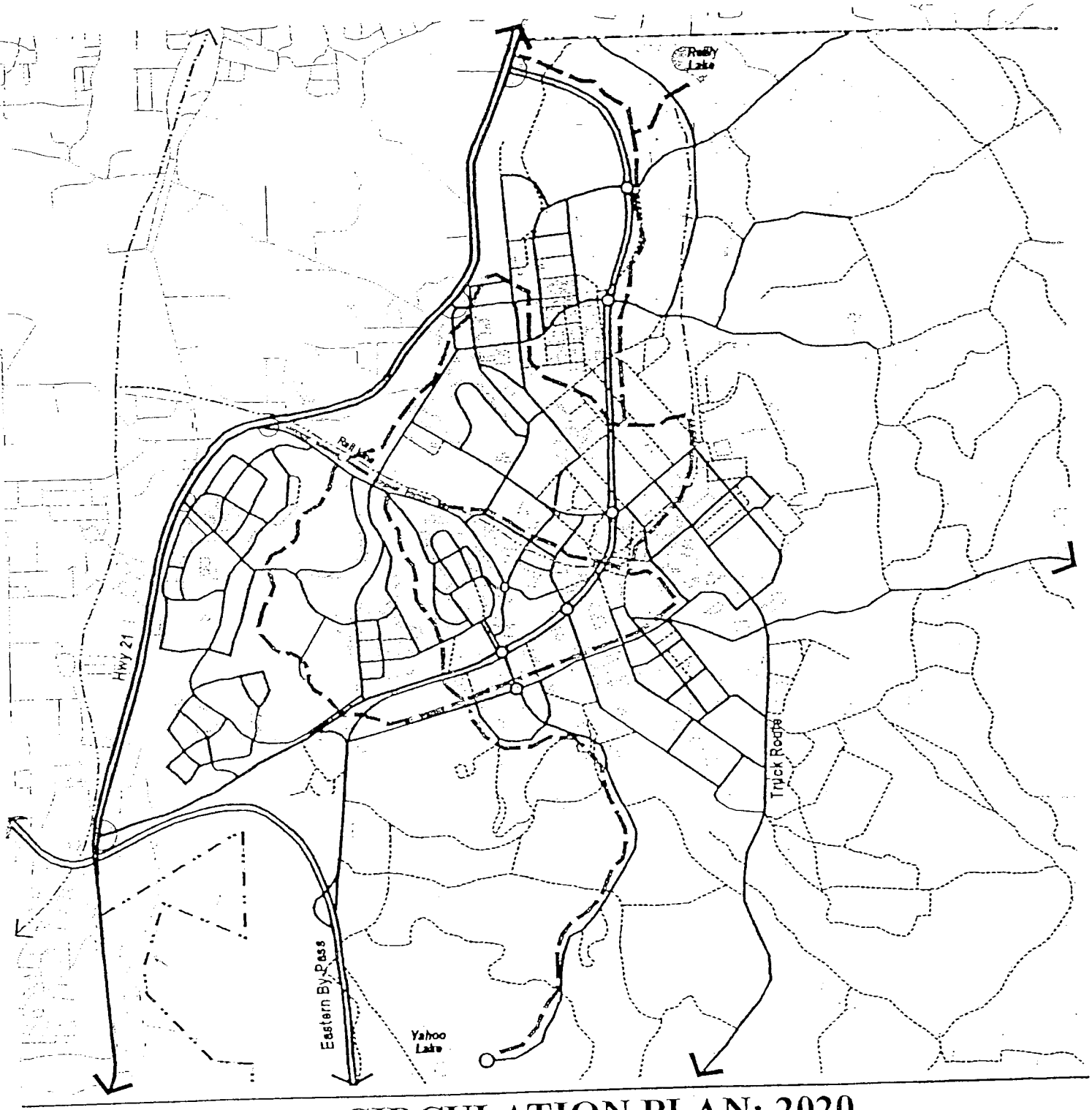
Signage—The signage plan developed prior to Phase 1a will be implemented in Phase 1b. Signs are required for land parcel identification, directions, special applications, and other general applications. Phase 1a will require entrance signs, parcel identification signs for those parcels being actively marketed, directional applications, and other special purposes.

Natural Resources Management—Fort McClellan is rich in natural resources that include forests, wetlands, streams, sensitive environmental areas, and wildlife. A continuing program will be continued in Phase 3 that actively manages these resources. Close coordination with local, State, and Federal natural resource management agencies will be required. A continued process of planning will be required that includes surveying, inventorying, and assessment of resources.

Property Management—The process of transferring land parcels and facilities requires property management tools and activities. A GIS is proposed for managing the Fort's land. Active surveying of land parcels will include current state-of-the-art technology (e.g., GPS receivers, EDMs, etc.). The surveying and management process will continue through the implementation process.

5.5 An Alternative Capital Improvements Strategy

The strategy outlined above has been deliberately designed to fulfill the aspirations of the local community by addressing the Preferred Land Use Plan in its most complete form. The strategy does not take into account issues of cash flow financing and risk. Chapter 9 illustrates the costs involved in implementing the capital improvements strategy outlined above and it is clear that the cost of the various programs contained in the Strategy will not be covered by the revenues that are expected to be accrued by the economic



CIRCULATION PLAN: 2020

LEGEND

- Retained Existing Roads
- Demolished Roads
- New Roads
- Rail Line
- Trail System
- Site Access

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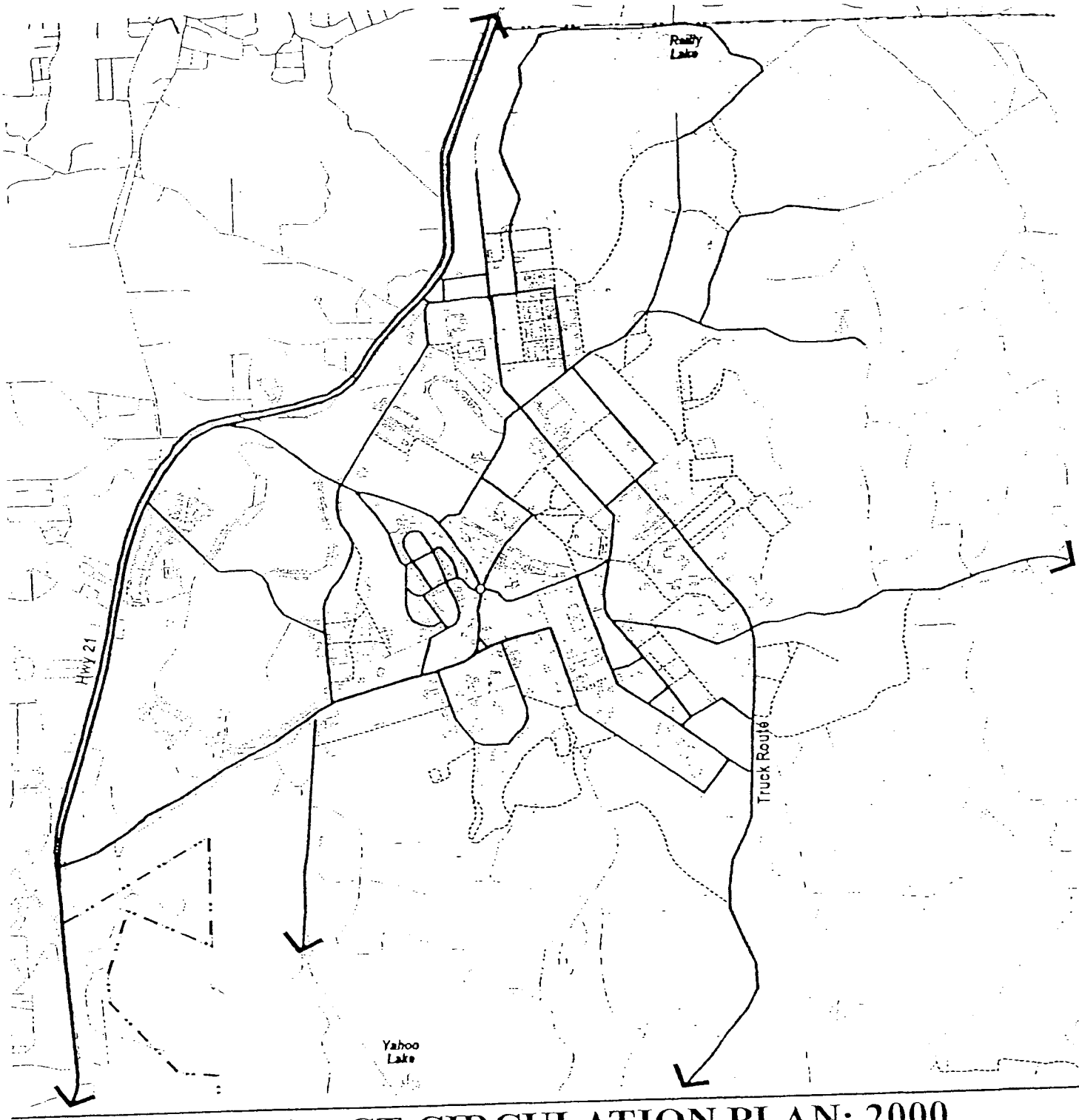

LOW IMPACT CIRCULATION PLAN: 2000

GEND
- Retained Existing Roads
- Closed Roads

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development of Fort McClellan. The purpose of an alternative capital improvements strategy is to recommend a process which recognizes three key objectives, anchored in reality:

- to minimize costs in the earliest phases of the reuse of Fort McClellan;
- to minimize cash flow deficits throughout the development process;
- to maximize the opportunities to achieve the goal of job creation and the other objectives of the community. It is not the purpose of the alternative capital improvements strategy to deny the aspirations of the community.

5.5.1 PHASES 1a AND 1b

The alternative capital improvements strategy considers these two concurrent phases as a single 5-year period of activity, crucial to the establishment of a longer-term development strategy, beginning in 2000 and ending in 2004.

Transportation

Roads—The current network of roads, though not ideal, is considered adequate to meet the immediate development needs of Phase 1. Plans to create a 4-lane parkway from Summerall Gate are deferred in recognition of the relatively low impact of early development. Roads within parcels 1a.1, 1a.2, and 1a.3 will be constructed by the eventual developer of each parcel. Access to Phase 1 will be encouraged only via Summerall, Baker, or Balzell Gates. Galloway Gate will provide access for trucks visiting the National Guard Enclave and the Center for Domestic Preparedness.

A strategy to close certain roads within Phase 1, on a temporary or permanent basis, will be devised to respond to precise development needs, closer to the acquisition date.

Sidewalks—Sidewalks will be confined to those parcels in which they already exist and in Parcels 1a.1, 1a.2, and 1a.3. It is expected that sidewalks in these latter three parcels will be the responsibility of the developer.

Bicycling/Walking Paths—The alternative plan supports the objective of linking parcels 1a.1 through 1a.4 (as outlined in the Preferred Land Use Strategy, above) by a series of paths.

Bridges—Regular inspection and maintenance of existing bridges will be required, however limited the development program may be.

Traffic control—The strategy of segregating traffic between the essentially residential areas south of Cane Creek and the areas north of Cane Creek occupied by the Army National Guard and the CDP reduces the need for

costly traffic control facilities. New, automated traffic control will be minimized in Phase 1.

Utilities

Potable Water Supply—Current facilities are adequate for Phase 1

Wastewater Management—Current facilities are deemed adequate for the demands of Phase 1.

Stormwater Management—Plans to complete a comprehensive watershed management system will be deferred, though it is accepted that, as a result, future revenues may also be deferred. The opportunity to provide a series of lakes for leisure and aesthetic purposes will be addressed later in the development phase, thus eliminating costs in Phase 1. It is accepted, however, that rapid development during Phase 1 may lead to some State and Federal stormwater management requirements. A strategy which addresses particular requirements in the face of specific development proposals will be required as those proposals firm up.

Electrical, Gas, Solid Waste, Communications Systems—Private sector providers will be expected to ensure, at their cost, that their systems meet the development needs of Phase 1.

Special Utilities—The Post's steam plant system is complex, ranges across clusters of buildings with varying proposed uses, and is labor-intensive. For these reasons it appears inappropriate to the reuse possibilities of Fort McClellan. The precise relationship, between the proposed demands of the Army national Guard and the reuse, by the private sector, of specific buildings such as Sibert Hall, must be established in the short-term. A detailed study of this utility is beyond the scope of this alternative plan, but is strongly recommended before base closure.

Buildings and Miscellaneous

Street Lighting—The existing street lighting, where adequate, will remain. The developers of parcels 1a.1, 1a.2, and 1a.3 will be expected to review the current provision and upgrade where necessary.

Landscaping—Standards of landscaping, that take into account the need to market Fort McClellan while minimizing costs, will be established and enhanced as development takes place.

Signage—The marketing and development of Fort McClellan will require effective signage which, in turn, will require a strategy, as outlined in the capital improvements recommendations, above.

Natural Resource Management—The recommendations of capital improvements strategy, above, hold good for the alternative strategy.

Property Management—The GIS approach proposed in the capital improvements strategy, above, is retained in the alternative strategy.

5.5.2 PHASE 2

The alternative capital improvements strategy assumes a 7-year time frame for Phase 2, beginning in 2005 and ending in 2011.

Transportation

Roads—The current network of roads is limited in its ability to serve several of the parcels in Phase 2, including 12, 13, and 14, all allocated for industrial use. Plans to create the 4-lane parkway from Summerall Gate, however, may continue to be deferred. Galloway Gate will provide access for trucks visiting Phase 2 developments north of Cane Creek. The northerly sites continue to be attractive for industrial uses, so it is proposed that two road improvement corridors, serving these sites, are earmarked for future development. The corridors should follow the alignment of the 4-lane parkway and the truck route, both of which appear in the Preferred Land Use Strategy. Plans for establishing these routes would be reviewed in the light of industrial development opportunities, as they arise. Construction of the parkway, should it become viable, would commence from a new northern access point off Highway 21, as outlined in the Preferred Land Use Plan.

A strategy to close certain roads within Phase 2, on a temporary or permanent basis, will be devised to respond to precise development needs, closer to the acquisition date.

Parking Lots—Only Sibert Hall is allocated a parking lot in Phase 2. All other parking would be provided by developers, at their expense.

Sidewalks—Sidewalks will be confined to those parcels in which they already exist and in Parcel 2.1. It is expected that sidewalks in this latter parcel will be the responsibility of the developer.

Bicycling/Walking Paths—The alternative plan proposes no new paths between parcels, though developers may choose to construct paths within those parcels for which they are responsible.

Bridges—Regular inspection and maintenance of existing bridges will be required, however limited the development program may be.

Traffic control—The strategy of segregating traffic between the essentially residential areas south of Cane Creek and the areas north of Cane Creek occupied by the Army National Guard, the CDP and industrial users, reduces

the need for costly traffic control facilities. New, automated traffic control will be minimized in Phase 2.

Utilities

Potable Water Supply—Current facilities are adequate for Phase 2

Wastewater Management—Current facilities are not adequate to meet the development demands of Phase 2. It is proposed that the system is upgraded in line with the plan outlined in the capital improvements strategy, above.

Stormwater Management—Plans to complete a comprehensive watershed management system will be deferred, though it is accepted that, as a result, future revenues may also be deferred. The opportunity to provide a series of lakes for leisure and aesthetic purposes will be addressed later in the development phase, thus eliminating costs in Phase 2. It is accepted, however, that rapid development during Phase 2 may lead to some State and Federal stormwater management requirements. A strategy which addresses particular requirements in the face of specific development proposals will be required, as those proposals become more clear.

Electrical, Gas, Solid Waste, Communications Systems—Private sector providers will be expected to ensure, at their cost, that their systems meet the development needs of Phase 2.

Special Utilities—See Phase 1 proposals, above.

Buildings and Miscellaneous

Street Lighting—The existing street lighting, where adequate, will remain. The developers of parcels will be expected to review the current provision and upgrade where necessary.

Landscaping—Standards of landscaping, that take into account the need to market Fort McClellan while minimizing costs, will be established and enhanced as development takes place.

Signage—The marketing and development of Fort McClellan will require effective signage which, in turn, will require a strategy, as outlined in the capital improvements recommendations, above.

Natural Resource Management—The recommendations of capital improvements strategy, above, hold good for the alternative strategy.

Property Management—The GIS approach proposed in the capital improvements strategy, above, is retained in the alternative strategy.

2.2.2.2 Parcel 2, Phase 2

Parcel 2 currently comprises wooded open space. Its location, adjacent to Highway 21 makes it ideal for future use as a greenfield retail site. Its 22 acres offer the potential for approximately 150,000 square feet of built retail space to meet a potential market demand for highway frontage from 2005 and beyond. Some of this demand will be generated by the occupants of Phase 1 housing, office, and industrial space. Some of the demand for developed space will be generated by the new opportunity to locate retailing on prime highway frontage.

The parcel includes a land reserve of 8 acres to meet the future expansion needs of the retail development.

This parcel has no environmental problems.

2.2.2.3 Parcel 3, Phase 2

This parcel comprises the existing Fort McClellan Elementary School, which will have been vacant for several years up to this point. The school and all its personal property will be required following the occupation of Phase 1 housing, which will take at least 5 years.

The school contains asbestos materials and lead-base paint. If it is to be "mothballed" until demand for it materializes once more, remediation should be completed before final closure of the building. The community must retain the personal property contained within the school. If the personal property is removed, the building will be worthless as a school.

2.2.2.4 Parcel 4, Phase 2

This parcel comprises land either side of Galloway Gate and includes the WAC Museum building. The Preferred Land Use Plan designates retailing for this 41-acre parcel, and it is expected that approximately 240,000 square feet of retailing built space could be accommodated here.

This parcel provides more prime frontage on Highway 21 to complement that contained in Parcel 2, Phase 2. The attraction of this parcel will be further enhanced by its location either side of a main entrance point to Fort McClellan.

Like the retail north of Summerall Gate, this parcel partly meets the demand generated by activities at the Fort and partly by the demand for highway frontage by retailers considering the wider market.

An environmental issue has been highlighted with respect to this parcel. A former printing plant is expected to have emitted volatile organic compounds, the scale of which has yet to be determined.

2.2.2.5 Parcel 5, Phase 2

Parcel 5 mainly comprises Sibert Hall and Truman Gymnasium and is 67 acres in size. Together these buildings provide the largest single area of covered floorspace at Fort McClellan. The Preferred Land Use Plan designates this parcel as an area for commercial office space, with the refurbished Sibert Hall providing 230,000 square feet, alone.

In its current form and given the local rate of absorption, Sibert Hall represents at least 10 years of office space supply. The building is laid out to provide classroom, administrative, and library space to the Chemical School, which has trained many thousands of Army and other personnel since its inception. The scale and layout of the building present particular maintenance and reuse problems. The building has few of the attributes of modern office space, with most of its large internal classrooms opening onto wide artificially-lit corridors and its external areas lacking car parking. These factors alone are likely to slow absorption. Given that it will take many years to fill the building, Sibert Hall will require a detailed maintenance schedule to preserve it as a viable asset.

One of Sibert Hall's greatest weaknesses, however, could prove to be its main strength. It is located some distance from the center of the base and therefore will contribute less to the urban density of Fort McClellan than such a large facility should. This implies that the Reuse Authority is better advised diverting demand for refurbished office space *away* from Sibert Hall to buildings closer to Buckner Circle (thus maximizing the chances of developing a critical mass of occupants close to the town center). However, recent success in establishing the CDP (see next parcel) has generated some potential demand for space at Sibert Hall and has led to the opportunity to create a business incubator for organizations seeking spin-off opportunities at the CDP. This possibility, though exciting, is still highly speculative.

It is likely, even in the event that Sibert Hall forms an important component of the CDP, that partial demolition will be required, leaving the special use laboratories with their personal property.

In addition to Sibert Hall, this parcel offers 46 acres of greenfield development land for office and research use. It will not be possible to divert all demand for such space at Fort McClellan into the reuse of buildings like Sibert Hall, so the provision of some greenfield sites is an essential element of this Implementation Plan.

Given the difficulties associated with the reuse of Sibert Hall and the lack of marketplace interest, the FMRRA may consider conveying the facility, via a PBC, to Jacksonville State University or, alternatively, may consider its demolition in lieu of its carrying costs. As the absorption schedule indicates,

Sibert Hall represents the sum total of excess office space at the end of the development period.

2.2.2.6 Parcel 6, Phase 2

Parcel 6 is 28 acres and comprises Noble Army Hospital, some of its outbuildings, and 22 acres of adjacent development land. The Hospital is a valuable asset for Fort McClellan, providing fully equipped medical facilities and bedspaces that could prove attractive to certain private sector operators. This will only be the case as long as all personal property is retained. The Preferred Reuse Plan includes this parcel with others which make up the retirement community. The facilities at the hospital would support a high level of assisted care and, as was outlined in the Phase 2 Report, could form the core of an assisted care community aimed at the 85-year-old and above age group, probably relocating to the facility from within a 50-mile radius.

The development land adjacent to the hospital would provide a retirement community developer with the opportunity to offer congregate, patio, or garden homes within easy reach of medical facilities. This quite specific use for the hospital and its surrounding land suggests a relatively lengthy marketing phase, which explains its inclusion in Phase 2 of the Implementation Plan. The weakness of this strategy lies in the need to carry out a detailed (and, therefore, relatively costly) maintenance regime while developer/operators are being sought.

Discussions with the Reuse Authority have recently highlighted the possibility of at least part of the hospital being acquired by the CDP. The CDP has a need to reproduce the activities of an emergency room for training purposes, and the hospital can, clearly, provide this type of facility. This may preclude the use of the remainder of the hospital for congregate care, but could open the way for other uses, including low security prisoner care on upper floors.

If the hospital does prove more adaptable to the needs of the training community than to retirement developers, then the adjacent development land would be better used for office park/research use, similar to the parcels on either side.

There are no significant environmental issues associated with this parcel.

2.2.2.7 Parcel 7, Phase 2

This parcel is 23 acres and includes no buildings appropriate for reuse. The Preferred Land Use Plan identifies it as a greenfield location for approximately 140,000 square feet of low density office space. The strength of this parcel is its proximity to the planned spine road running from Summerall Gate to north of Galloway Gate. Its use as a small office park complements the adjacent parcels, particularly those to the north and northwest.

The only negative environmental feature identified on this parcel is an underground storage tank.

2.2.2.8 Parcel 8, Phase 2

This parcel is highlighted in the Preferred Land Use Plan as an industrial area and with Parcel 10 (see below) forms part of the Rail Industrial Park. Parcel 8 is 82 acres, with capacity for 350,000 square feet of warehouse or industrial space (excluding a development reserve), is currently served by rail and is adjacent to the Vehicle Maintenance Facility located in Parcel 7, Phase 1 B. Parcel 9 is located in Phase 2 because it is expected that the industrial land absorption rate is insufficient to justify earlier acquisition and because it has a history that suggests it will require a significant cleanup program.

2.2.2.9 Parcel 9, Phase 2

Parcel 9 is the second half of the Rail Industrial Park and is 87 acres, with capacity to develop 400,000 square feet of low density industrial/warehouse space (excluding development reserves). It is currently the site of an extensive demolition program of obsolete wooden barrack huts. As a component of the Rail Industrial Park, Parcel 9 (like Parcel 7, Phase 1 B and Parcel 8, Phase 2) is served by the truck route which is defined in the Preferred Land Use Plan and which follows Rocky Hollow Road south to connect with the proposed Eastern Bypass. In the event that this industrial park is developed before the Eastern Bypass, truck access would be via the new north entrance to Fort McClellan.

This Parcel includes several historic uses which may require a yet-to-be-determined cleanup program.

2.2.2.10 Parcels 10 and 11, Phase 2

Parcels 10 and 11 are 108 acres and comprise a collection of buildings adjacent to the Homeless Alliance of Calhoun County. This particular group of buildings will be acquired by their user in Phase 1a (see Parcel 7, Phase 1a on Phase maps). The parcels form an industrial park, as highlighted in the Preferred Land Use Plan. This park has a capacity for 545,000 square feet of low density light industrial and warehousing development. It adjoins a landfill area and is served by the spine road, which north of the truck route provides a primary alternative route of access to Parcels 10 and 11. The main route of access would be the new access point north of Galloway Gate.

The environmental cleanup requirement for these parcels is indeterminate.

2.2.2.11 Parcel 13, Phase 2

Parcel 12 is 22 acres and currently has no buildings on it. It provides capacity for 130,000 square feet of low density industrial and warehouse development.

It is adjacent to a landfill which, it has been speculated, has contaminated the groundwater within the parcel. The parcel is included in Phase 2 because it has significant cleanup issues associated with its future development.

2.2.2.12 Parcel 13, Phase 2

Parcel 13 is 19 acres and currently has no buildings on it. It provides capacity for 98,000 square feet of low density industrial and warehouse development. It is adjacent to a landfill and suffers the same environmental disadvantages as Parcel 12.

2.2.3 PHASE 3

Phase 3, for the purposes of this Implementation Plan, commences in 2013 and lasts 5 years. Though Phase 3 is the final phase of the plan, it is expected that Fort McClellan will continue to be developed beyond 2017. The Preferred Land Use Plan, for instance, assumes that all of its components will be in place by 2020 but that there will be land available for development within many of the parcels beyond that date.

Phase 3 comprises those parts of Fort McClellan which, because of their location and the rate of land absorption, are likely to be the last areas of the Fort to attract development. In other words, the development program for Fort McClellan will be mature and established before these sites are required to meet market demand.

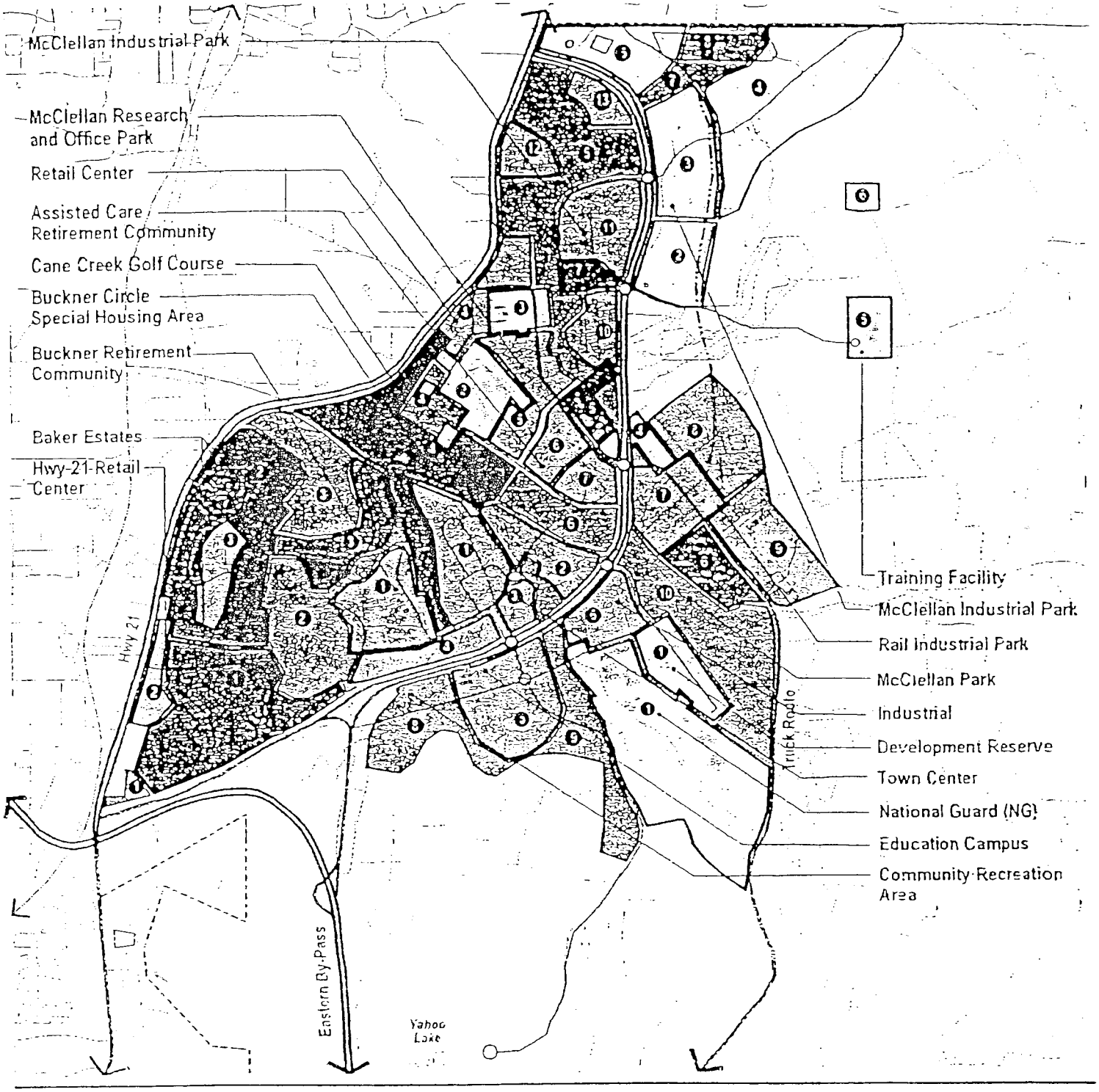
This Phase, therefore, contains:

- Large contiguous greenfield sites appropriate for industrial development close to Reilly Lake and the airfield
- A development reserve close to the town center of Fort McClellan and served by 8th Avenue

Phase 3 is defined by its peripheral location and relative isolation from the remainder of Fort McClellan, its dependence on a maturing market for its various uses, and its lack of existing buildings suitable for reuse.

About 833,000 square feet of industrial demand will be generated in Phase 3; 208,000 square feet will be absorbed by existing buildings, while 625,000 square feet will be developed on greenfield sites.

Demand for office space is projected to total 250,000 square feet. About 62,500 square feet will be accommodated in existing buildings, while the remaining 187,500 square feet will be new development.



PHASES 1A, 1B, 2, AND PHASE 3

FORT McCLELLAN REUSE PLAN

LEGEND

- Phase IA
- Phase IB
- Phase II
- Phase III
- National Guard Parcel
- Open Space Parcel
- Parcel Number

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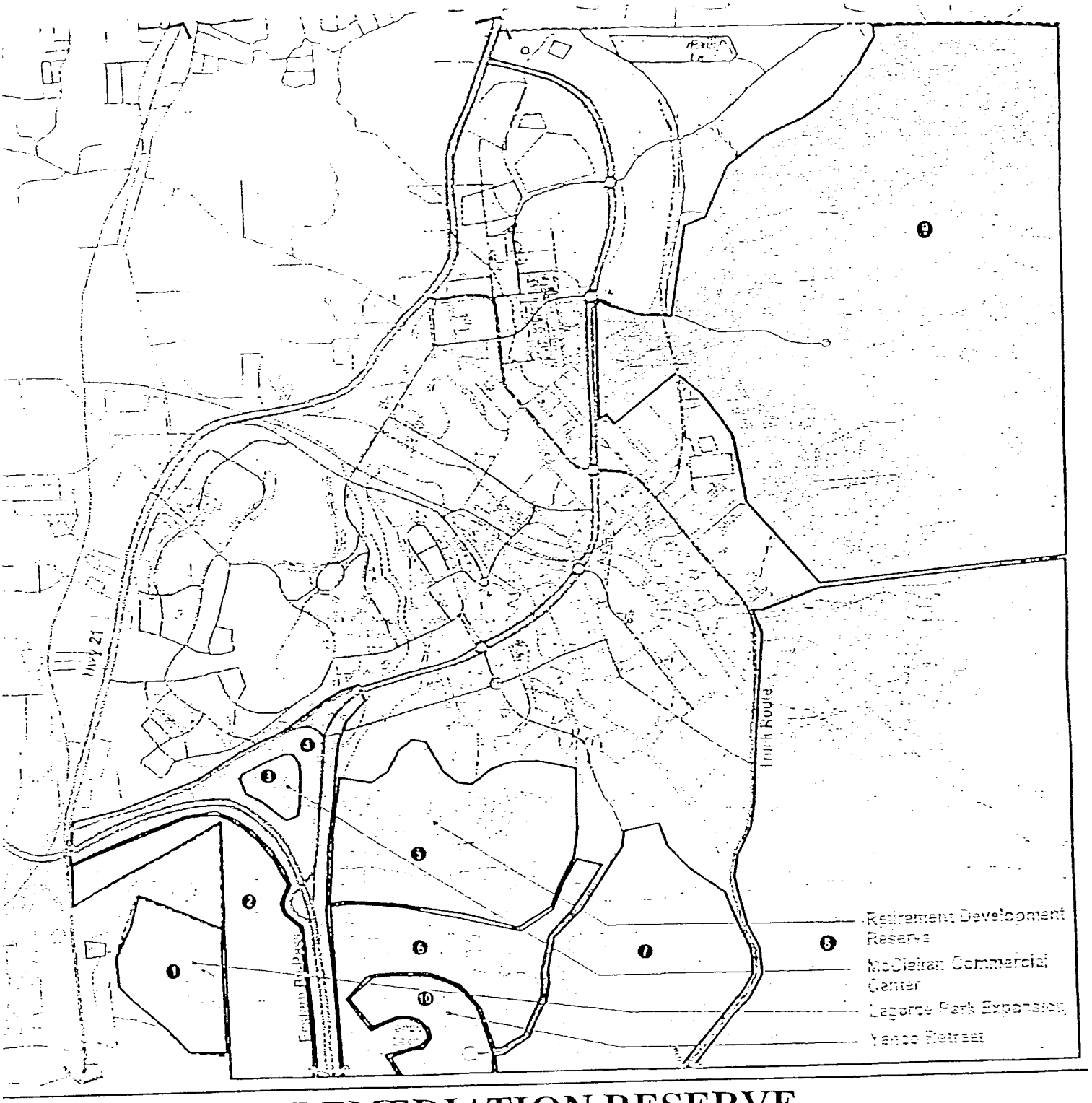
FORT McCLELLAN REUSE AND REDEVELOPMENT AUTHORITY



REMEDIATION RESERVE

FORT McCLELLAN REUSE PLAN

LEGEND

- Remediation Reserve
- Parcel Number

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The 15-year Business Plan Pro Forma (Chapter 9) identifies an income stream for the first 3 years of this 5-year phase. This stream consists solely of nonresidential income and totals a little over $17 million. This income stream assumes a reduced flow of rental income accruing to the Reuse Authority, as well as several substantial capital injections from the sale of buildings or land.

Phase 3 costs, compared to income, are once again substantial. Management, mothballing of retained buildings, maintenance of part-occupied buildings and the demolition of unwanted structures total $4 million in Phase 3. Transportation improvements, including maintenance, improvement, closure and demolition of roads, parking lot construction, new or improved sidewalks, bike and walking paths, bridges, and traffic control are projected to cost over $15 million. Utility improvements, including water supply, wastewater management, stormwater management, electrical, gas, communications and solid waste management, and special utilities, cost almost $9 million.

When summing costs and subtracting revenue, the cumulative deficit generated by the end of Phase 3 is almost $126 million.

The alternative cash flow for Phase 3 of the Comprehensive Reuse Plan shows a substantial variation from this shortfall. Total costs for Phase 3 are $22 million, and the cumulative deficit at the end of the Phase is $42 million, though the shortfall *within* the Phase is less than $5 million for the 3 year period. Once again, the once-only improvements to the transportation system account for half the costs of this phase. If half the proposed improvements could be financed from State and Federal sources, the deficit in Phase 3 would be eliminated.

2.2.3.1 Parcel 1, Phase 3

The Preferred Land Use Plan designates Parcel 1 as a development reserve. This 44-acre parcel should be "held back" from previous Phases in order to accommodate further development near the Fort McClellan town center, late in the implementation process. This enables the Reuse Authority to exploit the higher land values that are likely to be sustained by the more mature heart of the reused Base. It also allows complementary users, unwilling or unable to locate at Fort McClellan during its early phases, to be accommodated (at a premium) close to the town center.

A small segment of this parcel will be designated a Veteran's cemetery. A suitable buffer zone will be created between the cemetery and other uses within the parcel. It is possible that the cemetery would be acquired through a PBC during the first phase of this Implementation Plan.

This parcel has unconfirmed, and therefore undefined, environmental issues associated with it.

2.2.3.2 Parcels 2, 3, 4, and 5, Phase 3

These four parcels comprise a total of 370 acres of land. These parcels are designated in the Preferred Land Use Plan as the McClellan Industrial Park, aimed at light industry and warehousing uses, but sufficiently large to accommodate research facilities as well.

These parcels have been grouped together because they have several features in common. First, they each have the same use. Second, together, they form a substantial area of flat land accessible to Highway 21. Third, the parcels have the benefit of being in single ownership. All of these characteristics make the parcels, when amalgamated, attractive to end-users or developers seeking large sites for national manufacturing and assembly plants. There is currently a shortage of similar sites throughout the Southeast, to the extent that the Reuse Authority, by offering the four parcels as a package, will be able to place the Fort on most of these site-seekers' lists. The four parcels offer potential for almost a million square feet of developed space, plus 280 acres of development reserve. Clearly, higher density development with less reserved land would allow a further several million square feet of space to be built, should future market demand dictate.

The Phase 2 Report showed that only a handful of searches for substantial industrial sites are conducted in any one year in the Southeast. It is of course possible that Fort McClellan will meet the very particular needs of the first major site evaluator that considers its merits. It is more likely, however, that it will take several years before the right end-user/developer is able to match the Fort's attributes to its needs. In the meantime, the four parcels offer the opportunity to accommodate low impact agricultural uses as a means of earning interim revenue.

2.2.4 OPEN SPACE

The Preferred Land Use Plan highlighted the importance of open space to the reuse of Fort McClellan. The Plan has attempted to enhance the value of developed parcels by including open space areas within their boundaries and ensuring that, wherever practically possible, open space parcels are created adjacent to developed parcels.

The development densities in most parcels are sufficiently low to enable green buffer zones to be created when carrying out detailed planning of each parcel.

The open space parcels highlighted in the parcelization process fulfill one or more functions. An open space parcel may:

- Accommodate an active use such as a golf course or recreation field
- Protect a wetland or follow the course of a floodplain

- Include a significant quantity of UXO or other material requiring remediation
- Include a landfill
- Serve as a buffer between traditionally incompatible land uses

Acquisition of Open Space parcels as an EDC should coincide with the acquisition of adjacent development parcels in order to ensure continuity of maintenance and a rational opening up of the Fort as reuse accelerates. Maintenance clearly becomes an important issue given the amount of shrubs, trees, and grass within each open space parcel. The degree of maintenance to which each parcel is subjected will depend on its location in relation to adjacent development parcels. Three levels of maintenance have been identified:

- Basic maintenance, which will be applied to those areas that are less visible and/or will not offer public access. This category also applies to those parcels which are predominantly woodland and which will require normal arboreal inspection regimes.
- Moderate maintenance, which generally applies to those parcels to which the public has access, but which are for informal recreation
- High level maintenance, which applies to parcels that accommodate active, organized recreation and/or are highly visible to visitors to Fort McClellan

2.2.4.1 Parcel 1, Open Space

Parcel 1 is 10 acres located to the north Summerall Gate. As the main entry point, it is a passive area of open space critical to the initial impressions of first-time visitors to Fort McClellan. High level maintenance of the parcel may be limited to its roadside edge, with deeper, wooded areas of the parcel having only basic maintenance applied.

2.2.4.2 Parcel 2 and 3, Open Space

These parcels comprise 242 acres of open space and are closely connected with three Phase 1 development parcels and, as such, should be acquired at the beginning of Phase 1. These parcels are designated active recreation areas in the Preferred Land Use Plan where they are shown as an executive golf course. It is likely that demand for such a golf course, which will be driven by the success of the adjacent retirement community development, will materialize slowly over a period of time and with the maturing of the Reuse Plan. It may be several years, therefore, before the golf course attracts a developer/operator. In the meantime it will be important to maintain the open space as a passive recreation area, with the several routes which currently thread through it providing informal access to residents and workers at the

Fort. The maintenance regime for the wooded areas of these parcels need only be basic.

2.2.4.3 Parcel 4, Open Space

Parcel 4 acts as a buffer zone between the National Guard enclave to its northeast boundary and the golf course to the south. It is 28 acres and currently includes a number of low grade buildings scheduled for demolition. Some landscaping will be required following demolition, and the area, because of its relative visibility, will require a moderate maintenance regime. Assuming that the National Guard occupies the adjacent parcel at the beginning of Phase 1, this parcel should be acquired at the same time.

2.2.4.4 Parcel 5, Open Space

Parcel 5 is 186 acres and follows an irregular course northwest from the spine road at the Battalion Reception Center to the new proposed north entrance to the Base on Highway 21. The parcel should be acquired at the beginning of Phase 2. The parcel is defined by the floodplain of Cave Creek and a landfill around which a series of industrial parks has been proposed (see Parcels 12, 13 and 14, Phase 2). This parcel, therefore, establishes a buffer zone between the industrial parks and offers the opportunity to provide a substantial area of passive recreation space close to several employment areas. Some demolition will be carried out within this parcel, leading to the need for some simple landscaping. The maintenance regime will begin at the basic level, as adjoining land may be used for agriculture. Public access will be discouraged, particularly before industrial occupiers are attracted to the area. The maintenance regime will grow in sophistication (and cost) as adjoining parcels are occupied.

2.2.4.5 Parcel 6, Open Space

The Preferred Land Use Plan specifies active recreation for this 98-acre parcel, which adjoins the Fort McClellan Town Center. It should be acquired at the beginning of Phase 1. The Cane Creek floodplain defines the parcel and, as part of the surface water drainage system, offers a variety opportunities for enhancing the adjacent land values. The Preferred Land Use Plan, for instance, suggests the construction of a small lake and public park close to the Town Center. Other water features within this parcel and close to adjacent development sites will provide special vistas that will enhance marketability and the sense of place that is important to the success of the town center.

The maintenance regime, implied by this strategy of adding value to adjacent development sites, will eventually have to be of the highest order. The early phasing of the town center will bring the high level maintenance requirement forward, especially as the center plays a crucial role in the Reuse Authority's marketing efforts.

2.2.4.6 Parcel 7, Open Space

Like Parcel 5, this 53-acre area of open space provides a buffer between three industrial parks, as defined in the Preferred Land Use Plan. It should be acquired at the beginning of Phase 3. The industrial parcels (numbers 3, 4, and 5) fall into Phase 3; therefore, the caveats concerning maintenance of Open Space Parcel 5 apply to this parcel. Timing of the development of Phase 3 is expected to begin at least 12 years into the Reuse program, thus allowing the Reuse Authority to minimize maintenance of this parcel for several years. It is possible that a single occupier may require some or all of the most northerly Phase 3 development parcels in the near-to-medium term, in which case landscaping of Open Space Parcel 7 will have to be accelerated.

2.2.4.7 Parcels 8 and 9, Open Space

These two parcels include 194 acres of open space. They should be acquired at the beginning of Phase 1. They are contiguous and have sufficient characteristics in common to be grouped together. First, the northern boundary of each parcel forms an edge to the spine road running through the Fort. As has been outlined above, it will be essential to maintain this edge to a high standard because of its visibility. The northern edge of Parcel 8 is formed by Guillon Field, which the Preferred Land Use Plan specifies as a community recreation area. Parcel 9 is defined by the floodplain of a branch of Cane Creek. Both parcels, however, contain undefined quantities of UXO, as gunnery ranges were located in the southeast of each parcel.

2.2.4.8 Parcel 10, Open Space

Parcel 10 is 165 acres and shares its northern boundary with the spine road. It should be acquired at the beginning of Phase 1 as an EDC. The parcel is defined by the floodplains of Cane and Ingram creeks. Like Open Space Parcel 6, this parcel provides the opportunity to add value to adjacent development parcels by the imaginative use of water features and the groundwater management system. The Preferred Land Use Plan specifies Parcel 10 as McClellan Park, an area of active recreation close to the Fort's town center.

2.2.5 THE RESERVE COMPONENT ENCLAVE

The Army has yet to resolve a number of outstanding issues concerning the Reserve Component Enclave. These include the timing of the Guard's move from their existing on-post site to their new location; the availability of promised retrofit funds; the lack of operations and maintenance funds; and the application of leaseback provisions to the enclave.

A target date is yet to be agreed for the movement of the Alabama Army National Guard from their existing location to the newly proposed (and agreed) reserve component enclave. At issue is whether the Guard's move will be timely. At stake is the legitimate and legal interest of the Calhoun

County Area Homeless Alliance. Pursuant to its legal rights under the Redevelopment Act of 1994, the Homeless Alliance has executed a legally binding agreement with the Fort McClellan Development Commission for the long-term lease of the 1200 area barracks. The barrack buildings are located in the current Alabama Army National Guard Training Center. The Guard has indicated that it may take as long as 2 years after closure to retrofit their new enclave. The Homeless Alliance has indicated that a delay of 2 years will jeopardize its ability to move into the 1200 Area Barracks.

The Guard is unable to move to its new enclave in a timely fashion because promised retrofit funds are not programmed to be made available from the Army until some time during or after 2000. The Reuse Authority should work with the Army to expedite the availability of funding. Retrofit funds should be made available within the next 24-months to enable a seamless transition at closure of the Base.

Additional funding issues exacerbate the establishment of the Reserve Component Enclave. The Alabama Army National Guard has reported at numerous In-Process Reviews at Fort McClellan that its operations and maintenance funding will probably be only 1/3 of the amount originally planned. The Reuse Authority negotiated an enclave in good faith and on the basis that the Guard would be able to afford the upkeep and maintenance required. It appears, however, that this is not the case. The Reuse Authority should reopen discussions with TRADOC and the Guard to ensure that funding levels are sufficient to meet requirements.

Failure to adequately fund the operations and maintenance costs of the enclave serves to underscore the importance of securing leaseback provisions to the Reserve Component enclave. The FMRRA will include in its economic development application leaseback provisions for the enclave.

2.2.6 REMEDIATION RESERVE PARCELS

At the time of publication of this document, the Reuse Authority has not received a final copy of the Environmental Baseline Study. There continues to be speculation that the final document is not yet complete, despite the fact that the Department of Defense closely prescribes base reuse processes and timeframes. This lack of hard data has marginalized the planning process, particularly with regard to UXO on the installation.

The Archival Search Report (ASR) does not adequately determine the location, quantity, or quality of UXO at Fort McClellan. It appears that the range fans and impact areas, combined, could be as large as approximately 14,000 acres, or 78percent of the property. The ASR does not differentiate between impact areas and range fans.

The Reuse Authority has planned the ultimate use of all of the property at Fort McClellan. The commitment to providing a comprehensive land use strategy extends to the UXO areas, as well as those unaffected.

The Reuse Authority is particularly concerned about the level of clean-up that the installation will receive from the Department of the Army. The local community has been repeatedly told that the Army will clean up all of the CERCLA-related contaminants. The Army, however, has been ambiguous about its intentions to remediate the UXO. While the Army has, from time to time, made a commitment to clean the property, it has also indicated that it will not remediate the UXO. Even with regard to the clean-up of CERCLA-related contaminants, the Army has recently indicated that it will only clean the property to the level indicated in the Reuse Plan.

The community finds itself in a planning conundrum. On the one hand, if it requires the clean-up of UXO to residential standards in its reuse plan, the Department of Defense will probably not approve the plan. Even if it did, clean-up is unlikely in the near-term given the community's higher development priorities and the Army's position that technology and funding are inadequate to remediate UXO. On the other hand, if the community does not plan for the clean-up of UXO, it will not be remediated, as the Army will only clean to the standards required by the reuse plan. The munitions rule, yet to be formally promulgated, does not address the remediation of UXO from Base Realignment and Closure (BRAC) sites.

For this reason, the Reuse Plan designates a Remediation Reserve. It is a collection of parcels each contaminated by UXO to some degree. The community has planned for their eventual use. When the parcels are cleared of UXO by the Army they will be used by the community consistent with the Reuse Plan. The onus is on the Army to remediate the parcels so that they may fulfill their highest and best use.

By completing and submitting this Reuse Plan the local community does not acquiesce to any plan by the Army to avoid clearing UXO from the remediation reserve. The local community expects the Federal government to remove all UXO as funds are made available and as technology advances to allow for the safe, efficient, and environmentally friendly remediation.

The need for a Remediation Phase in this Implementation Plan has been outlined above. The Preferred Land Use Plan has identified a number of uses that are highly compatible with the natural environment of this part of Fort McClellan. The Remediation Reserve includes:

- A National Wildlife Refuge (see Appendix 1)
- Land which provides the ideal setting for a retirement golf community
- A strategically-placed area for further retail development

- A remote lakeside retreat
- Extensive wooded areas suitable for passive recreation
- Expansion land for Lagarde Park
- The route of the planned Eastern Bypass

The benefits of the natural environment in this part of Fort McClellan are currently outweighed by the fundamental environmental shortcomings manifest in the as yet undefined quantities of UXO, chemical, and biological hazards that pervade the area.

2.2.6.1 Parcel 1, Remediation Reserve

This parcel solely comprises 137 acres of land adjacent to Lagarde Park, Anniston. It is proposed that, following cleanup, it is passed to the City as an extension of the park.

2.2.6.2 Parcel 2, Remediation Reserve

Parcel 2 is 512 acres and acts as a buffer between the edge of the City of Anniston and the planned route for the eastern bypass. It also includes an undefined quantity of UXO and cannot be deemed safe to enter until remediation has taken place. Sherri Goodman, the Deputy Undersecretary of Defense, has encouraged the development and use of new technologies for the remediation of this type of land parcel. Every effort, on the part of the Army, should be made to exploit new UXO remediation technologies in this and similar parcels.

After remediation, it is unlikely that this isolated open space parcel will require anything but cursory maintenance.

2.2.6.3 Parcel 3, Remediation Reserve

Parcel 3 comprises 27 acres of land served by a main interchange on the eastern bypass. It is planned to absorb 217,000 square feet of retailing space, with 7 acres of land held in reserve for further development at a later stage. The precise configuration of the retailing will depend on market conditions at the time of development, but it is expected that the location will serve the maturing demand present at Fort McClellan and demand from the wider sub-region. This space will compliment the retailing development along Highway 21 that falls into Phase 2 of this Implementation Plan.

This parcel's location will ensure that a large local population will lie within a short drive of its shops and other facilities. The main drawbacks of this parcel are its dependency on cleanup by the Army of UXO in this area and the timely construction of the Eastern Bypass via which it is accessed.

2.2.6.4 Parcel 4, Remediation Reserve

This Parcel is 33 acres. It contains land required to create the proposed Eastern Bypass, which is planned to link Highways 431 and 21 at Summerall Gate with Interstate 20 between interchanges 188 and 191. This part of Fort McClellan included a number of gunnery firing ranges and is known to contain an undefined quantity of UXO. For the bypass to be created, a zone approximately 400 meters wide by 6,000 meters long must be cleared of all ordinance and other contaminants. The Eastern Bypass is an important component of the future success of Fort McClellan and the City of Anniston. Active pursuit of public finance for its construction is currently underway. Therefore, it is essential that remediation plans for this parcel are pursued with the highest priority.

The northern edge of Parcel 4 forms the southern boundary of Summerall Gate Road.

2.2.6.5 Parcel 5, Remediation Reserve

Parcel 5 is 378 acres and is the largest single parcel defined in the Preferred Reuse Plan, where it is termed a retirement development reserve. This Comprehensive Reuse Plan segments the retirement market in several ways, and certain parcels have been targeted at particular market segments. The Phase 2 Report contains details of each market segment. This parcel is aimed at the 50-64 age group of retirees from within the Southeast who are seeking independence, wish to be near an excellent range of facilities, such as a golf course, shopping, and medical facilities, and who have a higher than average disposable income. Parcel 5 provides retirement community developers with the opportunity to build substantial homes among heavily wooded, upland slopes. There is sufficient space within the parcel for the development of a new golf course aimed at meeting the needs of the retirement golfing community. The parcel, though relatively isolated, can be accessed from the new Bypass, as well as Iron Mountain Road.

Like all the parcels in the Remediation Reserve, Parcel 5 will require a detailed cleanup program if it is to be made available for development. Its use for high quality retirement housing overlooking a golf course is contingent on the success of Fort McClellan in attracting other segments of the retirement community market in the medium term.

2.2.6.6 Parcel 6, 7, 8 and 9, Remediation Reserve

These four contiguous parcels of open space comprise 2,709 acres and contain a large and undefined quantity of UXO. Each of these parcels, throughout the last 80 years, has accommodated firing ranges and until remediation has been completed cannot be deemed safe for public access. It has been assumed that, with one exception, no maintenance will be required of these relatively isolated wooded hills and valleys. The exception is a section of open space at

the extreme western boundary of Parcel 9. This boundary meets the spine road and, therefore, will require higher levels of maintenance than the remainder of the parcel, due to its high visibility. Parcels 8 and 9 will be conveyed by a PBC to the U.S. Fish and Wildlife Service for use as a National Wildlife Refuge (see Appendix 1).

2.2.6.7 Parcel 10, Remediation Reserve

Parcel 10 is 93 acres and lies in the southwest quadrant of Fort McClellan, encompassing Yahoo Lake. There are no plans to create an intersection to provide this parcel with access to the Eastern Bypass, which runs within 500 meters of Yahoo Lake, because the proposed use for this parcel is such that access and location are not important attributes. The Preferred Land Use Plan identifies Parcel 10 as the Yahoo Retreat. The precise nature of the retreat is relatively flexible, but the Phase 2 Report pinpointed two opportunities– for a corporate retreat or a religious retreat. The wooded, semi-mountainous environment provides an ideal location for those who need good road access from across the region, but seek relative quiet and isolation on arrival. Yahoo Lake provides a substantial amenity which adds value to a sense of retreat. Local access to this parcel, whether via Iron Mountain Road or a route further to the east, passes through areas that contain large and undefined amounts of UXO. Parcel 10 also includes UXO. This suggests that remediation is likely to take many years and, indeed, may prove too complex to allow this parcel to be developed.

3.0 THE ACQUISITION STRATEGY

This property acquisition strategy for Fort McClellan developed is the proposed method by which Base property will transfer from the Army to other entities, based upon the Preferred Reuse Alternative (Reuse Plan). The strategy is based upon Federal Laws, including the Defense Base Closure and Realignment Act of 1990, the Federal Property and Administrative Services Act of 1949, the Surplus Property Act of 1944 and Title XXIX of the National Defense Authorization Act for Fiscal Year 1994, which have evolved to guide the disposal and reuse of surplus military installations targeted for closure.

The purpose of this Chapter is to outline the acquisition strategies for the disposition of real property assets of the Base. The objective is to create a long term strategy that is not only consistent with Federal Laws and base closure policies but that also attains the highest economic and social returns consistent with the community's vision.

3.1 THE PROCESS

The economic success of this Reuse Plan depends on the ability of the community to acquire property under Federal law in a timely and economically realistic manner. Fort McClellan is a large military base, beset with environmental problems, located in a semi-rural economy, many miles from major metropolitan markets. This Reuse Plan calls for a comprehensive approach to property acquisition. It rests on a phased process that aims to build value for the community over at least 20 years. This Plan is comprehensive in the sense that each land use component supports the next, with the fundamental objective of replacing the jobs lost as a result of the Base closure. A piecemeal approach to the reuse of Fort McClellan will result in failure to replace these jobs.

None of these real property strategies can be realized while uncertainty surrounds the closure and permitting processes, particularly with regard to environmental cleanup. The Reuse Authority and its consultants are acutely aware that the Federal regulatory process must be satisfied if this plan is to be successful and the aspirations of the community are to be realized.

No property can be conveyed by deed or lease until the Army makes a Finding of Suitability to Transfer (FOST) or a Finding of Suitability to Lease (FOSL). Further, property cannot be transferred until the National Environmental Policy Act (NEPA) analysis is complete, the Army prepares an Environmental Impact Statement and issues the Record of Decision (ROD). The Army has stated that the ROD will be issued by late Summer 1998.

3.2 ACQUISITION STRATEGY

3.2.1 CORPORATE GOVERNANCE

3.2.1.1 Overview of the Issues

The Council of Elected Leaders (CEL) gave the Fort McClellan Reuse and Redevelopment Authority (FMRRA) responsibility for redrafting the Fort McClellan Development Commission Enabling Legislation (S.639) because it is deemed insufficient in scope. While it vests the responsibility of developing Fort McClellan in the FMRRA, it does not afford it the power to actually develop the property. In other words, the FMRRA has the responsibility to complete the work, but not the tools to get the job done. The State Delegation has indicated that it will not give the FMRRA the power required to successfully develop the property, including the powers to exercise land use controls and to generate revenue. The City of Anniston has also raised questions about the constitutionality of vesting these powers in the FMRRA.

It appears, therefore, that the best way to bring the required power and authority to bear on the development is through a partnership between the FMRRA and a qualified governmental entity. In fact, the Department of Defense has pronounced that it will not recognize the FMRRA as an implementing agency capable of acquiring the property by an EDC unless it becomes an "instrumentality or authority of a governmental entity." At issue, then, is identifying a partner to assist the FMRRA in the development.

3.2.1.2 Policy Guidance

The Office of Economic Adjustment (OEA) has established the following guidelines for the FMRRA if it is to be recognized by the Department of Defense for an EDC:

> "OEA, on behalf of the Secretary of Defense, must recognize the implementing LRA if it is the intent of the community to acquire some or all of the property under an Economic Development Conveyance (EDC). As such, I [Joan Sigler] recommend that the community coordinate with OEA so that you are fully aware of what statutory and policy requirements must be met to obtain this designation."
>
> "One of these requirements is that the proposed implementing LRA must be a governmental unit, or an instrumentality of a governmental unit. This means that the implementing LRA cannot be an independent authority. It must be an extension of a governmental unit and therefore be backed by a governmental unit. This governmental unit is ultimately accountable for the actions of the LRA."

"In order for the Office of General Counsel to approve the FMDC as an implementation LRA and an OEA grant recipient, the State or local government must do one of the following: (1) modify the legislation to specifically indicate that the FMDC is an authority or instrumentality of the State or local government; or (2) obtain a legal opinion from the appropriate State or local government's legal counsel that even though the legislation does not specifically state that the FMDC is an authority or instrumentality of the State or local government, such an entity would be viewed under Alabama law as an authority or instrumentality of the State or local government."

"There is no legal, regulatory, or policy requirement that an implementation LRA have the authority to tax, issue bonds, or zone. The absence of such authority is not a basis for denying recognition as an implementing LRA. However, without such authorities, it may be difficult for the FMDC to demonstrate in its EDC application that the FMDC can implement the redevelopment plan. If you decide to pursue revision of S.639, you might consider requesting that specific powers and authorities be identified in the legislation which could help strengthen an EDC application and your implementation efforts."

OEA's direction is unambiguous and should serve as the springboard for addressing the issue of corporate governance.

Application of OEA Policy

It is a fact that the State of Alabama has directed the FMRRA to develop Fort McClellan. It will have this responsibility for the next 20 years, or until the legislature and governor amend the enabling legislation to vest the responsibility in another entity. Unfortunately, while the State saddled the FMRRA with the responsibility to develop the property, it did not grant it the authority or power to meet the criteria established (above) by OEA to be considered an implementing agent. The FMRRA was given the job, but not the tools. Therefore, under the current law the FMRRA will never qualify for an EDC.

In order to qualify for an EDC and to be considered an implementing agent, the FMRRA must become an "authority or instrumentality" of a local government (a municipality or the County) or of the State of Alabama. The FMRRA must partner with an existing governmental entity if it wants to continue to be a player in the development of the property.

The mechanism by which the FMRRA will partner with a governmental authority is considered a "joint powers" agreement in the form of a contract. Traditionally, this contract is executed by the developer, the FMRRA, with a governmental entity. The developer serves as the party responsible for all activities within the jurisdictional boundary of the installation; the

governmental entity serves as the party responsible for providing the authority to the developer to ensure that it can successfully complete its job. This relationship is typically considered a Planned Unit Development (PUD). A PUD usually preserves autonomy with the developer to exercise land use controls, including recommendations on zoning, and to raise funds for the development, including recommendations on taxing. The degree of autonomy—with regard to land use controls and to revenue generation—that inures to the developer is highly dependent upon negotiations with the local governmental entity. The scope and scale of autonomous authority vested in the developer depends upon its ability to negotiate favorable terms.

The CEL should develop its decision matrix using the guidance promulgated (above) by OEA in evaluating four potential options: (1) executing a joint powers agreement with the State of Alabama, (2) executing a joint powers agreement with Calhoun County, (3) executing a joint powers agreement with the City of Anniston, or (4) executing a joint powers agreement with the CEL with municipal powers. The execution of such an agreement must be completed in the near-term. By Federal law, the FMRRA has 12 months from the submission of its Reuse Plan to the Department of Defense to submit its EDC application.

3.2.1.3 Decision Matrix

The FMRRA should develop a decision matrix that objectively weighs the pros and cons of executing a joint powers agreement with (1) the State, (2) the County, (3) the City of Anniston, or (4) the CEL with municipal powers. Some of the issues to be included in the analysis are:

- Is the entity a governmental unit?
- Is the entity legally capable of executing a joint powers agreement?
- Is the entity willing to execute such an instrument?
- Is the entity willing to subject itself to the financial, environmental, and tort liability associated with the development?
- Does the entity currently possess the authorities required to develop the property? If not, can those authorities be acquired?
- Can the entity tax, issue bonds, and zone?
- Does the entity have a "track record" for successful economic development?
- Does the entity possess the human infrastructure (staff) to ensure project completion?

- Is the entity capable of, and willing to, fund the development program?

Certainly, other factors must be considered and should be developed by the FMRRA. Again, it is important to bring this issue to closure in the very near-term.

The community's elected officials should recognize that time is of the essence in selecting an appropriate development partner for the FMRRA. Department of Defense policy and guidance suggests that the EDC application should be completed within 12 months of the submission of the Comprehensive Reuse Plan. Before the application is submitted, however, the corporate governance issue must be resolved. The application will likely take 6 months to complete. A development partner for the FMRRA must be identified prior to the commencement of work on the application. Therefore, a development partner must be identified no later than June 1998.

The community must recognize that the 12 month deadline for the submission of the EDC application is in many ways arbitrary. Certainly, that date can easily be extended. There is little threat that the Department of Defense will unilaterally dispose of the property within the immediate future. Only after years of community paralysis would a negotiated sale become likely.

The controlling factor in decisively identifying a development partner is the part-time nature of the Alabama legislature. Assuming that the issue will require modification of the enabling legislation, the community should be prepared to identify a partner during the Spring 1998 legislative session commencing in January 1998. Failure to address the issue during this legislative period will require a year and a half wait for legislative action. The 1999 legislative session begins in the Summer 1999. Juxtaposed against the Fall 1999 closure date for the installation, the community is woefully late in addressing the corporate governance issue. The development program will be substantially delayed, job opportunities will be lost, and the community's ability to provide appropriate developmental controls will be severely marginalized.

3.2.2 SHORT-TERM ACQUISITION STRATEGY

Due to the uncertainty regarding the level of environmental contamination and environmental cleanup schedule, this property acquisition strategy is divided into two sections. The first section outlines a short term acquisition strategy; the second section outlines a long term acquisition strategy that focuses on the proposed end use once Base property is available for transfer. The Army's environmental cleanup assessments and schedule for the Base are relatively immature which makes it difficult to determine the availability of a FOST, FOSL, or ROD for the Base. Further, the lack of a time schedule and the uncertainty caused by the lack of information regarding the environmental contamination prohibits Base property from being transferred by deed in the near-term.

The only property transfer option presently available to the Army and the FMRRA is an Interim Lease, a short-term leasing mechanism. The Interim Lease is only available for property where the Army has completed an EBS, an environmental analysis of the parcel of real property, and obtained a FOSL. It is understood that the Army is prepared to negotiate property transfer on an interim basis using the Memphis shell lease model. This allows the Reuse Authority to seek tenants for buildings or land, while incurring no rental or carrying costs for the property it is marketing.

An Interim Lease is differentiated from a longer term Lease in Furtherance of Conveyance because the Army cannot, at this time, guarantee the party leasing the property that it may receive title to the property when conveyance is permitted. The short-term nature of Interim Leases will not support the long-term amortization of improvements necessary for the redevelopment of Fort McClellan. The FMRRA having entered into the Interim Lease, can enter into a sub-lease with a prospective tenant. The value of this interim leasing capability is questionable, particularly in the 'soft' market in which Fort McClellan is located.

First, the Interim Lease can be for less than fair market value only if the Army determines such a lease to be in the public interest or the fair market value is unattainable. This eliminates the basic incentive of a downwardly negotiable lease. Second, the party leasing the property must utilize it in a manner consistent with its present use. Additionally, Interim Leases will contain a clause allowing the Army to terminate the lease if the use is not compatible with the Army's decision on the final use of the property. Termination could also be enacted in a national emergency. Further factors that increase the cost of the lease to the prospective tenant include: a requirement that premises be restored to their original condition at the end of the lease; that the tenant indemnify the Army for damages; and that the tenant vacate the premises to allow environmental remediation activities to be carried out.

3.2.2.1 Personal Property Use Under an Interim Lease

Tenants will be eligible to use, as part of the Interim Lease, Federal personal property that remains at the Base. This can include furniture, computers, forklifts, and motor vehicles. Personal property can be relocated from other parts of the base to satisfy the needs of the incoming tenant. It is proposed that the personal property contained in later phase buildings be transferred to buildings earmarked for acquisition in Phase 1.

An essential prerequisite of this Comprehensive Reuse Plan is the preservation and retention, subject to negotiation, of all personal property associated with buildings slated for reuse or demolition at Fort McClellan.

3.2.2.2 Caretaker Agreement

By entering into short-term leases on the property, the FMRRA will be occupying and utilizing Base real property and will need to provide fire, police, utility, and maintenance services to its tenants. The FMRRA, therefore, wishes to enter into a Co-operative Community Caretaker Agreement with the Army for Fort McClellan.

Under this Caretaker Agreement, the Reuse Authority, on behalf of the community, will undertake all of those activities necessary to maintain Fort McClellan to a standard commensurate with the activities that are planned to take place there over the coming years.

3.2.3 LONG-TERM ACQUISITION STRATEGY

The Reuse Authority proposes that three methods of conveyance are adopted in this Comprehensive Reuse Plan: (1) Acquisition via Economic Development Conveyances (EDC), (2) Acquisition via Public Benefit Conveyance (PBC) and (3) The acquisition of personal property. Table 3.1 summarizes the proposed acquisition strategy, with reference to EDCs and PBCs.

It is proposed that Fort McClellan is acquired by the community as a single EDC, comprising four phases. Table 3.2 illustrates how the Phasing Plan influences the way in which the community, through the FMRAA, will manage the Fort, following acquisition.

The proposed acquisition strategy for Fort McClellan takes the Phasing Plan as its starting point. The Phasing Plan has been developed to reflect the market reality; that Fort McClellan is a massive and complex military base located in a semi-rural economy. This potential market weakness can be minimized by exploiting the Fort's market strengths. The acquisition strategy of table 3.1 seeks to exploit market strengths, while minimizing market weaknesses.

Phases 1a and 1b include key EDCs which have the potential for priming long term development at Fort McClellan. A detailed market study of the retirement development sector highlighted its importance in supporting wider economic development strategies. Dr. Mark Fagan, who completed the study, has illustrated frequently the opportunities which planned retirement developments offer their host communities. For instance, the Sun city development in Phoenix, Arizona, drew retirees from all over the nation and was directly responsible for creating 11,000 new jobs. Dr. Fagan has identified similar opportunities at Fort McClellan, characterizing the development of a planned retirement community as a key economic driver, essential to job creation in the service industry sector. The disposal of the golf course to the retirement community developer, via an EDC to the FMRRA, will ensure that this important support facility is managed and operated to the benefit of the retirement community.

Table 3.1. Summary of Proposed Phased Strategy

	Parcel Number	Principal Use	Method of Acquisition	Acquired By
PHASE 1a	1	Retirement Housing	EDC	FMRRA
	2	Retirement Housing	EDC	FMRRA
	3	Retirement Housing	EDC	FMRRA
	4	Golf Course	EDC	FMRRA
	5	Training	EDC	FMRRA
	6	Training	EDC	FMRRA
	7	Homeless Assistance	PBC	Homeless Alliance
	8	Training	EDC	FMRRA
PHASE 1b	1	Retirement and Town Center	EDC	FMRRA
	2	Light Industry, Warehousing	EDC	FMRRA
	3	Town center Support	EDC	FMRRA
	4	Education and Training	PBC	Ayres State/Educ. Consort.
	5	Education and Training	PBC	Ayres State/Educ. Consort.
	6	Light Industry, Warehousing	EDC	FMRRA
	7	Industry, Warehousing	EDC	FMRRA
PHASE 2	1	Retirement	EDC	FMRRA
	2	Retailing	EDC	FMRRA
	3	Education	PBC	School System
	4	Retailing	EDC	FMRRA
	5	Industrial, Office	EDC	FMRRA
	6	Hospital	EDC	FMRRA
	7	Office	EDC	FMRRA
	8	Industry, Office	EDC	FMRRA
	9	Industry, Office	EDC	FMRRA
	10	Industry, Office	EDC	FMRRA
	11	Industry, Office	EDC	FMRRA
	12	Industry, Office	EDC	FMRRA
	13	Industry, Office	EDC	FMRRA
PHASE 3	1	Development Reserve	EDC	FMRRA
	2	Industry, Office	EDC	FMRRA
	3	Industry, Office	EDC	FMRRA
	4	Industry, Office	EDC	FMRRA
	5	Industry, Office	EDC	FMRRA

Table 3.1. Summary of Proposed Phased Strategy (Continued)

	Parcel Number	Principal Use	Method of Acquisition	Acquired By
REMEDIATION RESERVE	1	Lagarde Park Extension	PBC	City of Anniston
	2	Open Space	EDC	FMRRA
	3	Retail	EDC	FMRRA
	4	Eastern Bypass	PBC	State of Alabama
	5	Retirement Community Reserve	EDC	FMRRA
	6	Open Space	EDC	FMRRA
	7	Open Space	EDC	FMRRA
	8	Open Space	PBC	USDF & W
	9	Open Space	PBC	USDF & W
	10	Business Retreat	EDC	FMRRA
NATIONAL GUARD	1-5	Reserve Enclave	Not Surplus	National Guard
OPEN SPACE	1	To Complement Phase 1	EDC	FMRRA
	2	To Complement Phase 1	EDC	FMRRA
	3	To Complement Phase 1	EDC	FMRRA
	4	To Complement Phase 1	EDC	FMRRA
	5	To Complement Phase 2	EDC	FMRRA
	6	To Complement Phase 1	EDC	FMRRA
	7	To Complement Phase 3	EDC	FMRRA
	8	To Complement Phase 1	EDC	FMRRA
	9	To Complement Phase 1	EDC	FMRRA
	10	To Complement Phase 1	EDC	FMRRA

Table 3.2. Phasing Plan Milestones

YEAR	MILESTONE
1999	A single EDC is completed. It comprises the parcels outlined in the Comprehensive Reuse Plan.
2000-2004	Operational responsibility for parcels in Phases One A & B passes to the FMRRA and development commences, as described in the Reuse Plan.
2000-2004	Parcels in Phases Two & Three are maintained under a Co-operative Community Caretaker Agreement.
2000-2004	The Army begins clean-up of the parcels contained in the Remediation Reserve.
2005	Operational responsibility for parcels in Phase 2 passes to the FMRRA and development commences, as described in the Reuse Plan. Revenues from Phase 1 help finance maintenance and infrastructure development.
2005	Parcels in Phase 3 are maintained under a Community Cooperative Caretaker Agreement
2005-2011	Army continues clean-up
2012 -	Operational responsibility for Phase 3 passes to the FMRRA and development commences as described in the Reuse Plan
When Appropriate	Army hands over clean parcels in the Remediation Reserve to the community, for development.

Other economic development opportunities are offered in Phase 1b; more retirement community facilities as well as the core of a new town center for Fort McClellan that will include shops, light industry, and warehousing. The Center For Domestic Preparedness is included in this phase, though it is geographically removed from the rest of the uses contained therein. The establishment of the Center for Domestic Preparedness, early in the development process, will reinforce the strategic importance of Phase 1 as a means of priming the redevelopment of Fort McClellan.

Infrastructure maintenance and development underpins the success and sustainability of the Comprehensive Reuse Plan. Most of the existing infrastructure at Fort McClellan is obsolete or inadequate for the needs of modern development. The Phasing Plan recognizes the need to finance substantial improvements to the infrastructure.

Acquisition by direct sale would not enable the Reuse Authority to acquire the title of the property and complete the integrated plan on behalf of the local community. It would therefore undermine future efforts to attract businesses and jobs to Fort McClellan, thus failing to meet the key objective of the community.

The integrated plan will be further strengthened by the EDCs to acquire open spaces for the use of the wider community. Fort McClellan is located in a spectacular and precious environment, the value of which many local people recognize. The people of Calhoun County have expressed their strong desire to retain this environment, while achieving their goal of job creation and community development. The open space strategy supports these twin goals. It proposes the acquisition, by PBC, of large tracts of wooded and semi-wooded land for passive recreation, thus conserving the Fort's unique environment, while enhancing the value of the development parcels that these tracts surround.

Specific PBCs are also called for in this Comprehensive Reuse Plan. These include a wildlife refuge in the Choccolocco Mountains, to be conveyed to the U.S. Department of Fish and Wildlife (see Appendix 1), and a location for a new campus for a consortium of education providers and the expansion of Lagarde Park.

A local alliance of agencies, providing for the needs of the homeless, have also applied, via a Homeless Assistance Conveyance, for a group of buildings located in Phase 1, Parcel 7.

In the case of each of these acquisitions via EDCs, PBCs or the Homeless Assistance Conveyance, the role of personal property is crucial. No personal property on Fort McClellan should be removed, whether the building in which it is housed is to be retained or will be demolished. The impact of removal will undermine the integrated development strategy by rendering worthless key buildings.

3.3 PERSONAL PROPERTY ACQUISITION STRATEGY

3.3.1 JUSTIFICATION FOR THE RETENTION OF PERSONAL PROPERTY

The retention of existing, or functionally equivalent, personal property at Fort McClellan is critical to the reuse and redevelopment of the installation. As

has been clearly articulated, traditional development trends and absorption rates ensure a slow development process. The development program outlined in this plan lasts for at least 20 years, and even then substantial amounts of green space and existing facility space will go unused. The absorption rates projected in this plan assume the retention of personal property. For this reason, the successful development of the real property is highly dependent upon the retention of the personal property. Without the incentive offered by the reuse of personal property, successful reuse will not be accomplished for several reasons.

Fundamentally, there is no reason for the private sector to invest in abandoned buildings that are stripped of personal property and equipment. The regional marketplace will not invest in the development of aged military facilities without the incentive provided by existing personal property. The Base Realignment and Closure Office, Department of the Army, makes the case in its pamphlet, Obtaining Personal Property from Closing Army Installations, when it states:

> "Military base closures can have significant impacts on the economies of nearby communities. To improve prospects for economic recovery in those communities, the Army will make surplus personal property from its closing installations readily available to communities affected by base closures and, if appropriate, at a cost less than fair market value."

As the Army publication suggests, the retention of personal property can act as a stimulus to the development program, allowing for the reuse of obsolete facilities and the creation of new jobs. Similarly, there is little incentive for the Reuse Authority to assume operations, maintenance, and ownership of the property without the tools and equipment to get the job done.

If ever there was ever a case for the retention of personal property in support of job creation, it is the closure of Fort McClellan. The Army is closing one of the largest military installations in the country in a relatively rural area. Absorption rates, assuming the retention of all personal property at below fair market values and the phased acquisition of real property, are in excess of 20 years. Barring mitigation prior to closure, local unemployment levels will soar to approximately 17 percent. The campus-like character of the installation, large quantities of UXO, and the Anniston Army Depot's chemical incineration mission exacerbates reuse potential. The marketplace stigma attenuated by these negative impressions will, in part, be overcome by the retention of personal property. In short, the facilities at Fort McClellan will only be reused if they contain personal property upon closure.

3.3.2 ACQUISITION OF PERSONAL PROPERTY.

The Reuse Authority proposes acquiring all personal property at Fort McClellan under a single Personal Property EDC. Consistent with Department of Defense policy, the Personal Property EDC application will be completed within 12 months of the submission of the Comprehensive Reuse Plan. At the same time, the Reuse Authority will submit its EDC application for the no-cost acquisition of real property at Fort McClellan. The Real Property EDC application will include a timetable for the graduated completion of caretaker management services. In its EDC applications the Reuse Authority will propose assuming ownership, management, and control of all real and personal property at Fort McClellan contingent upon the Federal government's gradually diminishing operations and maintenance support.

3.3.3 SPECIAL USE BUILDINGS

A number of facilities at Fort McClellan stand out as special use, unique buildings. The character and utility of these buildings is defined by the personal property contained within their respective walls. Remove the personal property from these unique buildings and the Army destroys their character and utility. Special use buildings cannot be reused if they are stripped of personal property. Job creation is undermined without personal property. Special use buildings include the following:

- Noble Army Hospital
- Stout Dental Clinic
- Elementary School
- Building 350, Heavy Vehicle Maintenance Facility
- Central Shipping and Receiving

Without the personal property and equipment contained in these buildings, the facilities become of little value to the private sector. For example, strip the hospital of its equipment and it is no longer a hospital. Trainee areas and trainee lodging currently contain a wide range of educational, kitchen, bedding, and dining equipment that will be essential to the establishment of the National Center for Domestic Preparedness.

The personal property in Noble Army Hospital should additionally be retained as a full hospital, not simply as clinic. Since the BRAC announcement, the Medical Command has downsized the hospital to a clinic. The Reuse Authority intends to reuse all of the property currently contained in the hospital, whether it is used in the clinic operations or not.

Table 3.3 depicts the reuse of special use buildings and their impact on new job creation.

Table 3.3. Reuse of Special Use Buildings

Building	Current Use	Future Use	Spin-Offs	New Jobs
Hospital	Medical (clinic)	Hospital	Retirement community, CDP	450
Dental Clinic	Medical (clinic)	Dental School	Educational park	25
Elementary School	Education	Elementary School	Residential development	30
Central Shipping	Warehouse	Warehousing/ manufacturing	Industrial park development	20
Building 350	Vehicle maintenance	Maintenance/ manufacturing	Industrial park development	100

In the event the Reuse Authority determines that there is no requirement for the reuse of these buildings, the personal property will be released.

3.3.4 DEMOLITION

The personal property contained in facilities slated for demolition should be retained for use in other facilities on post, unless otherwise released by the Reuse Authority in accordance with BRAC personal property disposal guidance.

3.3.5 THE BRAC DISPOSAL PROCESS

The Reuse Authority should recognize that the BRAC personal property disposal process ultimately governs the disposition of personal property.

4.0 PHASING PLAN

The following tables summarize the phasing and parcelization plans proposed for the Fort McClellan Comprehensive Reuse Plan. The phasing and parcelization of the Comprehensive Plan supports the Preferred Land Use Plan, which was the culmination of Phase 2 of this work and which illustrates the mix of land uses at Fort McClellan in 2020. It is important to emphasize that all the land areas used in this chapter have been calculated from a 1:9600 scale map. A full site survey of each parcel will, no doubt, result in inevitable differences. These will not, however, alter the recommendations of this phasing plan.

Table 4.1 shows the acreage of the development phases of the Preferred Land Use Plan. Each phase is characterized in terms of the number of acres already developed (or, in other words, the acreage of existing buildings earmarked for retention), the amount of land to be held in reserve for later development, and the land available for immediate development. The concept of a development reserve is used here as a means of holding back land so that tenants or investors are able to expand within their existing locations. It is also a useful way for the Reuse Authority to increase land values by enabling late development of early parcels as demand for land in those parcels strengthens and matures.

In addition to Phases 1a, 1b, 2, and 3, this Plan includes four special phases: land with development potential that will require remediation (R), the National Guard component (NG), open space (OS), and open space which will require extensive remediation (R OS).

Table 4.2 shows the amount of built or demolished space proposed for each parcel of the development. The Preferred Land Use Plan proposes the retention of 3.3 million square feet of buildings during the first three phases of development at Fort McClellan. A further 1.35 million square feet of retained buildings can be found in the National Guard, Open Space, and Remediated Open Space areas. The proposed demolition program covers over 1.5 million square feet, when buildings on open space parcels and the remediation areas are included. There is potential for an additional 6.7 million square feet of new development at Fort McClellan, though this includes 1.1 million square feet of space in the remediation reserve.

Mothballing costs are generated by the amount of retained buildings specified in each phase. It has been assumed that retained buildings will cost between 80 cents and $2 per square foot per annum to mothball while empty. The cost of demolition has been estimated at $7.25 a square foot and assumes that asbestos and lead paint will be present in all earmarked buildings. Rental levels have been calculated for all those buildings from which the Reuse Authority has the option of taking income. It is quite possible, of course, that some or all of the reused buildings will never be managed by the Reuse Authority, that they will be sold on to a developer and that, rather than earn an income, the Authority will receive a capital payment.

Table 4.1. A Summary of the Phasing Plan for Fort McClellan—Land and Buildings

				After Demolition			
Phase #	Total built Space (Sq.Ft.)	Space to be retained (Sq. Ft.)	Space to be demolished (Sq. Ft.)	Total Acres	Built Acres	Acres	Reserve Acres
1a	1,320,247	1,189,724	46,362	654	424	230	10
1b	1,838,411	1,646,365	192,046	366	280	86	69
2	1,157,862	626,743	490,527	584	70	514	284
3	3,576	3,576	0	411	2	409	322
NG	1,314,558	0	0	393	0	0	0
OS	483,089	118,215	341,729	976	2	0	0
Remdiation	104,785	104,785	0	4,172	0	951	127
Totals	6,222,528	3,689,408	1,070,664	7,556	778	2,190	812

Table 4.2. A Summary of the Parcel Plan for Fort McClellan—Land and Buildings

					After Demolition			
Phase #	Parcel #	Total built Space (Sq.Ft.)	Space to be renovated (Sq. Ft.)	Space to be demolished (Sq. Ft.)	Total Acres	Built Acres	Cleared Acres	Reserve Acres
Ia	1	261,924	261,924	0	180	80	100	0
Ia	2	353,519	351,919	0	173	77	96	0
Ia	3	107,802	107,802	0	57	47	10	10
Ia	4	14,860	14,860	0	168	168	0	0
Ia	5	176,557	149,863	26,694	18	18	0	0
Ia	6	323,024	303,356	19,668	43	19	24	0
Ia	7	82,561	-	-	15	15	0	0
Ia	8	-	-	-	-	-	-	-
Ib	1	502,864	465,740	37,124	77	71	6	6
Ib	2	242,020	205,139	36,881	46	41	5	5
Ib	3	59,426	59,426	0	14	14	0	0
Ib	4	21,614	21,614	0	35	18	17	0
Ib	5	470,736	470,736	0	92	92	0	0
Ib	6	195,447	164,249	31,198	39	26	13	13
Ib	7	346,304	259,461	86,843	63	18	45	45
II	1	268,236	13,051	255,185	69	0	69	35
II	2	14,001	5,993	0	22	0	22	8
II	3	83,153	83,153	0	31	31	0	0
II	4	56,142	16,099	30,494	41	4	37	15
II	5	290,070	290,070	0	67	21	46	46
II	6	186,199	180,766	5,433	28	6	22	0
II	7	8,374	1,044	7,330	23	0	23	10
II	8	114,887	0	111,455	82	0	82	50
II	9	121,069	33,409	80,630	87	0	87	50
II	10	15,731	3,158	0	33	0	33	10
II	11	-	-	-	60	8	52	40
II	12	-	-	-	22	0	22	10
II	13	-	-	-	19	0	19	10
III	1	3,576	3,576	0	44	2	42	42
III	2	-	-	-	54	0	54	35
III	3	-	-	-	73	0	73	50
III	4	-	-	-	176	0	176	150
III	5	-	-	-	64	0	64	45
NG	1-5	1,314,558	-	-	393			
OS	1	-	-	-	10			
OS	2	-	-	-	132			
OS	3	-	-	-	110			
OS	4	229,611	23,898	205,713	28			
OS	5	5,614	0	5,614	186	2		
OS	6	91,940	86,634	2,277	98			
OS	7	-	-	-	53			
OS	8	88,895	7,683	81,212	90			
OS	9	21,186	0	21,186	104			
OS	10	45,843	0	25,727	165			
R	1	-	-	-	137	0	137	0
R	2	-	-	-	512			
R	3	-	-	-	27	0	27	7
R	4	-	-	-	316	0	316	0
R	5	-	-	-	378	0	378	120
R.OS	6	-	-	-	265			
R.OS	7	-	-	-	444			
R.OS	8	-	-	-	1000			
R.OS	9	104,785	104,785	0	1000			
R	10	-	-	-	93	0	93	0
	Totals	6,222,528	3,689,408	1,070,663	7,556	778	2,190	812

Parcel Number	1	Phase Number		1a
Main Uses		Single- and multi-family housing		
Total Acreage of the Parcel		180		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
180	245,024	80	0	0

Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	100	408,373	0		
Housing	100	408,373	0	3.00	300
Use Two					

Development Timetable		
Commence Marketing	Marketing Period	Build-out /Disposal Target Date
As soon as possible	October 97-October 99	March 2000

Financial data				
Demolition Costs	Annual Maint.Costs	Annual Holding Costs	Annual Rental Revenue	Land value at build out
0		637,000	0	

Maximum Jobs and population generated by the activities in this parcel	
Jobs	Population
80	240

Parcel Number	2	Phase Number		1a
Main Uses		Single- and multi-family housing		
Total Acreage of the Parcel		173		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
262	353,834	77	0	0

Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	96	388,947	0		
Housing	96	388,947	0	3.00	288
Use Two					

Development Timetable		
Commence Marketing	Marketing Period	Build-out /Disposal Target date
As soon as possible	October 97-October 99	March 2000

Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
0		920,000	0	

Maximum Jobs and population generated by the activities in this parcel	
Jobs	Population
70	275

Parcel Number	3	Phase Number		1a
Main Uses		Retirement housing		
Total Acreage of the Parcel		57		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
64	95,820	47	0	0
Land Available for development				
	Acres / Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	10 / 0		3.00	30
Housing		10		
Use Two				
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
As soon as possible		October 97-October 99		March 2000
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
0		250,000	0	
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
10		31		

Parcel Number	4	Phase Number		1a
Main Uses		Cane Creek Golf Course		
Total Acreage of the Parcel		168		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
4	17,320	168	0	0
Land Available for development				
	Acres / Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	0 / 0	0		
Housing		0		
Use Two				
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
As soon as possible		October 97-October 99		March 2000
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
0		45,000	0	
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
30		27		

Parcel Number	1	Phase Number		1b
Main Uses		Housing, retail, support services		
Total Acreage of the Parcel		77		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
62	441,606	71	12	40,514
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	6	0			
Undefined			6		
Development Timetable					
Commence Marketing		Marketing Period		Build-out /Disposal Target date
As soon as possible		1997- 2004		2004
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$295,000		$1.15 million	0	
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
150		145		

Parcel Number	2	Phase Number		1b
Main Uses		Light industry and warehousing, office		
Total Acreage of the Parcel		46		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
20	236,304	41	1	3,108
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	5	5,000		0.25	
Light industry			5		
Development Timetable					
Commence Marketing		Marketing Period		Build-out /Disposal Target date
As soon as possible		1997- 2004		2004
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$23,000		$615,000	$600,000	
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
429		536		

Parcel Number	3	Phase Number		1b
Main Uses		Retail, services, public, cultural, office		
Total Acreage of the Parcel		14		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
7	56,332	14	2	9,560
Land Available for development				
	Acres / Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	0 / 0	0		
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
As soon as possible		1997- 2004		2004
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$70,000		$147,000	0	
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
87		109		

Parcel Number	4	Phase Number		1b
Main Uses		Public benefit conveyance to college		
Total Acreage of the Parcel		35		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
5	49,000	18	0	0
Land Available for development				
	Acres / Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	17 / 50,000	0		
Educational use	17 / 50,000	0		
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
Convey as soon as possible		not applicable		2004
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
0		$127,000	0	
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
104		130		

Parcel Number	5	Phase Number		1b
Main Uses		Public benefit conveyance to college, offices, housing		
Total Acreage of the Parcel		92		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
24	386,780	92	2	89,905

Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	14	150,000	0		
Non -specified	14	150,000	0	0.25	

Development Timetable		
Commence Marketing	Marketing Period	Build-out /Disposal Target date
Convey MP school as soon as possible	1997-2004	2004

Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$652,000		$1 million	0	

Maximum Jobs and population generated by the activities in this parcel	
Jobs	Population
565	706

Parcel Number	6	Phase Number		1b
Main Uses		Light industry, warehousing		
Total Acreage of the Parcel		39		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
8	188,589	26	5	9,775

Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	13	141,570	0		
Industrial Use	13	141,570	0		

Development Timetable		
Commence Marketing	Marketing Period	Build-out /Disposal Target date
As soon as possible	1997-2004	2004

Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$71,000		$490,000	$650,000	

Maximum Jobs and population generated by the activities in this parcel	
Jobs	Population
275	343

Parcel Number	7	Phase Number		1b
Main Uses		Engineering, maintenance, light industrial		
Total Acreage of the Parcel		63		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
6	128,478	18	25	227,096
Land Available for development				
	Acres / Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	45 / 490,000		0.25	
Industrial Use	25 / 272,250	20	0.25	
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
As soon as possible		1997-2004		2004
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$1.65 million		$334,000	$842,000	
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
190		238		

Parcel Number	6	Phase Number		1a
Main Uses		Transient accommodation to support education uses		
Total Acreage of the Parcel		43		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
14	269,417	19	7	53,607
Land Available for development				
	Acres / Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	24			
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
As soon as possible		1997-2004		2000
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$390,000		$700,000		
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
337		421		

Parcel Number	1	Phase Number		2
Main Uses		Retirement housing		
Total Acreage of the Parcel		69		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
0	0	0	59	279,727
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	69			5.0	345
Housing	34	254,522	35	5.0	170
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
2000		2000-2011		2011
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$2.1 million		0		
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
20		82		

Parcel Number	2	Phase Number		2
Main Uses		Retail		
Total Acreage of the Parcel		22		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
0	0	0	0	0
Land Available for development				
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	22	240,000			
Retail	14	152,460	8	0.25	
Development Timetable				
Commence Marketing		Marketing Period		Build-out /Disposal Target date
2000		2000-2011		2011
Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
0		0		
Maximum Jobs and population generated by the activities in this parcel				
Jobs		Population		
254		318		

Parcel Number	3	Phase Number		2
Main Uses		Elementary School		
Total Acreage of the Parcel		31		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
2	46,914	31	1	3,238

Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	0	0	0		

Development Timetable		
Commence Marketing	Marketing Period	Build-out /Disposal Target date
Not applicable	Not applicable	To be determined

Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$25,000		$122,000	$0	

Maximum Jobs and population generated by the activities in this parcel	
Jobs	Population
59	73

Parcel Number	4	Phase Number		2
Main Uses		Retail (includes WAC Museum building)		
Total Acreage of the Parcel		41		
Buildings to be retained		Buildings to be demolished		
Number	Square feet	Acres	Number	Square feet
1	13,795	4	1	9,549

Land Available for development					
	Acres	Square feet	Development reserve (acres)	FAR or DU/acre	New DUs
Total	47	512,000			
Retail	22	239,580	15	0.25	

Development Timetable		
Commence Marketing	Marketing Period	Build-out /Disposal Target date
2000	2000-2011	2011

Financial data				
Demolition Costs	Annual Maintenance Costs	Annual Holding costs	Annual Rental Revenue	Land value at build out
$70,000		$36,000	$0	

Maximum Jobs and population generated by the activities in this parcel	
Jobs	Population
418	522

5.5.3 PHASE 3

The alternative capital improvements strategy assumes a 5-year time frame for Phase 3, beginning in 2012 and ending in 2016.

Transportation

Roads—Phase 3 parcels are not currently served by a road system commensurate with their proposed use. The strategy of defining road corridors, which are developed at the appropriate time, continues for Phase 3. It is assumed that, if development has proceeded in Phase 2, as planned, the northerly sites will be served from the new access point on Highway 21.

Sidewalks—It is expected that sidewalks in Phase 3 parcels will be the responsibility of each developer.

Bicycling/Walking Paths—The alternative plan proposes no new paths between parcels, though developers may choose to construct paths within those parcels for which they are responsible.

Bridges—Regular inspection and maintenance of existing bridges will be required, however limited the development program may be.

Traffic Control—The strategy of segregating traffic between the essentially residential areas south of Cane Creek and the areas north of Cane Creek occupied by the Army National Guard, the CDP and industrial users, reduces the need for costly traffic control facilities. New, automated traffic control will be minimized in Phase 3.

Utilities

Potable Water Supply—Current facilities are adequate for Phase 3.

Wastewater Management—Current facilities are not adequate to meet the development demands of Phase 3. The new system proposed for Phase 2, however, will provide sufficient capacity.

Stormwater Management—It is accepted that rapid development during Phase 3 may lead to some State and Federal stormwater management requirements. A strategy which addresses particular requirements in the face of specific development proposals will be required, as those proposals become more clear.

Electrical, Gas, Solid Waste, Communications Systems—Private sector providers will be expected to ensure, at their cost, that their systems meet the development needs of Phase 2.

Special Utilities—See Phase 1 proposals, above.

Buildings and Miscellaneous

Street Lighting—The existing street lighting, where adequate, will remain. The developers of parcels will be expected to review the current provision and upgrade where necessary.

Landscaping—Standards of landscaping, that take into account the need to market Fort McClellan while minimizing costs, will be established and enhanced as development takes place.

Signage—The marketing and development of Fort McClellan will require effective signage which, in turn, will require a strategy, as outlined in the capital improvements recommendations, above.

Natural Resource Management—The recommendations of capital improvements strategy, above, hold good for the alternative strategy.

Property Management—The GIS approach proposed in the capital improvements strategy, above, is retained in the alternative strategy.

6.0 INFRASTRUCTURE PRIVATIZATION PLAN

Fort McClellan has a large existing infrastructure base. The infrastructure includes the transportation, utilities, buildings, and other facilities.

6.1 PRIVATIZATION OPPORTUNITIES

All parts of the infrastructure at Fort McClellan offer the potential for privatization. However, the most obvious (and perhaps easiest) opportunities are the utilities. The utilities include:

- Potable water supply distribution system
- Wastewater management system (collection, conveyance, and treatment systems)
- Stormwater management
- Solid waste management
- Electrical energy distribution system
- Gas energy distribution system
- Communications system

The systems can (1) be privatized individually, (2) in groups, or)3) entirely as a single group. Each of the three approaches has its advantages and disadvantages.

The transportation system includes the road network, railroad, bike/walk paths, sidewalks, bridges, parking lots, and traffic control. Although there is a potential for privatizing the transportation system, the opportunity to raise revenue for offsetting expenses is usually limited to a public function.

6.2 ALTERNATIVE PRIVATIZATION ROLES FOR THE FMRRA

An organization's role in the privatization process can be measured by considering the level of management control, the business risk, revenue potential, and management costs. The legal authority must also be considered. The FMRRA has at least five alternative roles in privatizing Fort McClellan's utilities.

FMRRAA Observes Army COE Utilities Sale—The FMRRA could have an observer and advisor role in the sales of the Fort McClellan utilities to third party public or private utilities. The FMRRA would have no level of control

and assume no risk. Nor would it receive revenue from any sale or lease. No management costs would be incurred. The Army would be under no obligation to consider the FMRRA's Reuse Plan in selling the utilities. The FMRRA's lack of control in this situation could have major implications for the future development of Fort McClellan. It is possible that the new utility providers would be unable or unwilling to provide for the needs of the future development strategy. Utility upgrades, vital to the success of the Base reuse, may prove problematic to negotiate. It is recommended that the Reuse Authority does all that it can to avoid being marginalized in the utility disposal process.

FMRRA Participates in Army COE Utilities Lease—The Army is currently considering a plan to issue interim leases for the electrical distribution system, gas distribution system, potable water system, wastewater management system, and telecommunications system. No decision has been made about the lease term—short or long. The time periods of the utilities leases will affect the level of interest from potential leaseholders in the FMRRA's Reuse Plan. The Army intends to actively involve the FMRRA in the leasing process although neither the leasing process nor the FMRRA's role in the process has been identified. The FMRRA's level of involvement is expected to be advisory with no direct risk. The FMRRA would not expect to receive any revenue from the leases and would not incur any management costs. The Army would be under no obligation to consider the FMRRA's Reuse Plan in leasing the Fort McClellan utilities.

This alternative appears to provide the Reuse Authority with little more than a courtesy role. Though better than having no involvement at all, the FMRRA would have no more control or real influence on the future of utilities at Fort McClellan than in the first case, outlined above. It is recommended that the Reuse Authority does all that it can to avoid being marginalized in the utility disposal process.

FMRRA Sells/Leases Utilities—In this role, it is assumed that the FMRRA has title to the utility infrastructure, transferred to it by the Department of Defense. The FMRRA would sell or lease the utilities at Fort McClellan to public or private utilities. The FMRRA would have some level of control. It would be in a position to write and publish a Request for Proposals (RFP), ensuring that as wide a range of potential utility providers as possible were able to respond. The FMRRA would include in the RFP a full and detailed set of objectives, based on its Reuse Plan. The overriding purpose of the RFP would be to ensure that the development strategy for Fort McClellan is supported by the appropriate level of infrastructure at no cost or risk to the community. This process recognizes that Fort McClellan offers potential utility providers substantial benefits for which they should be expected to bid. The disadvantage of this role for the FMRRA is that it does not generate income to support the cash flow, that it will 'lock in' utility providers at a time when the

market for utilities is becoming more and more competitive, and that the RFP process could absorb substantial management time.

FMRRA Becomes a Utilities Operator—Like many communities throughout the United States, the FMRRA could actively operate the utilities at Fort McClellan, probably through a subsidiary which might be called McClellan Utilities.

The FMRRA, through its subsidiary, would have a high level of control but would also assume a high risk. McClellan Utilities would purchase utilities on a competitive contract basis, from any number of potential suppliers, setting the price for resale to its customers, the new occupants of Fort McClellan. McClellan Utilities would control cost and quality, enabling, in theory, the Base to be competitive with communities throughout the United States. The management costs and risks would be high relative to the other alternatives but the realization of potential revenues would be in the hands of the Authority, acting through its utility subsidiary (the Authority might choose, of course, to increase customer benefits by reducing prices, thus improving the regional competitiveness of Fort McClellan as a location). Responsibility for the maintenance of the utility infrastructure would fall on the shoulders of McClellan Utilities, bringing with it costs.

FMRRA Contracts Out Utility Provision —The FMRRA could seek to 'contract out' the utility management role, thus reducing risk, while generating some revenue by exploiting changes in the market for utilities. This role recognizes that it is unlikely to be in the FMRRA's interest to lock itself in to utility providers for the long to medium term. The FMRRA would appoint a third party service provider to purchase utilities on the open market at competitive prices, while ensuring that provision to the occupiers of Fort McClellan is efficient. The third party would therefore take responsibility for billing and network maintenance, adding a management fee to the cost of each utility. This reduces the costs and risks involved in setting up a utility provider subsidiary, but would also reduce the potential for revenue and certain amount of quality control.

Each of the alternatives outlined above have benefits and disadvantages. They vary in their potential to generate costs and revenues, as well as the level of control they provide the FMRRA.

6.3 Conclusions and Recommendations

The existing infrastructure at Fort McClellan has been designed and constructed incrementally to meet the changing needs of the Army over many years. It is essential that the FMRRA is fully engaged in all discussions concerning the future role of infrastructure at Fort McClellan for several reasons. First, the current infrastructure provision will not meet the needs of the proposed development plan for Fort McClellan. Second, the local

community does not have the financial resources to replace existing infrastructure; it must seek the assistance of the private sector by highlighting the revenue opportunities inherent in the Reuse Plan. Third, the market for utilities, in particular, is becoming more and more dynamic. For instance, the days when major utility purchasers (and even medium-size ones) bought their power from a single source, are fast disappearing. Fort McClellan has the potential to consume significant quantities of power, water, telecommunications, fuel, waste disposal, and stormwater control facilities. To dispose of each of these utilities without due consideration of the costs and benefits of alternative ownership and disposal strategies would be to the long-term detriment of the community.

It is recommended that the FMRRA devises a detailed utility lease and/or disposal plan. It is recommended that the plan considers the widest range of infrastructure privatization as possible, while fulfilling the community's key objectives. The options outlined above all place the FMRRA in a pivotal position. It is recommended that these options are used as a starting point for the plan.

It is recommended that the FMRRA informs the Army of its intention to complete the detailed plan, so that no precipitous decisions are made concerning the disposal of utilities.

It is recommended that, at the very minimum, the FMRRA is closely involved in all discussions concerning the future of infrastructure and utilities at Fort McClellan.

The future operation of the centralized steam heating and water cooling facilities that serve several key buildings and areas at Fort McClellan appear problematic. It is recommended that a detailed analysis of the costs and benefits associated with the retention of these facilities is implemented as soon as possible. This analysis should take into account the physical constraints on the system, likely future loads, maintenance, and operating costs and the retrofit of alternative sources of heating and cooling.

7.0 FINANCING PLAN

Fort McClellan may represent the largest and most complex real estate development project in Alabama. As the owner of the property the Federal Government has an interest in its successful operation and maintenance because it will retain some missions after the October 1, 1999 closure; the President has directed that military base reuses emphasize economic development opportunities; and the Departments of Defense, Commerce, and Transportation are expected to provide funding after closure in support of these opportunities.

Crucial to the financing of this Reuse Plan is a resolution of the issue, among the local communities, of governance. The extent of county, state and municipal government involvement in this plan has yet to be resolved. This will have a direct bearing on the finance of this Reuse Plan.

7.1 PRIVATE INVESTMENTS

Once prospective private investors are found, they will negotiate terms with the FMRRA. Among those terms will be:

- Sale and/or lease arrangements
- Site and/or building improvements
- Maintenance and services agreements

These terms will probably differ for each company.

7.2 PUBLIC INCENTIVES

For over 60 years, beginning in neighboring Mississippi, public incentives have been available to attract and retain industries which allegedly will help achieve state or local economic development objectives.

Since the country was in its infancy, public provision of infrastructure and the widespread distribution of public facilities and employment have stimulated economic development. The "third wave" view of local economic development holds that there have been three progressive stages of public sector programs established to help local businesses in recent years. The first, prevalent in the early 1980's, focused on providing infrastructure and financial incentives for businesses located in the central city. Industrial parks were developed, and tax benefit and loan programs created in many cities. The second wave augmented these efforts by introducing specialized, targeted programs, such as venture capital funds and incubators for start-up businesses. The third wave of local economic development incentives stresses the improvement of basic amenities and services and turns its primary focus to

"brokering" services and information, and building alliances among businesses, non-profit organizations serving businesses, and governments.

Beginning October 1, 1997, the FMDC will replace the FMRRA and is authorized to receive public funding. Other incentives are authorized by the State Legislature and administered by Calhoun County or by the Economic Development Partnership of Alabama. In addition, Federal funding may be available, upon application, for site-related infrastructure improvements.

7.2.1 ALABAMA SOURCES

State responses to defense downsizing have varied from very proactive initiatives, to responses to Federal actions and some of their ramifications, to very little concern because of few impacts or resources available to resolve issues. The State of Alabama has assigned a staff member of the Department of Economic and Community Affairs as liaison to the FMRRA. Approximately $140,000 of state funding has also been used for consultants who prepared maps and promotional information. Through a legislative appropriation, the state provides $150,000 annually to the FMRRA. The Governor has already contributed $75,000 of discretionary funding. No additional state money is expected to be made available unless it is appropriated by the State Legislature and approved by the Governor. Existing state programs available for eligible projects are discussed below.

Manufacturing companies making a capital investment of at least $2 million, creating at least 20 new jobs, and paying an average of at least $8 per hour have utilized a corporate income tax credit. This credit is available for up to 20 years. The same manufacturing companies may receive a one-time state sales and use tax abatement on sales to it before the project is placed into service. This abatement excludes the portion of the tax allocated to education.

Infrastructure grants are available from the State Government. Manufacturers may receive site preparation grants if they are locating on publicly held property. Industrial access road grants are also available for public rights-of-ways if they will result in new jobs and capital investment.

The state must recognize that the traditional forms of industrial development support will be of limited assistance in supporting the conversion of Fort McClellan, particularly during the early phases. More must be done to assist training development and retirement development upfront. The state must take an active role in financing the development, particularly the critical transportation needs of Fort McClellan.

Some other states affected by military base closures and/or realignments have taken more proactive roles in economic recovery from them than has Alabama. For example, the California Defense Conversion Council is responsible for the following functions:

1. Provide advice to governor and/or legislature through informal means, upon request
2. Propose and analyze state legislation affecting base reuse
3. Handle correspondence on base reuse on behalf of the governor or the state in general
4. Respond to general inquiries from the public
5. Proactively promote/market base property to businesses
6. Administer grant programs for base reuse
7. Administer loan programs for base reuse
8. Disseminate public information on a regular, formal basis, as through a newsletter
9. Sponsor workshops and conferences
10. Facilitate defense industry conversion to non-defense production and commercialization of new technologies through regional technology alliances and state matching grants program

In South Carolina these functions are more broadly dispersed among agencies in the following manner:

Shared responsibilities:

1. Provide advice to governor and/or legislature through informal means, upon request
2. Propose and analyze state legislation affecting base reuse
3. Handle correspondence on base reuse on behalf of the governor or the State in general
4. Respond to general inquiries from the public
5. Administer loan programs for base reuse
6. Negotiate leases for base property
7. Sponsor workshops and conferences

Budget & Control Board Responsibilities:

1. Coordinate with community committees on preventing closure

Department of Commerce Responsibilities:

1. Proactively promote/market base property to businesses

2. Administer grant programs for base reuse

As roles of FMRRA are expanded and clarified, and as other Alabama military base issues are identified, the State's roles and funding responsibilities can be prescribed. State assistance to share front-end costs is often critical to local redevelopment agencies implementing their plans and programs.

7.2.2 CALHOUN COUNTY

Fort McClellan is located in unincorporated Calhoun County and therefore subject to its land development standards, taxes and fees, and provision of public services. The County is authorized by the State Government to set these standards, raise and collect taxes and fees, and provide these services. The County has been authorized to abate the non-education portion of real and personal property and of sales and use taxes of manufacturers. Their eligibility test is a capital investment of at least $2 million or, in the case of a manufacturer's expansion, 30 percent of the original investment. Companies may utilize the property taxes abatement for up to 10 years and the sales and use tax abatements one time before improvements are put in-place.

The County established a 562-acre foreign-trade zone adjacent to the Anniston Metropolitan Airport in 1996. Goods may be imported into the zone duty free from another country for storage, processing, or manufacturing. Tariffs are levied only when goods leave the zone. Although the costs of duties may be reduced, security and management of a foreign-trade zone can increase the cost of doing business within the zone. A foreign-trade zone can attract firms depending on raw materials from other countries or shipping products to them. In a 1994 Jacksonville State University study, one-half of the businesses surveyed in Calhoun County indicated they sold products outside the United States. Eight of Calhoun County's businesses are owned by firms located in foreign countries. In that same year, Alabama firms exported $4.2 billion of products of which $62 million came from Calhoun, Clay, Cleburne, and Randolph Counties. It is recommended that Calhoun County's foreign-trade zone be extended to include Fort McClellan.

In 1997, the 40,000-square-foot Northeast Alabama Entrepreneurial Center will open at the Greenbrier Industrial Park. It will provide low cost building space, joint use of office equipment and facilities, and centralized building management. Business incubators, as the term suggests, are intended to help small start-up businesses get a toehold in their respective markets before moving on to their own space as they grow. Funding for the Center was not only provided by Calhoun County but also by the Federal Government, the State Government, four economic development organizations, and four cities.

The imminent availability of the business incubator eliminates the need to consider developing a second one at Fort McClellan until after 2010.

7.2.3 OTHER TAX AND FINANCIAL INCENTIVES

Tax exemptions and ceilings, loan programs, bonded debt, and grants for equipment are incentives made available by some local governments or industrial development agencies. Real and/or personal property may be exempted temporarily or in perpetuity. This local tax bill reduction is then added to the bottom line of benefiting businesses in such places as Wichita, Philadelphia, and Dallas which provide this incentive. In Michigan these taxes may be partially forgiven for up to 12 years on commercial and industrial property. To qualify for this incentive local elected officials must approve each application to reduce taxes which are paid by non-participating or unqualified property located in the jurisdiction. The programs have the effect of capping or putting a ceiling on property taxes in hopes such action will help sway the business' location analysts' decision.

Loan programs have been especially prevalent incentives made available to firms which qualify as small businesses. Commonly such firms are not only under capitalized but also do not have adequate lines of credit to support lean times newly formed businesses often experience. Hamilton County, Ohio, has such a program which, when linked to subsidized business incubator services, can be effective in encouraging new firms. Industrial revenue bonds have been used for many years, in Alabama and elsewhere, to subsidize the interest rate of business loans and grants.

Montgomery County, Ohio, has a unique business, infrastructure, and economic development research grant program. The County generates program funding from its sales tax. Participating growing jurisdictions contribute to this pot of money which is allocated annually to local economic development projects meeting program guidelines and criteria. Every 3 years the contributing growing cities, villages, and townships "settle-up" their accounts so their contributions net out to $0. Significant private economic development projects have been implemented as a result of this program.

The increasingly sophisticated equipment needs of most businesses discussed in section 12 often come with high price tags. Because the equipment is needed upon startup of the business it becomes one of the front-end expenses which cannot be avoided. As a result of the importance and cost of equipment it should be an eligible expense of loan and grant programs. A Minnesota court case determined that outstanding equipment loans from an economic development agency prevent relocation of the equipment outside of that agency's jurisdiction. Therefore, grant and loan programs may not only help attract industries but also retain them.

In addition to foreign-trade zones, other special purposes economic development districts have been created around the country to focus financial resources on selected geographic areas. Through the Departments of Housing and Urban Development and Agriculture, a small number of urban and rural empowerment zones were established in 1995 and 1996. Calhoun County was not among those eligible to participate in this program. Some states have enterprise programs under which selected fees or taxes are forgiven or reduced if the business qualifies. Evaluations of these programs indicate varying success at attracting and retaining jobs. Tax breaks are already available to qualified Alabama firms, even without an enterprise zone program, as described earlier in this chapter

Tax increment finance districts (TIF), while permitted in Alabama communities, have not been established in Calhoun County. Under this type of program, the property tax base of a geographic area is quantified for a specific date. Property tax increases in that geographic area after that date are allocated to the area for planned capital projects. The plan must be adopted by the TIF policy board. Business improvement districts (BIDs) designate a geographic area within which supplemental property taxes are paid. This additional tax yield is spent on improved services within the designated area which are prescribed by the property owners. TIF and BID programs would increase the funding available to pay for recommended improvements at the Fort. Therefore, the FMRRA should establish each special purpose taxing districts to generate revenue to pay for capital, operating, and maintenance expenses it will incur.

7.3 FEDERAL PROGRAMS

Although the number and relative generosity of Federal economic development programs has declined during the past 15 years, opportunities remain to provide Federal infusions of funding to closing and realigning military bases. The Departments of Commerce and Labor provide assistance for eligible projects. The Department of Defense can continue to provide planning fundings and Fort care and custody funding for a limited period of time. The Department of Housing and Urban Development provides homeless assistance and Community Development Block Grant funding which annually competes with projects throughout the County.

7.3.1 DEPARTMENT OF COMMERCE

Public Works and Development Facilities Assistance:

Eligibility: Public and non-profit agencies, representatives of redevelopment areas.

Programs: Infrastructure access roads, sewer and water, and infrastructure for industrial use.

Contact: James Campagna, Economic Development Administration, 404-730-3032.

Planning Assistance for Economic Development Districts, Redevelopment Areas:

Eligibility: City Governments

Programs: Implementation of Economic Development Program Activities

Contact: James Campagna, Economic Development Administration, 404-730-3032.

Small Business Loans—7(a) and 504 loans

Eligibility: Small businesses meeting Small Business Administration (SBA) criteria

Programs: 90 percent loan-to value for expansion/conversion of facilities purchase of equipment and material, and working capital

Contact: B.C. Moore or Johnny Brothers, Small Business Center, Jacksonville State University, 205-782-5271

Economic Adjustment Assistance (Title IX)

Eligibility: Areas with sudden and severe economic dislocation or redevelopment areas

Programs: Assistance for implementation strategies to reverse decline, labor force training and retraining, capital revolving loan funds, industrial development infrastructure.

Contact: James Campagna, Economic Development Administration

7.3.2 DEPARTMENT OF LABOR

Economic Dislocation and Worker's Adjustment Assistance—Title III Job Training Partnership

Eligibility: Local public agencies and regional development councils

Programs: Retraining, remedial education, entrepreneurial training

Contact: Edwin I. Gardner, Alabama Department of Economic and Community Affairs, 334-242-5591

The Department of Labor also has available a discretionary fund which provides moneys for special projects and demonstration programs.

It is recommended that the FMRRA contact representatives of each of these programs to match costs which need to be covered with these Federal programs and with detailed funding application requirements.

7.4 SUMMARY OF POTENTIAL FUNDING SOURCES

	UNITED STATES GOVERNMENT						STATE OF ALABAMA				LOCAL JURISDICTIONS		PRIVATE SECTOR		
	Dept of Defense	DoT	Dept of Commerce	EPA	Dept of the Interior	Dept of Agriculture	DoT	ADEM	ADO	Bond Issue	Revenue Bond Issue	Other	Real Estate Development	Commercial Businesses	Special Purpose Authorities
TRANSPORTATION															
Roads	O	O					O			O		O			
Parking Lots									O		O		O	O	
Railroad		O							O					O	
Sidewalks		O					O		O				O		
Bicycle/Walking Paths		O					O		O			O	O		
Bridges	O	O					O								
Traffic Control	O	O					O		O				O		
UTILITIES															
Potable Water Supply	O			O				O				O	O	O	O
Wastewater Management	O			O				O				O	O	O	O
Stormwater Management	O			O		O		O				O	O		O
Electrical Distribution System	O													O	
Gas Distribution System														O	
Communications System														O	
Solid Waste Management System				O				O				O		O	
Special Utilities	O													O	O
BUILDINGS															
Planning	O								O						
MISCELLANEOUS															
Street Lighting	O	O					O					O	O		
Landscaping	O											O	O		
Signage	O	O					O								
Natural Resources Management	O				O	O									
Property Management	O														

8.0 TARGET MARKETING STRATEGY

Fort McClellan offers unique marketing opportunities, as well as several fundamental marketing constraints. Most experts agree that delay, following closure announcement, is the greatest threat to a successful Base reuse. A number of factors ensure a marketplace stigma for the reuse of the property. The uncertain program for removal of Army activities to Fort Leonard Wood, Missouri, represents a serious impediment that will almost certainly lead to delay. Second, Fort McClellan comprises approximately 10,000 acres of UXO with no clear, costed strategy for its removal. Third, chemical weapon incineration at Anniston Army Depot places a major stigma on the Base that will only be removed by a carefully designed communications strategy. Finally, the sheer size of Fort McClellan, and its narrow educational mission, differentiates it from those reused bases which have been close to large urban areas and which have offered a wide range of adaptable and readily exploitable technical, industrial, and real estate assets.

Each of these constraints must be overcome by the community if it is to carry out a successful reuse of Fort McClellan. The Reuse Authority must ensure its communications and marketing strategy focuses on clear and attainable targets, given the limitations outlined above.

The Reuse Authority, since its establishment, has been actively marketing Fort McClellan, with its most visible effort being the ongoing strategy to establish the CDP. This highly focused strategy is now attracting significant financial support. The 24-month pre-closure countdown is about to begin; therefore, it is highly appropriate that the Reuse Authority will soon be relocating from the center of Anniston to property close to Buckner Circle.

This Implementation Plan is underpinned by the following marketing principles:

- The heart of Fort McClellan, for the majority of visitors, is the historic district surrounding Buckner Circle. This area is planned to be the new town center for the Fort. An effective marketing strategy will exploit the sense of place (and, to a lesser extent, sense of history) that is Buckner Circle. The Reuse authority, therefore, should take every opportunity to strengthen and exploit the ambiance of Buckner Circle and its historic surroundings. This area appears in the First Phase of acquisition because of its importance to the overall marketing strategy.

- The approach route to Buckner Circle, through Summerall Gate and along Summerall Gate Road, must support and strengthen the impact of the historic district. This means that landscaping, signposting, and the

establishment of a remediated buffer zone are important elements of Phase 1 implementation.

- The marketing strategy for Fort McClellan must have clear target markets, and well-defined products to meet target market needs. Phasing and implementation must provide a well-defined product with a clear market focus.

- The CDP provides the opportunity for spin-off uses to be targeted and attracted to Fort McClellan. The Implementation Plan must accommodate the spin-off uses.

- Certain activities at the CDP may be incompatible with some of the uses that are proposed in the Preferred Land Use Plan. The size of Fort McClellan, however, is such that, in reality, accommodating what appear to be incompatible uses may not prove problematic. In marketing Fort McClellan, it will be essential to communicate to potential investors clear, controlled messages of the opportunities particularly relevant to them. This compartmentalization, achieved by controlled and clear communication of the product, is enhanced by the Phasing and Parcelization processes. In practical terms, marketing tours and supporting information should be focused on precise needs.

The Fort McClellan marketing strategy postures the Reuse Authority to highlight the property's strengths while mitigating its weaknesses. It is a strategy committed to matching the operational phasing of the property and, therefore, corresponds to the timing of each respective phase. The phasing plan provides for the focused application of marketing resources in a timely fashion: identifying strategies, by phase, to develop target markets, marketing themes, and strategies and materials.

The preferred development plan calls for phasing reinvestment in Fort McClellan in response to:

- Allocation of sites and buildings for public uses
- Private market demand
- Efficient operation and maintenance of the nine infrastructure components
- Remediation of environmental contamination
- Release of real and personal property from the U.S. Army
- New capital projects which improve the site

These factors have an important bearing on the supply of property, the timing of its reuse, the financial obligations of the FMRRA, and the compatibility of various public and private uses.

The recommended marketing strategy also takes into account Calhoun County's development permission responsibilities and debt capacity, target industries to devote limited promotional resources, and existing promotional activities. The strategy assumes the state legislation passed in May 1997 will prevail in support of the FMRRA's operating policies and management practices.

Three major areas of economic activity, or market segments, will create jobs at Fort McClellan:

- The retirement market
- Training and education
- Warehousing, manufacturing and office-based activities

These three economic drivers will generate the majority of new jobs at Fort McClellan either directly or as a result of spin-off activities.

8.1 RETIREMENT

The retirement market will create 2,000 to 2,500 jobs in Calhoun County.

8.1.1 THE RETIREMENT INDUSTRY: AN OVERVIEW

The rapid growth in the retirement 'industry,' in all of its guises, has been a result of several factors, but is mainly due to a significant demographic bulge in the population of the United States; a steady growth in post-World War income and wealth; and medical advances which have increased longevity for all.

Throughout the United States, communities have responded to this rapid and sustained growth by initiating projects to attract relatively wealthy footloose retirees. Alabama now has a statewide program clear in its objective; to attract migrating retirees as a form of economic development to supplement the tourism, commercial, and manufacturing sectors. This objective is manifest in the Robert Trent Jones Golf Trail, an ambitious program lauded for its far-sightedness and high quality.

The strength of the retirement industry is founded on the underlying stability of retirement incomes which are generally invulnerable to normal down cycles in the national economy. Much of the income of retirees derives from government transfers and pension benefits and, as such, is relatively stable. In addition, a quarter of the income of the elderly is derived from property. Most

of this property income is in the form of relatively secure flows of interest on capital, with the largest source being banks, savings and loan associations, and credit unions insured by Federal agencies.

Retiree income is used mainly for discretionary spending in the local economy and, in turn, generates economic development and job creation in the host community. Migrant retirees, in particular, have become economic generators driving growth in the real estate, financial, recreation, health insurance, and retail industries. Retirees increase the local tax base because as a group, they pay more in taxes than they cost in government services. Retirees, as a community, do not require large investments in the infrastructure or tax abatements by governments. They do not place added strain on schools, welfare systems, criminal justice systems, or health care systems. The balances in their savings accounts are also larger than households in general, and their houses are worth 20 percent more than the average U.S. home.

8.1.2 ECONOMIC IMPACT OF RETIREES

Counties with larger numbers of retirees relocating to them are typically non-metropolitan; have smaller populations and lower population density; and have easy access to one or more metropolitan centers. Other common characteristics are: lower living costs; low urbanization; quality housing at reasonable costs; good healthcare services; outdoor recreational attractions; transportation services; and quality cultural attractions. Calhoun County and Fort McClellan have all of these assets and therefore the potential to compete with other successful areas as an attractive retiree destinations.

Sun City (pop. 46,000) in Phoenix, Arizona, was one of the first examples of a planned retirement community. It was founded in the 1960s as part of a trend to develop large planned communities for the purpose of attracting and housing retirees. Sun City drew retirees from all over the nation to enjoy the active lifestyle provided by the recreation and readily available services. Data from Del Webb Corporation (the developer and manager) indicated the following economic impact of this development on the Phoenix area.

- $300 million annual resident spending
- $1 billion in collective annual income
- $8 billion in combined net worth
- 11,000 jobs created in Phoenix area
- $32 million paid annually in state and county taxes

This development's economic impact illustrates how retirees can contribute to the economic vitality of an area. A planned retirement community at Fort McClellan has the potential to generate similar beneficial economic impacts in Calhoun County and the surrounding area.

In 1992, Mark Fagan surveyed a large sample of Alabama's in-migrant retirees. The survey provided the following key findings:

- 85% purchased a home and 81% were single-family homes home values
- 19% = $90,000-$120,000
- 16% = $120,001-$150,000
- 10% = $150,001 or more household incomes;
- 21% = $30,000-$40,000
- 8% = $40,001-$50,000
- 24% = $50,001 or more net worth;
- 16% = $200,000-$300,000
- 13% = $300,001-$400,000
- 17% = $400,001 or more annual spending;
- 20% from $15,000-$20,000
- 47% = $20,001 or more

These numbers illustrate the economic power that older migrants yield, and it becomes clear that retirees contribute significantly to the economic vitality of a state and area.

Retirees age 60 and over who moved between 1985 and 1990 transferred $8.3 billion in annual household income to Florida from other states. After subtracting the income transferred by retirees who left the state, Florida received a net income transfer of $6.5 billion. The states gaining the highest net income transfers after Florida were: (2) Arizona, $1.2 billion; (3) North Carolina, $742 million; (4) Nevada, $516 million; (5) South Carolina, $413 million; (6) Oregon, $325 million; (7) Georgia, $292 million; (8) Washington, $290 million; (9) Arkansas, $214 million; (10) Texas, $151 million; (11) Tennessee, $138 million; and (12) Alabama, $100 million. These figures do not include the assets transferred with these retirees. These figures also do not include the income of the sizable number of retirees less than 60 years old.

Since interstate migrant retirees tend to be higher bracket income earners, it is expected that the demographic bulge in wealthier baby boomers will lead to an increase in interstate migration rates among retirees.

8.1.3 DEMOGRAPHIC ASPECTS OF THE RETIREE MARKET

8.1.3.1 Pre-retirees - Age 50 to 64 (Involvers)

They have 10 percent higher incomes than the national average; 125 percent more from estates, trusts, dividends, and real estate rentals. They focus their time on dining, travel, and art. They are involved with their community. Their assets are liquid except for their homes. Accumulating assets for retirement is the main concern for them. They are sensitive to interest rates and prefer safe investments with an emphasis on security.

8.1.3.2 Retirees - Age 65 to 74 (go-gos)

This segment has time and money to pursue the things they had to defer while working and raising their family. Many travel frequently but some miss the hectic work schedule and are unfulfilled with retirement life. They enjoy learning experiences, and they look for things in which to get involved.

8.1.3.3 Retirees - Age 75 to 84 (slow-gos)

These individuals are beginning to slow down in their lifestyles and are showing signs of dependence. They need help with transportation and housing maintenance. Their health condition may also be worsening. Many remain active, but more have changing housing needs. They start searching for more assisted living and maintenance-free smaller housing. They feel vulnerable and become very safety conscious. These people usually migrate only as dependency migrants to be near relatives.

8.1.3.4 Retirees - Age 85 and over (no-gos)

This is the fastest growing older segment. They are becoming more dependent and require a lot of assistance. Their health is deteriorating and they require alternative housing and continuing care facilities. They give money to charities. Their families are more often involved in major financial decisions. They are interested in seeing their adult children or grandchildren fulfill family responsibilities. These people tend to become dependency migrants to be near relatives or they have aged in place and have never migrated.

US age group segments	1996	2000	2005	2020
		(Numbers in thousands)		
50-64 age group: 'involvers'	35,281	41,185	49,123	61,077
as a % of Total 50+ Population	*51.0*	*54.3*	*57.6*	*53.4*
65-74 age group: 'go-gos'	18,685	18,136	18,369	31,385
as a % of Total 50+ Population	*27.0*	*23.9*	*21.5*	*27.5*
75-84 age group: 'slow-gos'	11,440	12,315	12,898	15,375
as a % of Total 50+ Population	*16.5*	*16.2*	*15.1*	*13.5*
85 and over age group: 'no-gos'	3,746	4,260	4,898	6,460
as a % of Total 50+ Population	*5.4*	*5.6*	*5.7*	*5.7*

source: US Bureau of Census

8.1.3.5 Military Retirees

Military retirees compose an elite group within the market of potential retirees. They receive substantial amounts of annual income from the Department of Defense, investments, private pensions, IRAs, social security, and secondary employment. They have sizable assets and a significant amount of discretionary income which they usually spend locally for goods and services. They also provide a vast storehouse of usable education and experience which they use to benefit their communities by entering second careers and establishing new businesses. They also make major contributions by serving on boards of directors of public and private, profit and non-profit organizations.

Military retirees are well traveled, inclined to live in areas with favorable climates, and like lakes, seacoasts, forest preserves, and park land. They come from all parts of the nation, but many of them have forsaken northern roots for permanent residences in the South. They favor states with a low cost of living, pleasant climate, and a variety of recreational opportunities.

Alabama has the tenth highest number of military retirees, following California, Florida, Texas, Virginia, Georgia, Washington, North Carolina, Pennsylvania, and South Carolina. Alabama had 40,383 military retirees in 1991 (according to the U.S. Department of Defense). This consisted of 19,540 from the Army, 13,751 from the Air Force, 5,762 from the Navy, and 1,330 from the Marine Corps. Alabama counties with more than 1,000 military retirees include: Dale, Coffee, Madison, Calhoun, Russell, Montgomery, Elmore, and Baldwin. Alabama is home to Redstone Arsenal, Fort McClellan, Fort Rucker, Maxwell Air Force Base, Gunter Air Force Base, and the Mobile Home Port. Other installations near Alabama are: Ft. Benning, Georgia; Columbus Air Force Base, Meridian Naval Air Station, and Keesler Air Force

Base in Mississippi; and Eglin Air Force Base and the Naval Air Station in Florida.

8.1.4 MIGRATING RETIREES AND RETIREMENT AREAS

Amenity migrants seek a 'fantasy' lifestyle for retirement, an opposite of their daily routine. If they hate winters, they seek warmth. They gather around amenities such as lakes, beaches, mountains, and deserts. They accentuate their lifestyle with golf, leisure boating and fishing, tradition, history, and cultural activities. Amenity migrants tend to be younger retirees, married, well traveled, well educated, homeowners at community of origin and destination, and well-off financially.

Return migrants have earned their retirement pensions and are seeking a move back to their home state to enjoy relatives, nostalgia, and a lower cost-of-living. They too, are looking for safe, friendly, familiar environments. They will return with an enhanced status from having been "successful" before returning home. They do not tend to locate around amenities per se and are more geographically diffuse in their overall relocation patterns. Dependency migrants move because they are becoming disabled, have lost their spouse, or need to be closer to a caregiver.

Amenity and return migrants seek a combination of favorable climate (moderate four-season is popular); good medical care; quality housing at reasonable prices; safe, quiet neighborhoods; lower cost-of-living; quality recreational attractions; interesting cultural attractions; and convenient shopping.

Florida, Arizona, and California have been popular relocation areas due to their perpetually warm climates. However, increasing numbers of the retirees that located to Florida have moved a second time to states with moderate four-season climates, including Arkansas, Tennessee, North Carolina, South Carolina, Georgia, and Alabama. These states have lower living costs, low urbanization, good quality housing, adequate health care, excellent outdoor recreational attractions, and sufficient cultural amenities.

The number of Americans age 60+ that relocated across state lines between 1985 and 1990 was 1,901,000 or 4.5 percent of total age 60 + population (41,858,000) in the United States.

Charles F. Longino, Jr., in his book *Retirement Migration in America*, identified and tracked migration patterns and trends of the 380,000 Americans who moved across state lines to retire every year between 1985 and 1990. Table 8.1 ranks the states in terms of the migrants attracted over the period. The 10 states that sent the most out-migrants during the same time frame were: New York, 222,782; California, 187,240; Florida, 128,561; Illinois, 107,136; New Jersey, 106,556; Pennsylvania, 78,903; Michigan, 74,661;

Ohio, 74,271; Texas, 69,856; and Massachusetts, 56,737. Five of the states - California, Florida, New Jersey, Pennsylvania, and Texas - appear on both lists.

Table 8.1. Migrants Age 60+ for Alabama and Competitors; 1985-1990

STATE	RANK	IN-MIGRANTS
Florida	1	451,709
North Carolina	3	64,530
South Carolina	6	34,251
Georgia	8	44,475
Arkansas	9	29,848
Tennessee	10	36,306
Alabama	12	25,336
Mississippi	14	17,637
Virginia	15	46,554
Kentucky	22	21,770
West Virginia	26	12,919
Louisiana	39	14,004
Maryland	41	32,428
Pennsylvania	43	57,538
Ohio	45	44,459

(source: Longino; *Retirement Migration in America*)

Retirement migration patterns have been fairly consistent over the past 35 years. The same 15 states captured approximately 60 percent of the interstate migrants 60 and older during the last three decades and the proportion of those over age 60 migrating for retirement has also remained steady between 3.9 and 4.6 percent. However, since interstate migrants tend to have higher-than-average incomes, higher rates of migration are expected as baby boomers begin retiring in large numbers.

Table 8.2 identifies states sending the most retirees to Alabama along with their number and percentage of overall 60+ retirees to Alabama.

Table 8.2. Migration Patterns of 60+ Population to Alabama; 1985 to 1990

STATE	NUMBER	PERCENTAGE
Florida	4,729	18.7
Georgia	2,958	11.7
Illinois	1,845	7.3
Texas	1,676	6.6
Tennessee	1,667	6.6
Mississippi	1,348	5.3
California	1,323	5.2
Michigan	1,137	4.5
New York	947	3.7
Louisiana	926	3.5
Ohio	872	3.4

Between 1985 and 1990, Alabama attracted back about half of its expatriate retirees and in so doing ranked as one of the most successful states in the nation. This represented over 10,000 retired residents, drawn back to Alabama by its climate, tax structure, low housing costs, and family ties. As a continued source for retirees, the expatriate population of Alabama is likely to be a strong target market. In 1990, for instance, 35 percent of all those born in Alabama were living in other states. This meant about 1.6 million Alabamians were living outside the state of their birth.

8.1.5 HOUSING FOR RETIREES

8.1.5.1 Single Detached Homes

This option is available for the retiree who is self-sufficient or who requires minimal care or assistance. The home may be in the area in which they have always lived, or it may be in a retirement area specifically chosen because of climate, family, interests, or hobbies. The resources available to help mature adults to remain in their own home includes meals on wheels, home health visits, and live-in companions.

8.1.5.2 Private Apartments

This option leaves the responsibilities of upkeep and maintenance to others while still providing for independent living. Similar programs to those outlined above are available to assist the elderly in maintaining a home in these circumstances.

8.1.5.3 Planned Retirement Communities

Retirement Communities allow seniors to live active, independent lives while offering community facilities specific to their needs. Retirement communities are similar to resort towns and they are usually located in desirable areas of the South or Southwest. They provide shopping, recreation, security, health care, and other services for the changing needs of mature adults. Rental apartments, condominiums, and single-family houses are some of the options available in this type of environment. Retirees who live in these communities are seeking an active lifestyle for their retirement.

8.1.5.4 Condominiums with Services

Condominiums are detached or semidetached town-houses in which individuals hold the title to their living unit but share ownership of the common elements with all the other owners in the walls, grounds, parking areas, swimming pools, and other recreational facilities. Monthly fees are collected to maintain the common property and to cover staff wages, trash collection, gardening services, building repairs, and utilities that are not individually metered.

8.1.5.5 Housing Co-ops

Housing co-operatives are non-profit corporations that own and operate living facilities for the benefit of the occupants. Membership is composed of people who buy shares in the corporation in exchange for the right to occupy a specific living unit. Co-ops by law require members to "cooperate" in the ownership and management of the community.

8.1.5.6 Congregate Housing

Congregate housing typically provides living quarters, a central dining facility, and other social and recreational services. Services are provided to the residents by a staff which usually includes nurses, housekeepers, social workers, personal care helpers, dietitians, and a physician. These facilities may house up to a hundred residents and enable the elderly to maintain or return to a semi-independent life style.

8.1.5.7 Assisted Living

Assisted living allows the mature adult to maintain as much independence as possible by providing the care and assistance they need to continue to function

in a non-skilled care facility. Residents are assisted with the activities of daily living for which they have difficulty performing. There are assisted living arrangements provided in many of the alternatives listed above such as the accessory apartments, ECHO, boarding houses, and congregate housing facilities.

8.1.5.8 Nursing Homes/Skilled Care Facilities

If the demands of the retiree are too great for the options above, a nursing or skilled care facility could be the housing alternative of choice. These facilities provide different levels of service depending upon the needs of the individual. Skilled care provides for around-the-clock care by qualified nursing personnel. Intermediate care is for those who because of diminished health, abilities, or disease are unable to live alone. Custodial care is for those who need companionship as well as assistance with eating, dressing, and personal hygiene. Skilled care can be covered by Medicare and private insurance but intermediate and custodial care cannot. Medicaid is available to pay for all three levels of care after qualifications have been met.

8.1.5.9 Continuing Care Retirement Communities (CCRCs) or Life Care

Life Care is a housing and health care development planned, designed, and operated to provide a full range of accommodation and services for older adults; including independent, attended, and assisted living as well as skilled nursing care. Residents move from one level to another as their needs change. Life Care Services can include: maids, meals, on-site nurses and assistants, doctors on call, security, transportation, on-site skilled nursing care, physical activity and recreation areas (saunas and jacuzzis), gardens, shops, a library, movies, billiards, restaurants, and cocktail lounges.

The nursing home industry's identical treatment of everyone creates a one-class social system for all patients. This constitutes a denial of the affluent person's rights to purchase the quality of life that had been his or hers until stricken with illness or infirmity. Without quality Life Care facilities, wealthier patients are unable to purchase better care than a nursing home can offer. Life Care amenities provide a lifestyle of grace and activity for seniors with the ability to pay for it.

Most older residents of communities that lack Life Care services fear that they will be unable to live their last few years gracefully and enjoyably. Communities without Life Care services are losing residents to places where such services are available, despite the individual's preference to live near friends and relatives. The loss of these older residents represents a significant economic loss to the community!

8.1.6 RETIREMENT DEVELOPMENT AT FORT McCLELLAN

The range of facilities is broad enough to support independent and dependent retirees. Younger, more active retirees demand facilities such as the upscale detached houses on Buckner Circle, Cane Creek Golf Course, swimming pools, sporting fields, gymnasiums, theaters, and the bowling alley. There is sufficient undeveloped land at Fort McClellan to enable development a second golf course with surrounding housing. The existing facilities with most potential for serving older, more dependent retirees include: duplex and multi-family housing, the dental clinic, and the hospital.

Importantly, there are several possibilities for providing the entire spectrum of Life Care services at Fort McClellan. These include housing and long-term care alternatives for all ages and abilities of retirees. Single detached homes, private apartments, planned retirement communities, condominiums with services, housing co-ops, congregate housing, assisted living facilities, skilled care facilities, and life care services could all be developed at Fort McClellan to serve retirees.

Based on the strengths and weaknesses of Fort McClellan and its surrounding area, the following list of characteristics of active dependent retirees helps define the "target market" for Fort McClellan. These criteria characterize retirees in the immediate area, within Alabama, around the South, and throughout the nation. The target market includes retirees who:

- Have enough income to enjoy a pleasant retirement
- Are concerned about living costs
- Enjoy warmer climates
- Enjoy outdoor recreation such as fishing, golfing, hunting, and hiking
- Enjoy churches and religious activities
- Enjoy clubs, associations, and civic groups
- Enjoy quieter, safer communities with a small-town atmosphere
- Want to return to the area where they were raised to be near relatives and for nostalgic reasons

The following criteria characterize more dependent retirees. The target market includes retirees who:

- Want fewer maintenance responsibilities for their housing structure
- Want to live in close proximity of others

- Want more security in their housing
- Want easy access to necessary health care services
- Need assistance with certain activities of daily living
- Need long-term skilled care

8.1.7 SEGMENTING AND PROJECTING THE DEMAND FOR RETIREMENT FACILITIES AT FORT McCLELLAN

The methodology for segmenting and projecting the size of market for retirement facilities at Fort McClellan takes as its starting point the work of C.F. Longino Jr. He quantified the U.S. migrating 60+ population for the years 1985 to 1990.

Longino calculated that 1,901,000 people within the 60+ age group migrated across state borders between 1985 and 1990. This equals approximately 380,000 per annum during those years. This also equates to 4.5 percent of the 1990 60+ population of 41,858,000. Alabama's share of the 1.9 million migrating retirees was 25,366 *or* 1.33 percent *or* about 5,600 per annum. Calhoun County's share of the 25,366 migrating to Alabama was 608 *or* 2.4 percent of Alabama's share *or* 120 per annum.

By 2020, the 60+ population of the United States will be 73,769,000 (or 76 percent greater than it was in 1990—30 years earlier). It is assumed that migration patterns have remained the same over that period—and that Alabama and Calhoun County have done nothing special to increase their respective shares of the migratory market. This, of course, is a deliberately conservative assumption, given all that is known about the spending power of the baby boomer demographic group and given the escalating ambition of Alabama to attract increasing numbers of migrating retirees.

A 4.5 percent migratory component of the 2020 population will equal 3,319,000 migrating in the 5-year period, *or* 663,800 per annum. Alabama's share, at 1.33 percent, will be 44,150 people, *or* 8,830 per annum. Calhoun County's share of those retirees migrating to Alabama, at 2.4 percent, will be 1060, *or* a peak in 2020 of 212 retirees.

Taking into account the increasing 60+ population between 1990 and 2020, a crude linear calculation would suggest that, on average, 170 migrating 60+ers would be drawn to Calhoun County per year for 30 years—*or* 3,400 between 2000 and 2020.

If the average household size of the 60+ age group equals 1.6 people, then about 2125 homes would be required to address the demand for retirement property in the County. With minimum marketing, few additional facilities

and no segmentation of the market, Fort McClellan might attract, for example, 20 percent of those households, or about 20 households a year.

A focused approach to the market has been proposed. Three segments have been identified:

55-70 age group. Facilities would be provided to attract migrant retirees within this age group from all over the United States. The strongest demand, however, is likely to be among migrating retirees from the east coast states. The optimum range of facilities would include a golf course and adjacent housing, access to clubhouse facilities, a swimming and fitness center, bowling, hiking trails, and a softball park. The total potential market includes Alabama, Georgia, North and South Carolina, Tennessee, and Florida. In 2000 the 55-70 age group within this six state area will comprise approximately 5.2 million people. By 2020 this will have risen to 10.3 million people. A planned retirement community at Fort McClellan should be able to achieve a 5 percent penetration of Alabama's share of migrating 55-70 year olds. This is equivalent to an annual absorption rate of 60 units. Given these assumptions, a development of 360 homes would be absorbed in 6 years. (If migration rates are similar to those experienced in the past, Alabama's share of the migrating population will be about 1,200 members of the 55-70 age group per year. Five per cent of Alabama's share equals 60 units.)

70-85 age group. Existing base housing could meet the needs of this group, including Buckner Circle, duplexes and apartments. Additional new build development could comprise condominiums, patio and garden housing. Access to meeting space and the minimum of recreational facilities (possibly a swimming pool) would also be required. The potential market comprises all communities within a 100-mile radius of the Fort (including all or part of Birmingham, Montgomery, Atlanta, and Chattanooga). In 2000 this sub-region will comprise approximately 8.27 million people, of whom 7.6 percent or 628,000 will be within the target age group. By 2020 this target group, increasing by 12,600 a year, will have grown to 880,000 people out of a total sub-regional population of 9.79 million. If Fort McClellan was able to attract just 1 percent of this market, it would be achieving an annual absorption rate of a little over 120 homes. A total stock of 500 homes would represent just under 4 years' supply.

85 and over age group. Housing, for this age group, is closely allied to issues of dependency and is likely to be newly built. The Hospital is an essential amenity. Other facilities required are minimal. The potential market is assumed to be within a 50 mile radius of Fort McClellan. In 2000 there will be 2.11 million people living within this area, of whom 34,000 will be 85 years old or above. By 2020 this target age group will have increased in size to 50,000 people, out of a total population of 2.47 million. In other words, this age group increases in net terms by 800 people a year. A 5 percent penetration of this market would require an absorption rate of 40 units per

year. It would take 5 years, at this rate of market penetration, to absorb 200 assisted living units.

Target markets and their growth potential	2000	2020
Total population within 100 miles radius of Fort McClellan	8,271,230	9,797,810
Approximate number of 70-84 year olds living within 100 miles of Fort McClellan	628,000	880,000
Total population within 50 miles radius of Fort McClellan	2,119,370	2,472,360
Approximate number of 85 year olds and over living within 50 miles of Fort McClellan	34,000	50,000

source: US Bureau of Census

8.1.8 POSTSCRIPT: ALABAMA'S ROBERT TRENT JONES GOLF TRAIL

The RTJ golf trail was developed in Alabama to (1) attract tourists; (2) attract retirees; and (3) provide a quality of life for developing manufacturing and commercial industries. The RTJ golf trail is a $120,000,000 project owned by the Retirement Systems of Alabama that includes 7 public golf complexes in 7 different Alabama locations, each no more than 10 minutes from an interstate highway. The trail has four 54-hole complexes (Mobile, Birmingham, Auburn, Huntsville) and three 36-hole complexes (Dothan, Greenville, and Calhoun County). New construction around the sites includes housing, motels, restaurants, shopping facilities, and service stations. Revenue generated includes ad valorem, lodging, sales and use, utilities, fuel, and liquor.

SunBelt Golf Corporation leases the complexes and operates them. Sunbelt Golf owns the maintenance equipment at the complexes.

Today, 2 years after the project's completion, RSA and Sunbelt officials say nearly 500,000 rounds of golf have been played on the trail's 18 courses. All of the sites are making money, although officials won't release specifics. Even Silver Lakes in Calhoun County, the newest facility, had almost 40,000 rounds in 1996. Next year, RSA aims to generate more than $4 million in profit from Sunbelt; an increase from $2.5 million in 1995, the first full year all the

courses were operating. This year, revenues to RSA from the trail were reduced because of the devastation wreaked by Hurricane Opal in late 1995 and the extraordinarily cold weather in the spring of 1996. RSA hopes to raise its return from Sunbelt to between $5 million and $6 million over the coming years. The RSA-Sunbelt split of the profits is negotiated each year, based on the facilities' revenues, operating costs, and other expenses.

Statewide, Sunbelt employs about 275 full-time employees during the slow seasons of mid-winter and mid-summer. During peak times, Sunbelt employs 800 full-time workers. The trail is also a large generator of sales tax revenue.

The Huntsville, Auburn-Opelika, Greenville, Dothan, Birmingham, and Calhoun County courses have attracted new residential and commercial development. USX Reality in Birmingham has sufficient land to develop up to 2,000 houses in the vicinity of the Oxmoor Valley course. It is estimated that a development spurred by the trail generates an economic impact in the surrounding community six to seven times the amount invested.

When Hampton Cove in Huntsville opened in 1992, there was only a handful of businesses and no major housing developments nearby. Today, it is the fastest growing area in Huntsville, with 35 businesses—including a shopping center anchored by a new Publix Supermarket. A new elementary school opened this year, another Huntsville fire station is under construction, and some 600 homes have been built in the upscale Hampton Cove residential development adjacent to the trail complex. The average sale price of homes sold in Hampton Cove in the third quarter of this year was $229,112, according to Multiple Listing Service figures. In all, 1,300 single-family homes and 500 townhouses or condominium units are planned.

The Robert Trent Jones (RTJ) Golf Trail complex at Silver Lakes in Calhoun County will increasingly serve as a conduit for out-of-state tourists and introduce them to the lifestyle in the county. The Silver Lakes development is a 36-hole golf complex with an adjoining housing subdivision. It is important to note, however, that it is not a master planned retirement community. The golf complex is owned by The Retirement Systems of Alabama (RSA) and operated by SunBelt Golf Corporation. The housing zone is owned and operated by Silver Lakes Developers, Inc. and although some of the residents are retirees, there are no special facilities or recreational resources designated specifically for retirees. Silver Lakes and any planned retirement development at Fort McClellan would complement each other.

Reshaping Alabama's image to the world is one of the loftier goals of the trail that is being accomplished. Also, increasing tourism and spurring private investment and development are accomplishments of the trail. The trail has received over 4,000 positive articles in periodicals and travel sections nationwide and overseas. The trail has played a role in hotel and residential development, and in recruiting industrial projects such as Mercedes-Benz and

the $50 million S.T. Mobile Aerospace facility in South Alabama. Retirees are now starting to relocate to Alabama because of the trail. A goal of the RSA is to convince developers of retirement communities to build near the trail's sites. Next year, the trail will host its first major, televised professional event, the Nike Tour Championship. Grand National in Auburn has been selected to host the NCAA Division I men's golf championship in 2000. It will be several more years before the trail's impact can be accurately gauged.

During 1996, RSA loaned money to Park Communications for the purchase of a number of television stations, radio stations, and newspapers. RSA received $12 million worth of free advertising to promote Alabama and various attractions from the RTJ Trail to attracting retirees. The Calhoun County and Etowah County area received almost $400,000 worth of this free advertising as a campaign to bring tourists and retirees to the area. Park Communications recently repaid the RSA in full for this loan.

The RSA recently reinvested these funds in media with the purchase of Ellis Communications, a television and radio company. The company, named Raycom Media, has 12 television stations, two radio stations, and Raycom, which produces Big 12 basketball games, SEC and ACC games, and a number of football bowls. It has been agreed that the State of Alabama will receive approximately $24 million in advertising through Raycom Media to strengthen tourism and industrial recruiting and to attract retirees to Alabama.

8.2 TRAINING AND EDUCATION

Fort McClellan has an illustrious history as a military training establishment. The majority of its existing buildings are geared to the needs of the training industry; classroom space abounds and transient accommodation is located in several areas of the base. External training areas are also plentiful and include; a vehicle test track, an urban simulation environment, mock correctional facilities, wooded training areas and a wide variety of ranges.

With this range of facilities, the community has an exceptional and virtually unmatched opportunity to accommodate regional and national centers of public and private educational excellence.

The early success in establishing the Center For Domestic Preparedness, a national training initiative, and an education center to meet local needs (including Ayres State Technical College, Jacksonville State University, and the educational consortium) supports the contention that training and education is a particularly important primary market.

Proposed target markets will include training providers for a range of areas that include the private sector security industry, hazardous materials and nuclear handling, as well as:

9221	Police Protection (including highway patrols, police departments, state police)
9223	Correctional Institutions (including honor camps, penitentiaries, prison farms)
9224	Fire protection (including fire departments, fire prevention offices)
9229	Public order and safety, NEC (including disaster preparedness, emergency management offices, public safety bureaus)
2892	Explosives (including compounds high explosives, fuses)
2899	Chemicals and chemical preparations (including flares, pyrotechnic ammunition)

In addition, spin-off manufacturing industries and service providers would include safety wear, vehicle and equipment maintenance, safety materials (including training manuals, signs). and security equipment providers.

8.3 INDUSTRY

Fort McClellan is one of the few large industrial sites available in the Southeast. Demand for large industrial sites located within 120 miles of Anniston is discussed on page 13 of the Phase 2 Report. Disregarding the largest site, which remains undeveloped, the 12 major industrial site acquisitions during the 10-year period ending in 1996 averaged 379 acres. During the preferred development plan's 20-year horizon, Fort McClellan could expect to compete for three to four of these large industrial sites.

Among Calhoun County's industrial parks which have been partially developed, some 23 industries have located on 197 gross acres. Their average land demand has been about 6 gross acres, or 5 net acres. Because of the County's modest land prices and its ability to negotiate those prices with prospective owners, floor area ratios have hovered around 0.2 to 0.3. Therefore, Fort McClellan, with its large land area, is particularly well suited to manufacturing and warehousing uses. The Fort has plenty of room available for parking, truck maneuvering, and buffer areas for security purposes or eventual plant expansion. In order to offer a range of site sizes to prospective users, the first phase of the proposed on-site industrial park should be subdivided into sites having up to five acres, sites having 5 to 10 acres, sites having 10 to 30 acres, and sites having 30 to 350 acres to be most responsive to the marketplace.

8.3.1 CHANGING INDUSTRIAL PARAMETERS

Businesses are expanding or locating in areas to achieve multiple objectives such as adding value to products and services, reducing the time and costs required to reach markets, improving the quality and choices of products, and controlling costs. Locations which can provide these advantages may rank higher than their competitors. Broadly speaking, manufacturing operations need skilled machine operators and good access to markets and suppliers; administrative support operations need a dependable workforce, telecommunications capacity, and a minimum number of disruptions attributable to weather or other reasons; and headquarters operations need good airport service, good image, a pool of skilled managers, and mid-career training opportunities.

There are a number of forces in the ongoing "information revolution" in manufacturing and other target industries that shape the real business issues many Alabama companies face. Manufacturing firms in the United States and other developed nations are having to compete with national economies characterized by low environmental standards and wages, thus forcing companies in industrialized nations to markedly increase productivity. Simultaneously, the nature of markets has changed; no longer does mass production prevail. Instead, markets have fragmented, and buyers are demanding smaller, customized quantities of products, that a company may not have produced before or necessarily will make again. The implications for Calhoun County firms are particularly relevant. With the County's prevalence of small and medium-sized firms, many of which act as subcontractors to larger firms, the ability to meet the specifications and expectations of their clients is critical. Although the new technologies require a smaller direct workforce in the manufacturing sector, local manufacturers must be able to compete in the international arena using these technologies. Manufacturing jobs, although claiming lower numbers of employees than in the past, are then retained in the region, and complementary service sector jobs join them.

The new manufacturing environment is characterized by computer based and information technologies. The application of these technologies is dramatically changing production, where some decision-making is being brought down to the line worker. The aims are relatively straightforward: improve quality, lower costs, reduce product imperfections, and ease the creation of new products. The details of the technologies vary from industry to industry. The general catchwords of the new manufacturing environment include computer based machine tools, statistical process controls, flexible manufacturing systems, just-in-time inventory controls, and concurrent engineering.

Despite the plethora of new terms, many of these concepts are just plain common sense. For many small- and medium-sized manufacturers, there is a careful balance to be struck between acquiring new technologies to modernize

the production process and exceeding the firm's ability to use them effectively. Effective management of the design and production process, as well as the other aspects of the company's operation, is as important as the possession of state-of-the-art machinery and technology. Meaningful programmatic assistance to manufacturers cannot be focused solely on access to real estate, equipment or technology, but must also take into account the management needs of the firms.

8.3.1.1 Computer-Aided Design

Talk of off-the-shelf technology for manufacturers most frequently means the Computer Aided Design (CAD) family of process technology. As with many other manufacturing technologies, the CAD system was developed on mainframe computers for the design of spy planes and other defense purposes. Its later application on personal computers expanded its use, and CAD is now the most widely deployed manufacturing technology. According to the National Coalition for Advance Manufacturing (NCAM), as of 1989, 70 percent of U.S. manufacturing establishments used at least one CAD system. This share has increased in the meantime. Starting out as a computerized drafting board, CAD now performs many engineering tasks, and has introduced much greater precision to the design and production of parts. Its evolving applications are leading to "virtual manufacturing," in which mathematical models simulate virtually everything about a product and the processes that create it. Future computer technologies are expected to greatly speedup the time between design and production, making it more responsive to requirements of the marketplace.

Despite the growing sophistication of CAD-based computer software, many small and medium-sized firms do not fully know how to make use of this design technology. Small firms having few technical and professional staff members may not have the financial resources or technical ability to exploit CAD's full potential in the production process. This suggests a continuing need for institutions providing assistance to manufacturers to offer financial and technical assistance (whether directly or indirectly) in the acquisition, use, and management of the firm's existing resources.

8.3.1.2 Adaptable Manufacturing

One of the most important concepts to understand about the shift in manufacturing technologies is flexible, or adaptable production. Although the term is used broadly, its more narrow definition is mass customization, with the ability to produce high quality, short-run products. Changes to machinery are possible, enabling the product to vary, even if it has many component parts. The machinery does not need to be replaced, but can be adapted to produce different products at a given plant. Lower range quantities of industrial production are becoming increasingly common, because of what the buyers are demanding: short runs of specific products. Recent U.S.

Department of Defense data shows that 92 percent of the manufacturing products it buys are bit-parts, in which perhaps fewer than 10 copies are made.

Machinery of this type is more expensive than conventional production equipment. For a small manufacturer, concurrent engineering, which ties together marketing and design considerations, becomes especially important in planning equipment and technology acquisitions. With a capital-intensive investment, the manufacturer has to be sure its retooling strategy results in what it really needs to compete effectively.

8.3.1.3 Supplier Networks

Another important aspect of the changing manufacturing environment is the beneficial effect of cooperation between and amongst producers on technology and product matters. Such forms of cooperation are common in Western Europe, and have recently taken root in the United States, partially because of the need to take advantage of new technologies and meet the demand for short-run products. Three types of supplier networks are emerging:

- The so-called added-value networks, in which two or more firms with complementary core competencies (in joining and bending, for example), jointly bid and produce for a given contract. Such an alliance may only last for the duration of the one contract, or take on more permanence in marketing efforts.

- Regional alliances, which tend to be sectoral in nature. For example, woodworkers could organize to jointly pursue manufacturing projects, and market collectively.

- Networks which share resources and technologies. Small firms are often short on technologically knowledgeable staff and face capital budget constraints. Additionally, acquisition of a certain technology or equipment may receive only marginal use by one firm, but may be much more productively used (and affordable) when acquired by several firms.

There is a growing need for small suppliers to be networked in these ways.

8.3.1.4 Production Cycle Components

An assessment of a firm's technological standing might begin with materials handling, at the receiving end of the production cycle. Electronic controls can monitor what shows up and where in the plant parts are distributed. This level of sophistication in the monitoring and control of materials reduces costs and improves the quality of production. One extremely basic and obvious measure of preparedness observed by consultants performing technological audits of firms is the level of cleanliness and order in the shop. Another element of these first stages of production is the use of CAD. Many small firms utilize CAD on an elementary level.

Computer Integrated Manufacturing, (CIM) is a system that electronically wires CAD, numerically controlled equipment, and other processes, so that they all work in concert. CIM cells, such as tooling, forming, and joining (in the case of machine tooling), are interconnected. CIM transfers a part from one cell to the next for subsequent steps in the production process.

The use of robotics is increasingly common, but its application is not universal. Investment in robotics technologies is most appropriate for repetitive, simple processes and assembly of large components. Good examples are welding and spray painting. The use of robotics is particularly useful in hazardous production situations representing a threat to human workers. Unless the system is designed to be flexible and accommodate different runs, robotics are often not appropriate for small firms. The relatively high cost of such systems also makes it less accessible to small firms.

Sophisticated technologies also perform inspection functions on behalf of workers. The use of high-speed x-ray, for example, quickly identifies and removes flawed parts. Just-in-time (JIT), is typically applied to the external flow of materials to the worksite. JIT can also be applied to internal movement. Other statistical processes control production. These process controls take finite measurements of different elements of a part and evaluate them for deviations. They identify incremental improvements, and build tighter tolerance in the parts. These processes are done on a real-time basis; that is, the data is received and fed back into ongoing production simultaneously.

8.3.2 LOCAL DEVELOPMENT CONTEXT

Calhoun County's long industrial tradition has resulted in its labor force developing skills which continue to be marketable to target industries. For those people needing to upgrade their skills to maintain their competitiveness in the labor market, Calhoun County's three post-secondary educational institutions, Ayres State, Gadsden State, and Jacksonville State - - provide a broad range of programs for doing so. Most of these programs provide one or 2 years of training in the services, precision production, machine operator, fabricator, and repair occupations. As shown in Table 7 of the Phase 1 report, these occupations provided one-half of Calhoun County's jobs in 1990. The U.S. Bureau of Labor Statistics has estimated that most of the nation's job growth to 2005 will not require a bachelor's degree.

During the past 10 years, studies by the Alabama Electric Cooperative, Alabama Power, and Office of Economic Adjustment have identified a series of industries especially well suited to a location in the vicinity of Calhoun County. Criteria upon which their selections were based include:

- Multi-modal accessibility
- Labor force characteristics

- Availability of natural resources
- Industry growth trends
- Higher education resources
- Access to metropolitan markets
- Business climate and image
- Costs of public services

The Fort's economic strengths and weaknesses were discussed in Section 2.1.3 of the Phase 2 report. They establish a framework for the preferred land use recommendations and selection of the target industries. These industries become the focus of the recommended marketing program. The preferred land uses, as presented in Table 2.5 and Figure 8 of the Phase 2 report will take advantage of the Fort's economic strengths which are:

- Large land area expected to become available in single ownership
- Outstanding natural beauty of the site
- Centrally located among six metropolitan areas and within 100 miles of nearly 8 million people
- Location within ten miles of three interchanges with I-20
- Much of the Fort's infrastructure meets contemporary standards and can be used by new land uses
- Many of the Fort's buildings can be reused for domestic purposes
- Labor costs are competitive, especially when compared to those in nearby metropolitan areas
- Alabama has a tradition of offering footloose and other employers a range of incentives to reduce their operating and capital costs

8.3.3 RECOMMENDED TARGET INDUSTRIES

These analyses acknowledge these economic strengths and are in broad based agreement that the FMRRA economic development promotion resources should be directed toward the following major types of industries:

- Distribution and warehousing
- Printing and publishing

- Metalworking equipment
- Distribution and storage
- Motor vehicles and parts
- Telecommunication services
- Control and electrical equipment
- Wood products and furniture
- Food processing and beverages

Not only can companies providing these products and services in the future at Fort McClellan serve the Metropolitan Anniston Area market, they can also serve the firms employing 2.3 million people and the jurisdictions housing five million people located in the six metropolitan areas within 120 miles of Anniston. Each of these target industries is growing and is represented in the region's economy.

8.3.4 DISTRIBUTION AND WAREHOUSING

The distribution and storage industry has changed in recent years with manufacturing industry demands for just-in-time delivery, consumer demand for a broader range of products, and installation of automated retrieval systems. Results of these changes include mushrooming demand for new building products, more widely dispersed warehousing centers, and their locations near the center of multiple metropolitan markets where multi-modal transportation systems are in-place. Large, level inexpensive sites located near interstate highway interchanges and having rail and air cargo services are preferred by the industry.

This industry has been growing at 16 percent annually and is expected to do so in the near-term future. Some 166,013 companies provide these services in the United States. Of these companies, 37 have annual sales over $500 million, 63 have sales between $250 million and $500 million, and 191 have sales between $100 million and $250 million. The average company has sales of $135 million and employs 135 people. Among the largest distribution and warehousing firms, 17 are headquartered in the South:

- UPS, Allied Holdings, and Trism in Georgia
- ABF Freight System, J.B. Hunt Transport, and American Freightways in Arkansas
- AAA Cooper Transportation in Alabama

- Averitt Express, Mark VII, MS Carriers, and U.S. Xpress Enterprises in Tennessee
- Builders Transport and Southeastern Freight Lines in South Carolina
- Customized Transportation, Landstar Ranger, GATX Logistics, and Watkins Motor Lines in Florida

Calhoun County is well positioned to accommodate firms in this industry.

8.3.5 PRINTING AND PUBLISHING

The U.S. printing and publishing industry has about 60,000 establishments and nearly 2 million employees. Roughly two-thirds of this industry is devoted to advertising, with most of the rest devoted to books and periodicals. While consumers are increasingly turning to audio, laser and compact disks, software, and facsimile transmission of information, the value of printing and publishing shipments are expected to increase over 4 percent per year. Growth of the industry is assisted by greater use of environmentally friendly chemicals and more paper recycling. The United States is the largest consumer of printing and publishing products and their second largest exporter.

Among the largest printing and publishing firms located in the South are:

- American Color Mail and Media, American Business Products, and John H. Harland Company located in Georgia
- Harcourt Brace & Company located in Florida

A Calhoun County location can serve nearby major metropolitan markets for promotional, lithographic, business forms, envelopes, trade journals, textbooks, and other materials produced by these companies.

8.3.6 METALWORKING EQUIPMENT

This industry makes tools, robotics, molds, dies, jigs, and other apparatus necessary to manufacture products for consumers. Demand for these products is heightened as industries seek to increase labor force productivity. Industrializing countries are the most important part of the export market for metalworking equipment. The value of shipments to be made by this industry is expected to increase over 4 percent annually.

Among the largest metalworking equipment companies located in the south are:

- Okuma America and Murata Machinery located in North Carolina
- Jacobs Chuck Manufacturing located in South Carolina
- Hitachi Power Tools and Greenfield Industries located in Georgia

- Hartman Industrial Products located in Alabama
- Orchid International Group and Wright Industries located in Tennessee

Calhoun County is within just-in-time delivery services of vehicle assembly and other manufacturers located in most parts of Alabama, Tennessee, and Georgia.

8.3.7 MOTOR VEHICLES AND PARTS

During the past 15 years, this industry has changed in a number of fundamental ways. Its assembly plant locus has shifted southward from the Great Lakes area, a number of foreign manufacturers have located new plants in the United States, product content has emphasized plastic and other light weight materials, exports have increased, and a greater share of demand has been light trucks and vans. As a result, much more parts manufacturing and assembly are located closer to Calhoun County than ever before. As the quality of vehicles has increased, the number of units shipped overseas has also increased. This industry represents nearly 4 percent of the country's gross domestic product.

The industry is expected to grow by one to 2 percent annually as the population and as public and private employment grow. Entry of Asian and European manufacturers' assembly plants into the United States has saturated the market with domestically produced vehicle choices. Road congestion has slowly shifted people from small single occupancy vehicles, thereby reducing demand for them. The replacement vehicle demand has also declined as the average vehicle's age has crept upward.

There are a total of 9,856 companies in this industry in the United States. Of these, 35 companies have annual sales over $750 million, 61 have sales between $500 million and $750 million, and 175 have sales between $250 million and $500 million. Among the largest motor vehicles and parts firms, five are headquartered in the South:

- Volvo GM Heavy Truck in North Carolina
- Harvard Industries in Florida
- Nissan Motor Manufacturing in Tennessee
- Mercedes-Benz US International in Alabama
- Bavarian Motor Works of North America in South Carolina

During the past 15 years, a substantial network of suppliers to these manufacturers has developed. Many of them are located within 100 miles of vehicle assembly plants.

8.3.8 TELECOMMUNICATIONS SERVICES

The telecommunications services industry provides telephone, mobile radio, satellite, electronic data, and other communications transmission services. More than 2,000 companies employ over 900,000 persons. The industry is highly regulated by the Federal and state governments. Telemarketing is a growing business as companies use personalized communications to reach prospective customers. Rapid growth of use of the facsimile machine has increased demand for telephoned-based office and household services. Revenues are increasing at more than 3 percent annually.

Telecommunications companies include those responsible for manufacturing equipment, publishing directories, and billing and bookkeeping services. They need not be located in metropolitan markets. Among the largest telecommunications firms in the South are:

- Ldds Metromedia Communications located in Mississippi
- GDSI and GTE Mobile Communications located in Georgia
- United Telephone located in Florida

The telecommunications equipment located at Fort McClellan and labor force experienced in its use can help attract this industry.

8.3.9 CONTROL AND ELECTRICAL EQUIPMENT

This industry is responsive to growth in automated electrical systems and machinery. New buildings and equipment require the manufacture and installation of this industry's products as do the utilities and communications industries. A national goal is replacement of inefficient electrical equipment in order to reduce electricity demand and accompanying pollution. A large share of demand for this industry's products comes from original equipment manufacturers, especially those products that meet standards set by the International Electrotechnical Commission.

Demand for these products is expected to increase three to 4 percent annually. Because of Calhoun County's small base of original equipment manufacturers and lack of labor force skilled in appropriate occupations, this industry will need to be largely imported into the area. Some 6,223 companies are engaged in the control and electrical equipment in the United States. Of these, 39 have annual sales exceeding $750 million, 161 have sales between $250 million and $750 million, and 475 have sales between $50 million and $250 million. The largest firms employ 95,587 people and have annual sales exceeding $167 billion with the average firm employing 344 people and selling $590 million of products.

Among the largest control and electrical equipment firms, two are headquartered in the South:

- SCI Manufacturing located in Alabama
- Scientific-Atlanta located in Georgia

A Calhoun County location of a firm in this industry would provide a Southern anchor.

8.3.10 WOOD PRODUCTS AND FURNITURE

This industry includes lumber, wood products, furniture, and paper products. Demand for them is sensitive to changes in population and in household formation. High proportions of employment in the Southeast, including Alabama, are found in this industry. The climate is good for growing wood, the water supply is available for its manufacture, the multi-modal transportation system supports transfer of raw and finished products, and the labor force is in-place to attract additional private investments. While Calhoun County has good stands of timber, most of the value added is located in nearby counties. With the electronic transfer of information, the use of business forms, checks, envelopes, and other office paper products has stabilized.

This industry is expected to grow 3 percent annually as the housing industry in this country and abroad and consumer paper product demand increase. Environmental restrictions on harvesting wood in the Northwest may shift more of the available supply to the Southeast. Continued modernization of equipment in the paper products portion of this industry has maintained its worldwide competitiveness. As paper recycling has increased, the demand for pulpwood has grown more slowly than in previous years.

The furniture manufacturing industry is composed of 21,650 companies in the United States, most of which are small. Only 5 percent of these companies have annual sales over $10 million. This industry employs 253,490 people and has sales of over $134 billion. Among the largest wood products and furniture firms, the following are headquartered in the South:

- Cabin Craft American Homes in North Carolina
- H.W. Jenkins Company in Tennessee

8.3.11 FOOD PROCESSING AND BEVERAGES

This industry is the nation's largest manufacturing sector and is growing with the consumer base it serves. Shifts in consumer preferences have increased the relative demand for seafood and poultry and for diet beverages. Pollution problems continue to increase the costs of raising and processing of foods and

have spurred growth of the land-based seafood industry. Canned goods and frozen foods production has increased as the time spent in preparing meals has decreased. Lower fat dairy product popularity has increased while sweet bakery goods demand has decreased.

The future of this industry is highly favorable as demand increases with the population and the country's and the world's populations are increasing. While the domestic demand for food and beverages is forecast to increase about 2 percent annually, changes in the product mix are expected to continue as is per capita consumption of these products. Among the 37,350 companies in this industry, 156 have annual sales exceeding $1 billion, 260 have sales between $500 million and $1 billion and 426 companies have sales between $250 million and $500 million. The industry employs 233,490 people and its annual sales are nearly $900 billion. Among the largest food processing and beverage firms, 20 are headquartered in the South:

- Coca Cola, Conagra Poultry, Savannah Foods, Agra International, Southcorp USA, and Cagles in Georgia
- Hardee Food Systems, Fast Food Merchandisers, and Lance in North Carolina
- Tropicana Products, Lykes Brothers, Bolswessanen Holdings, Citrus World and National Beverage in Florida
- Flowers Baking in South Carolina
- Branch Van Houten, McKee Foods, and Bake Rite in Tennessee
- Sweet Sue Kitchens and Sanderson Farms in Mississippi

8.4 OTHER TARGET MARKETS

The modified preferred land use alternative includes buildings and land areas for the residential, retail, and recreation target markets.

8.4.1 RESIDENTIAL

The Calhoun County housing market area provides a full-range of types of residential structures. The modified Preferred Land Use Plan calls for selling 506 existing residential units to developers. They would be rehabilitated in three stages and resold to the public. It will continue to be necessary to maintain contact with representatives of residential developers to prescribe the terms and conditions of sales. The target residential markets are single family and duplex aimed at the family and retirement portions of the market. New residential construction at the Fort will occur after the fifteenth year of development.

8.4.2 RETAIL

The retail market is dependent on the I-20 and AL 21 highway corridors as discussed on pages 24-25 of the Phase 2 report. The I-20 corridor has attracted regional shopping center, big box, and fast food retailers, among others. The AL 21 corridor has attracted Fort McClellan-oriented retailers such as tailors, barber/hair dressers, new and used vehicle, and fast food retailers. As the Fort's businesses and residential areas are developed after 1999, neighborhood retail space demand will escalate and Fort-dependent uses will decline. The neighborhood shopping center proposed along AL 21 at the Fort will serve its job- and residential-based retail markets. As AL 21 is improved southwest of Oxford during the next 5 years, it will help attract shoppers to the I-20 corridor from the Talladega area. Therefore, the I-20 corridor will continue to be principal shopping area for the residents and employees of Anniston and its environs.

8.4.3 RECREATION

The primary recreation opportunity recommended in the modified Preferred Land Use Plan is continued use by the public of the Cane Creek golf course. The McClellan Park lake and adjacent open space would be used for passive recreation purposes. Other recreation facilities would not be developed until the economy grows to a point where demand for them occurs or special purpose funding for their implementation becomes available.

8.5 PROMOTIONAL OPTIONS

Economic development promotion has traditionally depended on face-to-face meetings to communicate interests of the prospect and land owner representatives, inspect property, exchange information, negotiate deals, and sign agreements. In parallel with globalization of the economy, economic development promotion communications have become more sophisticated. Color pictures, text, and tables can be transmitted electronically and large quantities of information can be stored and easily retrieved and manipulated. At the same time, trade shows, periodicals, brochures, and networking remain bulwarks of local economic development promotional programs.

8.5.1 WORLD WIDE WEB (WWW)

In 1996 the FMRRA established its WWW site which provides six categories of information to persons having access to this service. It describes the Fort's development opportunities and the area's recreation resources. Seven other websites provide information about the Fort, the area's assets and services, and some of its social and economic characteristics. Some of the information is dated and should be revised. The two websites having detailed information about Fort McClellan can be included in the U.S. Department of Commerce's

website describing the availability of former U.S. military bases for new investments.

The former military base state-of-art computerized communications capacity may be found at the Air Base Property Corporation of North Bay, Ontario. It has implemented a portable system which provides:

- Graphics, text, tables, and voice transmission
- Customized hardcover books
- Instant new pictures and scanned text and tables
- Flight simulation of the real property resources available to prospects

The hardware and software required to achieve these results costs approximately $50,000.

Private web sites are also available to list commercial property. One example is REAL USA located in Santa Barbara, California (800-725-3872). Property descriptions, floor plans, maps, and photographs supplied by the FMRRA could be scanned into REAL USA's database. Access to the information is provided for a $25 per month charge.

8.5.2 TRADE SHOW ATTENDANCE

Trade shows and exhibitions provide opportunities to alert industry representatives of Fort McClellan's and Calhoun County's resources and price structures and to learn of their industries' locational needs. Because of multiple demands on the time of attendees, joint attendance at trade shows is common. Former military base staff members may be accompanied by representatives of local and state economic development and utility companies or by local plant managers. Multiple representation also increases the number of interested parties to your booth. Construction of a booth may cost $1,200 to $2,200, depending upon its size and sophistication. Additional booth costs may be incurred in its transportation and assembly and tear-down.

Contemporary trade show booth standards include:

- Computerized graphics and printing capabilities
- Color maps and photographs
- Walls made of felt or other materials for easy mounting
- Collapsible frame structure for ease of transport
- Screen for showing 35mm slides
- Television monitor for very high resolution (VHR) tapes

Typical floor space allocations are 10-feet square whose cost is $500 to $2,000 per show, often depending on the number of attendees compared to the floor space available.

Trade shows and exhibitions are typically held annually and rotated among cities having the capacity to stage them and to accommodate overnight visitors. Because of limited FMRRA staff and policy board time and financial resources, trade show attendance is constrained to a small number each year. Examples of 1997 trade shows providing access to representatives of the eight target industries are listed below by type of industry. The locations and dates of the shows are given together with management's telephone numbers.

8.5.2.1 Printing and Publishing

Cincinnati Printing, Graphics & Mailing Expo
Cincinnati, Ohio
November 12-13
513-528-1550

Christian Booksellers Association International
Atlanta, Georgia
July 12-17
719-576-7880

Graph Expo East
Chicago, Illinois
October 8-11
703-264-7200.

Print Coverflex-USA
Chicago, Illinois
September 3-10
703-264-7200

8.5.2.2 Metalworking Equipment

American Welding Society
Los Angeles, California
April 15-17
800-443-9353

Greensboro Advanced Productivity Exposition
Greensboro, North Carolina
September 23-25
313-271-1500

Dayton Industrial Exposition
Dayton, Ohio
October 28-30
800-274-6948

International Die Casting Congress and Exposition
Minneapolis, Minnesota
November 3-6
847-292-3600

8.5.2.3 Distribution and Warehousing

American Trucking Associations Management Conference & Exhibition
Las Vegas, Nevada
October 19-22
703-838-1755

National Tank Truck Carriers Maintenance Conference
San Francisco, California
May 18-21
703-838-1960

8.5.2.4 Motor Vehicles and Parts

Automotive Service Industry Association
Las Vegas, Nevada
November 4-7
847-228-1310

Automotive Parts Rebuilders Association Exposition
Las Vegas, Nevada
October 31-November 3
703-968-2772

International Automotive Manufacturing Conference and Exhibition
Detroit, Michigan
May 14-17
412-776-4841

World Tire Conference and Exhibition
Louisville, Kentucky
April 17-19
502-968-8900

8.5.2.5 Telecommunications Services

Association of Telemessaging Service
New Orleans, Louisiana
June 4-7
202-429-5151

Telecommunications Association International
San Diego, California
September 14-18
415-777-4647

8.5.2.6 Control and Electrical Equipment

Assembly Technology Expo
Rosemont, Illinois
September 23-25
630-260-9700

Consumer Electronics Manufacturers Association
Atlanta, Georgia
April 4-6
703-907-7600

International Electrical Exposition & Conference
Chicago, Illinois
June 3-5
212-370-5005

Electrical Apparatus Service Association
Denver, Colorado
June 22-25
314-993-2220

8.5.2.7 Wood Products and Furniture

Carolina Woodworking & Furniture Supply Show
Greensboro, North Carolina
February 14-15
704-459-9894

International Conference on Scanning & Process Technology in Wood Processing
Atlanta, Georgia
October 21 - 23
800-227-4675

International Woodworking Machinery & Furniture Supply Fair
Atlanta, Georgia
August 20-23, 1998 (biennial)
770-246-0608

8.5.2.8 Food Processing and Beverages

Fresh Fruit and Vegetable Association
Orlando, Florida
February 22-24
703-836-3410

Bakery Showcase
Toronto, Ontario
November 8-10
905-625-2804

Institute of Food Technologies Expo
Orlando, Florida
June 14-18
312-782-8424

International Food & Dairy Expo
Chicago, Illinois
October 30-November 2
703-761-2600

8.5.3 BROCHURES

In addition to the static display, video, slide, and computer displays mentioned above, hard copy handouts can be effective communication materials at trade shows and for distribution at other times. Through the Alabama Department of Economic and Community Affairs, a variety of handouts were prepared in 1997:

- Flyers describing Calhoun County industrial parks having available developable land and sound vacant building space
- Maps and building footprints of Fort McClellan's physical resources
- Fort McClellan redevelopment issues report
- Flyers describing industrial sites available at Fort McClellan

As the information in these materials becomes dated, experience suggests after 18 months, they should be revised, as needed. As trade show attendance increases, the number of copies of these materials should increase.

8.5.4 PUBLICATIONS

Horizontal economic development publications are those of general interest typically covering large geographic areas. Vertical publications are those which provide more in-depth information on a specific topic such as telecommunications. These publications are good avenues to communicate with representatives of target industries looking for sites and buildings. Several examples of them are listed below by periodical name, its average circulation, city in which published, telephone number, and the typical cost range of an advertisement.

8.5.4.1 Distribution and Warehousing

American Shipper, 14,090
Jacksonville, Florida
904-355-2601
$3,310 - $4,435

Chilton Publication's Distribution, 70,016
Radnor, Pennsylvania
215-964-4282
$6,815 - $8,270

8.5.4.2 Printing and Publishing

American Printer, 89,755
Chicago, Illinois
312-595-1080
$13 per line, $60 per column inch

Graphic Arts Monthly, 85,000
New York, New York
212-463-6835
$8,590 - $11,190

8.5.4.3 Metalworking Equipment

Modern Application News, 78,001
Nokomis, Florida
941-966-9521
$4,480

Ornamental Metal Fabricator, 10,000
Forest Park, Georgia
404-363-4009
$965 - $1,640

8.5.4.4 Motor Vehicles and Parts

National Automobile Dealers Association, 21,679
McLean, Virginia
703-821-7150
$4,980 - $7,400

Automotive Industries, 105,000
Detroit, Michigan
313-875-2090
$7,200 - $9,195

8.5.4.5 Telecommunications Services

Communications News, 77,001
Nokomis, Florida
941-966-9521
$6,170 - $7,530

Signal, 35,149
Fairfax, Virginia
703-631-4693
$5,005 - $6,310

8.5.4.6 Control and Electrical Equipment

Electronic Commerce World, 44,000
Hollywood, Florida
954-925-5900
$5,355 - $6,380

Electrical Advertiser, 67,200
Minneapolis, Minnesota
800-328-0328
$4,740 - $5,520

8.5.4.7 Wood Products and Furniture

Modern Woodworking, 61,000
Collierville, Tennessee
901-853-7720
$2,450 - $3,650

Panel World, 10,033
Montgomery, Alabama
334-834-1170
$1,975 - $2,920

8.5.4.8 Food Processing and Beverages

Food People, 46,000
Acworth, Georgia
770-974-1077
$3,250 - $4,750

Beverage World, 51,000
New York, New York
212-822-5930
$2,448 - $4,097

The costs of advertisements vary with the periodical's circulation, print quality, number of colors, size, and graphic composition.

8.5.5 PRESS RELEASES

Since its inception, the FMRRA has provided press releases, held open meetings, and been accessible to the media. As the closure date nears and as reuses are negotiated, media demands on staff and policy board officer time are likely to increase. Preparation and distribution of press releases should continue. Their cost is an ongoing portion of staff time and of materials.

8.5.6 BUSINESS SYMPOSIA

Although computer simulation, tape, Internet, and hard copy descriptions are especially effective, each in their own way, there is no substitute for personal observation of the property. Many interested developers, Reuse Plan advisory committee members, and other individuals have received tours of all or parts

of the Fort during the past 2 years. An alternative approach is to set aside times for the FMRRA staff and selected policy board members to host groups of parties interested in specific properties. Perhaps more in-depth information can be provided in a shorter time period by using this approach. While Army representatives are still in town, they will be available to provide information and respond to questions of symposia attendance. One symposium per month should cost less than 25 hours of staff time. Attendee questions and answers to them should be retained in written summaries. It would be useful to prepare an oblique aerial narrated videotape of Fort McClellan and other Calhoun County highlights from which to guide visitors to the real property and cultural assets in which they are most interested.

8.6 RECOMMENDED STRATEGY

The FMRRA has the twin objectives of generating a cash flow to support its staff and to transition the acreage for which this plan was prepared to privately-owned civilian use and to a variety of public education and training uses. Therefore, the Fort should only be kept in the LRA's ownership as long as necessary to attract new investments to replace military uses before going out of business. As a result, the recommended marketing strategy should focus on attracting investors and developers. The large scale of available property, modest sized market, and constrained infrastructure and remediation funding renders the likelihood of finding a single acceptable developer unworkable.

FMRRA's marketing activities have been underway for several months. Prior to beginning preparation of this Reuse Plan, the staff received inquiries about the timing of availability of property and the Alabama Department of Economic and Community Affairs began producing promotional materials. As this project has proceeded during the past 12 months, there have been indications of interest in portions of the property in spite of its unavailability until 1999. Therefore, the recommended marketing strategy builds upon initiatives that have been undertaken by the FMRRA, the real estate and government networks that have been established, and the products that have already been produced and are available for distribution.

The key next steps in the marketing of Fort McClellan that should be undertaken to implement the modified Preferred Land Use Plan are:

- Increase staff capacity to take marketing initiatives and to respond to inquiries
- Continue and expand marketing partnerships that have been established

8.6.1 STAFF CAPACITY

Fort McClellan is a particularly complex real estate project that will require dedicated staff time to achieve its marketing objectives. In addition to the competition evident from the thousands of economic development promotion agencies across the country and the incentives they have to offer, the marketing program must try to overcome the site's economic development weaknesses discussed on page 15 of the Phase 2 report. A minimum of two full-time equivalent staff members are required to market a property of this size and complexity. From time-to-time they will need the professional services of one or more marketing companies. [The management plan will recommend to whom these two people will report.]

While the marketing staff should be distinguished between the private and public real estate sectors of the economy, their skills should also be directed at a team approach to implementing the FMRRA's goals. In addition to their familiarity with one of these two core real estate product competencies ancillary skills which would be useful to the overall mission of the agency are:

- Public relations and media contacts
- Writing
- Promotional materials content and layout
- Economic development incentives
- Site improvement and building renovation requirements for new investments

If ideal candidates having all of these skills are not available, outside professional services are available to periodically supplement the staff. A source of these services is the FMRRA's continued active participation in the annual and special conferences, membership on committees, and reading publications of the National Association of Installation Developers (NAID).

8.6.2 MAINTAINING PARTNERSHIPS

Complexity of the real estate development process demands that multiple public agencies and private organizations participate in it. Therefore, partnerships must be established with them in order to progress toward project implementation. These partnerships should occur at the policy board, staff director, and technical staff levels - - peer to peer. This process is already underway and should include the following contacts, at a minimum:

- Calhoun County Economic Development Council and Alabama Department of Economic and Community Affairs for economic development

- Calhoun County government for development permission, assuming municipal extraterritorial zoning conflicts can be worked out, and infrastructure
- Alabama Power Company for electric service and economic development
- Other utility providers for their unique services
- Alabama State Employment Service for labor force supply, training programs, and labor force data
- Calhoun County Area Board of Realtors for real estate product characteristics and trends data
- Alabama Cooperative Extension Service for agriculture and forest data
- East Alabama Regional Planning and Development Commission for socioeconomic data, mapping, and government programs
- Prospective developers for market trends and their proposed project's needs

8.6.3 STAFF ACTIVITIES

Public and private real estate developers often operate in very dynamic setting where information changes frequently. Therefore, the staff needs to be sufficiently informed to participate in these dynamic settings. The marketing staff should undertake the following activities:

- Contacts which express interest in the property distinguished between public and private agencies and organizations. This will provide multiple means of contacting them and remind the staff of the specific purpose(s) of the contact.
- Characteristics of the buildings available for sale or lease. This information should include their existing and previous uses; size; condition; failure to meet construction, development permission accessibility, infrastructure, and environmental standards; accessibility by truck; parking; parcel size; tenants; cost; and neighboring uses.
- References to be made available to prospects interested in utility services, infrastructure construction schedules, and environmental remediation schedules
- Media representatives
- References on economic development incentives and mortgage financing
- Prepare fact sheets on the site and on the most marketable buildings

- Prepare draft copy and graphics for brochures and the FMRRA's web page
- Prepare draft itineraries to guide prospects during their visits to Calhoun County. Stopping points on the itineraries should be described in detail and checked out day or two before the visit takes place. Keys to buildings whose interiors will be inspected should be available and the owner or his real estate broker should be available for consultation.
- Schedule meetings with whomever the prospect wants to meet and only attend if invited to do so
- If additional information is requested, supply it to the prospect following his visit. The following week check to answer questions and learn of problems the prospect has with Fort McClellan or the community in which it is located.
- Prepare press releases and articles to be placed in periodicals
- Provide technical assistance to tenants
- Prepare graphic display for a booth at trade shows
- Seek invitations to trade shows and logistics information from their sponsors
- Acquire a display frame and carrying case
- Purchase and/or obtain oblique aerial photographs of the Fort and of community assets from newspapers
- Host business symposia and make logistical arrangements for participants' travel. Identify and instruct symposia speakers on their topics, audience interests, and timing.

If other activities are requested of the staff, their veracity and the amount of staff time devoted to them should be evaluated by the executive director. Time sensitive materials must be updated periodically.

8.6.4 COST IMPLICATIONS

The limited budgets available to the Reuse Authority dictate that in the short-term, marketing is carried out on a shoestring. A more aggressive marketing strategy, however, could be costed as follows:

Object	$ Amount
Marketing specialists	85,000
Fringe benefits at 26%	22,100
Conference travel	19,000
Local mileage at $0.31 per mile	3,100
Equipment and software	6,500
Advertising	13,000
Subscriptions and dues	3,500
Office supplies and printing	5,500
Miscellaneous	1,000
Total	**158,700**

Because of Federal restrictions on paying marketing costs, they would have to be borne by local and state resources until the FMRRA's cash flow generated enough income to support this activity.

8.7 A Summary of Target Markets

MAIN USES	MAIN TARGET MARKETS	SPIN-OFF MARKETS	MARKETING THEMES
Phase One A			
Residential	Specialist residential developers aiming at lower end of market	Manufacturers of building components	Attractive environment at a reasonable price. Real homes!
Retirement community	Specialist retirement community developers aiming at sc sufficient residents	Health care providers. Speciality service providers & retailers	Fine environment, supported by good facilities, close to a settled rural community
Golf	Golfcourse/clubhouse operators that are able to address retirement market	Other leisure operators aiming their products at a retirement market	Growing residential population, close to golfcourse. All facilitie in place to begin operating
Phase One B			
Residential/Retirement	Higher-end retirement and residential developers	Health care providers Speciality service providers & retailers	Cost-effective lots in heavily wooded environment real flexibility
Education		Education service providers, retailers, restaurateurs	Access to a large and growing student body on a single campus
Retail	Shops and restaurants aimed at the retirement, residential and education communities		Providing services that the resident daytime and permanent population need closeby
Maintenance and Repair	Truck fleet maintenance General fleet maintenance Heavy assembly		Close to I20 Served by a railhead Unique high quality facilities
Light Industrial/warehousing	Distribution Warehousing Printing Metalworking Motor vehicle parts Control and electrical equipment Wood products and furniture	Truck fleet maintenance Machine tool maintenance Assembly line maintenance Employee services (Cleaning/retailing)	Close to I20 Served by a railhead Access to local and regional markets

Phase Two			
Retail	Food, beverage and services currently lacking to the north of Anniston. Services required by the growing population of Fort McClellan.	Distribution and warehousing associated with particular retailers	The new retail environment on the prime frontage of Highway 21
Retirement community	Specialty retirement community developers	Health care providers. Specialty service providers & retailers	Land available for new build communities, aimed at the more mobile retirees
Training	First responder training. Police training. Corporate training. Medical/dental training.	First responder equipment manufacturers. Security equipment. Training services. Equipment maintenance. Personnel services.	A location that was designed and developed as a place to train people. Ease of access combined with privacy and the right facilities.
Light industrial and processing	Printing. Metalworking. Motor vehicle parts. Control and electrical equipment. Wood products and furniture. Food processing.	Warehousing, distribution and logistics. Machine tool maintenance. Assembly line maintenance. Employee services (Cleaning/retailing/food/beverage/housing/leisure).	Close to I20. Served by a railhead. Access to local and regional markets. Growing local labor force. Availability of housing and other facilities.
Warehouse and distribution	Logistics, warehousing and distribution firms supporting growing regional industrial and retail markets.	Employee services (Cleaning/retailing/food/beverage/housing/leisure).	Eastern bypass provides access to regional road network, including Interstate. Served by a railhead. Access to local and regional markets.
Office	Publishing. Telecommunications services. Back-office services.	Office support services (stationery supplies/reproduction facilities/cleaning and janitorial). Employee services (Cleaning/retailing/food/beverage/housing/leisure).	The low cost alternative to maintaining facilities and labor in large metro areas.
Research	Chemical-related research. Companies requiring high quality environment combined with quiet and privacy. First-responder research.	Office support services (stationery supplies/reproduction facilities/cleaning and janitorial). Employee services (Cleaning/retailing/food/beverage/housing/leisure).	Seclusion in a town that understands chemical research. Spin-off opportunities locally and regionally.

Phase Three			
Light industrial	Large, low-density space users that require 100-plus acre sites.	Truck fleet maintenance. Machine tool maintenance. Assembly line maintenance. Employee services (Cleaning/retailing/food/beverage/housing/leisure).	Large low-cost greenfield sites in single ownership, close to regional communications network. Proven State incentive packages available.
Office	Publishing. Telecommunications services. Back-office services.	Office support services (stationery supplies/reproduction facilities/cleaning and janitorial). Employee services (Cleaning/retailing/food/beverage/housing/leisure).	The low cost alternative to maintaining facilities and labor in large metro areas.
Research	Chemical-related research. Companies requiring high quality environment combined with quiet and privacy. First-responder research.	Office support services (stationery supplies/reproduction facilities/cleaning and janitorial). Employee services (Cleaning/retailing/food/beverage/housing/leisure).	

9.0 BUSINESS PLAN PRO FORMA

The modified preferred plan covers a 21-year period during which a variety of private and public reinvestments in Fort McClellan have been forecast and allocated to the site. This section discusses the net cost implications of this proposed development. The purposes of doing so are to:

- Estimate potential costs and revenues during the first 15-years of plan implementation
- Provide a forecasting model which can compare costs and revenues as assumptions are changed over time by the FMRRA
- Monitor costs and revenues to determine if forecasts were achieved

In the field of real estate development, 15 years is an extremely long time during which markets will ebb and flow and new products may be expected to enter the field. As a result, it is recommended that the FMRRA staff maintain a capacity to operate this model in order to use it, as required.

In light of the inherent variables associated with the 20-year development of the installation, a sensitivity analysis was applied to the Business Plan Pro Forma in recognition of changing market conditions, of the requirement for planning flexibility, and of the ability of the local community to afford the complete development. The Preferred Land Use Plan represents the complete development vision of the local community. It is the product of extensive community involvement in the planning process and develops an aggressive vision for the property. It represents the preferred development strategy.

Alternative strategies exist to achieve the same goals and objectives, however. The sensitivity analysis postures the community to succeed with its development, but at a lower cost. The goals of job creation, facility reuse, and of regional economic development are, nevertheless, preserved. The alternative development pro forma substantially curtails the 17-year debt burden associated with the project. It also postpones major capital improvements projects to the later stages of the development. The alternative analysis provides for a more manageable cash flow.

9.1 CASH FLOW COMPONENTS

Under the National Defense Authorization Act for Fiscal Year 1994, a new real property conveyance method was created in order to achieve economic development objectives. It is the EDC application which permits transfer of real and personal property at or below fair market value. An application must contain many elements prescribed by the Department of Defense, some of which are wholly or partly included in the three phases of the Reuse Plan. The

most detailed portion of the application is the project's financial feasibility. This section of the application is a cash flow analysis which quantifies the costs to implement the plan during the first 15 years of development and its revenue implications. The costs and revenues are then compared to each other. Cost of utility, infrastructure, building demolition, and other improvements are estimated below. Next, the revenue potential of the sale and lease of properties and of intergovernmental transfers are estimated. Finally, the annual costs and revenues are compared to each other.

The financial analysis builds upon the modified reuse and redevelopment plan. It integrates engineering and real estate market data with information regarding anticipated availability of Federal and state economic and redevelopment assistance funds to derive a comprehensive view of future costs and revenues, or cash flow, implied by the plan. In turn, the timing and magnitude of the monetary flows provide insights into the financial feasibility given the specific assumptions and estimates underlying the analysis. Critical parameters of the cash flow analysis include the following:

- A 15-year period of analysis is used, beginning in 2000, the assumed year of initial conveyance of property to the FMRRA, and extending through 2014
- A phased property development timetable, as described in Section 5, with development coordinated with forecast market demand, public uses, and environmental constraints
- Proposed demolition, mothballing, and infrastructure investment costs, tied to the phased redevelopment and reuse schedule
- Ongoing operations and maintenance costs, including administrative costs for the FMRRA, tied to the annual and cumulative amount of development achieved at Fort McClellan

A computerized cash flow model was prepared to aid in the financial analysis. The model consists of a series of computer spreadsheet programs. Note that all monetary values are expressed in 1997 dollars.

The remainder of this section consists of four major subsections: the market overview, which summarizes the key development and absorption assumptions underlying the cash flow analysis; the redevelopment costs, which summarize the capital, operating, and maintenance costs strictly associated with the proposed reuse; the anticipated revenues, which address revenue flows by major source and year; and the net revenues and conclusions, which combine the cost and revenue forecasts to derive annual cash flow and its discounted value for the entire 15-year analysis period.

9.2 MARKET OVERVIEW

The phased development plan seeks to achieve orderly reuse and redevelopment and is responsive to market demands, environmental cleanup timetables, and preservation and construction of vital infrastructure and physical building assets. User fees and revenues from timber harvesting are considered unlikely sources of income given the problems anticipated with remediation.

The first 15 years of plan implementation will achieve only partial reuse of the vast real estate resource that is Fort McClellan. The 15-year period is envisioned to encompass three distinct phases of activity. The initial 5-year period, Phase 1, will be characterized primarily by absorption of some of the existing inventory of non-residential buildings and partial absorption of the residential housing stock. Phase 2 will see the absorption of the remaining inventory of existing buildings and dwellings and sale of land to promote a variety of new retail, office, and industrial (manufacturing and warehousing) development. Phase 3 will see a continuation of the nonresidential development initiated in Phase 2, however, the additional development will be primarily industrial uses. By the end of the 15-year period, the majority of existing buildings will be in use and sufficient land will remain to support substantial additional new development.

Residential Reuse. The Reuse Plan includes a total of 506 units of existing single- and multi-family housing units to be sold to the private sector. As described on pages 23 and 24 of the Phase 2 report, market demand in Calhoun County is forecast at 1,300 units between 2000 and 2010. Additional demand is forecast in both the owner-occupied and rental segments of the market after 2010. Sales are expected to be to developers/investors, who will rehabilitate the units before either selling units to individuals or temporarily adding them to the rental market. Disposition of these units is programmed to occur in distinct sales.

Nonresidential Reuse. Reuse of the extensive inventory of existing retail, office, and industrial buildings and building of sites to accommodate future nonresidential development is the lynchpin of achieving FMRRA objectives because they represent the greater share of buildings and land as well as revenue potential. Nonresidential reuse is phased to coincide with anticipated market demands. Buildings with the highest probability of immediate reuse would be the priority targets for environmental remediation or rehabilitation efforts, allowing local marketing efforts to commence as soon as possible. Other buildings would be mothballed in order to maintain the viability of the existing mechanical, electrical and plumbing systems and structural integrity of the structures until such time in the future when market demands support reuse.

Absorption of the existing structures is expected to begin in 2000, gaining momentum over time. However, through the end of the 15-year period, only the forecast retail space is expected to be fully absorbed, with 60,822 square feet of space being leased. Leasing of office space will absorb 137,502 square feet of the available space; however, over 194,200 square feet of existing office space will remain available. Absorption of the industrial inventory is expected to be more rapid, with over 500,000 square feet of existing space being occupied by 2014.

Not all users interested in a Fort McClellan location will find existing buildings suited to their specific needs. Thus, many additional users will be attracted the opportunities for "build-to-suit" facilities. Based on the market analysis underlying the *Preferred Reuse Plan*, new development will far outpace absorption of existing space. Total new nonresidential development is forecast to exceed 1.9 million square feet of space through 2014 compared to leasing of about 699,000 square feet of existing space. The new development will manifest itself as sales of strategically located developed sites and undeveloped parcels. The most competitive parcels will be absorbed first.

Consumer demands related to residential reuse and growth in the surrounding area, market opportunities associated with the site's proximity to I-20 and AL 21, and demands arising from nearby office and industrial development are anticipated to give rise to the construction of a community-scale shopping center development. For this analysis, the total increment of new development is assumed to occur in two phases of 196,020 square feet each. The first increment is expected to occur in 2007, year 8 of the analysis, following the absorption of the existing retail space and the initiation of office and industrial development.

In contrast to industrial development, office space construction will occur at a modest pace. Over the 15-year period, new office construction is forecast at 141,750 square feet. The limited scale of development reflects weak demand and the relative abundance of existing office space available throughout the period. As with retail development, the total increase is assumed to begin in two increments, the first in 2005, the second to follow in 2009.

The industrial market consists of a wide variety of users, with a corresponding diversity of building needs. Fort McClellan's strategic location within the southeast region combined and the availability of sites and highway accessibility will promote new construction, even prior to the lease-up of existing facilities. By 2014, more than 1.37 million square feet of new industrial construction is anticipated.

Forecast development of building space is translated to the corresponding acres of land absorption using the concept of a floor area ratio (FAR). Floor area ratios express the mathematical relationship between the amount of floor

space developed on a site and the overall size of the parcel. Thus, a FAR of 0.25 indicates an average of 10,890 square feet of building space per acre. Absorption of nonresidential development sites land sales totals 176 acres, based on a 0.25 FAR. The total is distributed as follows: 36 acres of retail development, 13 acres of office use, and 127 acres devoted to new industrial development. Appendix 1 shows the timing of land sales, by type of development, as assumed for this analysis.

9.3 REVENUE ANALYSIS

The following cash flows reflect the revenues outlined above and the costs generated by the capital improvements strategy (Chapter 5).

Two cash flows have been constructed.

The first represents the costs and revenues associated with the ideal realization of the Preferred Reuse Plan. It includes the costs of a sophisticated capital improvements strategy that assumes optimum levels of build out, in response to strong market demand, irrespective of issues of cash flow financing.

The second cash flow is based on the alternative capital improvements strategy and is more sensitive to risk and the need to find realistic ways to finance the cash flow. In the second cash flow, many of the capital improvements costs have been postponed or shelved.

9.3.1 CASH FLOW ONE: THE IDEAL

REVENUES	PHASE ONE					
	Year 1	Year 2	Year 3	Year 4	Year 5	
	2000	2001	2002	2003	2004	Phase Total
RESIDENTIAL	336,000	4,055,000	2,060,000	2,435,000	1,250,000	10,136,000
INDUSTRIAL	83,160	116,310	146,310	184,830	214,830	745,440
OFFICES	32,500	65,000	147,500	146,250	1,656,545	2,047,795
RETAIL	66,000	132,000	1,164,080	132,000	1,236,240	2,730,320
Annual Total Revenue	517,660	4,368,310	3,517,890	2,898,080	4,357,615	15,659,555
Cumulative Total Revenue	517,660	4,885,970	8,403,860	11,301,940	15,659,555	

COSTS	PHASE ONE					
	Year 1	Year 2	Year 3	Year 4	Year 5	
	2000	2001	2002	2003	2004	Phase Total
TRANSPORTATION	21,375,217	2,552,820	1,887,264	1,887,264	1,887,264	29,589,830
UTILITIES	7,053,876	1,914,503	1,315,629	1,327,312	1,339,579	12,950,900
BUILDING/MISC.	3,311,720	663,770	663,770	663,770	663,770	5,966,800
MOTHBALLING	1,035,680	918,680	823,115	726,240	658,004	4,161,718
MANAGEMENT	3,277,649	604,977	468,978	460,459	454,862	5,266,925
Annual Total Costs	36,054,142	6,654,750	5,158,756	5,065,045	5,003,479	57,936,172
Cumulative Total Costs	36,054,142	42,708,892	47,867,648	52,932,693	57,936,172	

Annual Surplus/Deficit	-35,536,482	-2,286,440	-1,640,866	-2,166,965	-645,864
Cumulative Surplus/Deficit	-35,536,482	-37,822,922	-39,463,788	-41,630,753	-42,276,617

REVENUES	PHASE TWO							
	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	
	2005	2006	2007	2008	2009	2010	2011	Phase Total
RESIDENTIAL	0	0	1,575,000	0	0	0	0	1,575,000
INDUSTRIAL	291,960	507,450	567,450	627,450	672,450	6,167,982	1,393,118	10,227,860
OFFICES	281,820	195,000	292,500	390,000	677,580	585,000	855,668	3,277,568
RETAIL	13,552	98,360	1,170,000	0	0	1,170,000	520,000	2,972,112
Annual Total Revenue	587,332	801,010	3,604,950	1,017,450	1,350,030	7,922,982	2,768,786	18,052,540
Cumulative Total Revenue	16,246,887	17,047,897	20,652,847	21,670,297	23,020,327	30,943,309	33,712,095	

COSTS	PHASE TWO							
	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	
	2005	2006	2007	2008	2009	2010	2011	Phase Total
TRANSPORTATION	7,572,417	6,939,339	6,939,339	6,939,339	6,939,339	6,939,339	6,939,339	49,328,449
UTILITIES	12,451,722	1,762,870	1,777,071	1,791,982	1,807,638	1,824,077	1,841,338	23,256,698
BUILDING/MISC.	2,727,107	698,107	1,913,107	698,107	698,107	698,107	698,107	8,131,759
MOTHBALLING	580,754	532,004	483,254	434,504	393,254	356,895	306,060	3,086,722
MANAGEMENT	1,983,220	865,947	946,455	840,134	837,959	836,265	832,412	7,123,393
Annual Total Costs	25,315,220	10,798,267	12,081,226	10,724,065	10,696,296	10,674,683	10,638,255	90,928,011
Cumulative Total Costs	83,251,392	94,049,659	106,130,885	116,854,950	127,551,245	138,225,928	148,864,184	

Annual Surplus/Deficit	-24,727,888	-9,997,257	-8,476,276	-9,706,615	-9,346,266	-2,751,701	-7,869,469
Cumulative Surplus/Deficit	-67,004,505	-77,001,762	-85,478,038	-95,184,653	-104,530,918	-107,282,619	-115,152,089

REVENUES	PHASE THREE			
	Year 13	Year 14	Year 15	
	2012	2013	2014	Phase Total
RESIDENTIAL	0	0	0	0
INDUSTRIAL	589,950	4,678,346	8,542,866	13,811,162
OFFICES	845,000	975,000	1,105,000	2,925,000
RETAIL	0	975,000	0	975,000
Annual Total Revenue	1,434,950	6,628,346	9,647,866	17,711,162
Cumulative Total Revenue	35,147,045	41,775,391	51,423,257	

COSTS	PHASE THREE			
	Year 13	Year 14	Year 15	
	2012	2013	2014	Phase Total
TRANSPORTATION	7,729,482	3,967,591	3,967,591	15,664,663
UTILITIES	3,917,236	2,343,267	2,363,248	8,623,751
BUILDING/MISC.	657,270	407,270	407,270	1,471,810
MOTHBALLING	254,810	207,209	164,518	626,537
MANAGEMENT	941,910	519,400	517,697	1,979,007
Annual Total Costs	13,500,708	7,444,737	7,420,323	28,365,768
Cumulative Total Costs	162,364,891	169,809,628	177,229,951	

Annual Surplus/Deficit	-12,065,758	-816,391	2,227,543
Cumulative Surplus/Deficit	-127,217,846	-128,034,237	-125,806,694

9.3.2 CASH FLOW TWO: THE ALTERNATIVE

REVENUES	PHASE ONE					
	Year 1	Year 2	Year 3	Year 4	Year 5	
	2000	2001	2002	2003	2004	Phase Total
RESIDENTIAL	336.000	4.055.000	2.060.000	2.435.000	1.250.000	10,136,000
INDUSTRIAL	83.160	116.310	146.310	184.830	214.830	745.440
OFFICES	32.500	65.000	147.500	146.250	1.656.545	2,047,795
RETAIL	66.000	132.000	1.164.080	132.000	1.236.240	2.730.320
Annual Total Revenue	517.660	4.368.310	3.517.890	2.898.080	4.357.615	15.659.555
Cumulative Total Revenue	517.660	4.885.970	8.403.860	11.301.940	15.659.555	

COSTS	PHASE ONE					
	Year 1	Year 2	Year 3	Year 4	Year 5	
	2000	2001	2002	2003	2004	Phase Total
TRANSPORTATION	1.654.788	499.512	251.744	251.744	251.744	2,909,531
UTILITIES	3.877.907	1.406.147	872.274	883.957	896.224	7,936,509
BUILDING/MISC.	3.311.720	663.770	663.770	663.770	663.770	5,966,800
MOTHBALLING	1.035.680	918.680	823.115	726.240	658.004	4,161,718
MANAGEMENT	988.009	348.811	261.090	252.521	246.974	2.097.456
Annual Total Costs	10.868.104	3.836.920	2.871.993	2.778.282	2.716.715	16.812.840
Cumulative Total Costs	10.868.104	14.705.024	17.577.017	20.355.298	23.072.014	

Annual Surplus/Deficit	-10.350.444	531.390	645.897	119.798	1.640.900
Cumulative Surplus/Deficit	-10.350.444	-9.819.054	-9.173.157	-9.053.358	-7.412.459

REVENUES	PHASE TWO							
	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	
	2005	2006	2007	2008	2009	2010	2011	Phase Total
RESIDENTIAL	0	0	1,575,000	0	0	0	0	1,575,000
INDUSTRIAL	291.960	507.450	567.450	627.450	672.450	6.167.982	1.393.118	10.227.860
OFFICES	281.820	195.000	292.500	390.000	677.580	585.000	853.668	3,277,568
RETAIL	13.552	98.560	1.170.000	0	0	1.170.000	520.000	2,972,112
Annual Total Revenue	587.332	801.010	3.604.950	1.017.450	1.350.030	7.922.982	2.768.786	18.052.540
Cumulative Total Revenue	16.246.887	17.047.897	20.652.847	21.670.297	23.020.327	30.943.309	33.712.095	

COSTS	PHASE TWO							
	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	
	2005	2006	2007	2008	2009	2010	2011	Phase Total
TRANSPORTATION	2.269.931	2.062.838	2.062.838	2.062.838	2.062.838	2.062.838	2.062.838	14,644,962
UTILITIES	11.883.548	1.194.696	1.208.897	1.223.807	1.239.463	1.255.903	1.273.164	19.279.478
BUILDING/MISC.	2.727.107	698.107	1.915.107	698.107	698.107	698.107	698.107	8.132.750
MOTHBALLING	580.754	532.004	483.254	434.504	393.254	356.895	306.060	3.084.722
MANAGEMENT	1.484.213	351.450	451.958	375.622	373.462	371.268	369.913	3.837.403
Annual Total Costs	18.945.554	4.869.095	6.152.054	4.794.893	4.767.123	4.745.512	4.709.084	48.983.315
Cumulative Total Costs	35.758.394	40.627.489	46.779.542	51.574.436	56.341.560	61.087.071	65.796.155	

Annual Surplus/Deficit	-18.358.222	-4.068.085	-2.547.104	-3.777.443	-3.417.093	-1.777.470	-1.940.298
Cumulative Surplus/Deficit	-25,770,681	-29,838,766	-32,385,870	-36,163,313	-39,580,406	-36,402,936	-38,343,233

REVENUES

	PHASE THREE			
	Year 13	Year 14	Year 15	
	2012	2013	2014	Phase Total
RESIDENTIAL	0	0	0	0
INDUSTRIAL	589,950	4,678,346	8,542,866	13,811,162
OFFICES	845,000	975,000	1,105,000	2,925,000
RETAIL	0	975,000	0	975,000
Annual Total Revenue	**1,434,950**	**6,628,346**	**9,647,866**	**17,711,162**
Cumulative Total Revenue	35,147,045	41,775,391	51,423,257	

COSTS

	PHASE THREE			
	Year 13	Year 14	Year 15	
	2012	2013	2014	Phase Total
TRANSPORTATION	6,167,167	2,811,261	2,811,261	11,789,689
UTILITIES	3,315,501	1,741,532	1,761,513	6,818,546
BUILDING/MISC.	657,270	407,270	407,270	1,471,810
MOTHBALLING	254,810	207,209	164,518	626,537
MANAGEMENT	779,606	387,545	385,842	1,552,994
Annual Total Costs	**11,174,353**	**5,554,818**	**5,530,404**	**22,259,575**
Cumulative Total Costs	76,970,509	82,525,326	88,055,730	

Annual Surplus/Deficit	-9,739,403	1,073,528	4,117,462
Cumulative Surplus/Deficit	**-48,082,637**	**-47,009,109**	**-42,891,646**

APPENDIX 1

Fort McClellan Reuse Plan

Implementation Strategy

A National Wildlife Refuge at Fort McClellan

The U.S. Fish and Wildlife Service (Service), Southeast Region, in full partnership with the Alabama Department of Conservation, Game and Fish Division, proposes to establish the Mountain Longleaf National Wildlife Refuge on approximately 10,000 acres of unique habitat at Fort McClellan, Alabama.

Several organizations, including the Longleaf Alliance, Alabama Natural HeritageProgram, Auburn University, The Nature Conservancy (Alabama Chapter), Alabama Audubon Council, Alabama Environmental Council, Alabama Wildlife Federation, and Alabama Ornithological Society have urged the LRA to preserve the longleaf pine and hardwood habitat on Fort McClellan. The Service wrote the LRA in December, 1996, and indicated a desire to work with the LRA in formulating plans to preserve this valuable habitat. This letter proposed a partnership concept between the Service and the Alabama Department of Conservation and Natural Resources, Game and Fish Division, to ensure that this occurs. The Alabama Game and Fish Division strongly supports the refuge proposal and will share in the management responsibilities. Fort McClellan has offered a public hunting program for many years and both the Alabama Game and Fish Division and the Fish and Wildlife Service want to ensure that these opportunities are continued after the base closes.

The objectives of the refuge proposal are:

1) to preserve and enhance the natural mountain longleaf pine ecosystem,

2) to help perpetuate the neotropical migratory bird resource,

3) to preserve a natural diversity and abundance of fauna and flora with special emphasis on endangered and threatened species,

4) to provide compatible, wildlife-dependent recreational opportunities such as hunting, fishing, wildlife observation, photography, etc., and

5) to promote an understanding and appreciation of fish and wildlife ecology .

These obectives will be accomplished through a partnership between the Service and the Alabama Game and Fish Division. Both agencies will be actively involved in the on ground management at the refuge. Several coordination meetings have been held and the plans currently being formulated propose that the Game and Fish Division would have responsibility for hunting and fishing programs and also any hunter education facilities such as a shooting range. The Service would have responsibility for endangered species, migratory birds, preservation of the mountain longleaf pine habitat, and environmental education/interpretation. Obviously some of the responsibilities, such as habitat management, will require joint efforts. Other potential partners include the city of Anniston, the Anniston Museum of Natural History and Jacksonville State University.

The proposed refuge area would come to the Service through an interagency transfer, so no Service acquisition funds will be required. This transfer process may take several years to complete due to contaminant cleanup issues. In the interim, the Service and Alabama Game and Fish Division will attempt to develop a Memorandum of Agreement with Army for management of Fort McClellan.

APPENDIX 2

Fort McClellan Reuse Plan

Implementation Strategy

Buildings to be Demolished and Retained

November 1997

SUMMARY TABLE

Phase #	Parcel #	Total built Space (Sq.Ft.)	Space to be retained (Sq. Ft.)	Space to be demolished (Sq. Ft.)	After Demolition: Total Acres	Built Acres	Cleared Acres	Reserve Acres
Ia	1	261,924	261,924	0	180	80	100	0
Ia	2	353,519	351,919	0	173	77	96	0
Ia	3	107,802	107,802	0	57	47	10	10
Ia	4	14,860	14,860	0	168	168	0	0
Ia	5	176,557	149,863	26,694	18	18	0	0
Ia	6	323,024	303,356	19,668	43	19	24	0
Ia	7	82,561	-	-	15	15	0	0
Ia	8	-	-	-	-	-	-	-
Ib	1	502,864	465,740	37,124	77	71	6	6
Ib	2	242,020	205,139	36,881	46	41	5	5
Ib	3	59,426	59,426	0	14	14	0	0
Ib	4	21,614	21,614	0	35	18	17	0
Ib	5	470,736	470,736	0	92	92	0	0
Ib	6	195,447	164,249	31,198	39	26	13	13
Ib	7	346,304	259,461	86,843	63	18	45	45
II	1	268,236	13,051	255,185	69	0	69	35
II	2	14,001	5,993	0	22	0	22	8
II	3	83,153	83,153	0	31	31	0	0
II	4	56,142	16,099	30,494	41	4	37	15
II	5	290,070	290,070	0	67	21	46	46
II	6	186,199	180,766	5,433	28	6	22	0
II	7	8,374	1,044	7,330	23	0	23	10
II	8	114,887	0	111,455	82	0	82	50
II	9	121,069	33,409	80,630	87	0	87	50
II	10	15,731	3,158	0	33	0	33	10
II	11	-	-	-	60	8	52	40
II	12	-	-	-	22	0	22	10
II	13	-	-	-	19	0	19	10
III	1	3,576	3,576	0	44	2	42	42
III	2	-	-	-	54	0	54	35
III	3	-	-	-	73	0	73	50
III	4	-	-	-	176	0	176	150
III	5	-	-	-	64	0	64	45
NG	1-5	1,314,558	-	-	393			
OS	1	-	-	-	10			
OS	2	-	-	-	132			
OS	3	-	-	-	110			
OS	4	229,611	23,898	205,713	28			
OS	5	5,614	0	5,614	186	2		
OS	6	91,940	86,634	2,277	98			
OS	7	-	-	-	53			
OS	8	88,895	7,683	81,212	90			
OS	9	21,186	0	21,186	104			
OS	10	45,843	0	25,727	165			
R	1	-	-	-	137	0	137	0
R	2	-	-	-	512			
R	3	-	-	-	27	0	27	7
R	4	-	-	-	316	0	316	0
R	5	-	-	-	378	0	378	120
R.OS	6	-	-	-	265			
R.OS	7	-	-	-	444			
R.OS	8	-	-	-	1000			
R.OS	9	104,785	104,785	0	1000			
R	10	-	-	-	93	0	93	0
	Totals	6,222,528	3,689,408	1,070,664	7,556	778	2,190	812

Phase #	Total built Space (Sq.Ft.)	Space to be retained (Sq. Ft.)	Space to be demolished (Sq. Ft.)	After Demolition: Total Acres	Built Acres	Acres	Reserve Acres
1a	1,320,247	1,189,724	46,362	654	424	230	10
1b	1,838,411	1,646,365	192,046	366	280	86	69
2	1,157,862	626,743	490,527	584	70	514	284
3	3,576	3,576	0	411	2	409	322
NG	1,314,558	0	0	393	0	0	0
OS	483,089	118,215	341,729	976	2	0	0
Remediation	104,785	104,785	0	4,172	0	951	127
Totals	6,222,528	3,689,408	1,070,664	7,556	778	2,190	812

Phase	Parcel	Building No.	Building Name	Sq. Ft.	Current Use	Proposed Use	Year	Status
Ia	1	3702	FH JR NCO/ENL	10,705	8F Residential	Residential	1941	Retain
Ia	1	3704	FH JR NCO/ENL	10,705	8F Residential	Residential	1941	Retain
Ia	1	3706	FH JR NCO/ENL	10,705	8F Residential	Residential	1941	Retain
Ia	1	3708	FH JR NCO/ENL	5,266	4F Residential	Residential	1941	Retain
Ia	1	3710	FH JR NCO/ENL	5,266	4F Residential	Residential	1990	Retain
Ia	1	3712	FH JR NCO/ENL	10,705	8F Residential	Residential	1941	Retain
Ia	1	3714	FH JR NCO/ENL	5,266	4F Residential	Residential	1941	Retain
Ia	1	3716	FH JR NCO/ENL	5,266	4F Residential	Residential	1941	Retain
Ia	1	3717	FH JR NCO/ENL	2,717	2F Residential	Residential	1941	Retain
Ia	1	3718	FH JR NCO/ENL	5,266	4F Residential	Residential	1941	Retain
Ia	1	3719	FH JR NCO/ENL	11,495	8F Residential	Residential	1940	Retain
Ia	1	3720	FH JR NCO/ENL	6,057	4F Residential	Residential	1941	Retain
Ia	1	3721	FH JR NCO/ENL	6,057	4F Residential	Residential	1941	Retain
Ia	1	3722	FH JR NCO/ENL	6,057	4F Residential	Residential	1941	Retain
Ia	1	3724	FH JR NCO/ENL	6,057	4F Residential	Residential	1941	Retain
Ia	1	3725	FH JR NCO/ENL	6,057	4F Residential	Residential	1977	Retain
Ia	1	3726	FH JR NCO/ENL	6,057	4F Residential	Residential	1940	Retain
Ia	1	3727	FH JR NCO/ENL	11,495	8F Residential	Residential	1941	Retain
Ia	1	3728	FH JR NCO/ENL	11,495	8F Residential	Residential	1941	Retain
Ia	1	3729	FH JR NCO/ENL	11,495	8F Residential	Residential	1941	Retain
Ia	1	3730	FH JR NCO/ENL	11,495	8F Residential	Residential	1940	Retain
Ia	1	3731	FH JR NCO/ENL	11,495	8F Residential	Residential	1941	Retain
Ia	1	3732	FH JR NCO/ENL	11,495	8F Residential	Residential	1936	Retain
Ia	1	3737	FH JR NCO/ENL	2,346	2F Residential	Residential	1948	Retain
Ia	1	3738	FH JR NCO/ENL	2,346	2F Residential	Residential	1941	Retain
Ia	1	3739	FH JR NCO/ENL	2,346	2F Residential	Residential	1941	Retain
Ia	1	3740	FH JR NCO/ENL	2,346	2F Residential	Residential	1941	Retain
Ia	1	3742	FH JR NCO/ENL	2,346	2F Residential	Residential	1941	Retain
Ia	1	3743	FH JR NCO/ENL	2,346	2F Residential	Residential	1918	Retain
Ia	1	3744	FH JR NCO/ENL	2,346	2F Residential	Residential	1936	Retain
Ia	1	3745	FH JR NCO/ENL	2,346	2F Residential	Residential	1936	Retain
Ia	1	3746	FH JR NCO/ENL	2,346	2F Residential	Residential	1941	Retain
Ia	1	3748	FH JR NCO/ENL	2,346	2F Residential	Residential	1941	Retain
Ia	1	3761	FH JR NCO/ENL	2,346	2F Residential	Residential	1991	Retain
Ia	1	3763	FH JR NCO/ENL	2,346	2F Residential	Residential	1941	Retain
Ia	1	3765	FH JR NCO/ENL	2,346	2F Residential	Residential	1943	Retain
Ia	1	3766	FH JR NCO/ENL	2,346	2F Residential	Residential	1970	Retain
Ia	1	3767	FH JR NCO/ENL	2,703	2F Residential	Residential	1994	Retain
Ia	1	3768	FH JR NCO/ENL	2,703	2F Residential	Residential	1970	Retain
Ia	1	3769	FH JR NCO/ENL	2,703	2F Residential	Residential	1991	Retain
Ia	1	3770	FH JR NCO/ENL	2,346	2F Residential	Residential	1987	Retain

		3517	FH JR NCO/ENL	2,717				Retain
		3771	FH JR NCO/ENL	2,346				Retain
		3772	FH JR NCO/ENL	2,346				Retain
		3773	FH JR NCO/ENL	2,703				Retain
		3774	FH JR NCO/ENL	2,703				Retain
		3775	FH JR NCO/ENL	2,346				Retain
		3776	FH JR NCO/ENL	2,346				Retain
		3777	FH JR NCO/ENL	2,703				Retain
		3778	FH JR NCO/ENL	2,346				Retain
		3779	FH JR NCO/ENL	2,346				Retain
		3780	FH JR NCO/ENL	2,346				Retain
		3781	FH JR NCO/ENL	2,703				Retain
	Parcel Total			**261,924**				
Ia	2	2262	BN HQ Bldg	4,078	Office	NG	1958	Retain
Ia	2	2269	Gen Instructional	1,600	Classroom	NA	1974	NG
Ia	2	3400	FH LTC/MAJ	1,785	SF Residential	Residential	1955	Retain
Ia	2	3401	FH LTC/MAJ	3,485	2F Residential	Residential	1930	Retain
Ia	2	3402	FH LTC/MAJ	3,485	2F Residential	Residential	1930	Retain
Ia	2	3403	FH LTC/MAJ	3,485	2F Residential	Residential	1930	Retain
Ia	2	3404	FH LTC/MAJ	1,785	SF Residential	Residential	1957	Retain
Ia	2	3405	FH LTC/MAJ	3,485	2F Residential	Residential	1930	Retain
Ia	2	3406	FH LTC/MAJ	3,485	2F Residential	Residential	1930	Retain
Ia	2	3407	FH LTC/MAJ	1,785	SF Residential	Residential	1957	Retain
Ia	2	3408	FH LTC/MAJ	1,785	SF Residential	Residential	1958	Retain
Ia	2	3409	FH LTC/MAJ	3,485	2F Residential	Residential	1930	Retain
Ia	2	3410	FH LTC/MAJ	3,485	2F Residential	Residential	1930	Retain
Ia	2	3411	FH LTC/MAJ	3,485	2F Residential	Residential	1930	Retain
Ia	2	3500	FH JR NCO/ENL	4,258	4F Residential	Residential	1977	Retain
Ia	2	3501	FH JR NCO/ENL	4,258	4F Residential	Residential	1994	Retain
Ia	2	3502	FH JR NCO/ENL	6,704	6F Residential	Residential	1940	Retain
Ia	2	3503	FH SR NCO	2,717	2F Residential	Residential	1930	Retain
Ia	2	3504	FH JR NCO/ENL	2,446	2F Residential	Residential	1930	Retain
Ia	2	3505	FH SR NCO	2,628	2F Residential	Residential	1930	Retain
Ia	2	3506	FH JR NCO/ENL	6,704	6F Residential	Residential	1940	Retain
Ia	2	3507	FH SR NCO	2,719	2F Residential	Residential	1930	Retain
Ia	2	3508	FH JR NCO/ENL	4,258	4F Residential	Residential	1941	Retain
Ia	2	3509	FH SR NCO	2,628	2F Residential	Residential	1930	Retain
Ia	2	3510	FH JR NCO/ENL	2,446	2F Residential	Residential	1930	Retain
Ia	2	3511	FH JR NCO/ENL	2,628	2F Residential	Residential	1930	Retain
Ia	2	3512	FH JR NCO/ENL	4,258	4F Residential	Residential	1955	Retain
Ia	2	3513	FH JR NCO/ENL	2,628	2F Residential	Residential	1936	Retain
Ia	2	3514	FH JR NCO/ENL	2,446	2F Residential	Residential	1930	Retain

Ia	2	3515	FH JR NCO/ENL	2,717	2F Residential	Residential	1956	Retain
Ia	2	3516	FH JR NCO/ENL	4,258	4F Residential	Residential	1941	Retain
Ia	2	3518	FH JR NCO/ENL	2,446	2F Residential	Residential	1936	Retain
Ia	2	3519	FH JR NCO/ENL	2,628	2F Residential	Residential	1936	Retain
Ia	2	3520	FH JR NCO/ENL	6,704	6F Residential	Residential	1940	Retain
Ia	2	3522	FH JR NCO/ENL	4,258	4F Residential	Residential	1941	Retain
Ia	2	3524	FH JR NCO/ENL	6,704	6F Residential	Residential	1940	Retain
Ia	2	3526	FH JR NCO/ENL	2,446	2F Residential	Residential	1924	Retain
Ia	2	3527	PVT/Org Club	2,166	Community	Residential	1941	Retain
Ia	2	3528	FH JR NCO/ENL	6,704	6F Residential	Residential	1940	Retain
Ia	2	3529	FH JR NCO/ENL	2,446	2F Residential	Residential	1931	Retain
Ia	2	3530	FH JR NCO/ENL	6,704	6F Residential	Residential	1940	Retain
Ia	2	3531	FH JR NCO/ENL	5,481	5F Residential	Residential	1940	Retain
Ia	2	3532	FH JR NCO/ENL	4,258	4F Residential	Residential	1941	Retain
Ia	2	3533	FH JR NCO/ENL	6,704	6F Residential	Residential	1940	Retain
Ia	2	3534	FH JR NCO/ENL	6,704	6F Residential	Residential	1940	Retain
Ia	2	3535	FH JR NCO/ENL	5,481	5F Residential	Residential	1940	Retain
Ia	2	3536	FH JR NCO/ENL	6,704	6F Residential	Residential	1940	Retain
Ia	2	3537	FH JR NCO/ENL	2,446	2F Residential	Residential	1936	Retain
Ia	2	3538	FH JR NCO/ENL	6,704	6F Residential	Residential	1940	Retain
Ia	2	3540	FH JR NCO/ENL	6,704	6F Residential	Residential	1940	Retain
Ia	2	3542	FH JR NCO/ENL	6,794	6F Residential	Residential	1977	Retain
Ia	2	3611	FH SR NCO	3,238	2F Residential	Residential	1936	Retain
Ia	2	3612	FH SR NCO	2,755	2F Residential	Residential	1978	Retain
Ia	2	3614	FH SR NCO	2,755	2F Residential	Residential	1978	Retain
Ia	2	3615	FH SR NCO	3,238	2F Residential	Residential	1966	Retain
Ia	2	3616	FH SR NCO	2,755	2F Residential	Residential	1937	Retain
Ia	2	3617	FH SR NCO	3,238	2F Residential	Residential	1958	Retain
Ia	2	3618	FH SR NCO	2,755	2F Residential	Residential	1964	Retain
Ia	2	3619	FH SR NCO	2,755	2F Residential	Residential	1930	Retain
Ia	2	3620	FH SR NCO	2,755	2F Residential	Residential	1970	Retain
Ia	2	3622	FH SR NCO	3,238	2F Residential	Residential	1955	Retain
Ia	2	3623	FH SR NCO	2,755	2F Residential	Residential	1936	Retain
Ia	2	3624	FH SR NCO	3,238	2F Residential	Residential	1930	Retain
Ia	2	3625	FH SR NCO	2,755	2F Residential	Residential	1937	Retain
Ia	2	3626	FH SR NCO	3,238	2F Residential	Residential	1957	Retain
Ia	2	3627	FH SR NCO	2,755	2F Residential	Residential	1932	Retain
Ia	2	3628	FH SR NCO	3,238	2F Residential	Residential	1936	Retain
Ia	2	3629	FH SR NCO	2,755	2F Residential	Residential	1930	Retain
Ia	2	3630	FH SR NCO	3,238	2F Residential	Residential	1936	Retain
Ia	2	3631	FH SR NCO	3,238	2F Residential	Residential	1937	Retain
Ia	2	3632	FH SR NCO	2,755	2F Residential	Residential	1936	Retain

Ia	2	3633	FH SR NCO	3,238	2F Residential	Residential	1932	Retain
Ia	2	3634	FH SR NCO	3,238	2F Residential	Residential	1934	Retain
Ia	2	3635	FH SR NCO	3,238	2F Residential	Residential	1941	Retain
Ia	2	3636	FH SR NCO	2,755	2F Residential	Residential	1960	Retain
Ia	2	3637	FH SR NCO	3,238	2F Residential	Residential	1986	Retain
Ia	2	3638	FH SR NCO	3,238	2F Residential	Residential	1957	Retain
Ia	2	3639	FH SR NCO	3,238	2F Residential	Residential	1983	Retain
Ia	2	3640	FH SR NCO	3,238	2F Residential	Residential	1934	Retain
Ia	2	3641	FH SR NCO	2,755	2F Residential	Residential	1954	Retain
Ia	2	3642	FH SR NCO	3,238	2F Residential	Residential	1941	Retain
Ia	2	3643	FH SR NCO	3,238	2F Residential	Residential	1941	Retain
Ia	2	3644	FH SR NCO	3,238	2F Residential	Residential	1941	Retain
Ia	2	3648	FH SR NCO	2,755	2F Residential	Residential	1941	Retain
Ia	2	3650	FH SR NCO	3,238	2F Residential	Residential	1962	Retain
Ia	2	3652	FH SR NCO	3,238	2F Residential	Residential	1930	Retain
Ia	2	3659	FH SR NCO	2,755	2F Residential	Residential	1941	Retain
Ia	2	3660	FH SR NCO	3,238	2F Residential	Residential	1994	Retain
Ia	2	3661	FH SR NCO	3,238	2F Residential	Residential	1959	Retain
Ia	2	3663	FH SR NCO	2,755	2F Residential	Residential	1962	Retain
Ia	2	3664	FH SR NCO	3,238	2F Residential	Residential	1956	Retain
Ia	2	3665	FH SR NCO	3,238	2F Residential	Residential	1942	Retain
Ia	2	3666	FH SR NCO	3,238	2F Residential	Residential	1942	Retain
Ia	2	3667	FH SR NCO	3,238	2F Residential	Residential	1942	Retain
Ia	2	3668	FH SR NCO	3,238	2F Residential	Residential	1941	Retain
Ia	2	3669	FH SR NCO	3,238	2F Residential	Residential	1941	Retain
Ia	2	3670	FH SR NCO	3,238	2F Residential	Residential	1941	Retain
Ia	2	3671	FH SR NCO	3,238	2F Residential	Residential	1941	Retain
Ia	2	3672	FH SR NCO	3,238	2F Residential	Residential	1941	Retain
Ia	2	3673	FH SR NCO	3,238	2F Residential	Residential	1941	Retain
Parcel Total				**353,519**				
Ia	3	3303	FH CO/WO	2,755	2F Residential	Retirement	1930	Retain
Ia	3	3310	FH CO/WO	2,755	2F Residential	Retirement	1930	Retain
Ia	3	3311	FH CO/WO	2,755	2F Residential	Retirement	1930	Retain
Ia	3	3313	FH CO/WO	2,755	2F Residential	Retirement	1930	Retain
Ia	3	3314	FH CO/WO	2,755	2F Residential	Retirement	1930	Retain
Ia	3	3315	FH CO/WO	3,238	2F Residential	Retirement	1930	Retain
Ia	3	3316	FH CO/WO	2,552	2F Residential	Retirement	1930	Retain
Ia	3	3317	FH CO/WO	2,755	2F Residential	Retirement	1936	Retain
Ia	3	3318	FH CO/WO	3,238	2F Residential	Retirement	1936	Retain
Ia	3	3319	FH CO/WO	2,755	2F Residential	Retirement	1941	Retain
Ia	3	3322	FH CO/WO	2,755	2F Residential	Retirement	1936	Retain
Ia	3	3323	FH CO/WO	2,755	2F Residential	Retirement	1957	Retain

Ia	3	3324	FH CO/WO	3,238	2F Residential	Retirement	1957	Retain
Ja	3	3325	FH CO/WO	2,755	2F Residential	Retirement	1957	Retain
Ia	3	3326	FH CO/WO	2,755	2F Residential	Retirement	1959	Retain
Ia	3	3327	FH CO/WO	2,755	2F Residential	Retirement	1957	Retain
Ia	3	3328	FH CO/WO	3,238	2F Residential	Retirement	1957	Retain
Ia	3	3329	FH CO/WO	3,238	2F Residential	Retirement	1957	Retain
Ia	3	3330	FH CO/WO	2,755	2F Residential	Retirement	1957	Retain
Ia	3	3331	FH CO/WO	2,755	2F Residential	Retirement	1957	Retain
Ia	3	3334	FH CO/WO	3,209	2F Residential	Retirement	1957	Retain
Ia	3	3335	FH CO/WO	3,209	2F Residential	Retirement	1954	Retain
Ia	3	3336	FH CO/WO	3,209	2F Residential	Retirement	1957	Retain
Ia	3	3337	FH CO/WO	3,209	2F Residential	Retirement	1941	Retain
Ia	3	3338	FH CO/WO	3,209	2F Residential	Retirement	1941	Retain
Ia	3	3339	FH CO/WO	3,209	2F Residential	Retirement	1988	Retain
Ia	3	3340	FH CO/WO	3,209	2F Residential	Retirement	1937	Retain
Ia	3	3341	FH CO/WO	3,209	2F Residential	Retirement	1958	Retain
Ia	3	3342	FH CO/WO	3,209	2F Residential	Retirement	1954	Retain
Ia	3	3343	FH CO/WO	3,209	2F Residential	Retirement	1965	Retain
Ia	3	3600	Youth Center	18,400	Recreation	Public use	1955	Retain
Parcel Total				**107,802**				
NG	4	2247	Clubhouse	9,900	Recreation	Active Rec.	1941	Retain
Ia	4	2248	Golf Maint	2,960	Recreation	Active Rec.	1955	Retain
Ia	4	2252	Golf Maint	2,000	Recreation	Active Rec.	1955	Retain
Parcel Total				**14,860**				
Ia	5	500	Admin	39,777	Office	Edu./Training	1976	Retain
Ia	5	501	Enlisted UPH	33,070	MF Residential	Edu./Training	1988	Retain
Ia	5	502	Enlisted UPH	5,796	MF Residential	Edu./Training	1941	Retain
Ia	5	503	Admin/Instructional	16,455	Classroom	Edu./Training	1941	Retain
Ia	5	504	Dining Facility	8,502	Dining	Edu./Training	1941	Retain
Ia	5	505	Admin	49,500	Office	Edu./Training	1954	Retain
Ia	5	680	Limit Use Instructional	36,540	Classroom	Edu./Training	1942	Retain
Ia	5	1271	Gen Instructional	17,920	Classroom	OS	1941	Demolish
Ia	5	1307	At Enl Barracks	2,232	MF Residential	OS	1953	Demolish
Ia	5	1358	AT Enl Barracks	1,150	Mf Residential	OS	1954	Demolish
Ia	5	1375	At Enl Barracks	2,284	MF Residential	OS	1953	Demolish
Ia	5	1398	Storage - Instructional	3,108	Storage	OS	1985	Demolish
Parcel Total				**176,557**				
Ia	6	900	UOQ Transient	1,990	SF Residential	Industrial	1957	Retain
Ia	6	916	AT ENL Barracks	3,540	MF Residential	NA	1954	Retain
Ia	6	917	AT ENL Barracks	4,500	MF Residential	NA	1954	Demolish
Ia	6	918	AT ENL Barracks	4,425	MF Residential	NA	1954	Demolish
Ia	6	925	AT ENL Barracks	3,075	MF Residential	NA	1954	Demolish
Ia	6	926	AT ENL Barracks	3,075	MF Residential	NA	1988	Demolish

Ia	6	927	AT ENL Barracks	4,593	MF Residential	NA	1977	Demolish
Ia	6	934	CO HQ Bldg	4,847	Office	Industrial	1959	Retain
Ia	6	935	Enlisted UPH	30,399	MF Residential	Industrial	1995	Retain
Ia	6	936	CO HQ Bldg	4,847	Office	Industrial	1959	Retain
Ia	6	937	Enlisted UPH	30,399	MF Residential	Industrial	1995	Retain
Ia	6	938	Enlisted UPH	30,399	Mf Residential	Industrial	1956	Retain
Ia	6	939	CO HQ Bldg	4,847	Office	Industrial	1959	Retain
Ia	6	940	Transient UPH	30,399	MF Residential	Industrial	1937	Retain
Ia	6	941	Transient UPH	30,399	MF Residential	Industrial	1977	Retain
Ia	6	942	CO HQ Bldg	4,847	Office	Industrial	1959	Retain
Ia	6	943	Transient UPH	30,399	MF Residential	NA	1954	Retain
Ia	6	944	Transient UPH	30,399	MF Residential	Industrial	1954	Retain
Ia	6	945	Transient UPH	30,399	MF Residential	Industrial	1954	Retain
Ia	6	946	Transient UPH	30,399	MF Residential	Industrial	1975	Retain
Ia	6	947	CO HQ Bldg	4,847	Office	Industrial	1959	Retain
Parcel Total				**323,024**				
Ia	7	1213	Enl Barracks/Dining	16,772	MF Residential	Public Convey	1988	HUD
Ia	7	1216	UOQ Military	3,344	MF Residential	Public Convey	1954	HUD
Ia	7	1211	Enl Barracks/Dining	16,772	MF Residential	Public Convey	1954	HUD
Ia	7	1212	Enl Barracks/Dining	16,772	MF Residential	Public Convey	1956	HUD
Ia	7	1215	Enl Barracks/Dining	16,772	MF Residential	Public Convey	1954	HUD
Ia	7	1218	UOQ Military	3,344	MF Residential	Public Convey	1959	HUD
Ia	7	1219	AT Enl Barracks	3,353	MF Residential	Public Convey	1954	HUD
Ia	7	1220	Admin	2,958	Office	Public Convey	1959	HUD
Ia	7	1221	BN HQ Bldg	2,474	Office	Public Convey	1959	HUD
Parcel Total				**82,561**				
Ib	1	1	Family Housing Gen Office	4,689	SF Residential	Residential	1959	Retain
Ib	1	2	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	3	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	4	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	5	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	6	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	7	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	8	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	9	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	10	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	11	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	12	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	13	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	14	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	15	Family Housing COL	4,232	SF Residential	Residential	1959	Retain
Ib	1	16	Family Housing COL	4,232	SF Residential	Residential	1959	Retain

Ib	1	17	Family Housing COL	3,988	SF Residential	Residential	1959	Retain
Ib	1	18	Family Housing COL	3,988	SF Residential	Residential	1959	Retain
Ib	1	19	Family Housing COL	3,988	SF Residential	Residential	1959	Retain
Ib	1	20	Family Housing Gen Office	4,725	SF Residential	Residential	1959	Retain
Ib	1	21	Family Housing SR NCO	1,812	SF Residential	Residential	1959	Demolish
Ib	1	22	Family Housing SR NCO	1,812	SF Residential	Residential	1959	Demolish
Ib	1	23	Family Housing SR NCO	1,812	2F Residential	Residential	1954	Demolish
Ib	1	24	Family Housing SR NCO	1,812	2F Residential	Residential	1917	Demolish
Ib	1	25	Family Housing CO/WO	2,998	2F Residential	Residential	1930	Demolish
Ib	1	26	Family Housing CO/WO	2,998	2F Residential	Residential	1930	Demolish
Ib	1	27	Family Housing CO/WO	2,998	2F Residential	Residential	1930	Demolish
Ib	1	28	Family Housing CO/WO	2,998	2F Residential	Residential	1930	Demolish
Ib	1	29	Family Housing CO/WO	2,998	2F Residential	Residential	1930	Demolish
Ib	1	30	Family Housing CO/WO	2,998	2F Residential	Residential	1930	Demolish
Ib	1	51	Open Dining	22,431	Office	Residential	1953	Retain
Ib	1	57	Unaccompanied Officer Qrt.	8,562	Residential	Residential	1957	Demolish
Ib	1	61	Administration	8,862	Office	Residential	1953	Retain
Ib	1	63	Administration	19,163	Office	Residential	1954	Retain
Ib	1	65	Administration	9,328	Office	Office	1953	Retain
Ib	1	66	Child Development Center	6,716	Community	Residential	1941	Retain
Ib	1	67	Chapel	5,829	Religious	Residential	1955	Retain
Ib	1	81	FH SR NCO	2,236	SF Residential	Residential	1959	Retain
Ib	1	82	FH SR NCO	2,655	SF Residential	Residential	1959	Retain
Ib	1	83	FH SR NCO	2,655	SF Residential	Residential	1959	Retain
Ib	1	84	FH SR NCO	2,655	SF Residential	Residential	1959	Retain
Ib	1	85	FH SR NCO	2,655	SF Residential	Residential	1959	Retain
Ib	1	86	FH SR NCO	2,655	SF Residential	Residential	1959	Retain
Ib	1	87	FH SR NCO	2,655	SF Residential	Residential	1959	Retain
Ib	1	88	FH SR NCO	2,236	SF Residential	Residential	1959	Retain
Ib	1	89	FH SR NCO	2,236	SF Residential	Residential	1959	Retain
Ib	1	90	FH SR NCO	2,236	SF Residential	Residential	1959	Retain
Ib	1	102	FH SR NCO	2,236	SF Residential	Residential	1977	Retain
Ib	1	103	FH SR NCO	2,236	SF Residential	Residential	1959	Retain
Ib	1	104	FH SR NCO	2,236	SF Residential	Residential	1957	Retain
Ib	1	105	FH SR NCO	2,236	SF Residential	Residential	1957	Retain
Ib	1	106	FH SR NCO	2,236	SF Residential	Residential	1957	Retain
Ib	1	107	FH SR NCO	2,236	SF Residential	Residential	1957	Retain
Ib	1	141	CO HQ Bldg	91,113	Office	Residential	1953	Retain
Ib	1	142	Admin	29,450	Office	Office	1953	Retain
Ib	1	143	Admin	52,042	Office	Residential	1953	Retain
Ib	1	144	Info Proc Center	29,450	Office	Residential	1953	Retain
Ib	1	161	Auditorium	5,408	Auditorium	Cultural	1940	Retain

Ib	6	1965	Exchange	63,267	Retail	Industrial	1959	Retain
Ib	6	1966	PO Main	7,720	Office	Industrial	1958	Retain
Ib	6	1967	Post Restaurant	3,505	Retail	Industrial	1959	Retain
Ib	6	2041	Commissary	62,632	Retail	Industrial	1959	Retain
Ib	6	2042	Exch Ser Outlet	11,375	Retail	Industrial	1959	Retain
Ib	6	2090	Admin	1,680	Office	NA	1958	Demolish
Ib	6	2091	Exch Serv Outlet	3,840	Retail	Industrial	1959	Demolish
Ib	6	2099	Exch Serv Outlet	3,096	Retail	NA	1959	Demolish
Parcel Total				195,447				
Ib	7	267	Tng Aids Center	18,728	Industrial	Industrial	1942	Demolish
Ib	7	303	Storage - Instructional	27,000	Storage	Industrial	1959	Retain
Ib	7	305	Storage - Instructional	9,000	Storage	Industrial	1959	Retain
Ib	7	308	Storage - Instructional	9,000	Storage	Industrial	1959	Retain
Ib	7	309	Storage - Instructional	9,360	Storage	Industrial	1959	Retain
Ib	7	310	Storage - Instructional	9,360	Storage	Industrial	1959	Retain
Ib	7	311	Storage - Instructional	9,000	Storage	Industrial	1959	Retain
Ib	7	314	Storage - Instructional	9,360	Storage	Industrial	1959	Retain
Ib	7	315	Storage - Instructional	9,360	Storage	Industrial	1959	Retain
Ib	7	316	Storage - Instructional	9,360	Storage	Industrial	1959	Retain
Ib	7	317	Storage - Instructional	9,360	Storage	Industrial	1959	Retain
Ib	7	318	Storage - Instructional	9,000	Storage	Industrial	1959	Retain
Ib	7	319	Storage - Instructional	9,000	Storage	Industrial	1959	Retain
Ib	7	320	Storage - Instructional	9,000	Storage	Industrial	1959	Retain
Ib	7	321	Storage - Instructional	9,360	Storage	Industrial	1959	Retain
Ib	7	322	Exch Warehouse	9,360	Storage	Industrial	1959	Retain
Ib	7	323	Storage - Industrial	9,360	Storage	Industrial	1959	Retain
Ib	7	324	Enl Barracks	2,482	MF Residential	Industrial	1980	Retain
Ib	7	325	Admin	6,227	Office	Industrial	1995	Demolish
Ib	7	326	Storage	216	Storage	Industrial	1941	Demolish
Ib	7	328	ACES Fac	11,616	Office	Industrial	1953	Demolish
Ib	7	329	Storage	378	Storage	Industrial	1941	Demolish
Ib	7	335	Maint Storage	6,933	Storage	Industrial	1959	Demolish
Ib	7	337	Maint Storage	9,640	Storage	Industrial	1959	Demolish
Ib	7	338	Refuse/Garbage	18,240	Industrial	NA	1986	Demolish
Ib	7	339	Maint Storage	10,540	Storage	NA	1959	Demolish
Ib	7	350	Consolidated Maintenance	89,000	Industrial	Industrial	1992	Retain
Ib	7	336	Heat Plt Bldg	624				Demolish
Ib	7	893	Chapel	3,701	Religious	Industrial	1955	Demolish
Ib	7	2105	Bank	2,739	Bank	OS	1941	Retain
Parcel Total				346,304				
II	1	3202	CO HQ Bldg	3,729	Office	NA	1955	Demolish
II	1	3203	Dining Facility	3,773	Dining	Na	1941	Demolish

II	I	3204	Dining Facility	3,772	Dining	NA	1941	Demolish
II	I	3205	Dining Facility	3,630	Dining	NA	1941	Demolish
II	I	3206	Dining Facility	3,773	Dining	NA	1941	Demolish
II	I	3207	Storage GP Inst	3,772	Classroom	NA	1961	Demolish
II	I	3208	Dining Facility	4,080	Dining	NA	1972	Demolish
II	I	3209	Storage GP Inst	4,125	Classroom	NA	1989	Demolish
II	I	3210	Dining Facility	4,148	Dining	NA	1941	Demolish
II	I	3211	Health Clinic	4,156	Medical	NA	1969	Demolish
II	I	3221	At Enl Barracks	6,063	Residential	NA	1955	Demolish
II	I	3222	Pvt/Org Club	6,063	Recreation	NA	1955	Demolish
II	I	3223	At Enl Barracks	6,063	Residential	NA	1959	Demolish
II	I	3224	At Enl Barracks	6,063	Residential	NA	1959	Demolish
II	I	3225	At Enl Barracks	6,063	Residential	NA	1959	Demolish
II	I	3226	Gen Inst Bldg	6,063	Classroom	NA	1984	Demolish
II	I	3227	At Enl Barracks	6,063	Residential	NA	1959	Demolish
II	I	3228	Gen Inst Bldg	6,063	Classroom	NA	1984	Demolish
II	I	3229	Gen Inst Bldg	6,063	Classroom	NA	1984	Demolish
II	I	3230	Gen Inst Bldg	6,063	Classroom	NA	1984	Demolish
II	I	3231	Gen Inst Bldg	6,063	Classroom	NA	1984	Demolish
II	I	3232	Gen Inst Bldg	6,063	Classroom	NA	1943	Demolish
II	I	3233	At Enl Barracks	6,063	MF Residential	NA	1953	Demolish
II	I	3234	At Enl Barracks	6,063	MF Residential	NA	1953	Demolish
II	I	3235	At Enl Barracks	6,063	MF Residential	NA	1953	Demolish
II	I	3236	At Enl Barracks	6,063	MF Residential	NA	1953	Demolish
II	I	3237	At Enl Barracks	6,063	MF Residential	NA	1953	Demolish
II	I	3238	At Enl Barracks	6,063	MF Residential	NA	1953	Demolish
II	I	3239	At Enl Barracks	6,063	Mf Residential	NA	1953	Demolish
II	I	3240	At Enl Barracks	6,063	Mf Residential	NA	1953	Demolish
II	I	3241	At Enl Barracks	6,063	MF Residennal	NA	1953	Demolish
II	I	3242	At Enl Barracks	6,063	MF Residential	NA	1953	Demolish
II	I	3243	At Enl Barracks	6,063	MF Residential	NA	1953	Demolish
II	I	3244	At Enl Barracks	6,063	MF Residential	NA	1953	Demolish
II	I	3250	Religious Ed Fac	5,554	Religious	Active Rec.	1955	Demolish
		3251	Limit Use Inst	6,063				Demolish
II	I	3252	Limit Use Inst	6,063	Classroom	Active Rec.	1984	Demolish
II	I	3253	Limit Use Inst	6,063	Classroom	Active Rec.	1941	Demolish
II	I	3270	CO HQ Bldg	2,750	Office	NA	1955	Demolish
II	I	3271	CO HQ Bldg	2,750	Office	Active Rec.	1955	Demolish
II	I	3272	CO HQ Bldg	2,750	Office	NA	1955	Demolish
II	I	3273	Religious Ed Fac	2,750	Religious	NA	1955	Demolish
II	I	3274	CO HQ Bldg	2,750	Office	NA	1955	Demolish
II	I	3275	CO HQ Bldg	2,750	Office	NA	1955	Demolish

II	1	3276	CO HQ Bldg	2,750	Office	NA	1955	Demolish
II	1	3277	CO HQ Bldg	2,750	Office	NA	1955	Demolish
II	1	3278	CO HQ Bldg	2,750	Office	NA	1955	Demolish
II	1	3279	CO HQ Bldg	2,750	Office	NA	1955	Demolish
II	1	3280	CO HQ Bldg	2,750	Office	NA	1955	Demolish
II	1	3281	CO HQ Bldg	2,750	Office	Active Rec.	1955	Demolish
II	1	3290	Health Clinic	2,250	Medical	NA	1941	Demolish
II	1	3291	Admin Gen Purp	2,000	Office	NA	1955	Demolish
II	1	3292	BN HQ Bldg	2,000	Office	NA	1955	Demolish
II	1	3298	Veh Maint Shop	3,861	Industrial	NA	1941	Demolish
II	1	3299	Veh Maint Shop	3,861	Industrial	NA	1941	Demolish
II	1	3701	FH JR NCO/ENL	10,705	8F Residential	Residential	1984	Retain
II	1	3741	FH JR NCO/ENL	2,346	2F Residential	Residential	1941	Retain
Parcel Total				**268,236**				
II	2	2291	Thrift Shop	8,008	Retail	NG	1959	NG
II	2	3610	FH SR NCO	2,755	2F Residential	Residential	1936	Retain
II	2	3662	FH SR NCO	3,238	2F Residential	Residential	1941	Retain
Parcel Total				**14,001**				
II	3	1001	Dining Facility	11,834	Dining	NG	1941	Retain
II	3	1020	Enlisted UPH	36,416	Residential	NG	1988	Retain
II	3	1076	Heat Plant	3,180	Utility	NG	1959	Retain
II	3	3301	FH CO/WO	3,209	2F Residential	Retirement	1930	Retain
2	3	3681	Dependent School	28,514	Community	Public use	1963	Retain
Parcel Total				**83,153**				
II	4	698	Admin	3,108	Office	NG	1953	Demolish
II	4	1060	BN HQ Bldg	16,099	Office	NG	1959	Retain
II	4	2290	Health Clinic	9,549	Medical	Retail	1943	NG
II	4	3212	Enl Open Dining	17,855	Dining	Education	1941	Demolish
II	4	3293	Chapel	9,531	Religious	Education	1955	Demolish
Parcel Total				**56,142**				
II	5	1081	Gen Instructional	232,864	Classroom	Office	1941	Retain
II	5	2220	Enlisted UPH	36,416	MF Residential	OS	1972	Retain
II	5	3133	UOQ Transient	10,882	MF Residential	Education	1953	Retain
II	5	3160	BN HQ Bldg	2,655	Office	Education	1958	Retain
II	5	3165	Auto Aid Inst	6,250	Office	Education	1955	Retain
II	5	3172	WK Animal Bldg	1,003	Medical	Education	1985	Retain
Parcel Total				**290,070**				
II	6	300	UOQ Transient	3,149	SF Residential	Industrial	1957	Demolish
II	6	349	Mnt Gen Purpose	7,200	Industrial	Industrial	1942	Retain
II	6	891	BDE HQ Bldg	2,284	Office	Industrial	1959	Demolish
OS	6	292	Hospital	159,766	Medical	Retirement	1941	Retain
II	6	294	Refuse/Garbage	1,836	Industrial	Office	1942	Retain

II	6	295	Health Clinic	11,964	Medical	Office	1941	Retain
	Parcel Total			**186,199-**				
II	7	342	Storage	782	Storage	Industrial	1970	Demolish
II	7	344	Storage - Instructional	2,400	Storage	Industrial	1959	Demolish
II	7	345	Storage - Instructional	4,040	Storage	Industrial	1959	Demolish
II	7	346	Toilet	108	Toilet	Industrial	1974	Demolish
II	7	348	Haz Mat Storage	1,044	Storage	Industrial	1959	Retain
	Parcel Total			**8,374**				
II	8	341	Storage - Instructional	4,040	Storage	Industrial	1959	Demolish
II	8	801	Gen Instructional	2,232	Classroom	NA	1941	Demolish
II	8	802	Gen Instructional	2,232	Classroom	NA	1941	Demolish
II	8	803	Gen Instructional	2,232	Classroom	Industrial	1988	Demolish
II	8	804	Gen Instructional	2,232	Classroom	Industrial	1988	Demolish
II	8	805	Gen Instructional	2,232	Classroom	Industrial	1988	Demolish
II	8	806	Gen Instructional	2,232	Classroom	Industrial	1988	Demolish
II	8	807	Storage - Instructional	2,232	Storage	Industrial	1959	Demolish
II	8	808	Storage - Instructional	2,232	Storage	NA	1959	Demolish
II	8	809	Gen Instructional	2,232	Classroom	NA	1988	Demolish
II	8	810	Gen Instructional	2,232	Classroom	NA	1988	Demolish
II	8	811	Gen Instructional	2,232	Classroom	NA	1988	Demolish
II	8	812	Gen Instructional	2,232	Classroom	NA	1988	Demolish
II	8	813	Canteen	2,232	Retail	NA	1959	Demolish
II	8	814	Gen Instructional	2,232	Classroom	NA	1988	Demolish
II	8	829	Enl Barracks	4,425	MF Residential	NA	1941	Demolish
II	8	830	Enl Barracks	4,425	MF Residential	NA	1941	Demolish
II	8	831	Enl Barracks	4,425	MF Residential	NA	1941	Demolish
II	8	832	Enl Barracks	4,425	MF Residential	NA	1941	Demolish
II	8	833	Enl Barracks	4,425	MF Residential	NA	1970	Demolish
II	8	834	Enl Barracks	4,425	MF Residential	NA	1977	Demolish
II	8	835	Enl Barracks	4,425	MF Residential	NA	1970	Demolish
II	8	838	Enl Barracks	4,425	MF Residential	NA	1941	Demolish
II	8	839	Enl Barracks	4,425	MF Residential	NA	1954	Demolish
II	8	840	Enl Barracks	4,425	MF Residential	NA	1953	Demolish
II	8	841	Enl Barracks	4,425	MF Residential	NA	1974	Demolish
II	8	842	Enl Barracks	4,425	MF Residential	NA	1955	Demolish
II	8	843	Enl Barracks	4,425	MF Residential	NA	1977	Demolish
II	8	844	Enl Barracks	4,425	MF Residential	NA	1954	Demolish
II	8	852	CO HQ Bldg	1,144	Office	NA	1953	Demolish
II	8	853	CO HQ Bldg	1,144	Office	NA	1957	Sold
II	8	854	CO HQ Bldg	1,144	Office	NA	1957	Sold
II	8	855	CO HQ Bldg	1,144	Office	NA	1959	Sold
II	8	856	Gen Instructional	1,144	Classroom	NA	1988	Demolish

II	8	857	Gen Instructional	1,144	Classroom	NA	1988	Demolish
II	8	858	Gen Instructional	1,144	Classroom	NA	1988	Demolish
II	8	837	Enl Barracks	4,425				Demolish
II	8	992	Recreation Center	4,072				Demolish
II	8	859	Storage - Instructional	1,144	Storage	NA	1959	Demolish
	Parcel Total			**114,887**				
II	9	874	CO HQ Bldg	1,013	Office	NA	1959	Demolish
II	9	875	CO HQ Bldg	1,013	Office	NA	1959	Demolish
II	9	888	Maint Storage	3,108	Storage	NA	1959	Demolish
II	9	954	Gen Instructional	3,750	Classroom	Industrial	1940	Retain
II	9	959	Gen Instructional	4,537	Classroom	Industrial	1940	Retain
II	9	1302	At Enl Barracks	2,232	MF Residential	NA	1956	Demolish
II	9	1303	Dining Facility	2,232	Dining	NA	1941	Demolish
II	9	1304	At Enl Barracks	2,232	MF Residential	Industrial	1953	Demolish
II	9	1305	At Enl Barracks	2,232	MF Residential	NA	1961	Demolish
II	9	1306	At Enl Barracks	2,232	MF Residential	NA	1954	Demolish
II	9	1311	Dining Facility	2,232	Dining	NA	1941	Demolish
II	9	1312	AT Enl Barracks	2,232	MF Residential	NA	1942	Demolish
II	9	1313	Veh Maint	2,400	Industrial	Industrial	1941	Demolish
II	9	1314	FST FD/Snk Bar	1,000	Retail	NA	1959	Retain
II	9	1315	CO HQ Bldg	2,374	Office	Industrial	1960	Demolish
II	9	1316	Dining Facility	2,284	Dining	Industrial	1941	Demolish
II	9	1318	Storage - Instructional	1,220	Storage	Industrial	1941	Demolish
II	9	1322	Storage - Instructional	1,220	Storage	NA	1961	Retain
II	9	1329	UOQ Military	1,220	MF Residential	NA	1955	Retain
II	9	1330	Health Clinic	1,220	Medical	NA	1941	Demolish
II	9	1331	CO HQ Bldg	1,220	Office	Industrial	1959	Demolish
II	9	1333	Gen Instructional	27,569	Classroom	Industrial	1976	Retain
II	9	1343	Storage- Instructional	2,400	Storage	Industrial	1960	Retain
	9	1345	Ready Bldg	7,030				HUD
II	9	1352	Co HQ Bldg	1,150	Office	NA	1959	Demolish
II	9	1353	AT Enl Barracks	1,150	MF Residential	NA	1954	Demolish
II	9	1354	CO HQ bldg	1,150	Office	NA	1958	Demolish
II	9	1355	CO HQ Bldg	1,150	Office	NA	1958	Demolish
II	9	1356	AT Enl Barracks	1,150	MF Residential	NA	1977	Demolish
II	9	1357	AT Enl Barracks	1,150	MF Residential	NA	1941	Demolish
II	9	1361	CO Hq Bldg	1,150	Office	NA	1958	Demolish
II	9	1362	AT Enl Barracks	1,150	MF Residential	Industrial	1954	Demolish
II	9	1363	AT Enl Barracks	1,150	MF Residential	Industrial	1955	Demolish
II	9	1364	Storage Instructional	1,150	MF Residential	NA	1954	Demolish
II	9	1366	CO HQ Bldg	1,150	Office	Industrial	1958	Demolish
II	9	1367	Veh Maint	4,200	Industrial	Industrial	1941	Demolish

II	9	1368	Storage Instructional	4,000	Storage	Industrial	1988	Demolish
II	9	1372	At Enl Barracks	2,284	Mf Residential	Industrial	1953	Demolish
II	9	1373	At Enl Barracks	2,284	MF Residential	Industrial	1954	Demolish
II	9	1374	AT Enl Barracks	2,284	MF Residential	NA	1941	Demolish
II	9	1380	Storage Instructional	1,040	Storage	NA	1995	Demolish
II	9	1381	Storage Instructional	1,040	Storage	NA	1995	Demolish
II	9	1382	Storage Instructional	1,040	Storage	NA	1959	Demolish
II	9	1383	Storage Instructional	1,040	Storage	NA	1952	Demolish
II	9	1384	Storage Instructional	960	Storage	NA	1995	Demolish
II	9	1385	Storage Instructional	1,040	Storage	Industrial	1995	Demolish
II	9	1387	Storage Instructional	960	Storage	Industrial	1995	Demolish
II	9	1389	UOQ Military	579	MF Residential	NA	1953	Demolish
II	9	1390	UOQ Military	2,284	Mf Residential	NA	1953	Demolish
II	9	1391	BDE HQ Bldg	2,284	Office	NA	1958	Demolish
II	9	1392	BDE HQ Bldg	3,450	Office	Industrial	1958	Demolish
II	9	1393	Gen. Instructional	3,701	Classroom	NA	1988	Demolish
II	9	1395	Gen. Instructional	3,838	Classroom	NA	1954	Demolish
II	9	1396	Gen. Instructional	3,330	Classroom	NA	1954	Demolish
	Parcel Total			**121,069**				
II	10	1108	Admin	3,158	Office	OS	1959	Retain
II	10	1222	Storage - Instructional	2,389	Storage	Industrial	1953	NG
II	10	1225	Veh Maint	9,184	Industrial	Industrial	1941	NG
II	10	1227	Storage - Instructional	1,000	Storage	Industrial	1917	NG
	Parcel Total			**15,731**				
III	1	1122	Credit Union	3,576	Bank	Dev. Reserve	1941	Retain
	Parcel Total			**3,576**				
NG	1	1602	Trainee Barracks	177,540	MF Residential	NG	1953	NG
NG	1	1617	USAR Center	2,284	Office	NG	1958	NG
NG	1	1689	Veh Maint	1,288	Industrial	NG	1988	NG
NG	1	1693	Storage Instructional	2,600	Storage	NG	1987	NG
NG	1	1696	Veh Maint	3,108	Industrial	NG	1941	NG
NG	1	1697	Storage Instructional	3,396	Storage	NG	1995	NG
NG	1	1698	Veh Maint	3,108	Industrial	NG	1986	NG
NG	1	1701	Phys Fit Center	21,102	Gym	NG	1989	NG
NG	1	1702	Phys Fit Center	21,408	Gym	NG	1941	NG
NG	1	1801	Traninee Baracks	186,915	MF Residential	NG		NG
NG	1	1802	Traninee Baracks	186,915	MF Residential	NG		NG
NG	1	1898	Storage - Instructional	3,108	Storage	NG	1975	NG
NG	1	1899	Storage - Instructional	3,108	Storage	NG	1987	NG
NG	2	2236	FH ENL	754	SF Residential	NG	1954	NG
NG	2	2237	FH ENL	754	SF Residential	NG	1954	NG
NG	2	2238	FH ENL	754	SF Residential	NG	1954	NG

NG	2	2239	FH ENL	754	SF Residential	NG	1954	NG
NG	2	2240	FH ENL	754	SF Residential	NG	1954	NG
NG	2	2243	Mars Station	1,183	Office	NG	1958	Demolish
NG	2	2275	UOQ Transient	25,147	MF Residential	NG	1988	NG
NG	2	2276	UOQ Transient	25,147	MF Residential	NG	1953	NG
NG	2	2277	UOQ Transient	25,147	MF Residential	NG	1960	NG
NG	2	2293	Chapel	8,963	Religious	NG	1955	NG
NG	2	2299	Museum	23,739	Museum	NG	1953	NG
NG	3	1021	Enlisted UPH	36,416	Residential	NG	1954	NG
NG	3	1022	Enlisted UPH	36,416	Residential	NG	1954	NG
NG	3	1023	Enlisted UPH	36,416	Residential	NG	1954	NG
NG	3	1740	Chapel	5,880	Religious	Dev. Reserve	1955	NG
NG	3	1876	Heat Plant	6,607	Utility	Dev. Reserve	1985	NG
NG	3	3101	FH CO/WO	3,209	2F Residential	Retirement	1930	Retain
NG	4	699	Rec EQ checkout	3,108	Office	NG	1985	Demolish
NG	4	1026	UOQ Transient	2,464	SF Residential	Retail	1957	Retain
NG	4	1077	Museum	11,331	Museum	Cultural	1953	Retain
NG	4	2263	Gen Instructional	2,460	Classroom	Active Rec.	1954	NG
NG	5	1012	Phys Fitness Center	41,369	Gym	Office	1941	Retain
NG	5	1062	BN HQ Bldg	2,578	Office	Office	1959	Retain
NG	5	2281	Gen Instructional	46,334	Classroom	OS	1959	NG
NG	5	4483	Refuse/Garb Bldg	6,000	Industrial	NG	1984	Retain
NG	5	4484	Haz Mat Str Ins	7,188	Industrial	NG	1976	Retain
NG	6	1919	Admin	1,200	Office	NA	1958	Demolish
NG	6	2020	Admin	1,717	Office	NA	1958	Demolish
NG	9	793	Gen Instructional	3,701	Classroom	Industrial	1943	Demolish
NG	11	1800	Auto Skill Center	8,064	Industrial	OS	1954	Retain
NG		4485	Water Storzage FAC	0				Retain
NG		5700	Waste Water Treatment	0				Retain
NG	1	1601	Trainee Barracks	177,540	MF Residential	NG	1953	Retain
NG	1	1801	Auto Skill Center	8,064	Industrial	NG		NG
NG	2	2235	FH ENL	754	SF Residential	NG	1954	Demolish
NG	5	4481	Limit Use Inst	15,376	Classroom	NG	1941	Retain
NG	5	4482	Gas Chamber	28,630	Industrial	NG	1987	Retain
NG	1	1789	Health Clinic	7,596	Medical	NG	1977	NG
NG	1	1881	Limit Use Instructional	85,164	Classroom	NG	1954	NG
	Parcel Total			1,314,558				
OS	4	2202	Dining Facility	11,816	Dining	OS	1941	Demolish
OS	4	2203	Admin	11,817	Office	OS	1958	Demolish
OS	4	2213	Child Dev Center	23,898	Community	Office	1941	Retain
OS	4	2221	Enlisted UPH	36,416	MF Residential	OS	1989	Demolish
OS	4	2223	Enlisted UPH	36,416	MF Residential	OS	1941	Demolish

OS	4	2224	Enlisted UPH	36,416	MF Residential	OS	1969	Demolish
OS	4	2225	Enlisted UPH	36,416	MF Residential	OS	1936	Demolish
OS	4	2227	Enlisted UPH	36,416	MF Residential	OS	1984	Demolish
	Parcel Total			**229,611**				
OS	5	1308	At Enl Barracks	2,232	MF Residential	OS	1954	Demolish
OS	5	1309	Dining Facility	2,232	Dining	OS	1993	Demolish
OS	5	1359	AT Enl Barracks	1,150	MF Residential	OS	1961	Demolish
	Parcel Total			**5,614**				
OS	6	200	Admin	3,200	Office	OS	1953	Retain
OS	6	201	Housing Maintenance	516	Industrial	OS	1941	Retain
OS	6	202	Storage-Intructional	12,000	Storage	OS	1958	Retain
OS	6	204	Dispatch Building	292	Office	OS	1954	Retain
OS	6	206	Admin	400	Office	OS	1953	Retain
OS	6	207	Flammable Storage	400	Storage	OS	1957	Retain
OS	6	211	Entomolgy Fac	1,200	Medical	OS	1954	Retain
OS	6	212	Housing Maintenance	600	Industrial	OS	1991	Retain
OS	6	214	Eng/Housing Maintenance	100	Storage	OS	1965	Retain
OS	6	215	Housing Maintenance	28,561	Industrial	OS	1936	Retain
OS	6	251	Commo Ctr	4,800	Office	OS	1953	Retain
OS	6	252	Commo Ctr	3,378	Office	OS	1987	Retain
OS	6	254	Vet Facility	2,464	Medical	OS	1941	Retain
	6	272	Red Cross Bldg	3,029	Medical	OS	1941	
OS	6	256	Storage - Instructional	24,739	Storage	OS	1958	Retain
OS	6	269	Transient UPH	2,277	SF Residential	OS	1957	Demolish
OS	6	270	Contr Humidity Warehouse	3,984	Storage	OS	1959	Retain
	Parcel Total			**91,940**				
OS	8	3131	Enlisted UPH	81,212	MF Residential	OS	1953	Demolish
OS	8	3139	Veh Maint Shop	5,028	Industrial	OS	1979	Retain
OS	8	3161	BN HQ Bldg	2,655	Office	OS	1955	Retain
	Parcel Total			**88,895**				
OS	9	1301	At Enl Barracks	2,232	MF Residential	NA	1976	Demolish
OS	9	1310	Dining Facility	2,232	Dining	NA	1941	Demolish
OS	9	1360	CO Hq Bldg	1,150	Office	NA	1958	Demolish
OS	9	1379	Storage Instructional	1,040	Storage	NA	1995	Demolish
OS	11	2115	Tng Aids Center	3,956	Office	OS	1958	Demolish
OS	9	2116	Tng Aids Center	10,576	Office	OS	1958	Demolish
	Parcel Total			**21,186**				
OS	10	930	Exch Warehouse	10,413	Storage	OS	1995	Demolish
OS	10	931	Med Warehouse	9,300	Storage	OS	1954	Demolish
OS	10	1120	Emerg Opns Center	6,014	Office	OS	1959	Demolish
OS	10	1214	Enl Barracks/Dining	16,772	MF Residential	Industrial	1988	HUD
OS	10	1217	UOQ Military	3,344	MF Residential	Industrial	1959	HUD

APPENDIX 2 THE DEMOLITION PLAN

	Parcel Total			45,843				
	MOUT	472	Classroom	4,425				Retain
	MOUT	473	Classroom	4,425				Retain
	MOUT	474	Classroom	4,425				Retain
	MOUT	475	Classroom	4,425				Retain
	MOUT	471	Gen Instructional Bldg	4,133	Classroom	OS	1986	Retain
	MOUT	475	Classroom	4,425				Retain
	MOUT	477	Classroom	4,425				Retain
	MOUT	478	Classroom	4,425				Retain
	MOUT	479	Classroom	4,425				Retain
	MOUT	480	Classroom	4,425				Retain
	MOUT	481	Classroom	4,425				Retain
	MOUT	482	Classroom	4,425				Retain
	MOUT	483	Classroom	4,425				Retain
	MOUT	484	Classroom	4,425				Retain
	MOUT	485	Classroom	4,425				Retain
	MOUT	486	Classroom	4,425				Retain
	MOUT	487	Classroom	4,425				Retain
RR	9	4400	Admin Gen Purp	1,500	Office	OS	1955	Retain
RR	9	4401	HE Mag Inst	1,232	Classroom	OS	1941	Retain
RR	9	4405	HE Mag Inst	1,440	Classroom	OS	1941	Retain
RR	9	4417	HE Mag Inst	2,000	Classroom	OS	1941	Retain
RR	9	4420	HE Mag Inst	4,032	Classroom	OS	1941	Retain
RR	9	4425	Igloo Str Inst	1,500	Classroom	OS	1941	Retain
RR	9?	4422	Storage GP Inst	877	Classroom	OS	1941	Retain
RR	9?	4423	Storage GP Inst	877	Classroom	OS	1941	Retain
RR	9?	4424	Flam Mat Str In	10,000	Industrial	OS	1941	Retain
RR	9?	4426	Igloo Str Inst	1,500	Classroom	OS	1941	Retain
RR	9?	4427	Igloo Str Inst	1,500	Classroom	OS	1941	Retain
RR	9?	4434	Scale House	800	Residential	OS	1959	Retain
RR	9?	4437	Eng/Housing Mnt	480	Residential	OS	1959	Retain
		4480	Acces Control Fac	389				Retain
		6904	Rg Spt Fac	1,200				Retain
RR	9?	4450	Gen Inst Bldg	525	Classroom	OS	1954	Retain
	Parcel Total			104,785				

APPENDIX 3

Fort McClellan Reuse Plan

Implementation Strategy

Revenue and Cost Sources

November 1997

RESIDENTIAL

	PHASE ONE						PHASE TWO								PHASE THREE (part)			
	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Total	Year 13	Year 14	Year 15	Total
Revenues	2000	2001	2002	2003	2004		2005	2006	2007	2008	2009	2010	2011		2012	2013	2014	
Parcel																		
1a 1	168,000	400,000	400,000	400,000	400,000	1,768,000												
1a 2	168,000	400,000	400,000	400,000	400,000	1,768,000												
1a 3	0	2,880,000	0	0	0	2,880,000												
1b 1	0	375,000	750,000	1,125,000	450,000	2,700,000								1,575,000				
2 1	0	0	510,000	510,000	0	1,020,000	0	0	1,575,000									
Total	336,000	4,055,000	2,060,000	2,435,000	1,250,000	10,136,000			1,575,000					1,575,000				

Sources of Revenue																		
Housing Type	Units	$																
Parcel 1,2 units	442	8,000	336,000	800,000	800,000	800,000	800,000	3,536,000										
Avery Drive units	64	45,000	0	2,880,000	0	0	0	2,880,000										
Buckner Circle units	38	75,000	0	375,000	750,000	1,125,000	450,000	2,700,000										
Development Land (Acres)	34	30,000	0	0	510,000	510,000	0	1,020,000										
Reserve Land (Acres)	35	45,000	0	0	0	0	0	0	0	0	1,575,000							
Forcast Sales				42	100	100	100	100	442									
Parcel 1,2 units					64				64									
Avery Drive units					5	10	15	8	38									
Buckner Circle units						17	17		34									
Development Land (Acres)									0			35						
Reserve Land (Acres)																		

INDUSTRIAL

		PHASE ONE						PHASE TWO								PHASE THREE (part)			
		Year 1	Year 2	Year 3	Year 4	Year 5	Total	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Total	Year 13	Year 14	Year 15	Total
Revenues		2000	2001	2002	2003	2004		2005	2006	2007	2008	2009	2010	2011		2012	2013	2014	
	Parcel																		
	1b 6	83,160	116,310	52,500	67,500	82,500	401,970	82,500	127,500	142,500	157,500	172,500	187,500	202,500	1,072,500	232,500	247,500	8,297,916	8,777,916
	1b 7	0	0	93,810	117,330	132,330	343,470	105,000	105,000	105,000	150,000	180,000	5,653,032	0	6,298,032	0	0	0	0
	2 9	0	0	0	0	0	0	89,460	0	0	0	0	0	244,950	334,410	0	0	0	0
	2 10	0	0	0	0	0	0	15,000	259,950	15,000	15,000	15,000	22,500	855,668	1,198,118	0	0	0	0
	2 11	0	0	0	0	0	0	0	0	244,950	0	0	0	0	244,950	0	0	0	0
	2 12	0	0	0	0	0	0	0	15,000	60,000	304,950	60,000	60,000	90,000	589,950	112,500	4,185,896	0	4,298,396
	2 13	0	0	0	0	0	0	0	0	0	0	244,950	0	0	244,950	0	0	0	0
	2 14	0	0	0	0	0	0	0	0	0	0	0	244,950	0	244,950	0	0	0	0
	3 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	244,950	0	0	244,950
	3 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	244,950	0	244,950
	3 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	244,950	244,950
	3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0
	Total	83,160	116,310	146,310	184,830	214,830	745,440	291,960	507,450	567,450	627,450	672,450	6,167,982	1,393,118	10,227,860	589,950	4,678,346	8,542,866	13,811,162

Sources of Revenue																			
Industrial Parcel	Acres	Reserve																	
1b 6	13	0	3.2	3.7				6.9											
1b 7	25	20			3.7	4.1	4.1	11.9											
2 9	32	50						0.0	4.2					11.5	15.7				
2 10	37	50						0.0		11.5					11.5				
2 11	23	10						0.0			11.5				11.5				
2 12	27	38										11.5			11.5				
2 13	12	10											11.5		11.5				
2 14	9	10						0.0						11.5	11.5				
3 2	19	35						0.0							0.0	11.5			11.5
3 3	23	50						0.0							0.0		11.5		11.5
3 4	28	150						0.0							0.0			11.5	11.5
3 5	19	45						0.0							0.0				0.0
Buildings	Number	Square feet																	
1b 6	8	188,589	10,000	25,000	35,000	45,000	55,000	55000	55,000	85,000	95,000	105,000	115,000	125,000	135,000	135,000	155,000	185,000		185,000
1b 7	8	128,478			10,000	20,000	30,000	30000	70,000	70,000	70,000	100,000	120,000			120,000				0
2 9	0	0														0				
2 10	7	19,447							10,000	10,000	10,000	10,000	10,000	15,000		15,000				0
2 11	0	0														0				
2 12	12	95,134								10,000	40,000	40,000	40,000	40,000	60,000	60,000	75,000			0
2 13	0	0														0				0
2 14	0	0														0				0
3 2	0	0														0				0
3 3	0	0														0				0
3 4	0	0														0				0
3 5	0	0														0				0
		431,648	10,000	25,000	45,000	65,000	85,000	85000	135,000	175,000	215,000	255,000	285,000	180,000	195,000	330000	230,000	185,000	0	185,000
New Construction (ft2)			35,000	40,000	40,000	45,000	45,000	205,000	48,100	125,000	125,000	125000	125000	125000	125000	798,100	125000	125000	125000	375000
NC - Acres			3.2	3.7	3.7	4.1	4.1	18.8	4.2	11.5	11.5	11.5	11.5	11.5	11.5	73.1	11.5	11.5	11.5	34.4
Values	Land $/acre	21,300																	
	Lease $/ft2	1.50																	

APPENDIX 1

OFFICES

		PHASE ONE						PHASE TWO								PHASE THREE (part)			
		Year 1	Year 2	Year 3	Year 4	Year 5	Total	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Total	Year 13	Year 14	Year 15	Total
Revenues		2000	2001	2002	2003	2004		2005	2006	2007	2008	2009	2010	2011		2012	2013	2014	
	Parcel																		
	1b 1	32,500	32,500	32,500	48,750	513,040	659,290	0	0	0	0	0	0	0	0	0	0	0	0
	1b 2	0	32,500	65,000	97,500	1,143,505	1,338,505	0	0	0	0	0	0	0	0	0	0	0	0
	1b 3	0	0	50,000	0	0	50,000	0	0	0	0	0	0	0	0	0	0	0	0
	2 5	0	0	0	0	0	0	281,820	195,000	292,500	390,000	487,500	585,000	855,668	3,087,488	845,000	975,000	1,105,000	2,925,000
	2 8	0	0	0	0	0	0	0	0	0	0	190,080	0	0	190,080	0	0	0	0
	Total	32,500	65,000	147,500	146,250	1,656,545	2,047,795	281,820	195,000	292,500	390,000	677,580	585,000	855,668	3,277,568	845,000	975,000	1,105,000	2,925,000

Sources of Revenue																			
Industrial Parcel	Acres	Reserve																	
1b 1	0	0																	
1b 2	0	0																	
1b 3	0	0						6 4											
2 5	26	20										6 6							
2 8	13	10																	
Buildings	Number	Square feet																	
1b 1	8	9,328	5,000	5,000	5,000	7,500		0											
1b 2	8	20,791		5,000	10,000	15,000		0											
1b 3	0	905						15,000	30,000	45,000	60,000	75,000	90,000	110,000	110,000	130,000	150,000	170,000	170,000
2 5	4	300,709													0				0
2 8	0	0						70,000				72,000							
New Construction (f2)			0 0	0 0	0 0	0 0	0 0	0 0	6 4	0 0	0 0	0 0	6 6	0 0	0 0	0 0	0 0	0 0	0 0	0 0
NC - Acres																			
Values	Land $/acre	28,800																	
	Lease $/f2	8 50																	

RETAIL

	PHASE ONE						PHASE TWO								PHASE THREE (part)			
	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Total	Year 13	Year 14	Year 15	Total
Revenues	2000	2001	2002	2003	2004		2005	2006	2007	2008	2009	2010	2011		2012	2013	2014	
Parcel																		
1b 1	66,000	132,000	1,098,080	0		1,296,080	0	0	0	0	0	0	0	0	0	0	0	0
1b 3	0	0	66,000	132,000	1,236,240	1,434,240	0	0	0	0	0	0	0	0	0	0	0	0
2 2	0	0	0	0	0	0	13,552	98,560	910,000	0	0	0	520,000	1542112	0	0	0	
2 4	0	0		0	0	0	0	0	260,000	0	0	1,170,000	0	1430000	0	975,000	0	975,000
Total	66,000	132,000	1,164,080	132,000	1,236,240	2,730,320	13,552	98,560	1,170,000	0	0	1,170,000	520,000	2,972,112	0	975,000	0	975,000

Sources of Revenue																		
Industrial Parcel	Acres	Reserve																
1b 1	0	0																
1b 3	0	0																
2 2	14	8							14.0				8.0					
2 4	22	15							4.0			18.0				15.0		
Buildings	Number	Square feet																
1b 1		27,452	12,000	24,000														
1b 3		30,808			12,000	24,000												
2 2	0	2,464						2464										
2 4	0	0							200,000			200,000						
New Construction (f2)																		
NC - Acres			0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.4	0.0	0.0	18.4	0.0	0.0	0.0	0.0	0.0	0.0
Values	Land $/acre	65,000																
	Lease $/f2	5.50																

Fort McClellan Reuse Plan
Implementation Strategy

Capital Improvements Strategy

Transportation

N[illegible]er 1997

Transportation Summary

Ft. McClellan Reuse Plan

Phase III – Capital Improvements Strategy

Annual Cost Distribution:

Category/Phase	Value	Units	Total Requirement ($)	Phase IA/B	Phase IB				Phase II							Phase III						Total Project Cost ($)
				Year 1 2000	Year 2 2001	Year 3 2002	Year 4 2003	Year 5 2004	Year 6 2005	Year 7 2006	Year 8 2007	Year 9 2008	Year 10 2009	Year 11 2010	Year 12 2011	Year 13 2012	Year 14 2013	Year 15 2014	Year 16 2015	Year 17 2016	
Roads																						
Phase Ia		miles	17,960,581	17,960,581																		17,960,581
Phase Ib		miles	8,368,010	1,673,602	1,673,602	1,673,602	1,673,602	1,673,602														8,368,010
Phase II		miles	29,227,460						4,175,351	4,175,351	4,175,351	4,175,351	4,175,351	4,175,351	4,175,351							29,227,460
Phase III		miles	11,460,808													2,296,162	2,296,162	2,296,162	2,296,162	2,296,162	2,296,162	11,480,808
Non-Parcel			1,875,921	418,960	418,960				418,960							418,960						1,875,921
Sub-total		miles	68,712,781	20,053,143	2,092,562	1,673,602	1,673,602	1,673,602	4,594,332	4,175,351	4,175,351	4,175,351	4,175,351	4,175,351	4,175,351	2,715,142	2,296,162	2,296,162	2,296,162	2,296,162	2,296,162	68,712,781
Parking Lots																						0
Phase Ia		sq ft	0	0																		0
Phase Ib		sq ft	0	0	0	0	0	0														0
Phase II	1,741,858	sq ft	17,418,555						2,488,365	2,488,365	2,488,365	2,488,365	2,488,365	2,488,365	2,488,365	1,127,442	1,127,442	1,127,442	1,127,442	1,127,442	1,127,442	17,418,555
Phase III	563,721	sq ft	5,837,209													144,099						5,837,209
Non-Parcel			578,394	144,099	144,099				144,099							144,099						578,394
Sub-total	2,305,578	sq ft	23,832,158	144,099	144,099	0	0	0	2,632,464	2,488,365	2,488,365	2,488,365	2,488,365	2,488,365	2,488,365	1,271,540	1,127,442	1,127,442	1,127,442	1,127,442	1,127,442	23,832,158
Bridges																						0
Phase Ia	0	miles	0	0																		0
Phase Ib	0	miles	0	0	0	0	0	0														0
Phase II	0	miles	0						0	0	0	0	0	0	0							3,110,875
Phase III	2.81	miles	3,110,875													3,110,875						75,875
Non-Parcel			75,875	37,938	0											37,938						3,184,750
Sub-total	2.81	miles	3,184,750	37,938	0	0	0	0	0	0	0	0	0	0	0	3,148,813	0	0	0	0	0	
Sidewalks																						217,452
Phase Ia Parcels	31,600	feet	217,452	217,452																		46,793
Phase Ia OS	6,800		46,793																			107,350
Phase Ib Parcels	15,600	feet	107,350	21,470	21,470	21,470	21,470	21,470														18,515
Phase Ib OS	2,400		18,515	3,303	3,303	3,303	3,303	3,303														548,382
Phase II Parcels	79,400	feet	546,382						78,056	78,056	78,056	78,056	78,056	78,056	78,056							8,634
Phase II OS	1,400		8,634						1,378	1,378	1,378	1,378	1,378	1,378	1,378							276,008
Phase III Parcels	40,400	feet	276,008													55,602	55,602	55,602	55,602	55,602	55,602	42,665
Phase III OS	8,200		42,665													8,533	8,533	8,533	8,533	8,533	8,533	31,420
Non-Parcel			31,820	15,810	15,810																	1,296,420
Sub-total	183,800	feet	1,296,420	304,828	40,583	24,773	24,773	24,773	79,434	79,434	79,434	79,434	79,434	79,434	79,434	64,135	64,135	64,135	64,135	64,135	64,135	
Bikeways																						309,833
Phase Ia	2.870	miles	309,833	309,833																		244,447
Phase Ib	2.273	miles	244,447	48,889	48,889	48,889	48,889	48,889														513,334
Phase II	4.773	miles	513,336						73,334	73,334	73,334	73,334	73,334	73,334	73,334							398,263
Phase III	3.712	miles	399,263													79,853	79,853	79,853	79,853	79,853	79,853	73,334
Non-Parcel			73,334	36,667	36,667																	1,540,015
Sub-total	13.838	miles	1,540,015	395,389	85,556	48,889	48,889	48,889	73,334	73,334	73,334	73,334	73,334	73,334	73,334	79,853	79,853	79,853	79,853	79,853	79,853	
Transit Stops																						200,000
Phase Ia		No	200,000	200,000																		600,000
Phase Ib		No	600,000	120,000	120,000	120,000	120,000	120,000														800,000
Phase II		No	800,000						114,286	114,286	114,286	114,286	114,286	114,286	114,286							1,500,000
Phase III		No	1,500,000													300,000	300,000	300,000	300,000	300,000	300,000	100,000
Non-Parcel			100,000	25,000	25,000				25,000							25,000						3,200,000
Sub-total			3,200,000	345,000	145,000	120,000	120,000	120,000	139,286	114,286	114,286	114,286	114,286	114,286	114,286	325,000	300,000	300,000	300,000	300,000	300,000	
Traffic Control																						50,000
Phase Ia			50,000	50,000																		100,000
Phase Ib			100,000	20,000	20,000	20,000	20,000	20,000														200,000
Phase II			200,000						28,571	28,571	28,571	28,571	28,571	28,571	28,571							500,000
Phase III			500,000													100,000	100,000	100,000	100,000	100,000	100,000	100,000
Non-Parcel			100,000	25,000	25,000				25,000							25,000						950,000
Sub-total			950,000	95,000	45,000	20,000	20,000	20,000	53,571	28,571	28,571	28,571	28,571	28,571	28,571	125,000	100,000	100,000	100,000	100,000	100,000	
Transportation Totals			102,518,123	21,375,217	2,552,820	1,887,264	1,887,264	1,887,264	7,572,417	6,956,339	6,956,339	6,956,339	6,956,339	6,956,339	6,956,339	7,729,442	3,947,591	3,947,591	3,947,591	3,947,591	3,947,591	102,518,123

Selected Plan Road Construction by Parcel and Phase [1]

Phase	Parcel	Parcel ID	2 Lane to 2 Lane Road (feet)						2 - 4 Lane (feet)	New 4 Lane (feet)	Bike/Walk (feet)	Bridges				
			Existing Maintain	Existing Imp	Demolished	New	Intrm Closed	Total				Ex Maintain	Ex Replace	New 2Lane	New 4Lane	New Bike
Ia	1	Ia.1	14,700	-	1,500	5,000	-		-	-	-	-	-	-	-	-
Ia	2	Ia.2	21,500	-	1,600	10,800	-		-	-	-	-	-	-	-	-
Ia	3	Ia 3	7,000	-	-	-	-		-	-	-	-	-	-	-	-
Ia	4	Ia.4	6,700	-	1,300	-	-		-	-	-	-	-	-	-	-
Ia	5	Ia.5	-	-	-	-	-		-	-	-	-	-	-	-	-
Ia	6	Ia.6	-	-	-	-	-		-	-	-	-	-	-	-	-
Sub-total			*49,900*	-	*4,400*	*15,800*	-	*70,100*	-	-	-	-	-	-	-	-

Phase	Parcel	Parcel ID	2 Lane to 2 Lane Road (feet)						2 - 4 Lane (feet)	New 4 Lane (feet)	Bike/Walk (feet)	Bridges				
			Existing Maintain	Existing Imp	Demolished	New	Intrm Closed	Total				Ex Maintain	Ex Replace	New 2Lane	New 4Lane	New Bike
Ib	1	Ib.1	8,900	-	2,500	1,400	-		-	-	-	-	-	-	-	-
Ib	2	Ib.2	2,600	-	-	-	-		-	-	-	-	-	-	-	-
Ib	3	Ib.3	1,600	-	-	600	-		-	-	-	-	-	-	-	-
Ib	4	Ib.4	-	-	1,300	-	-		-	-	-	-	-	-	-	-
Ib	5	Ib.5	1,100	-	5,700	-	-		-	-	-	-	-	-	-	-
Ib	6	Ib.6	5,000	-	-	3,800	-		-	-	-	-	-	-	-	-
Ib	7	Ib.7	2,300	-	5,800	2,000	-		-	-	-	-	-	-	-	-
Sub-total			*21,500*	-	*15,300*	*7,800*	-	*44,600*	-	-	-	-	-	-	-	-

Phase	Parcel	Parcel ID	2 Lane to 2 Lane Road (feet)						2 - 4 Lane (feet)	New 4 Lane (feet)	Bike/Walk (feet)	Bridges				
			Existing Maintain	Existing Imp	Demolished	New	Intrm Closed	Total				Ex Maintain	Ex Replace	New 2Lane	New 4Lane	New Bike
II	1	II.1	6,300	-	4,200	6,900	-		-	-	-	-	-	-	-	-
II	2	II.2	-	-	-	-	-		-	-	-	-	-	-	-	-
II	3	II.3	800	-	-	600	-		-	-	-	-	-	-	-	-
II	4	II.4	2,900	-	-	-	-		-	-	-	-	-	-	-	-
II	5	II.5	6,900	-	1,100	4,800	-		-	-	-	-	-	-	-	-
II	6	II.6	-	-	1,000	-	-		-	-	-	-	-	-	-	-
II	7	II.7	3,000	-	2,300	4,000	-		-	-	-	-	-	-	-	-
II	8	II 8	2,000	-	2,200	2,900	-		-	-	-	-	-	-	-	-
II	9	II.9	-	-	5,400	5,900	5,400		-	-	-	-	-	-	-	-
II	10	II.10	7,600	-	6,600	7,000	6,600		-	-	-	-	-	-	-	-
II	11	II.11	4,800	-	900	-	900		-	-	-	-	-	-	-	-
II	12	II.12	6,200	-	900	4,400	900		-	-	-	-	-	-	-	-
II	13	II.13	500	-	-	1,000	-		-	-	-	-	-	-	-	-
II	14	II.14	-	-	-	-	-		-	-	-	-	-	-	-	-
II	15	II.15	4,300	-	300	2,200	-		-	-	-	-	-	-	-	-
Sub-total			*45,300*	-	*24,900*	*39,700*	*13,800*	*109,900*	-	-	-	-	-	-	-	-

Phase	Parcel	Parcel ID	2 Lane to 2 Lane Road (feet)						2 - 4 Lane (feet)	New 4 Lane (feet)	Bike/Walk (feet)	Bridges				
			Existing Maintain	Existing Imp	Demolished	New	Intrm Closed	Total				Ex Maintain	Ex Replace	New 2Lane	New 4Lane	New Bike
III	1	III.1	-	-	2,000	2,900	2,000		-	-	-	-	-	-	-	-
III	2	III.2	-	-	-	-	-		-	-	-	-	-	-	-	-
III	3	III.3	7,500	-	2,300	700	2,300		-	-	-	-	-	-	-	-
III	4	III.4	-	-	3,400	4,500	3,400		-	-	-	-	-	-	-	-
III	5	III.5	-	-	3,200	6,700	3,200		-	-	-	-	-	-	-	-
III	6	III.6	-	-	900	3,500	900									

III	7	III.7	-	-	-	1,000	-		-	-	-	-	-	-	-	-	-
III	8	III.8	-	-	-	900	-		-	-	-	-	-	-	-	-	-
Sub-total			*7,500*	-	*11,800*	*20,200*	*11,800*	*39,500*	-	-	-	-	-	-	-	-	-

Phase	Parcel	Parcel ID	2 Lane to 2 Lane Road (feet)						2 - 4 Lane (feet)	New 4 Lane (feet)	Bike/Walk (feet)	Bridges				
			Existing Maintain	Existing Imp	Demolished	New	Interim Closed	Total				Ex Maintain	Ex Replace	New 2 Lane	New 4 Lane	New Bike
Ia	1	ARNG.1	11,800	-	-	-	-		-	-	-	-	-	-	-	-
Ia	2	ARNG.2	500	-	-	-	-		-	-	-	-	-	-	-	-
Ia	3	ARNG.3	1,800	-	-	-	-		-	-	-	-	-	-	-	-
Ia	4	ARNG.4	-	-	-	-	-		-	-	-	-	-	-	-	-
Ia	5	ARNG.5	-	-	-	-	-		-	-	-	-	-	-	-	-
Sub-total			*14,100*	-	-	-	-	*14,100*	-	-	-	-	-	-	-	-

Phase	Parcel	Parcel ID	2 Lane to 2 Lane Road (feet)						2 - 4 Lane (feet)	New 4 Lane (feet)	Bike/Walk (feet)	Bridges				
			Existing Maintain	Existing Imp	Demolished	New	Interim Closed	Total				Ex Maintain	Ex Replace	New 2 Lane	New 4 Lane	New Bike
Ia	1	OS.1	-	-	-	-	-		-	-	-	-	-	-	-	-
Ia	2	OS.2	-	-	-	-	-		-	-	-	-	-	-	-	-
Ia	3	OS.3	600	-	-	3,400	-		-	-	-	-	-	-	-	-
Ia	4	OS.4	1,300	-	-	-	-		-	-	-	-	-	-	-	-
Ib	5	OS.5	2,600	-	2,100	-	-		-	-	-	-	-	-	-	-
II	6	OS.6	3,300	-	800	400	-		-	-	-	-	-	-	-	-
Ib	7	OS.7	1,500	-	1,800	1,200	-		-	-	-	-	-	-	-	-
III	8	OS.8	-	-	-	300	-		-	-	-	-	-	-	-	-
III	9	OS.9	-	-	6,600	-	-		-	-	-	-	-	-	-	-
Ia	10	OS.10	2,200	-	1,500	-	-		-	-	-	-	-	-	-	-
Ib	11	OS.11	5,400	-	-	-	-		-	-	-	-	-	-	-	-
II	12	OS.12	1,200	-	3,000	300	3,000		-	-	-	-	-	-	-	-
III	13	OS.13	1,200	-	2,000	2,800	2,000		-	-	-	-	-	-	-	-
III	14	OS.14	-	-	-	-	-		-	-	-	-	-	-	-	-
III	15	OS.15	11,700	-	-	-	-		-	-	-	-	-	-	-	-
Sub-total			*31,000*	-	*17,800*	-	*5,000*	*48,800*	-	-	-	-	-	-	-	-

Phase	Parcel	Parcel ID	2 Lane to 2 Lane Road (feet)						2 - 4 Lane (feet)	New 4 Lane (feet)	Bike/Walk (feet)	Bridges				
			Existing Maintain	Existing Imp	Demolished	New	Interim Closed	Total				Ex Maintain	Ex Replace	New 2 Lane	New 4 Lane	New Bike
Ia	1	ART.1	-	-	-	-	-		12,000	-	-	-	-	-	-	-
Ib	2	ART.2	-	-	-	-	-		-	4,000	-	-	-	-	-	-
II	3	ART.3	-	-	-	-	-		-	10,520	-	-	-	-	-	-
III	4	ART.4	-	-	-	-	-		-	-	-	-	-	-	-	-
III	5	ART.5	-	-	-	-	-		-	-	-	-	-	-	-	-
Sub-total			-	-	-	-	-	-	*12,000*	*14,520*	-	-	-	-	-	-

Phase	Parcel	Parcel ID	2 Lane to 2 Lane Road (feet)						2 - 4 Lane (feet)	New 4 Lane (feet)	Bike/Walk (feet)	Bridges				
			Existing Maintain	Existing Imp	Demolished	New	Interim Closed	Total				Ex Maintain	Ex Replace	New 2 Lane	New 4 Lane	New Bike
Ia	1	BW.1	-	-	-	-	-		-	-	15,200	-	-	-	-	-
Ib	2	BW.2	-	-	-	-	-		-	-	12,000	-	-	-	-	-
II	3	BW.3	-	-	-	-	-		-	-	25,200	-	-	-	-	-
III	4	BW.4	-	-	-	-	-		-	-	19,600	-	-	-	-	-
Sub-total			-	-	-	-	-	-	-	-	*72,000*	-	-	-	-	-

Road Totals			*169,300*		*74,200*	*83,500*	*30,600*	*327,000*	*12,000*	*14,520*	*72,000*	-	-	-	-	-

Notes:

1 Data provided by EDAW, Alexandria, 8/15/97 and updated 8/27/97

2 Road total does not include interim closed roads.

Land Use Summary by Parcel & Phase

Phase	Parcel	Parcel ID	Phase Assigned	Existing Space			Future Space		
				Retail	Office	Industrial		Retail	Office	Industrial
Ia	1	Ia.1	Ia	-	-	-	0 Ia.1	-	-	-
Ia	2	Ia.2	Ia	-	-	-	0 Ia.2	-	-	-
Ia	3	Ia.3	Ia	-	-	-	0 Ia.3	-	-	-
Ia	4	Ia.4	Ia	-	-	-	0 Ia.4	-	-	-
Ia	5	Ia.5	Ia							
Ia	6	Ia.6	Ia	-	-	-		-	-	-
Phase Ia Sub-total				-	-	-		-	-	-

Phase	Parcel	Parcel ID	Phase Assigned	Existing Space			Future Space		
				Retail	Office	Industrial		Retail	Office	Industrial
Ib	1	Ib.1	Ib	27,452	9,328	-	0 Ib.1	-	-	-
Ib	2	Ib.2	Ib	-	20,791	215,513	0 Ib.2	-	-	-
Ib	3	Ib.3	Ib	30,906	905	-	0 Ib.3	-	-	-
Ib	4	Ib.4	Ib	-	-	-	0 Ib.4	-	-	-
Ib	5	Ib.5	Ib	-	-	-	0 Ib.5	-	-	-
Ib	6	Ib.6	Ib	-	-	168,069	0 Ib.6	-	-	-
Ib	7	Ib.7	Ib	-	-	128,478	0 Ib.7	-	-	-
			Ib	-	-	-	0 Ib.8	-	-	-
Phase Ib Sub-total				58,358	31,024	512,060		-	-	-

Phase	Parcel	Parcel ID	Phase Assigned	Existing Space			Future Space		
				Retail	Office	Industrial		Retail	Office	Industrial
II	1	II.1	II	-	-	-	0 II.1	-	-	-
II	2	II.2	II	-	-	-	0 II.2	152,460	-	-
II	3	II.3	II	-	-	-	0 II.3	-	-	-
II	4	II.4	II	2,484	-	-	0 II.4	239,580	-	-
II	5	II.5	II	-	300,709	-	0 II.5	-	-	-
II	6	II.6	II	-	-	-	0 II.6	-	-	-
II	7	II.7	II	-	-	-	0 II.7	-	-	-
II	8	II.8	II	-	-	-	0 II.8	-	141,570	-
II	9	II.9	II	-	-	-	0 II.9	-	-	348,480
II	10	II.10	II	-	-	19,447	0 II.10	-	-	402,930
II	11	II.11	II	-	-	-	0 II.11	-	-	250,470
II	12	II.12	II	-	-	95,134	0 II.12	-	-	294,030
II	13	II.13	II	-	-	-	0 II.13	-	-	130,680
II	14	II.14	II	-	-	-	0 II.14	-	-	96,010
II	15	II.15	II							
Phase II Sub-total				2,484	300,709	114,581		392,040	141,570	

Phase	Parcel	Parcel ID	Phase Assigned	Existing Space			Future Space		
				Retail	Office	Industrial		Retail	Office	Industrial
III	1	III.1	III							
III	2	III.2	III							
III	3	III.3	III	-	-	-	0 III.3	-	-	-
III	4	III.4	III	-	-	-	0 III.4	-	-	206,910
III	5	III.5	III	-	-	-	0 III.5	-	-	250,470
III	6	III.6	III	-	-	-	0 III.6	-	-	283,140
III	7	III.7	III	-	-	-	0 III.7	-	-	206,910
III	8	III.8	III							
Phase III Sub-total				-	-	-		-	-	947,430

Phase	Parcel	Parcel ID	Phase Assigned	Existing Space			Future Space		
				Retail	Office	Industrial		Retail	Office	Industrial
ARNG	1	ARNG.1	Ia							
ARNG	2	ARNG.2	Ia							
ARNG	3	ARNG.3	Ia							
ARNG	4	ARNG.4	Ia							
ARNG	5	ARNG.5	Ia							
ARNG Sub-total										

Phase	Parcel	Parcel ID	Phase Assigned
OS	1	OS.1	Ia
OS	2	OS.2	Ia
OS	3	OS.3	Ia
OS	4	OS.4	Ia
OS	5	OS.5	Ib
OS	6	OS.6	II
OS	7	OS.7	Ib
OS	8	OS.8	III
OS	9	OS.9	III
OS	10	OS.10	Ia
OS	11	OS.11	Ib
OS	12	OS.12	II
OS	13	OS.13	III
OS	14	OS.14	III
OS	15	OS.15	III
Open Space Sub-total			

Phase	Parcel	Parcel ID	Phase Assigned
Arterial	1	ART.1	
	2	ART.2	
	3	ART.3	
	4	ART.4	
	5	ART.5	
Arterials Sub-total			

Phase	Parcel	Parcel ID	Phase Assigned
Ia	1	BW.1	Ia
Ib	2	BW.2	Ib
II	3	BW.3	II
III	4	BW.4	III
Bike/Walk Sub-total			

Totals

Roads Summary

Road Category		Road Length (miles)		Total Project ($)	Annual Cost Distribu Year 1 2000	Year 2 2001
Existing 2 Lane Roads (Maintenance Only)						
Phase Ia	Phase Ia Parcels	9.451	$	388,022		
	Army National Guard	2.670	$	109,642		
	Open Space	0.777	$	31,882		
	Arterials	0.000	$	-		
Phase Ib	Phase Ib Parcels	4.072	$	167,184		
	Army National Guard	0.000	$	-		
	Open Space	1.799	$	73,872		
	Arterials	0.000	$	-		
Phase II	Phase II Parcels	8.580	$	352,253		
	Army National Guard	0.000	$	-		
	Open Space	0.852	$	34,992		
	Arterials	0.000	$	-		
Phase III	Phase III Parcels	1.420	$	58,320		
	Army National Guard	0.000	$	-		
	Open Space	2.443	$	100,310		
	Arterials	0.000	$	-		
Non-Parcel Costs			$	32,912		
	Sub-total	***32.064***	***$***	***1,349,389***		
Existing 2 Lane Roads (Improvements)						
Phase Ia	Phase Ia Parcels	0.000	$	-		
	ARNG	0.000	$	-		
	Open Space	0.000	$	-		
	Arterials	0.000	$	-		
Phase Ib	Phase Ib Parcels	0.000	$	-		
	ARNG	0.000	$	-		
	Open Space	0.000	$	-		
	Arterials	0.000	$	-		
Phase II	Phase II Parcels	0.000	$	-		

	ARNG	0.000	$	-
	Open Space	0.000	$	-
	Arterials	0.000	$	-
Phase III	Phase III Parcels	0.000	$	-
	ARNG	0.000	$	-
	Open Space	0.000	$	-
	Arterials	0.000	$	-
Non-Parcel Costs			$	-
	Sub-Total	*0.000*	*$*	-
Existing 2 Lane Roads (Demolish)				
Phase Ia	Phase Ia Parcels	0.833	$	82,603
	ARNG	0.000	$	-
	Open Space	0.284	$	28,160
	Arterials	0.000	$	-
Phase Ib	Phase Ib Parcels	2.898	$	287,232
	ARNG	0.000	$	-
	Open Space	0.739	$	73,216
	Arterials	0.000	$	-
Phase II	Phase II Parcels	4.716	$	467,456
	ARNG	0.000	$	-
	Open Space	0.720	$	71,339
	Arterials	0.000	$	-
Phase III	Phase III Parcels	2.235	$	221,525
	ARNG	0.000	$	-
	Open Space	1.629	$	161,451
	Arterials	0.000	$	-
Non-Parcel Costs			$	34,825
	Sub-Total	*14.053*	*$*	*1,427,806*
Existing 2 Lane Roads (Interim Closures)				
Phase Ia	Phase Ia Parcels	0.000	$	-
	ARNG	0.000	$	-
	Open Space	0.000	$	-
	Arterials	0.000	$	-
Phase Ib	Phase Ib Parcels	0.000	$	-
	ARNG	0.000	$	-

	Open Space	0.000	$	-
	Arterials	0.000	$	-
Phase II	Phase II Parcels	2.614	$	41,818
	ARNG	0.000	$	-
	Open Space	0.568	$	9,091
	Arterials	0.000	$	-
Phase III	Phase III Parcels	2.235	$	35,758
	ARNG	0.000	$	-
	Open Space	0.379	$	6,061
	Arterials	0.000	$	-
Non-Parcel Costs			$	2,318
	Sub-Total	*5.795*	*$*	*95,045*
New Roads (2-Lane)				
Phase Ia	Phase Ia Parcels	2.992	$	7,389,642
	ARNG	0.000	$	-
	Open Space	0.644	$	1,590,176
	Arterials	0.000	$	-
Phase Ib	Phase Ib Parcels	1.477	$	3,648,051
	ARNG	0.000	$	-
	Open Space	0.227	$	561,239
	Arterials	0.000	$	-
Phase II	Phase II Parcels	7.519	$	18,567,645
	ARNG	0.000	$	-
	Open Space	0.133	$	327,389
	Arterials	0.000	$	-
Phase III	Phase III Parcels	3.826	$	9,447,517
	ARNG	0.000	$	-
	Open Space	0.587	$	1,449,866
	Arterials	0.000	$	-
Non-Parcel Costs			$	1,074,538
	Sub-Total	*17.405*	*$*	*44,056,064*
New Roads (4-Lane)				
Phase Ia	Phase Ia Parcels	0.000	$	-
	ARNG	0.000	$	-
	Open Space	0.000	$	-

	Arterials	0.000	$	-
Phase Ib	Phase Ib Parcels	0.000	$	-
	ARNG	0.000	$	-
	Open Space	0.000	$	-
	Arterials	0.758	$	3,557,216
Phase II	Phase II Parcels	0.000	$	-
	ARNG	0.000	$	-
	Open Space	0.000	$	-
	Arterials	1.992	$	9,355,478
Phase III	Phase III Parcels	0.000	$	-
	ARNG	0.000	$	-
	Open Space	0.000	$	-
	Arterials	0.000	$	-
Non-Parcel Costs			$	322,817
	Sub-Total	*2.750*	*$*	*13,235,511*
Convert Roads 2 Lane to 4 Lane				
Phase Ia	Phase Ia Parcels	0.000	$	-
	ARNG	0.000	$	-
	Open Space	0.000	$	-
	Arterials	2.273	$	8,340,455
Phase Ib	Phase Ib Parcels	0.000	$	-
	ARNG	0.000	$	-
	Open Space	0.000	$	-
	Arterials	0.000	$	-
Phase II	Phase II Parcels	0.000	$	-
	ARNG	0.000	$	-
	Open Space	0.000	$	-
	Arterials	0.000	$	-
Phase III	Phase III Parcels	0.000	$	-
	ARNG	0.000	$	-
	Open Space	0.000	$	-
	Arterials	0.000	$	-
Non-Parcel Costs			$	208,511
	Sub-Total	*2.273*	*$*	*8,548,966*

Total All Road Costs by Phase

	Phase Ia	Phase Ib	Phase II	Phase III	Non-Parcel	Total
Ex 2 L Roads (Main)	$ 529,546	$ 241,056	$ 387,245	$ 158,630	$ 32,912	$ 1,349,389
Ex 2 L Roads (Improv)	$ -	$ -	$ -	$ -	$ -	$ -
Ex 2 L Roads (Demolish)	$ 110,763	$ 360,448	$ 538,795	$ 382,976	$ 34,825	$ 1,427,806
Ex 2 L Roads (Intrm Clos)	$ -	$ -	$ 50,909	$ 41,818	$ 2,318	$ 95,045
New Roads (2-Lane)	$ 8,979,818	$ 4,209,290	$ 18,895,034	$ 10,897,384	$ 1,074,538	$ 44,056,064
New Roads (4-Lane)	$ -	$ 3,557,216	$ 9,355,478	$ -	$ 322,817	$ 13,235,511
Convert Roads 2 L to 4 L	$ 8,340,455	$ -	$ -	$ -	$ 208,511	$ 8,548,966
Total All Roads	*$ 17,960,581*	*$ 8,368,010*	*$ 29,227,460*	*$ 11,480,808*	*$ 1,675,921*	*$ 68,712,781*

Total All Road Lengths by Phase

	Phase Ia	Phase Ib	Phase II	Phase III	Non-Parcel	Total
Ex 2 L Roads (Main)						-
Ex 2 L Roads (Improv)						-
Ex 2 L Roads (Demolish)						-
Ex 2 L Roads (Intrm Clos)						-
New Roads (2-Lane)						-
New Roads (4-Lane)						-
Convert Roads 2 L to 4 L						-
Total All Roads	-	-	-	-	-	-

Total All Roads by Road Category

Existing 2 Lane Roads (Maintenance Only)	$ 1,349,389
Existing 2 Lane Roads (Improvements)	$ -
Existing 2 Lane Roads (Demolish)	$ 1,427,806
Existing 2 Lane Roads (Interim Closures)	$ 95,045
New Roads (2-Lane)	$ 44,056,064
New Roads (4-Lane)	$ 13,235,511
Convert Roads 2 Lane to 4 Lane	$ 8,548,966
Total All Roads	*$ 68,712,781*

Existing Roads (Maintenance Only)

Parcel Assigned	Parcel ID	Road Length (feet)	Road Length (miles)	Sub-Total Construction ($)	Total Construction ($)	Total Project ($)
Ia	Ia.1	14,700	2.78	$ 95,256	$ 114,307	$ 114,307
Ia	Ia.2	21,500	4.07	$ 139,320	$ 167,184	$ 167,184
Ia	Ia.3	7,000	1.33	$ 45,360	$ 54,432	$ 54,432
Ia	Ia.4	6,700	1.27	$ 43,416	$ 52,099	$ 52,099
Ia	Ia.5	-	0.00	$ -	$ -	$ -
Ia	Ia.6	-	0.00	$ -	$ -	$ -
	Sub-Total	*49,900*	*9.45*	*$ 323,352*	*$ 388,022*	*$ 388,022*
Ib	Ib.1	8,900	1.69	$ 57,672	$ 69,206	$ 69,206
Ib	Ib.2	2,600	0.49	$ 16,848	$ 20,218	$ 20,218
Ib	Ib.3	1,600	0.30	$ 10,368	$ 12,442	$ 12,442
Ib	Ib.4	-	0.00	$ -	$ -	$ -
Ib	Ib.5	1,100	0.21	$ 7,128	$ 8,554	$ 8,554
Ib	Ib.6	5,000	0.95	$ 32,400	$ 38,880	$ 38,880
Ib	Ib.7	2,300	0.44	$ 14,904	$ 17,885	$ 17,885
	Sub-total	*21,500*	*4.07*	*$ 139,320*	*$ 167,184*	*$ 167,184*
II	II.1	6,300	1.19	$ 40,824	$ 48,989	$ 48,989
II	II.2	-	0.00	$ -	$ -	$ -
II	II.3	800	0.15	$ 5,184	$ 6,221	$ 6,221
II	II.4	2,900	0.55	$ 18,792	$ 22,550	$ 22,550
II	II.5	6,900	1.31	$ 44,712	$ 53,654	$ 53,654
II	II.6	-	0.00	$ -	$ -	$ -
II	II.7	3,000	0.57	$ 19,440	$ 23,328	$ 23,328
II	II.8	2,000	0.38	$ 12,960	$ 15,552	$ 15,552
II	II.9	-	0.00	$ -	$ -	$ -
II	II.10	7,600	1.44	$ 49,248	$ 59,098	$ 59,098
II	II.11	4,800	0.91	$ 31,104	$ 37,325	$ 37,325
II	II.12	6,200	1.17	$ 40,176	$ 48,211	$ 48,211
II	II.13	500	0.09	$ 3,240	$ 3,888	$ 3,888
II	II.14	-	0.00	$ -	$ -	$ -
II	II.15	4,300	0.81	$ 27,864	$ 33,437	$ 33,437
	Sub-Total	*45,300*	*8.58*	*$ 293,544*	*$ 352,253*	*$ 352,253*
III	III.1	-	0.00	$ -	$ -	$ -
III	III.2	-	0.00	$ -	$ -	$ -
III	III.3	7,500	1.42	$ 48,600	$ 58,320	$ 58,320
III	III.4	-	0.00	$ -	$ -	$ -
III	III.5	-	0.00	$ -	$ -	$ -
III	III.6	-	0.00	$ -	$ -	$ -
III	III.7	-	0.00	$ -	$ -	$ -
III	III.8	-	0.00	$ -	$ -	$ -
	Sub-Total	*7,500*	*1.42*	*$ 48,600*	*$ 58,320*	*$ 58,320*
Ia	ARNG.1	11,800	2.23	$ 76,464	$ 91,757	$ 91,757
Ia	ARNG.2	500	0.09	$ 3,240	$ 3,888	$ 3,888
Ia	ARNG.3	1,800	0.34	$ 11,664	$ 13,997	$ 13,997
Ia	ARNG.4	-	0.00	$ -	$ -	$ -
Ia	ARNG.5	-	0.00	$ -	$ -	$ -
	Sub-Total	*14,100*	*2.67*	*$ 91,368*	*$ 109,642*	*$ 109,642*
Ia	OS.1	-	0.00	$ -	$ -	$ -
Ia	OS.2	-	0.00	$ -	$ -	$ -
Ia	OS.3	600	0.11	$ 3,888	$ 4,666	$ 4,666
Ia	OS.4	1,300	0.25	$ 8,424	$ 10,109	$ 10,109
Ib	OS.5	2,600	0.49	$ 16,848	$ 20,218	$ 20,218
II	OS.6	3,300	0.63	$ 21,384	$ 25,661	$ 25,661
Ib	OS.7	1,500	0.28	$ 9,720	$ 11,664	$ 11,664
III	OS.8	-	0.00	$ -	$ -	$ -
III	OS.9	-	0.00	$ -	$ -	$ -

Ia	OS.10	2,200	0.42	$	14,256	$ 17,107	$	17,107
Ib	OS.11	5,400	1.02	$	34,992	$ 41,990	$	41,990
II	OS.12	1,200	0.23	$	7,776	$ 9,331	$	9,331
III	OS.13	1,200	0.23	$	7,776	$ 9,331	$	9,331
III	OS.14	-	0.00	$	-	$ -	$	-
III	OS.15	11,700	2.22	$	75,816	$ 90,979	$	90,979
	Sub-Total	*31,000*	*5.87*	$	*200,880*	$ *241,056*	$	*241,056*
	Phase Ia	*4,100*	*0.78*	$	*26,568*	$ *31,882*	$	*31,882*
	Phase Ib	*9,500*	*1.80*	$	*61,560*	$ *73,872*	$	*73,872*
	Phase II	*4,500*	*0.85*	$	*29,160*	$ *34,992*	$	*34,992*
	Phase III	*12,900*	*2.44*	$	*83,592*	$ *100,310*	$	*100,310*
Ia	ART.1	-	0.00	$	-	$ -	$	-
Ib	ART.2	-	0.00	$	-	$ -	$	-
II	ART.3	-	0.00	$	-	$ -	$	-
III	ART.4	-	0.00	$	-	$ -	$	-
III	ART.5	-	0.00	$	-	$ -	$	-
	Sub-Total	-	*0.00*	$	-	$ -	$	-
	Phase Ia	-	-	$	-	$ -	$	-
	Phase Ib	-	-	$	-	$ -	$	-
	Phase II	-	-	$	-	$ -	$	-
	Phase III	-	-	$	-	$ -	$	-
Ia	BW.1	-	0.00	$	-	$ -	$	-
Ib	BW.2	-	0.00	$	-	$ -	$	-
II	BW.3	-	0.00	$	-	$ -	$	-
III	BW.4	-	0.00	$	-	$ -	$	-
	Sub-Total	-	*0.00*	$	-	$ -	$	-
	Other Non-Parcel Costs						$	*32,912*
	Planning						$	-
	Item #2						$	-
	Item #3						$	-
	Item #4						$	-
	Sub-Total						$	*32,912*
	Total	*169,300*	*32.064*	$	*1,097,064*	$ *1,316,477*	$	*1,349,389*

Assumptions:		value	units
a *For Sub-Total Construction Costs Include:*			
Road Width		24	feet
Grade & Drain	$	-	$/mile
Pave with 1 inch surface layer	$	0.27	$/sq. ft.
b *For Total Construction Include:*			
Engineenng Controls		2%	%
Mobilization		5%	%
Engineering & Inspection		13%	%
c *For Project Total Include:*			
Preliminary Engineering		0%	%
Utilities Relocation	$	-	$/mile
d For Planning Costs include:			
Planning		2.5%	%
e *Source:*			
Cost Estimate Chart (Feb. 17, 1995), Alabama Dept. of Transportation, Zone II, Hilly Terrain.			

Existing Roads (Demolish)

Parcel Assigned	Parcel ID	Road Length (feet)	Road Length (miles)	Sub-Total Construction ($)	Total Construction ($)	Total Project ($)
Ia	Ia.1	1,500	0.284	$ 25,600	$ 28,160	$ 28,160
Ia	Ia.2	1,600	0.303	$ 27,307	$ 30,037	$ 30,037
Ia	Ia.3	-	0.000	$ -	$ -	$ -
Ia	Ia.4	1,300	0.246	$ 22,187	$ 24,405	$ 24,405
Ia	Ia.5	-	0.000	$ -	$ -	$ -
Ia	Ia.6	-	0.000	$ -	$ -	$ -
	Sub-Total	*4,400*	*0.833*	*$ 75,093*	*$ 82,603*	*$ 82,603*
Ib	Ib.1	2,500	0.473	$ 42,667	$ 46,933	$ 46,933
Ib	Ib.2	-	0.000	$ -	$ -	$ -
Ib	Ib.3	-	0.000	$ -	$ -	$ -
Ib	Ib.4	1,300	0.246	$ 22,187	$ 24,405	$ 24,405
Ib	Ib.5	5,700	1.080	$ 97,280	$ 107,008	$ 107,008
Ib	Ib.6	-	0.000	$ -	$ -	$ -
Ib	Ib.7	5,800	1.098	$ 98,987	$ 108,885	$ 108,885
	Sub-total	*15,300*	*2.898*	*$ 261,120*	*$ 287,232*	*$ 287,232*
II	II.1	4,200	0.795	$ 71,680	$ 78,848	$ 78,848
II	II.2	-	0.000	$ -	$ -	$ -
II	II.3	-	0.000	$ -	$ -	$ -
II	II.4	-	0.000	$ -	$ -	$ -
II	II.5	1,100	0.208	$ 18,773	$ 20,651	$ 20,651
II	II.6	1,000	0.189	$ 17,067	$ 18,773	$ 18,773
II	II.7	2,300	0.436	$ 39,253	$ 43,179	$ 43,179
II	II.8	2,200	0.417	$ 37,547	$ 41,301	$ 41,301
II	II.9	5,400	1.023	$ 92,160	$ 101,376	$ 101,376
II	II.10	6,600	1.250	$ 112,640	$ 123,904	$ 123,904
II	II.11	900	0.170	$ 15,360	$ 16,896	$ 16,896
II	II.12	900	0.170	$ 15,360	$ 16,896	$ 16,896
II	II.13	-	0.000	$ -	$ -	$ -
II	II.14	-	0.000	$ -	$ -	$ -
II	II.15	300	0.057	$ 5,120	$ 5,632	$ 5,632
	Sub-Total	*24,900*	*4.716*	*$ 424,960*	*$ 467,456*	*$ 467,456*
III	III.1	2,000	0.379	$ 34,133	$ 37,547	$ 37,547
III	III.2	-	0.000	$ -	$ -	$ -
III	III.3	2,300	0.436	$ 39,253	$ 43,179	$ 43,179
III	III.4	3,400	0.644	$ 58,027	$ 63,829	$ 63,829
III	III.5	3,200	0.606	$ 54,613	$ 60,075	$ 60,075
III	III.6	900	0.170	$ 15,360	$ 16,896	$ 16,896
III	III.7	-	0.000	$ -	$ -	$ -
III	III.8	-	0.000	$ -	$ -	$ -
	Sub-Total	*11,800*	*2.235*	*$ 201,387*	*$ 221,525*	*$ 221,525*
Ia	ARNG.1	-	0.000	$ -	$ -	$ -
Ia	ARNG.2	-	0.000	$ -	$ -	$ -
Ia	ARNG.3	-	0.000	$ -	$ -	$ -
Ia	ARNG.4	-	0.000	$ -	$ -	$ -
Ia	ARNG.5	-	0.000	$ -	$ -	$ -
	Sub-Total	*-*	*0.000*	*$ -*	*$ -*	*$ -*
Ia	OS.1	-	0.000	$ -	$ -	$ -
Ia	OS.2	-	0.000	$ -	$ -	$ -
Ia	OS.3	-	0.000	$ -	$ -	$ -
Ia	OS.4	-	0.000	$ -	$ -	$ -
Ib	OS.5	2,100	0.398	$ 35,840	$ 39,424	$ 39,424
II	OS.6	800	0.152	$ 13,653	$ 15,019	$ 15,019

Ib	OS.7	1,800	0.341	$	30,720	$ 33,792	$	33,792
III	OS.8	-	0.000	$	-	$ -	$	-
III	OS.9	6,600	1.250	$	112,640	$ 123,904	$	123,904
Ia	OS.10	1,500	0.284	$	25,600	$ 28,160	$	28,160
Ib	OS.11	-	0.000	$	-	$ -	$	-
II	OS.12	3,000	0.568	$	51,200	$ 56,320	$	56,320
III	OS.13	2,000	0.379	$	34,133	$ 37,547	$	37,547
III	OS.14	-	0.000	$	-	$ -	$	-
III	OS.15	-	0.000	$	-	$ -	$	-
	Sub-Total	*17,800*	*3.371*	$	*303,787*	$ *334,165*	$	*334,165*
	Phase Ia	*1,500*	*0.28*	$	*25,600*	$ *28,160*	$	*28,160*
	Phase Ib	*3,900*	*0.74*	$	*66,560*	$ *73,216*	$	*73,216*
	Phase II	*3,800*	*0.72*	$	*64,853*	$ *71,339*	$	*71,339*
	Phase III	*8,600*	*1.63*	$	*146,773*	$ *161,451*	$	*161,451*
Ia	ART.1	-	0.000	$	-	$ -	$	-
Ib	ART.2	-	0.000	$	-	$ -	$	-
II	ART.3	-	0.000	$	-	$ -	$	-
III	ART.4	-	0.000	$	-	$ -	$	-
III	ART.5	-	0.000	$	-	$ -	$	-
	Sub-Total	-	*0.000*	$	-	$ -	$	-
	Phase Ia	-	-	$	-	$ -	$	-
	Phase Ib	-	-	$	-	$ -	$	-
	Phase II	-	-	$	-	$ -	$	-
	Phase III	-	-	$	-	$ -	$	-
Ia	BW.1	-	0.000	$	-	$ -	$	-
Ib	BW.2	-	0.000	$	-	$ -	$	-
II	BW.3	-	0.000	$	-	$ -	$	-
III	BW.4	-	0.000	$	-	$ -	$	-
	Sub-Total	-	*0.000*	$	-	$ -	$	-
	Other Non-Parcel Costs						$	*34,825*
	Planning						$	-
	Item #2						$	-
	Item #3						$	-
	Item #4						$	*34,825*
	Sub-Total							
	Total	*74,200*	*14.053*	$	*1,266,347*	$ *1,392,981*	$	*1,427,806*

Assumptions:	value	units
a For Sub-Total Construction Costs include:		
Road Width	24	feet
Removal of Pavement	$ 3.20	$/SY
Erosion & Sediment Control	$ 3.20	$/SY
b For Total Construction include:		
Contingency.	10%	%
c For Project Total include:		
Total Construction cost		
d For Planning Costs include:		
Planning	2.5%	%
e Source:		
Cost Estimate Chart (Feb. 17, 1995), Alabama Dept. of Transportation, Zone II, Hilly Terrain.		

Existing Roads (Interim Closures)

Parcel Assigned	Parcel ID	Road Length (feet)	Road Length (miles)	Closure/Reopen Cost ($)	Maintenance Cost ($)	Number of Years	Total Project ($)
Ia	Ia.1	-	-	$ -	$ -	-	$ -
Ia	Ia.2	-	-	$ -	$ -	-	$ -
Ia	Ia.3	-	-	$ -	$ -	-	$ -
Ia	Ia.4	-	-	$ -	$ -	-	$ -
Ia	Ia.5	-	-	$ -	$ -	-	$ -
Ia	Ia.6	-	-	$ -	$ -	-	$ -
	Sub-Total	-	-	$ -	$ -	-	$ -
Ib	Ib.1	-	-	$ -	$ -	-	$ -
Ib	Ib.2	-	-	$ -	$ -	-	$ -
Ib	Ib.3	-	-	$ -	$ -	-	$ -
Ib	Ib.4	-	-	$ -	$ -	-	$ -
Ib	Ib.5	-	-	$ -	$ -	-	$ -
Ib	Ib.6	-	-	$ -	$ -	-	$ -
Ib	Ib.7	-	-	$ -	$ -	-	$ -
	Sub-total	-	-	$ -	$ -	-	$ -
II	II.1	-	-	$ -	$ -	-	$ -
II	II.2	-	-	$ -	$ -	-	$ -
II	II.3	-	-	$ -	$ -	-	$ -
II	II.4	-	-	$ -	$ -	-	$ -
II	II.5	-	-	$ -	$ -	-	$ -
II	II.6	-	-	$ -	$ -	-	$ -
II	II.7	-	-	$ -	$ -	-	$ -
II	II.8	-	-	$ -	$ -	-	$ -
II	II.9	5,400	1.02	$ 10,227	$ 6,136	1	$ 16,364
II	II.10	6,600	1.25	$ 12,500	$ 7,500	1	$ 20,000
II	II.11	900	0.17	$ 1,705	$ 1,023	1	$ 2,727
II	II.12	900	0.17	$ 1,705	$ 1,023	1	$ 2,727
II	II.13	-	-	$ -	$ -	-	$ -
II	II.14	-	-	$ -	$ -	-	$ -
II	II.15	-	-	$ -	$ -	-	$ -
	Sub-Total	*13,800*	*2.61*	*$ 26,136*	*$ 15,682*	*4*	*$ 41,818*
III	III.1	2,000	0.38	$ 3,788	$ 2,273	1	$ 6,061
III	III.2	-	-	$ -	$ -	-	$ -
III	III.3	2,300	0.44	$ 4,356	$ 2,614	1	$ 6,970
III	III.4	3,400	0.64	$ 6,439	$ 3,864	1	$ 10,303
III	III.5	3,200	0.61	$ 6,061	$ 3,636	1	$ 9,697
III	III.6	900	0.17	$ 1,705	$ 1,023	1	$ 2,727
III	III.7	-	-	$ -	$ -	-	$ -
III	III.8	-	-	$ -	$ -	-	$ -
	Sub-Total	*11,800*	*2.23*	*$ 22,348*	*$ 13,409*	*5*	*$ 35,758*
Ia	ARNG.1	-	-	$ -	$ -	-	$ -
Ia	ARNG.2	-	-	$ -	$ -	-	$ -
Ia	ARNG.3	-	-	$ -	$ -	-	$ -
Ia	ARNG.4	-	-	$ -	$ -	-	$ -
Ia	ARNG.5	-	-	$ -	$ -	-	$ -
	Sub-Total	-	-	$ -	$ -	-	$ -
Ia	OS.1	-	-	$ -	$ -	-	$ -
Ia	OS.2	-	-	$ -	$ -	-	$ -
Ia	OS.3	-	-	$ -	$ -	-	$ -

Ia	OS.4	-	-	$ -	$	-	-	$	-	
Ib	OS.5	-	-	$ -	$	-	-	$	-	
II	OS.6	-	-	$ -	$	-	-	$	-	
Ib	OS.7	-	-	$ -	$	-	-	$	-	
III	OS.8	-	-	$ -	$	-	-	$	-	
III	OS.9	-	-	$ -	$	-	-	$	-	
Ia	OS.10	-	-	$ -	$	-	-	$	-	
Ib	OS.11	-	-	$ -	$	-	-	$	-	
II	OS.12	3,000	0.57	$ 5,682	$	3,409	1	$	9,091	
III	OS.13	2,000	0.38	$ 3,788	$	2,273	1	$	6,061	
III	OS.14	-	-	$ -	$	-	-	$	-	
III	OS.15	-	-	$ -	$	-	-	$	-	
	Sub-Total	***5,000***	***0.95***	***$ 9,470***	***$***	***5,682***	***2***	***$***	***15,152***	
	Phase Ia	-	-					$	-	
	Phase Ib	-	-					$	-	
	Phase II	***3,000***	***0.57***					$	***9,091***	
	Phase III	***2,000***	***0.38***					$	***6,061***	

Ia	ART.1	-	-	$ -	$	-	-	$	-	
Ib	ART.2	-	-	$ -	$	-	-	$	-	
II	ART.3	-	-	$ -	$	-	-	$	-	
III	ART.4	-	-	$ -	$	-	-	$	-	
III	ART.5	-	-	$ -	$	-	-	$	-	
	Sub-Total	-	-	$ -	$	-	-	$	-	
	Phase Ia	-	-					$	-	
	Phase Ib	-	-					$	-	
	Phase II	-	-					$	-	
	Phase III	-	-					$	-	

Ia	BW.1	-	-	$ -	$	-	-	$	-	
Ib	BW.2	-	-	$ -	$	-	-	$	-	
II	BW.3	-	-	$ -	$	-	-	$	-	
III	BW.4	-	-	$ -	$	-	-	$	-	
	Sub-Total	-	-	$ -	$	-	-	$	-	

	Other Non-Parcel Costs							$	***2,318***	
	Planning							$	-	
	Item #2							$	-	
	Item #3							$	-	
	Item #4							$	2,318	
	Sub-Total									
	Total	***30,600***	***5.795***	***$ 57,955***	***$***	***34,773***	***11***	***$***	***95,045***	

Assumptions:	value	units
a For Project Total Costs include:		
Closure/Reopening Cost	$ 10,000	$/mile
Annual Maintenance Cost	$ 6,000	$/mile/yr
b For Planning Costs include:		
Planning	2.5%	%
c Source:		
Cost Estimate Chart (Feb. 17, 1995), Alabama Dept. of Transportation, Zone II, Hilly Terrain.		

New Roads (2-Lane)

Parcel Assigned	Parcel ID	Road Length (feet)	Road Length (miles)	Sub-Total Construction ($)	Total Construction ($)	Total Project ($)
Ia	Ia.1	5,000	0.947	$ 1,740,530	$ 2,088,636	$ 2,338,494
Ia	Ia.2	10,800	2.045	$ 3,759,545	$ 4,511,455	$ 5,051,148
Ia	Ia.3	-	0.000	$ -	$ -	$ -
Ia	Ia.4	-	0.000	$ -	$ -	$ -
Ia	Ia.5	-	0.000	$ -	$ -	$ -
Ia	Ia.6	-	0.000	$ -	$ -	$ -
	Sub-Total	*15,800*	*2.992*	*$ 5,500,076*	*$ 6,600,091*	*$ 7,389,642*
Ib	Ib.1	1,400	0.265	$ 487,348	$ 584,818	$ 654,778
Ib	Ib.2	-	0.000	$ -	$ -	$ -
Ib	Ib.3	600	0.114	$ 208,864	$ 250,636	$ 280,619
Ib	Ib.4	-	0.000	$ -	$ -	$ -
Ib	Ib.5	-	0.000	$ -	$ -	$ -
Ib	Ib.6	3,800	0.720	$ 1,322,803	$ 1,587,364	$ 1,777,256
Ib	Ib.7	2,000	0.379	$ 696,212	$ 835,455	$ 935,398
	Sub-total	*7,800*	*1.477*	*$ 2,715,227*	*$ 3,258,273*	*$ 3,648,051*
II	II.1	6,900	1.307	$ 2,401,932	$ 2,882,318	$ 3,227,122
II	II.2	-	0.000	$ -	$ -	$ -
II	II.3	600	0.114	$ 208,864	$ 250,636	$ 280,619
II	II.4	-	0.000	$ -	$ -	$ -
II	II.5	4,800	0.909	$ 1,670,909	$ 2,005,091	$ 2,244,955
II	II.6	-	0.000	$ -	$ -	$ -
II	II.7	4,000	0.758	$ 1,392,424	$ 1,670,909	$ 1,870,795
II	II.8	2,900	0.549	$ 1,009,508	$ 1,211,409	$ 1,356,327
II	II.9	5,900	1.117	$ 2,053,826	$ 2,464,591	$ 2,759,423
II	II.10	7,000	1.326	$ 2,436,742	$ 2,924,091	$ 3,273,892
II	II.11	-	0.000	$ -	$ -	$ -
II	II.12	4,400	0.833	$ 1,531,667	$ 1,838,000	$ 2,057,875
II	II.13	1,000	0.189	$ 348,106	$ 417,727	$ 467,699
II	II.14	-	0.000	$ -	$ -	$ -
II	II.15	2,200	0.417	$ 765,833	$ 919,000	$ 1,028,938
	Sub-Total	*39,700*	*7.519*	*$ 13,819,811*	*$ 16,583,773*	*$ 18,567,645*
III	III.1	2,900	0.549	$ 1,009,508	$ 1,211,409	$ 1,356,327
III	III.2	-	0.000	$ -	$ -	$ -
III	III.3	700	0.133	$ 243,674	$ 292,409	$ 327,389
III	III.4	4,500	0.852	$ 1,566,477	$ 1,879,773	$ 2,104,645
III	III.5	6,700	1.269	$ 2,332,311	$ 2,798,773	$ 3,133,582
III	III.6	3,500	0.663	$ 1,218,371	$ 1,462,045	$ 1,636,946
III	III.7	1,000	0.189	$ 348,106	$ 417,727	$ 467,699
III	III.8	900	0.170	$ 313,295	$ 375,955	$ 420,929
	Sub-Total	*20,200*	*3.826*	*$ 7,031,742*	*$ 8,438,091*	*$ 9,447,517*
Ia	ARNG.1	-	0.000	$ -	$ -	$ -
Ia	ARNG.2	-	0.000	$ -	$ -	$ -
Ia	ARNG.3	-	0.000	$ -	$ -	$ -
Ia	ARNG.4	-	0.000	$ -	$ -	$ -
Ia	ARNG.5	-	0.000	$ -	$ -	$ -
	Sub-Total	-	*0.000*	*$ -*	*$ -*	*$ -*
Ia	OS.1	-	0.000	$ -	$ -	$ -
Ia	OS.2	-	0.000	$ -	$ -	$ -
Ia	OS.3	3,400	0.644	$ 1,183,561	$ 1,420,273	$ 1,590,176
Ia	OS.4	-	0.000	$ -	$ -	$ -
Ib	OS.5	-	0.000	$ -	$ -	$ -
II	OS.6	400	0.076	$ 139,242	$ 167,091	$ 187,080
Ib	OS.7	1,200	0.227	$ 417,727	$ 501,273	$ 561,239
III	OS.8	300	0.057	$ 104,432	$ 125,318	$ 140,310
III	OS.9	-	0.000	$ -	$ -	$ -

Ia	OS.10	-	0.000	$ -	$ -	$	-
Ib	OS.11	-	0.000	$ -	$ -	$	-
II	OS.12	300	0.057	$ 104,432	$ 125,318	$	140,310
III	OS.13	2,800	0.530	$ 974,697	$ 1,169,636	$	1,309,557
III	OS.14	-	0.000	$ -	$ -	$	-
III	OS.15	-	0.000	$ -	$ -	$	-
	Sub-Total	*8,400*	*1.591*	$ *2,924,091*	$ *3,508,909*	$	*3,928,670*
	Phase Ia	*3,400*	*0.64*	$ *1,183,561*	$ *1,420,273*	$	*1,590,176*
	Phase Ib	*1,200*	*0.23*	$ *417,727*	$ *501,273*	$	*561,239*
	Phase II	*700*	*0.13*	$ *243,674*	$ *292,409*	$	*327,389*
	Phase III	*3,100*	*0.59*	$ *1,079,129*	$ *1,294,955*	$	*1,449,866*
Ia	ART.1	-	0.000	$ -	$ -	$	-
Ib	ART.2	-	0.000	$ -	$ -	$	-
II	ART.3	-	0.000	$ -	$ -	$	-
III	ART.4	-	0.000	$ -	$ -	$	-
III	ART.5	-	0.000	$ -	$ -	$	-
	Sub-Total	-	*0.000*	$ -	$ -	$	-
	Phase Ia	-	-	$ -	$ -	$	-
	Phase Ib	-	-	$ -	$ -	$	-
	Phase II	-	-	$ -	$ -	$	-
	Phase III	-	-	$ -	$ -	$	-
Ia	BW.1	-	0.000	$ -	$ -	$	-
Ib	BW.2	-	0.000	$ -	$ -	$	-
II	BW.3	-	0.000	$ -	$ -	$	-
III	BW.4	-	0.000	$ -	$ -	$	-
	Sub-Total	-	*0.000*	$ -	$ -	$	-
	Other Non-Parcel Costs					$	*1,074,538*
	Planning					$	-
	Item #2					$	-
	Item #3					$	-
	Item #4					$	*1,074,538*
	Sub-Total						
	Total	*91,900*	*17.405*	$ *31,990,947*	$ *38,389,136*	$	*44,056,064*

Assumptions:	value	units
a For Sub-Total Construction Costs Include:		
Road Width	24	feet
Grade & Drain	$ 859,000	$/mile
Base & Pave	$ 979,000	$/mile
b For Total Construction Include:		
Engineering Controls	2%	%
Mobilization	5%	%
Engineering & Inspection	13%	%
c For Project Total Include:		
Preliminary Engineering	7.5%	%
Utilities Relocation	$ 126,000	$/mile
d For Planning Costs Include:		
Planning	2.5%	%
e Source:		
Cost Estimate Chart (Feb. 17, 1995), Alabama Dept. of Transportation, Zone II, Hilly Terrain.		

Parking Lots

Phase Assigned	Parcel ID	Future Retail (park spaces)	Future Office (park spaces)	Future Industrial (park spaces)	Future Parking Space (square feet)	Total Project ($)
Ia	Ia.1	-	-	-	-	$ -
Ia	Ia.2	-	-	-	-	$ -
Ia	Ia.3	-	-	-	-	$ -
Ia	Ia.4	-	-	-	-	$ -
Ia	Ia.5	-	-	-	-	$ -
Ia	Ia.6	-	-	-	-	$ -
	Sub-Total	-	-	-	-	$ -
Ib	Ib.1	-	-	-	-	$ -
Ib	Ib.2	-	-	-	-	$ -
Ib	Ib.3	-	-	-	-	$ -
Ib	Ib.4	-	-	-	-	$ -
Ib	Ib.5	-	-	-	-	$ -
Ib	Ib.6	-	-	-	-	$ -
Ib	Ib.7	-	-	-	-	$ -
Ib	Ib.8	-	-	-	-	$ -
	Sub-Total	-	-	-	-	$ -
II	II.1	-	-	-	-	$ -
II	II.2	762	-	-	266,805	$ 2,668,050
II	II.3	-	-	-	-	$ -
II	II.4	1,198	-	-	419,265	$ 4,192,650
II	II.5	-	-	-	-	$ -
II	II.6	-	-	-	-	$ -
II	II.7	-	-	-	-	$ -
II	II.8	-	425	-	148,649	$ 1,486,485
II	II.9	-	-	592	207,346	$ 2,073,456
II	II.10	-	-	685	239,743	$ 2,397,434
II	II.11	-	-	426	149,030	$ 1,490,297
II	II.12	-	-	500	174,948	$ 1,749,479
II	II.13	-	-	222	77,755	$ 777,546
II	II.14	-	-	167	58,316	$ 583,160
II	II.15	-	-	-	-	$ -
	Sub-Total	*1,960*	*425*	*2,592*	*1,741,856*	$ *17,418,555*
III	III.1	-	-	-	-	$ -
III	III.2	-	-	-	-	$ -
III	III.3	-	-	-	-	$ -
III	III.4	-	-	352	123,111	$ 1,231,115
III	III.5	-	-	426	149,030	$ 1,490,297
III	III.6	-	-	481	168,468	$ 1,684,683
III	III.7	-	-	352	123,111	$ 1,231,115
III	III.8	-	-	-	-	$ -
	Sub-Total	-	-	*1,611*	*563,721*	$ *5,637,209*
Ia	ARNG.1	-	-	-	-	$ -
Ia	ARNG.2	-	-	-	-	$ -
Ia	ARNG.3	-	-	-	-	$ -
Ia	ARNG.4	-	-	-	-	$ -
Ia	ARNG.5	-	-	-	-	$ -
	Sub-Total	-	-	-	-	$ -
Ia	OS.1	-	-	-	-	$ -
Ia	OS.2	-	-	-	-	$ -
Ia	OS.3	-	-	-	-	$ -
Ia	OS.4	-	-	-	-	$ -
Ib	OS.5	-	-	-	-	$ -
II	OS.6	-	-	-	-	$ -
Ib	OS.7	-	-	-	-	$ -
III	OS.8	-	-	-	-	$ -

III	OS.9	-	-	-	-	$	-
Ia	OS.10	-	-	-	-	$	-
Ib	OS.11	-	-	-	-	$	-
II	OS.12	-	-	-	-	$	-
III	OS.13	-	-	-	-	$	-
III	OS.14	-	-	-	-	$	-
III	OS.15	-	-	-	-	$	-
	Sub-Total	-	-	-	-	$	-
	Phase Ia	-	-	$ -	$ -	$	-
	Phase Ib	-	-	$ -	$ -	$	-
	Phase II	-	-	$ -	$ -	$	-
	Phase III	-	-	$ -	$ -	$	-
Ia	ART.1	-	-	-	-	$	-
Ib	ART.2	-	-	-	-	$	-
II	ART.3	-	-	-	-	$	-
III	ART.4	-	-	-	-	$	-
III	ART.5	-	-	-	-	$	-
	Sub-Total	-	-	-	-	$	-
	Phase Ia	-	-	$ -	$ -	$	-
	Phase Ib	-	-	$ -	$ -	$	-
	Phase II	-	-	$ -	$ -	$	-
	Phase III	-	-	$ -	$ -	$	-
Ia	BW.1	-	-	-	-	$	-
Ib	BW.2	-	-	-	-	$	-
II	BW.3	-	-	-	-	$	-
III	BW.4	-	-	-	-	$	-
	Sub-Total	-	-	-	-	$	-
	Other Non-Parcel Costs					$	576,394
	Planning					$	-
	Item #2					$	-
	Item #3					$	-
	Item #4					$	-
	Sub-Total					$	*576,394*
	Total	*1,960*	*425*	*4,202*	*2,305,576*	$	*23,632,158*

Assumptions:	value	units
a *For Number of Future Parking Space Requirements include:*		
No. Parking spaces by land use type:		
Industrial	1.7	No/1000 SF Bldg
Office	3.0	No/1000 SF Bldg
Retail	5.0	No/1000 SF Bldg
Institutional	3.0	No/1000 SF Bldg
b *For Future Parking Space Area Include:*		
Space required for each parking space	350	SF
c *For Project Total Cost Include:*		
Parking Lot Costs	$ 90	SY
d. *For Planning Costs Include:* Planning	2.5%	%
e. *Source:* EDAW, Inc. and ECG, Inc., 9/10/97		

Railroad

Phase Assigned		Track Length (feet)	Track Length (miles)	Other Expenses	Total Project ($)
III	New Railroad Extension	13,800	2.61		$ 3,035,000
	Other Non-Parcel Costs				
	Planning			$ -	$ 75,875
	Item #2			$ -	$ -
	Item #3			$ -	$ -
	Item #4			$ -	$ -
	Sub-Total			$ -	$ 75,875
	Total	***13,800***	***2.61***	***$ -***	***$ 3,110,875***

Assumptions:

a For Total Project $ assume:

	Value	Units	Unit Cost	Units
New Track	13,800	track feet	$ 173	$/track foot
Railroad Bridge (2-Lane Road)	-	track feet	$ 1,813	$/track foot
Railroad Bridge (4-Lane Road)	200	track feet	$ 1,813	$/track foot
Signals	3	No.	$ 95,000	$/each

b. For Planning Costs include:

Planning	2.5%	%

b. Source:

Cost Estimate Chart (Feb. 17, 1995), Alabama Dept. of Transportation, Zone II, Hilly Terrain

Sidewalks

Phase Assigned	Parcel ID	New 2 Lane Roads (feet)	New Sidewalks (feet)	Sub-Total Construction ($)	Total Construction ($)	Total Project ($)
Ia	Ia.1	5,000	10,000	$ 53,972	$ 64,766	$ 68,814
Ia	Ia.2	10,800	21,600	$ 116,579	$ 139,895	$ 148,638
Ia	Ia.3	-	-	$ -	$ -	$ -
Ia	Ia.4	-	-	$ -	$ -	$ -
Ia	Ia.5	-	-	$ -	$ -	$ -
Ia	Ia.6	-	-	$ -	$ -	$ -
	Sub-Total	*15,800*	*31,600*	$ *170,551*	$ *204,661*	$ *217,452*
Ib	Ib.1	1,400	2,800	$ 15,112	$ 18,134	$ 19,268
Ib	Ib.2	-	-	$ -	$ -	$ -
Ib	Ib.3	600	1,200	$ 6,477	$ 7,772	$ 8,258
Ib	Ib.4	-	-	$ -	$ -	$ -
Ib	Ib.5	-	-	$ -	$ -	$ -
Ib	Ib.6	3,800	7,600	$ 41,018	$ 49,222	$ 52,299
Ib	Ib.7	2,000	4,000	$ 21,589	$ 25,906	$ 27,526
	Sub-Total	*7,800*	*15,600*	$ *84,196*	$ *101,035*	$ *107,350*
II	II.1	6,900	13,800	$ 74,481	$ 89,377	$ 94,963
II	II.2	-	-	$ -	$ -	$ -
II	II.3	600	1,200	$ 6,477	$ 7,772	$ 8,258
II	II.4	-	-	$ -	$ -	$ -
II	II.5	4,800	9,600	$ 51,813	$ 62,175	$ 66,061
II	II.6	-	-	$ -	$ -	$ -
II	II.7	4,000	8,000	$ 43,177	$ 51,813	$ 55,051
II	II.8	2,900	5,800	$ 31,304	$ 37,564	$ 39,912
II	II.9	5,900	11,800	$ 63,687	$ 76,424	$ 81,200
II	II.10	7,000	14,000	$ 75,560	$ 90,672	$ 96,339
II	II.11	-	-	$ -	$ -	$ -
II	II.12	4,400	8,800	$ 47,495	$ 56,994	$ 60,556
II	II.13	1,000	2,000	$ 10,794	$ 12,953	$ 13,763
II	II.14	-	-	$ -	$ -	$ -
II	II.15	2,200	4,400	$ 23,748	$ 28,497	$ 30,278
	Sub-Total	*39,700*	*79,400*	$ *428,535*	$ *514,242*	$ *546,382*
III	III.1	2,900	5,800	$ 31,304	$ 37,564	$ 39,912
III	III.2	-	-	$ -	$ -	$ -
III	III.3	700	1,400	$ 7,556	$ 9,067	$ 9,634
III	III.4	4,500	9,000	$ 48,575	$ 58,289	$ 61,933
III	III.5	6,700	13,400	$ 72,322	$ 86,786	$ 92,211
III	III.6	3,500	7,000	$ 37,780	$ 45,336	$ 48,170
III	III.7	1,000	2,000	$ 10,794	$ 12,953	$ 13,763
III	III.8	900	1,800	$ 9,715	$ 11,658	$ 12,387
	Sub-Total	*20,200*	*40,400*	$ *218,046*	$ *261,655*	$ *278,008*
Ia	ARNG.1	-	-	$ -	$ -	$ -
Ia	ARNG.2	-	-	$ -	$ -	$ -
Ia	ARNG.3	-	-	$ -	$ -	$ -
Ia	ARNG.4	-	-	$ -	$ -	$ -
Ia	ARNG.5	-	-	$ -	$ -	$ -
	Sub-Total	-	-	$ -	$ -	$ -
Ia	OS.1	-	-	$ -	$ -	$ -
Ia	OS.2	-	-	$ -	$ -	$ -
Ia	OS.3	3,400	6,800	$ 36,701	$ 44,041	$ 46,793
Ia	OS.4	-	-	$ -	$ -	$ -
Ib	OS.5	-	-	$ -	$ -	$ -
II	OS.6	400	800	$ 4,318	$ 5,181	$ 5,505
Ib	OS.7	1,200	2,400	$ 12,953	$ 15,544	$ 16,515
III	OS.8	300	600	$ 3,238	$ 3,886	$ 4,129
III	OS.9	-	-	$ -	$ -	$ -

Ia	OS.10	-	-	$ -	$ -	$	-
Ib	OS.11	-	-	$ -	$ -	$	-
II	OS.12	300	600	$ 3,238	$ 3,886	$	4,129
III	OS.13	2,800	5,600	$ 30,224	$ 36,269	$	38,536
III	OS.14	-	-	$ -	$ -	$	-
III	OS.15	-	-	$ -	$ -	$	-
	Sub-Total	*8,400*	*16,800*	$ *90,672*	$ *108,807*	$	*115,607*
	Phase Ia	*3,400*	*6,800*	$ *36,701*	$ *44,041*	$	*46,793*
	Phase Ib	*1,200*	*2,400*	$ *12,953*	$ *15,544*	$	*16,515*
	Phase II	*700*	*1,400*	$ *7,556*	$ *9,067*	$	*9,634*
	Phase III	*3,100*	*6,200*	$ *33,462*	$ *40,155*	$	*42,665*
Ia	ART.1	-	-	$ -	$ -	$	-
Ib	ART.2	-	-	$ -	$ -	$	-
II	ART.3	-	-	$ -	$ -	$	-
III	ART.4	-	-	$ -	$ -	$	-
III	ART.5	-	-	$ -	$ -	$	-
	Sub-Total	-	-	$ -	$ -	$	-
	Phase Ia	-	-	$ -	$ -	$	-
	Phase Ib	-	-	$ -	$ -	$	-
	Phase II	-	-	$ -	$ -	$	-
	Phase III	-	-	$ -	$ -	$	-
Ia	BW.1	-	-	$ -	$ -	$	-
Ib	BW.2	-	-	$ -	$ -	$	-
II	BW.3	-	-	$ -	$ -	$	-
III	BW.4	-	-	$ -	$ -	$	-
	Sub-Total	-	-	$ -	$ -	$	-
	Other Non-Parcel Costs						
	Planning					$	31,620
	Item #2					$	-
	Item #3					$	-
	Item #4					$	-
	Sub-Total					$	*31,620*
	Total	*91,900*	*183,800*	$ *992,000*	$ *1,190,400*	$	*1,296,420*

Assumptions:		value	units
a For Sub-Total Construction Costs Include:			
Sidewalk width		4	Ft
Materials Type (options):			
Concrete 4" w/WW, No base	$	32.29	SY
Bitum. Conc., 2" w/4" Base	$	13.33	SY
4" Conc., No reinf., No Base	$	29.97	SY
Mtls Type Selected:	$	13.33	SY
Means Region Index		91.1%	%
Eqn.: [(SW width*Street Length)/9*2*Mtl. Type*Means Index]			
b For Total Construction Include:			
Engineering Controls		2%	%
Mobilization		5%	%
Engineering & Inspection		13%	%
c For Project Total Include:			
Preliminary Engineering		7.5%	%
d. For Planning Costs Include:			
Planning		2.5%	%
e. Source:			
1996 Comprehensive Unit Price Schedule, County of Fairfax, VA			

Bike/Walk Paths

Phase Assigned	Parcel ID	Path Length (feet)	Path Length (miles)	Sub-Total Construction ($)	Total Construction ($)	Total Project ($)
Ia	Ia.1	-	-	$ -	$ -	$ -
Ia	Ia.2	-	-	$ -	$ -	$ -
Ia	Ia.3	-	-	$ -	$ -	$ -
Ia	Ia.4	-	-	$ -	$ -	$ -
Ia	Ia.5	-	-	$ -	$ -	$ -
Ia	Ia.6	-	-	$ -	$ -	$ -
	Sub-Total	-		$ -	$ -	$ -
Ib	Ib.1	-	-	$ -	$ -	$ -
Ib	Ib.2	-	-	$ -	$ -	$ -
Ib	Ib.3	-	-	$ -	$ -	$ -
Ib	Ib.4	-	-	$ -	$ -	$ -
Ib	Ib.5	-	-	$ -	$ -	$ -
Ib	Ib.6	-	-	$ -	$ -	$ -
Ib	Ib.7	-	-	$ -	$ -	$ -
	Sub-total	-		$ -	$ -	$ -
II	II.1	-	-	$ -	$ -	$ -
II	II.2	-	-	$ -	$ -	$ -
II	II.3	-	-	$ -	$ -	$ -
II	II.4	-	-	$ -	$ -	$ -
II	II.5	-	-	$ -	$ -	$ -
II	II.6	-	-	$ -	$ -	$ -
II	II.7	-	-	$ -	$ -	$ -
II	II.8	-	-	$ -	$ -	$ -
II	II.9	-	-	$ -	$ -	$ -
II	II.10	-	-	$ -	$ -	$ -
II	II.11	-	-	$ -	$ -	$ -
II	II.12	-	-	$ -	$ -	$ -
II	II.13	-	-	$ -	$ -	$ -
II	II.14	-	-	$ -	$ -	$ -
II	II.15	-	-	$ -	$ -	$ -
	Sub-Total	-		$ -	$ -	$ -
III	III.1	-	-	$ -	$ -	$ -
III	III.2	-	-	$ -	$ -	$ -
III	III.3	-	-	$ -	$ -	$ -
III	III.4	-	-	$ -	$ -	$ -
III	III.5	-	-	$ -	$ -	$ -
III	III.6	-	-	$ -	$ -	$ -
III	III.7	-	-	$ -	$ -	$ -
III	III.8	-	-	$ -	$ -	$ -
	Sub-Total	-		$ -	$ -	$ -
Ia	ARNG.1	-	-	$ -	$ -	$ -
Ia	ARNG.2	-	-	$ -	$ -	$ -
Ia	ARNG.3	-	-	$ -	$ -	$ -
Ia	ARNG.4	-	-	$ -	$ -	$ -
Ia	ARNG.5	-	-	$ -	$ -	$ -
	Sub-Total	-		$ -	$ -	$ -
Ia	OS.1	-	-	$ -	$ -	$ -
Ia	OS.2	-	-	$ -	$ -	$ -
Ia	OS.3	-	-	$ -	$ -	$ -
Ia	OS.4	-	-	$ -	$ -	$ -
Ib	OS.5	-	-	$ -	$ -	$ -
II	OS.6	-	-	$ -	$ -	$ -
Ib	OS.7	-	-	$ -	$ -	$ -
III	OS.8	-	-	$ -	$ -	$ -
III	OS.9	-	-	$ -	$ -	$ -

Ia	OS.10	-	-	$ -	$	-	$	-
Ib	OS.11	-	-	$ -	$	-	$	-
II	OS.12	-	-	$ -	$	-	$	-
III	OS.13	-	-	$ -	$	-	$	-
III	OS.14	-	-	$ -	$	-	$	-
III	OS.15	-	-	$ -	$	-	$	-
	Sub-Total	-		$ -	$	-	$	-
	Phase Ia	-	-	$ -	$	-	$	-
	Phase Ib	-	-	$ -	$	-	$	-
	Phase II	-	-	$ -	$	-	$	-
	Phase III	-	-	$ -	$	-	$	-
Ia	ART.1	-	-	$ -	$	-	$	-
Ib	ART.2	-	-	$ -	$	-	$	-
II	ART.3	-	-	$ -	$	-	$	-
III	ART.4	-	-	$ -	$	-	$	-
III	ART.5	-	-	$ -	$	-	$	-
	Sub-Total	-		$ -	$	-	$	-
	Phase Ia	-	-	$ -	$	-	$	-
	Phase Ib	-	-	$ -	$	-	$	-
	Phase II	-	-	$ -	$	-	$	-
	Phase III	-	-	$ -	$	-	$	-
Ia	BW.1	15,200	2.879	$ 242,849	$	291,419	$	309,633
Ib	BW.2	12,000	2.273	$ 191,723	$	230,068	$	244,447
II	BW.3	25,200	4.773	$ 402,618	$	483,142	$	513,338
III	BW.4	19,600	3.712	$ 313,148	$	375,777	$	399,263
	Sub-Total	*72,000*	*13.636*	*$ 1,150,338*	*$*	*1,380,406*	*$*	*1,466,681*
	Oher Non-Parcel Costs							
	Planning						$	73,334
	Item #2						$	-
	Item #3						$	-
	Item #4						$	-
	Sub-Total						$	73,334
	Total	*72,000*	*13.636*	*$ 1,150,338*	*$*	*1,380,406*	*$*	*1,540,015*

Assumptions:		value	units
a For Sub-Total Construction Costs Include:			
Sidewalk width		8	Ft
Materials Type (options incl. excavation & grading):			
Wood Chip, 4' wide	$	13.48	SY
Bitum Type I, TX-2, 8' wide	$	19.73	SY
Stone Dust w/ Blue Stone Chip Base, 6' wide	$	11.38	SY
Seal Coat w/Soil Cement Base (4"), 6' wide	$	13.42	SY
Mtls Type Selected:	$	19.73	SY
Means Region Index		91.1%	%
Eqn.: [(SW width*Street Length)/9*Mtl. Type*Means Index]			
b For Total Construction Include:			
Engineering Controls		2%	%
Mobilization		5%	%
Engineering & Inspection		13%	%
c For Project Total Include:			
Preliminary Engineering		7.5%	%
d. For Planning Include:			
Planning		5.0%	%
e. Source			
1996 Comprehensive Unit Price Schedule, County of Fairfax, VA			

Fort McClellan Reuse Plan
Implementation Strategy

Capital Improvements Strategy

Utilities

Nc ıer 1997

Utilities Summary

Category/Item	Total Requirements ($)	Phase 1A/1B Year 1 2000	Phase 1B Year 2 2001	Year 3 2002	Year 4 2003	Year 5 2004	Phase II Year 6 2005	Year 7 2006	Year 8 2007	Year 9 2008	Year 10 2009	Year 11 2010	Year 12 2011	Phase III Year 13 2012	Year 14 2013	Year 15 2014	Year 16 2015	Year 17 2016	Total Cost ($)
Water Supply																			
Phase 1a	75,000	75,000																	75,000
Phase 1b	0	0	0	0	0	0													0
Phase II	420,000						420,000												420,000
Phase III	1,593,000													1,593,000					1,593,000
Non-Parcel	100,000	50,000	50,000																100,000
Sub-Total	2,188,000	125,000	50,000	0	0	0	420,000	0	0	0	0	0	0	1,593,000	0	0	0	0	2,188,000
Wastewater Treatment																			
Phase 1a	0	0																	0
Phase 1b	0	0	0	0	0	0													0
Phase II	10,282,376						10,282,376												10,282,376
Phase III	0																		0
Non-Parcel	200,000	100,000	100,000																200,000
Sub-Total	10,482,376	100,000	100,000	0	0	0	10,282,376	0	0	0	0	0	0	0	0	0	0	0	10,482,376
Roadway Improvements																			
Phase 1a	4,104,020	4,104,020																	4,104,020
Phase 1b	3,410,428	642,046	642,046	642,046	642,046	642,046													3,410,428
Phase II	6,118,801						874,114	874,114	874,114	874,114	874,114	874,114	874,114						6,118,801
Phase III	4,628,750													925,746	925,746	925,746	925,746	925,746	4,628,750
Non-Parcel	200,000	100,000	100,000																100,000
Sub-Total	18,441,979	4,846,196	742,046	642,046	642,046	642,046	874,114	874,114	874,114	874,114	874,114	874,114	874,114	925,746	925,746	925,746	925,746	925,746	18,441,979
Electrical Energy Lines																			
Phase 1a	211,935	211,935																	211,935
Phase 1b	939,140	0	222,332	233,659	245,341	257,808													959,140
Phase II	2,202,323						270,489	284,013	298,214	313,125	328,781	345,220	362,481						2,202,323
Phase III	2,103,083													380,605	399,635	419,617	440,598	462,628	2,103,083
Non-Parcel	225,000	112,500	112,500																225,000
Sub-Total	5,781,481	324,435	335,832	233,659	245,341	257,808	270,489	284,013	298,214	313,125	328,781	345,220	362,481	380,605	399,635	419,617	440,598	462,628	5,781,481
Gas Energy Lines																			
Phase 1a	400,000	400,000																	400,000
Phase 1b	400,000	80,000	80,000	80,000	80,000	80,000													400,000
Phase II	1,700,000						242,857	242,857	242,857	242,857	242,857	242,857	242,857						1,700,000
Phase III	1,500,000													300,000	300,000	300,000	300,000	300,000	1,500,000
Non-Parcel	200,000	100,000	100,000																200,000
Sub-Total	4,200,000	580,000	180,000	80,000	80,000	80,000	242,857	242,857	242,857	242,857	242,857	242,857	242,857	300,000	300,000	300,000	300,000	300,000	4,200,000
Gas Industrial Lines																			
Phase 1a	175,000	175,000																	175,000
Phase 1b	500,000	60,000	60,000	60,000	60,000	60,000													300,000
Phase II	500,000						71,429	71,429	71,429	71,429	71,429	71,429	71,429						500,000
Phase III	700,000													140,000	140,000	140,000	140,000	140,000	700,000
Non-Parcel	100,000	50,000	50,000																100,000
Sub-Total	1,975,000	285,000	110,000	60,000	60,000	60,000	71,429	71,429	71,429	71,429	71,429	71,429	71,429	140,000	140,000	140,000	140,000	140,000	1,975,000
Solid Waste Disposal																			
Phase 1a	1,969,200	115,835	115,835	115,835	115,835	115,835	115,835	115,835	115,835	115,835	115,835	115,835	115,835	115,835	115,835	115,835	115,835	115,835	1,969,200
Phase 1b	64,800		4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050	4,050	64,800
Phase II	504,000						42,000	42,000	42,000	42,000	42,000	42,000	42,000	42,000	42,000	42,000	42,000	42,000	504,000
Phase III	1,080,000													216,000	216,000	216,000	216,000	216,000	1,080,000
Non-Parcel	95,000	47,500	47,500																95,000
Sub-Total	3,713,000	163,335	167,385	119,885	119,885	119,885	161,885	161,885	161,885	161,885	161,885	161,885	161,885	377,885	377,885	377,885	377,885	377,885	3,713,000
Solid Waste Collection																			
Phase 1a	400,000	400,000																	400,000
Phase 1b	700,000	140,000	140,000	140,000	140,000	140,000													700,000
Phase II	900,000						128,571	128,571	128,571	128,571	128,571	128,571	128,571						900,000
Phase III	1,000,000													200,000	200,000	200,000	200,000	200,000	1,000,000
Non-Parcel	100,000	50,000	50,000																100,000
Sub-Total	3,100,000	590,000	190,000	140,000	140,000	140,000	128,571	128,571	128,571	128,571	128,571	128,571	128,571	200,000	200,000	200,000	200,000	200,000	3,100,000
Total Utilities	49,611,837	7,053,876	3,914,563	3,315,639	3,327,312	3,339,579	12,451,722	3,762,870	3,777,071	3,791,982	3,847,638	3,814,877	3,841,338	3,917,236	3,243,247	3,343,148	3,364,219	2,404,359	49,611,837

Land Area Summary by Parcel

Phase	Parcel	Parcel ID	Phase #	Parcel #	Area from BldDbs	Total Area (acres)	Built Area (acres)	Developable (acres)	Dev. Reserv (acres)	After Demo Avail (acres)
Ia	1	Ia.1	Ia	1	162	180	80	100	0	100
Ia	2	Ia.2	Ia	2	189	173	77	96	0	96
Ia	3	Ia.3	Ia	3	164	57	47	10	10	0
Ia	4	Ia.4	Ia	4	180	168	168	0	0	0
Ia	5	Ia.5								
Ia	6	Ia.6	R	Ia 6	44	137	0	137	0	137
Phase Ia Sub-total										

Phase	Parcel	Parcel ID	Phase #	Parcel #	Area from BldDbs	Total Area (acres)	Built Area (acres)	Developable (acres)	Dev. Reserv (acres)	After Demo Avail (acres)
Ib	1	Ib.1	Ib	1	98	77	71	6	6	0
Ib	2	Ib.2	Ib	2	25	46	41	5	5	0
Ib	3	Ib.3	Ib	3	18	14	14	0	0	0
Ib	4	Ib.4	Ib	4	41	35	18	17	0	17
Ib	5	Ib.5	Ib	5	99	92	92	0	0	0
Ib	6	Ib.6	Ib	6	40	39	26	13	0	13
Ib	7	Ib.7	Ib	7	68	63	18	45	20	25
			Ib	8	0	43	19	24	0	24
Phase Ib Sub-total										

Phase	Parcel	Parcel ID	Phase #	Parcel #	Area from BldDbs	Total Area (acres)	Built Area (acres)	Developable (acres)	Dev. Reserv (acres)	After Demo Avail (acres)
II	1	II.1	II	1	71	69	0	69	35	34
II	2	II.2	II	2	36	22	0	22	8	14
II	3	II.3	II	3	51	31	31	0	0	0
II	4	II.4	II	4	28	41	4	37	15	22
II	5	II.5	II	5	82	67	21	46	20	26
II	6	II.6	II	6	25	18	18	0	0	0
II	7	II.7	II	7	30	28	6	22	0	22
II	8	II.8	II	8	23	23	0	23	10	13
II	9	II.9	II	9	87	82	0	82	50	32
II	10	II.10	II	10	126	87	0	87	50	37
II	11	II.11	II	11	38	33	0	33	10	23
II	12	II.12	II	12	73	75	8	67	40	27
II	13	II.13	II	13	25	22	0	22	10	12
II	14	II.14	II	14	23	19	0	19	10	9
II	15	II.15	R	II.15	0	316	0	316	0	316
Phase II Sub-total										

Phase	Parcel	Parcel ID	Phase #	Parcel #	Area from BldDbs	Total Area (acres)	Built Area (acres)	Developable (acres)	Dev. Reserv (acres)	After Demo Avail (acres)
III	1	III.1	R	III.1	36	27	0	27	7	20
III	2	III.2	R	III.2	400	378	0	378	120	258
III	3	III.3	III	3	54	44	2	42	0	42
III	4	III.4	III	4	88	54	0	54	35	19
III	5	III.5	III	5	107	73	0	73	50	23
III	6	III.6	III	6	167	178	0	178	150	28
III	7	III.7	III	7	70	84	0	84	45	19
III	8	III.8	R	III.8	144	93	0	93	0	93
Phase III Sub-total										

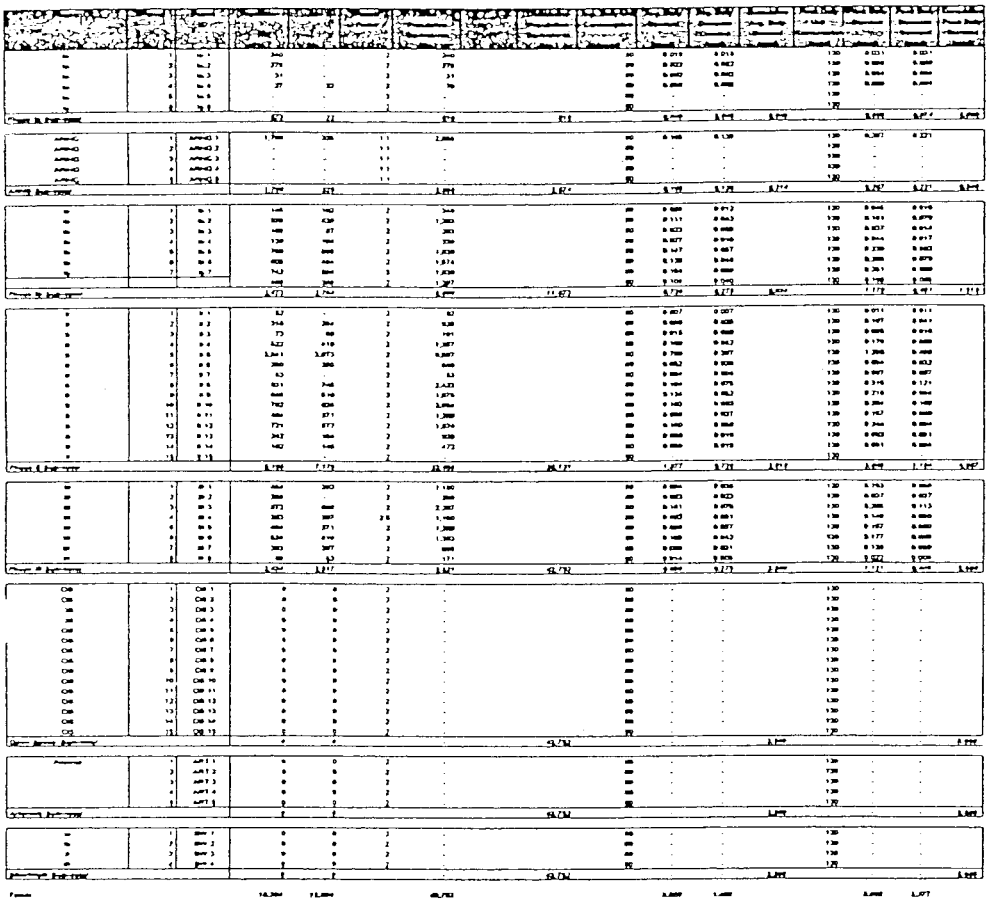
Phase	Parcel	Parcel ID	Phase #	Parcel #	Area from BldDbs	Total Area (acres)	Built Area (acres)	Developable (acres)	Dev. Reserv (acres)	After Demo Avail (acres)
ARNG	1	ARNG.1	NG	1	252	252	0	0	0	0
ARNG	2	ARNG.2	NG	2	40	40	0	0	0	0
ARNG	3	ARNG.3	NG	3	34	34	0	0	0	0
ARNG	4	ARNG.4	NG	4	37	37	0	0	0	0
ARNG	5	ARNG.5	NG	5	30	30	0	0	0	0
ARNG Sub-total										

Phase	Parcel	Parcel ID	Phase #	Parcel #	Area from BldDbs	Total Area (acres)	Built Area (acres)	Developable (acres)	Dev. Reserv (acres)	After Demo Avail (acres)
OS	1	OS.1	OS	1	10	10	0	0	0	0
OS	2	OS.2	R.OS	2	512	512	0	0	0	0
OS	3	OS.3	OS	3	132	132	0	0	0	0
OS	4	OS.4	OS	4	110	110	0	0	0	0
OS	5	OS.5	OS	5	28	28	0	0	0	0
OS	6	OS.6	OS	6	186	186	2	0	0	0
OS	7	OS.7	OS	7	98	98	0	0	0	0
OS	8	OS.8	OS	8	53	53	0	0	0	0
OS	9	OS.9	R.OS	9	na	na	0	0	0	0
OS	10	OS.10	R.OS	10	90	90	0	0	0	0
OS	11	OS.11	R.OS	11	104	104	0	0	0	0
OS	12	OS.12	OS	12	165	165	0	0	0	0
OS	13	OS.13	R.OS	13	265	265	0	0	0	0
OS	14	OS.14	R.OS	14	444	444	0	0	0	0
OS	15	OS.15	R.OS	15	na	na	0	0	0	0
Open Space Sub-total										

Phase	Parcel	Parcel ID	Phase #	Parcel #	Area from BldDbs	Total Area (acres)	Built Area (acres)	Developable (acres)	Dev. Reserv (acres)	After Demo Avail (acres)
Arterial	1	ART.1								
	2	ART.2								
	3	ART.3								
	4	ART.4								
	5	ART.5								
Arterials Sub-total										

Phase	Parcel	Parcel ID	Phase #	Parcel #	Area from BldDbs	Total Area (acres)	Built Area (acres)	Developable (acres)	Dev. Reserv (acres)	After Demo Avail (acres)
Ia	1	BW.1								
Ib	2	BW.2								
II	3	BW.3								
III	4	BW.4								
Walk Sub-total										

Totals

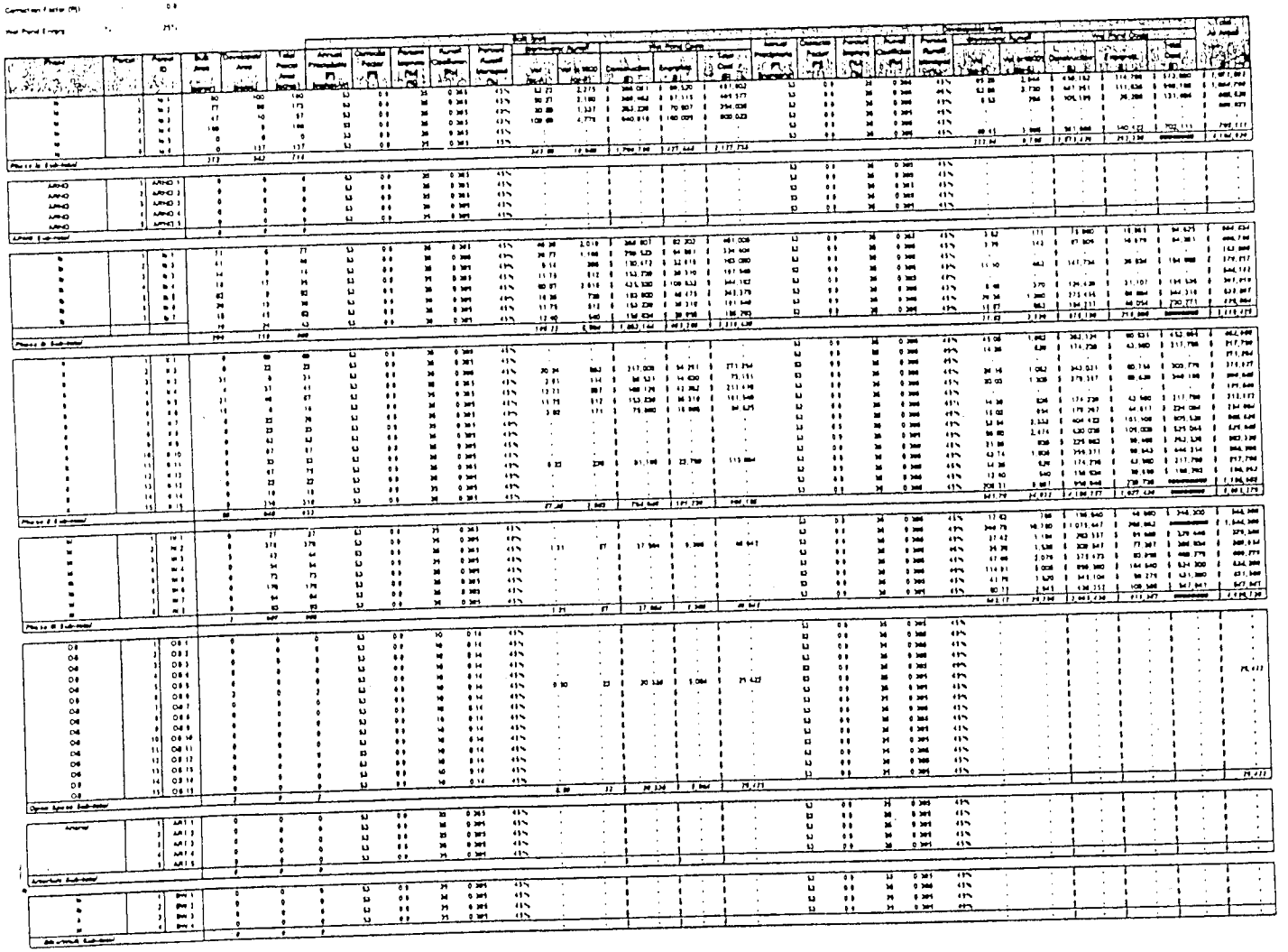


Stormwater Management Worksheet

Storm Water Management System

	Units	Qty
Average Annual Rainfall (P)	inches	52
	feet	4.33
Correction Factor (R)		0.9
Wet Pond Energy	%	25%

Phase	Period	Period ID	Bulk Area (sq.ft.)	Developed Area (sq.ft.)	Total Period Area (sq.ft.)	Annual Precipitation (P) (inches/yr)	Corrected Factor (R)	Percent Impervious (%)	Runoff Coefficient (Rv)	Percent Runoff Managed (%)	Bulk Area Stormwater Runoff Vol (sq.ft.)	Bulk Area Stormwater Runoff Vol (sq.ft.)	Wet Pond Costs Construction (B)	Wet Pond Costs Engineering (B)	Wet Pond Costs Total Cost (B)	Annual Precipitation (P) (inches/yr)	Corrected Factor (R)	Percent Impervious (%)	Runoff Coefficient (Rv)	Percent Runoff Managed (%)	Developed Area Stormwater Runoff Vol (sq.ft.)	Developed Area Stormwater Runoff Vol (sq.ft.)	Wet Pond Costs Construction (B)	Wet Pond Costs Engineering (B)	Wet Pond Costs Total Cost (B)	Total Annual Cost
[illegible]	[illegible]	[illegible]	80	100	180	53	0.9	35	0.365	45%	52.23	2,275	368,081	89,520	457,602	53	0.9	35	0.365	45%	65.28	2,844	458,152	114,798	572,880	1,087,882
[illegible]	[illegible]	[illegible]	77	80	173	53	0.9	35	0.365	45%	50.27	2,180	368,462	87,115	445,577	53	0.9	35	0.365	45%	62.86	2,730	447,951	111,836	559,788	1,004,788
[illegible]	[illegible]	[illegible]	47	10	57	53	0.9	35	0.365	45%	30.88	1,337	263,238	70,807	354,036	53	0.9	35	0.365	45%	8.53	784	105,199	26,288	131,484	485,520
[illegible]	[illegible]	[illegible]	100	9	100	53	0.9	35	0.365	45%	109.69	4,778	640,918	160,005	800,023	53	0.9	35	0.365	45%						800,023
[illegible]	[illegible]	[illegible]	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	80.45	3,986	561,666	140,422	702,111	702,111
[illegible]	[illegible]	[illegible]	0	137	137	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	212.84	9,788	1,273,429	263,336	[illegible]	4,194,929
Phase [illegible] Sub-total			372	342	714						343.88	10,640	1,794,798	427,444	2,177,734											
ARNO	1	ARNO 1	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
ARNO	2	ARNO 2	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
ARNO	3	ARNO 3	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
ARNO	4	ARNO 4	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
ARNO	5	ARNO 5	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
ARNO Sub-total			0	0	0																					
[illegible]	1	[illegible]	51	6	77	53	0.9	35	0.365	45%	46.38	2,018	364,801	82,202	461,008	53	0.9	35	0.365	45%	3.62	111	73,880	18,361	94,625	664,634
[illegible]	2	[illegible]	41	9	44	53	0.9	35	0.365	45%	26.77	1,166	259,523	64,881	324,404	53	0.9	35	0.365	45%	3.79	142	87,809	16,679	94,381	488,786
[illegible]	3	[illegible]	14	9	14	53	0.9	35	0.365	45%	9.14	398	130,472	32,618	163,080	53	0.9	35	0.365	45%						163,080
[illegible]	4	[illegible]	18	17	35	53	0.9	35	0.365	45%	11.78	512	153,738	38,310	197,548	53	0.9	35	0.365	45%	11.10	462	141,734	36,934	184,668	379,717
[illegible]	5	[illegible]	82	9	82	53	0.9	35	0.365	45%	60.87	2,618	425,330	108,832	544,162	53	0.9	35	0.365	45%						544,162
[illegible]	6	[illegible]	24	13	38	53	0.9	35	0.365	45%	16.36	738	183,800	46,475	241,379	53	0.9	35	0.365	45%	8.48	370	126,438	31,107	155,536	397,919
[illegible]	7	[illegible]	18	41	63	53	0.9	35	0.365	45%	11.75	512	153,238	38,310	191,548	53	0.9	35	0.365	45%	26.36	1,380	273,414	68,884	344,318	635,867
[illegible]	8	[illegible]	19	24	43	53	0.9	35	0.365	45%	12.40	540	156,634	39,158	195,793	53	0.9	35	0.365	45%	11.87	663	184,211	46,054	230,271	426,064
Phase [illegible] Sub-total			294	119	400						149.22	6,964	1,883,144	461,786	2,344,930						71.62	3,139	878,138	219,800	[illegible]	3,119,479
[illegible]	1	[illegible]	0	60	60	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	45.06	1,962	362,134	60,531	452,665	662,669
[illegible]	2	[illegible]	0	22	22	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	14.36	626	174,238	43,560	217,798	217,798
[illegible]	3	[illegible]	31	9	31	53	0.9	35	0.365	45%	20.24	882	217,008	54,251	271,254	53	0.9	35	0.365	45%						271,254
[illegible]	4	[illegible]	4	31	41	53	0.9	35	0.365	45%	2.61	114	58,531	14,630	73,131	53	0.9	35	0.365	45%	24.16	1,062	343,031	60,734	303,776	376,927
[illegible]	5	[illegible]	21	46	67	53	0.9	35	0.365	45%	12.73	887	168,178	42,362	211,418	53	0.9	35	0.365	45%	30.03	1,308	379,317	68,638	348,198	394,648
[illegible]	6	[illegible]	19	6	19	53	0.9	35	0.365	45%	11.75	512	153,238	38,310	191,548	53	0.9	35	0.365	45%						191,548
[illegible]	7	[illegible]	0	22	22	53	0.9	35	0.365	45%	3.82	171	75,880	18,968	94,625	53	0.9	35	0.365	45%	14.36	626	174,238	43,560	217,798	312,172
[illegible]	8	[illegible]	0	22	22	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	18.02	834	179,267	44,817	224,084	234,084
[illegible]	9	[illegible]	0	62	62	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	53.94	2,352	404,422	101,106	505,528	505,528
[illegible]	10	[illegible]	0	87	87	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	56.80	2,474	420,038	105,008	525,044	525,044
[illegible]	11	[illegible]	0	33	33	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	31.88	838	325,962	58,488	262,326	862,326
[illegible]	12	[illegible]	0	87	87	53	0.9	35	0.365	45%	8.23	238	91,198	22,799	113,864	53	0.9	35	0.365	45%	43.74	1,808	359,371	58,543	444,314	564,394
[illegible]	13	[illegible]	0	22	22	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	14.36	626	174,238	43,560	217,798	217,798
[illegible]	14	[illegible]	0	18	18	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	12.40	540	156,634	39,158	195,793	195,793
[illegible]	15	[illegible]	0	318	318	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	208.31	9,087	958,848	239,738	[illegible]	1,198,586
Phase [illegible] Sub-total			80	648	432						27.46	1,843	754,648	187,738	944,188						541.79	24,872	4,186,777	1,027,434	[illegible]	5,041,179
[illegible]	1	[illegible]	0	27	27	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	17.62	768	196,640	44,880	244,300	544,300
[illegible]	2	[illegible]	0	378	378	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	246.78	10,760	1,075,647	268,862	[illegible]	1,544,300
[illegible]	3	[illegible]	0	42	42	53	0.9	35	0.365	45%	1.31	57	37,984	9,396	48,647	53	0.9	35	0.365	45%	37.42	1,184	293,337	69,660	379,446	379,446
[illegible]	4	[illegible]	0	54	54	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	35.78	1,538	308,847	77,387	386,834	388,834
[illegible]	5	[illegible]	0	73	73	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	47.66	2,079	373,173	93,298	466,779	466,779
[illegible]	6	[illegible]	0	178	178	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	114.91	5,008	898,380	164,540	624,300	624,300
[illegible]	7	[illegible]	0	64	64	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	41.79	1,820	341,104	58,276	431,380	431,380
[illegible]	8	[illegible]	0	83	83	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%	80.73	2,641	436,252	108,566	547,847	547,847
Phase [illegible] Sub-total			2	607	608						1.31	57	37,984	9,396	48,647						543.17	24,736	3,445,436	911,347	[illegible]	4,498,736
[illegible]	1	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	2	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	3	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	4	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	5	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	6	[illegible]	0	0	0	53	0.9	10	0.14	45%	0.30	22	20,336	5,084	25,422	53	0.9	35	0.365	45%						25,422
[illegible]	7	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	8	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	9	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	10	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	11	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	12	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	13	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	14	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
[illegible]	15	[illegible]	0	0	0	53	0.9	10	0.14	45%						53	0.9	35	0.365	45%						
Open Space Sub-total			2	0	2						0.30	22	20,336	5,084	25,422											25,422
Arterial	1	ART 1	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
	2	ART 2	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
	3	ART 3	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
	4	ART 4	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
	5	ART 5	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
Arterial Sub-total			0	0	0																					
[illegible]	1	BW 1	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
[illegible]	2	BW 2	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
[illegible]	3	BW 3	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
[illegible]	4	BW 4	0	0	0	53	0.9	35	0.365	45%						53	0.9	35	0.365	45%						
Bikeroute Sub-total			0	0	0																					



Totals

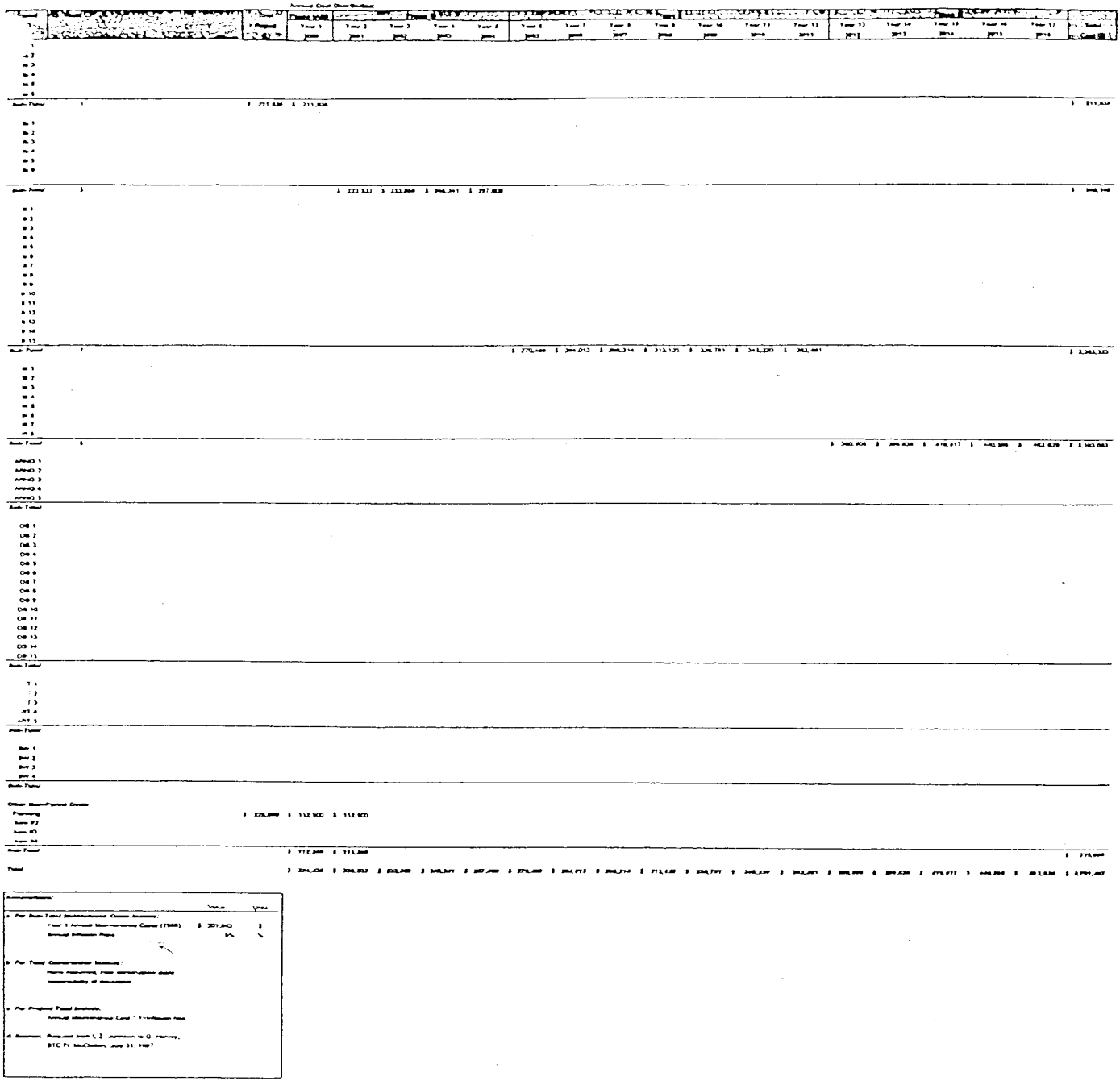
Notes:

1. Source for storm water volume and wet pond cost calculations:
   Manipulated on Washington Council of Governments (1987), Controlling Urban Runoff

Summary

Operational Distribution Systems

Period			Annual Cost Distribution																		
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Total Cost ($)
1																				
Sub-Total	1		$ 211,836	$ 211,836																$ 211,836
Sub-Total	5			$ 232,532	$ 233,869	$ 246,341	$ 297,828													$ 266,549
Sub-Total	7							$ 270,469	$ 284,012	$ 298,214	$ 313,125	$ 328,781	$ 345,220	$ 362,481						$ 2,383,303
Sub-Total	8														$ 380,606	$ 399,636	$ 419,617	$ 440,598	$ 462,629	$ 2,103,083
Sub-Total																				
Sub-Total																				
Sub-Total																				
Sub-Total																				
Other Non-Period Costs																				
Planning		$ 225,000	$ 112,500	$ 112,500																
Item #2																				
Item #3																				
Item #4																				
Sub-Total			$ 112,500	$ 112,500																$ 225,000
Total			$ 324,436	$ 336,932	$ 352,869	$ 346,341	$ 297,828	$ 270,469	$ 284,012	$ 298,214	$ 313,125	$ 328,781	$ 345,220	$ 362,481	$ 380,606	$ 399,636	$ 419,617	$ 440,598	$ 462,629	$ 2,791,402



Assumptions:

	Value	Units
a. Per Sub-Total Incremental Cost Assumes:		
Year 1 Annual Incremental Costs (1988)	$ 301,843	$
Annual Inflation Rate	5%	%
b. Per Total Construction Schedule:		
Items Assumed, from construction date		
Nonsimilarity of developer		
c. Per Proposed Total Schedule:		
Annual Incremental Cost * Y-Inflation Rate		
d. Source: Pursuant from L.Z. Johnson to G. Harvey, BTC Pt. McClellan, July 31, 1987		

Solid Waste Management System

Parcel ID	Total Dus Residential	Total Dus Retirement				Total Project ($)
Ia.1	$ 864,000	$ -				$ 864,000
Ia.2	$ 990,000	$ -				$ 990,000
Ia.3	$ -	$ 115,200				$ 115,200
Ia.4	$ -	$ -				$ -
Ia.5	$ -	$ -				$ -
Ia.6	$ -	$ -				$ -
Sub-Total						*$ 1,969,200*
Ib.1	$ 64,800	$ -				$ 64,800
Ib.2	$ -	$ -				$ -
Ib.3	$ -	$ -				$ -
Ib.4	$ -	$ -				$ -
Ib.5	$ -	$ -				$ -
Ib.6	$ -	$ -				$ -
Ib.7	$ -	$ -				$ -
Ib.8	$ -	$ -				$ -
Sub-Total						*$ 64,800*
II.1	$ -	$ 306,000				$ 306,000
II.2	$ -	$ -				$ -
II.3	$ -	$ -				$ -
II.4	$ -	$ -				$ -
II.5	$ -	$ -				$ -
II.6	$ -	$ -				$ -
II.7	$ -	$ 198,000				$ 198,000
II.8	$ -	$ -				$ -
II.9	$ -	$ -				$ -
II.10	$ -	$ -				$ -
II.11	$ -	$ -				$ -
II.12	$ -	$ -				$ -
II.13	$ -	$ -				$ -
II.14	$ -	$ -				$ -
II.15	$ -	$ -				$ -
Sub-Total						*$ 504,000*
III.1	$ -	$ -				$ -
III.2	$ -	$ 1,080,000				$ 1,080,000
III.3	$ -	$ -				$ -
III.4	$ -	$ -				$ -
III.5	$ -	$ -				$ -
III.6	$ -	$ -				$ -
III.7	$ -	$ -				$ -
III.8	$ -	$ -				$ -
Sub-Total						*$ 1,080,000*
ARNG.1	$ -	$ -				$ -
ARNG.2	$ -	$ -				$ -
ARNG.3	$ -	$ -				$ -
ARNG.4	$ -	$ -				$ -
ARNG.5	$ -	$ -				$ -
Sub-Total						$ -
OS.1	$ -	$ -				$ -
OS.2	$ -	$ -				$ -

OS.3	$ -	$ -	$ -
OS.4	$ -	$ -	$ -
OS.5	$ -	$ -	$ -
OS.6	$ -	$ -	$ -
OS.7	$ -	$ -	$ -
OS.8	$ -	$ -	$ -
OS.9	$ -	$ -	$ -
OS.10	$ -	$ -	$ -
OS.11	$ -	$ -	$ -
OS.12	$ -	$ -	$ -
OS.13	$ -	$ -	$ -
OS.14	$ -	$ -	$ -
OS.15	$ -	$ -	$ -
Sub-Total			$ -
ART.1	$ -	$ -	$ -
ART.2	$ -	$ -	$ -
ART.3	$ -	$ -	$ -
ART.4	$ -	$ -	$ -
ART.5	$ -	$ -	$ -
Sub-Total			$ -
BW.1	$ -	$ -	$ -
BW.2	$ -	$ -	$ -
BW.3	$ -	$ -	$ -
BW.4	$ -	$ -	$ -
Sub-Total			$ -
Other Non-Parcel Costs			
Planning			$ 75,000
Item #2			
Item #3			
Item #4			
Sub-Total			*$ 75,000*
Total			*$ 3,693,000*

Assumptions:

a For Sub-Total Construction Costs include:

Annual	No of Years	
$ 120	15	$ 1,800

b For Total Construction include:

c For Project Total include:

d. Source:

Fort McClellan Reuse Plan
Implementation Strategy

Capital Improvements Strategy

Buildings and Miscellaneous

Nc er 1997

Phase Ia	385,700	385,700																	385,700
Phase Ib	1,900,000	380,000	380,000	380,000	380,000	380,000													1,900,000
Phase II	3,872,000						872,000	500,000	500,000	500,000	500,000	500,000	500,000						3,872,000
Phase III	0																		0
Open Space	3,635,000	1,200,000					1,217,000		1,217,000										3,634,000
Remediation Re	30,000																	30,000	30,000
Sub-Total	9,822,700	1,965,700	380,000	380,000	380,000	380,000	1,089,000	500,000	1,717,000	500,000	500,000	500,000	500,000	0	0	0	0	30,000	9,821,700
Buildings and Miscellaneous Total	16,416,900	3,318,750	663,770	663,770	663,770	663,770	1,727,107	698,107	1,915,107	698,107	698,107	698,107	698,107	457,270	407,270	407,270	407,270	457,270	16,415,900

Miscellaneous Summary by Phase and Category

	Phase Ia	Phase Ib	Phase II	Phase III	Non-Parcel	Total
Street Lighting	$ 75,000	$ 325,000	$ 400,000	$ 600,000	$ 20,000	$ 1,410,000
Landscaping	$ 100,000	$ 355,000	$ 500,000	$ 700,000	$ 75,000	$ 1,730,000
Signage	$ 335,000	$ 442,500	$ 440,000	$ 250,000	$ 25,000	$ 1,492,500
Natural Resourc	$ 85,000	$ 235,000	$ 450,000	$ 600,000	$ 15,000	$ 1,385,000
Property Mgmt	$ 107,250	$ 61,350	$ 36,750	$ 136,350	$ 225,000	$ 566,700
Demolition	$ 385,700	$ 1,900,000	$ 3,872,000	$ -	$ 3,665,000	$ 9,822,700
	$ 1,087,950	$ 3,318,850	$ 5,698,750	$ 2,286,350	$ 4,025,000	$ 16,416,900

Parcel Land Summary

Phase	Parcel	Parcel ID	Phase #	Parcel #	Acres from BldDbs	Total Area (acres)	Built Land (acres)	Developable (acres)	Dev. Reserve (acres)	After Demo Avail. (acres)
Ia	1	Ia.1	Ia	1	162	180	80	100	0	100
Ia	2	Ia.2	Ia	2	169	173	77	96	0	96
Ia	3	Ia.3	Ia	3	164	57	47	10	10	0
Ia	4	Ia.4	Ia	4	180	168	168	0	0	0
Ia	5	Ia.5								
Ia	6	Ia.6	R	Ia.6	44	137	0	137	0	137
Sub-total					719	715	372	343	10	333

Phase	Parcel	Parcel ID	Phase #	Parcel #	Acres from BldDbs	Total Area (acres)	Built Land (acres)	Developable (acres)	Dev. Reserve (acres)	After Demo Avail. (acres)
Ib	1	Ib.1	Ib	1	98	77	71	6	6	0
Ib	2	Ib.2	Ib	2	25	46	41	5	5	0
Ib	3	Ib.3	Ib	3	18	14	14	0	0	0
Ib	4	Ib.4	Ib	4	41	35	18	17	0	17
Ib	5	Ib.5	Ib	5	99	92	92	0	0	0
Ib	6	Ib.6	Ib	6	40	39	26	13	0	13
Ib	7	Ib.7	Ib	7	68	63	18	45	20	25
			Ib	8	0	43	19	24	0	24
Sub-total					389	409	299	110	31	79

Phase	Parcel	Parcel ID	Phase #	Parcel #	Acres from BldDbs	Total Area (acres)	Built Land (acres)	Developable (acres)	Dev. Reserve (acres)	After Demo Avail. (acres)
II	1	II.1	II	1	71	69	0	69	35	34
II	2	II.2	II	2	36	22	0	22	8	14
II	3	II.3	II	3	51	31	31	0	0	0
II	4	II.4	II	4	28	41	4	37	15	22
II	5	II.5	II	5	82	67	21	46	20	26
II	6	II.6	II	6	25	18	18	0	0	0
II	7	II.7	II	7	30	28	6	22	0	22
II	8	II.8	II	8	23	23	0	23	10	13
II	9	II.9	II	9	87	82	0	82	50	32
II	10	II.10	II	10	126	87	0	87	50	37
II	11	II.11	II	11	38	33	0	33	10	23
II	12	II.12	II	12	73	75	8	67	40	27
II	13	II.13	II	13	25	22	0	22	10	12
II	14	II.14	II	14	23	19	0	19	10	9
II	15	II.15	R	II.15	0	316	0	316	0	316
Sub-total					718	933	88	845	258	587

Phase	Parcel	Parcel ID	Phase #	Parcel #	Acres from BldDbs	Total Area (acres)	Built Land (acres)	Developable (acres)	Dev. Reserve (acres)	After Demo Avail. (acres)
III	1	III.1	R	III.1	36	27	0	27	7	20
III	2	III.2	R	III.2	400	378	0	378	120	258
III	3	III.3	III	3	54	44	2	42	0	42
III	4	III.4	III	4	68	54	0	54	35	19
III	5	III.5	III	5	107	73	0	73	50	23
III	6	III.6	III	6	167	176	0	176	150	26
III	7	III.7	III	7	70	64	0	64	45	19
III	8	III.8	R	III.8	144	93	0	93	0	93
Sub-total					1,046	909	2	907	407	500

Phase	Parcel	Parcel ID	Phase #	Parcel #	Acres from BldDbs	Total Area (acres)	Built Land (acres)	Developable (acres)	Dev. Reserve (acres)	After Demo Avail. (acres)
ARNG	1	ARNG.1	NG	1	252	252	0	0	0	0

ARNG	2	ARNG.2	NG	2	40	40	0	0	0	0
ARNG	3	ARNG.3	NG	3	34	34	0	0	0	0
ARNG	4	ARNG.4	NG	4	37	37	0	0	0	0
ARNG	5	ARNG.5	NG	5	30	30	0	0	0	0
Sub-total					393	393	-	-	-	-

Phase	Parcel	Parcel ID	Phase #	Parcel #	Acres from BldDbs	Total Area (acres)	Built Land (acres)	Developable (acres)	Dev. Reserve (acres)	After Demo Avail. (acres)
OS	1	OS.1	OS	1	10	10	0	0	0	0
OS	2	OS.2	R.OS	2	512	512	0	0	0	0
OS	3	OS.3	OS	3	132	132	0	0	0	0
OS	4	OS.4	OS	4	110	110	0	0	0	0
OS	5	OS.5	OS	5	28	28	0	0	0	0
OS	6	OS.6	OS	6	186	186	2	0	0	0
OS	7	OS.7	OS	7	98	98	0	0	0	0
OS	8	OS.8	OS	8	53	53	0	0	0	0
OS	9	OS.9	R.OS	9	na	na	0	0	0	0
OS	10	OS.10	R.OS	10	90	90	0	0	0	0
OS	11	OS.11	R.OS	11	104	104	0	0	0	0
OS	12	OS.12	OS	12	165	165	0	0	0	0
OS	13	OS.13	R.OS	13	265	265	0	0	0	0
OS	14	OS.14	R.OS	14	444	444	0	0	0	0
OS	15	OS.15	R.OS	15	na	na	0	0	0	0
Sub-total					2,197	2,197	2	-	-	-

Phase	Parcel	Parcel ID	Phase #	Parcel #	Acres from BldDbs	Total Area (acres)	Built Land (acres)	Developable (acres)	Dev. Reserve (acres)	After Demo Avail. (acres)
Arterial	1	ART.1								
	2	ART.2								
	3	ART.3								
	4	ART.4								
	5	ART.5								
Sub-total										

Phase	Parcel	Parcel ID	Phase #	Parcel #	Acres from BldDbs	Total Area (acres)	Built Land (acres)	Developable (acres)	Dev. Reserve (acres)	After Demo Avail. (acres)
Ia	1	BW.1								
Ib	2	BW.2								
II	3	BW.3								
III	4	BW.4								
Sub-total										

Totals

Property Management

Phase Assigned	Parcel ID	Surveying				Total Project ($)	Annual C Year 1 2000
		Built	Developable	Total			
Ia	Ia.1	$ 12,000	$ 15,000	$ 27,000		$ 27,000	
Ia	Ia.2	$ 11,550	$ 14,400	$ 25,950		$ 25,950	
Ia	Ia.3	$ 7,050	$ 1,500	$ 8,550		$ 8,550	
Ia	Ia.4	$ 25,200	$ -	$ 25,200		$ 25,200	
Ia	Ia.5	$ -	$ -	$ -		$ -	
Ia	Ia.6	$ -	$ 20,550	$ 20,550		$ 20,550	
	Sub-Total					***$ 107,250***	
Ib	Ib.1	$ 10,650	$ 900	$ 11,550		$ 11,550	
Ib	Ib.2	$ 6,150	$ 750	$ 6,900		$ 6,900	
Ib	Ib.3	$ 2,100	$ -	$ 2,100		$ 2,100	
Ib	Ib.4	$ 2,700	$ 2,550	$ 5,250		$ 5,250	
Ib	Ib.5	$ 13,800	$ -	$ 13,800		$ 13,800	
Ib	Ib.6	$ 3,900	$ 1,950	$ 5,850		$ 5,850	
Ib	1b.7	$ 2,700	$ 6,750	$ 9,450		$ 9,450	
Ib		$ 2,850	$ 3,600	$ 6,450		$ 6,450	
	Sub-Total					***$ 61,350***	
II	II.1	$ -	$ 10,350	$ 10,350		$ 10,350	
II	II.2	$ -	$ -	$ -		$ -	
II	II.3	$ 4,650	$ 4,650	$ 9,300		$ 9,300	
II	II.4	$ 600	$ 600	$ 1,200		$ 1,200	
II	II.5	$ 3,150	$ 3,150	$ 6,300		$ 6,300	
II	II.6	$ 2,700	$ 2,700	$ 5,400		$ 5,400	
II	II.7	$ 900	$ 900	$ 1,800		$ 1,800	
II	II.8	$ -	$ -	$ -		$ -	
II	II.9	$ -	$ -	$ -		$ -	
II	II.10	$ -	$ -	$ -		$ -	
II	II.11	$ -	$ -	$ -		$ -	
II	II.12	$ 1,200	$ 1,200	$ 2,400		$ 2,400	
II	II.13	$ -	$ -	$ -		$ -	
II	II.14	$ -	$ -	$ -		$ -	
II	II.15	$ -	$ -	$ -		$ -	
	Sub-Total					***$ 36,750***	
III	III.1	$ -	$ 4,050	$ 4,050		$ 4,050	
III	III.2	$ -	$ 56,700	$ 56,700		$ 56,700	
III	III.3	$ 300	$ 6,300	$ 6,600		$ 6,600	
III	III.4	$ -	$ 8,100	$ 8,100		$ 8,100	
III	III.5	$ -	$ 10,950	$ 10,950		$ 10,950	
III	III.6	$ -	$ 26,400	$ 26,400		$ 26,400	
III	III.7	$ -	$ 9,600	$ 9,600		$ 9,600	
III	III.8	$ -	$ 13,950	$ 13,950		$ 13,950	

	Sub-Total							*$*	*136,350*
,a	ARNG.1	$	-	$	-	$	-	$	-
la	ARNG.2	$	-	$	-	$	-	$	-
la	ARNG.3	$	-	$	-	$	-	$	-
la	ARNG.4	$	-	$	-	$	-	$	-
la	ARNG.5	$	-	$	-	$	-	$	-
	Sub-Total							*$*	-
la	OS.1	$	-	$	-	$	-	$	-
la	OS.2	$	-	$	-	$	-	$	-
la	OS.3	$	-	$	-	$	-	$	-
la	OS.4	$	-	$	-	$	-	$	-
lb	OS.5	$	-	$	-	$	-	$	-
II	OS.6	$	300	$	-	$	300	$	300
lb	OS.7	$	-	$	-	$	-	$	-
III	OS.8	$	-	$	-	$	-	$	-
III	OS.9	$	-	$	-	$	-	$	-
la	OS.10	$	-	$	-	$	-	$	-
lb	OS.11	$	-	$	-	$	-	$	-
II	OS.12	$	-	$	-	$	-	$	-
III	OS.13	$	-	$	-	$	-	$	-
III	OS.14	$	-	$	-	$	-	$	-
III	OS.15	$	-	$	-	$	-	$	-
	Sub-Total							*$*	*300*
la	ART.1	$	-	$	-	$	-	$	-
lb	ART.2	$	-	$	-	$	-	$	-
II	ART.3	$	-	$	-	$	-	$	-
III	ART.4	$	-	$	-	$	-	$	-
III	ART.5	$	-	$	-	$	-	$	-
	Sub-Total							*$*	-
la	BW.1	$	-	$	-	$	-	$	-
lb	BW.2	$	-	$	-	$	-	$	-
II	BW.3	$	-	$	-	$	-	$	-
III	BW.4	$	-	$	-	$	-	$	-
	Sub-Total							*$*	-

	Annual $	No. Years	
Other Non-Parcel Costs			
Geo-Based Information Management	$ 15,000	15	$ 225,000
Item #2			
Item #3			
Item #4			
Sub-Total			*$ 225,000*
Total			*$ 567,000*

Assumptions:	Value	Units
a *For Sub-Total Construction Costs include:* Surveying	$ 150	acre
b *For Total Construction include:*		
c *For Project Total include:*		
d. *Source:*		

Property Management Worksheet

Parcel ID	Parcel ID	Phase #	Parcel #	Acres from BldDbs	Total Area (acres)	Built Land. (acres)	Developable (acres)
Ia.1	Ia.1	Ia	1	162	180	80	100
Ia.2	Ia.2	Ia	2	169	173	77	96
Ia.3	Ia.3	Ia	3	164	57	47	10
Ia.4	Ia.4	Ia	4	180	168	168	0
Ia.5	Ia.5						
Ia.6	Ia.6	R	Ia.6	44	137	0	137
Sub-Total							
Ib.1	Ib.1	Ib	1	98	77	71	6
Ib.2	Ib.2	Ib	2	25	46	41	5
Ib.3	Ib.3	Ib	3	18	14	14	0
Ib.4	Ib.4	Ib	4	41	35	18	17
Ib.5	Ib.5	Ib	5	99	92	92	0
Ib.6	Ib.6	Ib	6	40	39	26	13
1b.7	Ib.7	Ib	7	68	63	18	45
		Ib	8	0	43	19	24
Sub-Total							
II.1	II.1	II	1	71	69	0	69
II.2	II.2	II	2	36	22	0	22
II.3	II.3	II	3	51	31	31	0
II.4	II.4	II	4	28	41	4	37
II.5	II.5	II	5	82	67	21	46
II.6	II.6	II	6	25	18	18	0
II.7	II.7	II	7	30	28	6	22
II.8	II.8	II	8	23	23	0	23
II.9	II.9	II	9	87	82	0	82
II.10	II.10	II	10	126	87	0	87
II.11	II.11	II	11	38	33	0	33
II.12	II.12	II	12	73	75	8	67
II.13	II.13	II	13	25	22	0	22
II.14	II.14	II	14	23	19	0	19
II.15	II.15	R	II.15	0	316	0	316
Sub-Total							
III.1	III.1	R	III.1	36	27	0	27
III.2	III.2	R	III.2	400	378	0	378
III.3	III.3	III	3	54	44	2	42
III.4	III.4	III	4	68	54	0	54
III.5	III.5	III	5	107	73	0	73
III.6	III.6	III	6	167	176	0	176
III.7	III.7	III	7	70	64	0	64
III.8	III.8	R	III.8	144	93	0	93

Sub-Total							
ARNG.1	ARNG.1	NG	1	252	252	0	0
ARNG.2	ARNG.2	NG	2	40	40	0	0
ARNG.3	ARNG.3	NG	3	34	34	0	0
ARNG.4	ARNG.4	NG	4	37	37	0	0
ARNG.5	ARNG.5	NG	5	30	30	0	0
Sub-Total							
OS.1	OS.1	OS	1	10	10	0	0
OS.2	OS.2	R.OS	2	512	512	0	0
OS.3	OS.3	OS	3	132	132	0	0
OS.4	OS.4	OS	4	110	110	0	0
OS.5	OS.5	OS	5	28	28	0	0
OS.6	OS.6	OS	6	186	186	2	0
OS.7	OS.7	OS	7	98	98	0	0
OS.8	OS.8	OS	8	53	53	0	0
OS.9	OS.9	R.OS	9	na	na	0	0
OS.10	OS.10	R.OS	10	90	90	0	0
OS.11	OS.11	R.OS	11	104	104	0	0
OS.12	OS.12	OS	12	165	165	0	0
OS.13	OS.13	R.OS	13	265	265	0	0
OS.14	OS.14	R.OS	14	444	444	0	0
OS.15	OS.15	R.OS	15	na	na	0	0
Sub-Total							
ART.1	ART.1						
ART.2	ART.2						
ART.3	ART.3						
ART.4	ART.4						
ART.5	ART.5						
Sub-Total							
BW.1	BW.1						
BW.2	BW.2						
BW.3	BW.3						
BW.4	BW.4						
Sub-Total							
Other Non-Parcel Costs							
Planning							
Item #2							
Item #3							
Item #4							
Sub-Total							
Total							

Sign Requirements Summary

Phase Assigned	Phase	Sign Type				
		Entry Sign Type	Parcel ID	Directional	Special	Other
Ia	Ia	3	6	6	2	1
Ib	Ib	1	7	3	2	1
II	II	1	15	3	2	1
III	III	0	8	3	2	1
Ia	ARNG	0	0	0	0	0
Ia	OS	0	0	0	4	0
Ib	OS	0	0	0	6	0
II	OS	0	0	0	4	0
III	OS	0	0	0	1	0
Ia	Arterials	0	0	1	0	0
Ib	Arterials	0	0	3	0	0
II	Arterials	0	0	1	0	0
III	Arterials	0	0	1	0	0
Ia	Bike/Walk	0	0	1	2	0
Ib	Bike/Walk	0	0	3	0	0
II	Bike/Walk	0	0	2	0	0
III	Bike/Walk	0	0	2	0	0
	Total	5	36	29	25	4

Signage

Phase Assigned	Phase ID	Entry Sign Type	Parcel ID	Directional	Special	Other	Total Project ($)
Ia	Ia	$ 90,000	$ 60,000	$ 45,000	$ 60,000	$ 5,000	$ *260,000*
Ib	Ib	$ 30,000	$ 70,000	$ 22,500	$ 90,000	$ 5,000	$ *217,500*
II	II	$ 30,000	$ 150,000	$ 22,500	$ 90,000	$ 5,000	$ *297,500*
III	III	$ -	$ 80,000	$ 22,500	$ 90,000	$ 5,000	$ *197,500*
Ia	ARNG	$ -	$ -	$ -	$ -	$ -	$ -
Ia	OS	$ -	$ -	$ -	$ 120,000	$ -	$ *120,000*
Ib	OS	$ -	$ -	$ -	$ 180,000	$ -	$ *180,000*
II	OS	$ -	$ -	$ -	$ 120,000	$ -	$ *120,000*
III	OS	$ -	$ -	$ -	$ 30,000	$ -	$ *30,000*
Ia	Arterials	$ -	$ -	$ 7,500	$ -	$ -	$ *7,500*
Ib	Arterials	$ -	$ -	$ 22,500	$ -	$ -	$ *22,500*
II	Arterials	$ -	$ -	$ 7,500	$ -	$ -	$ *7,500*
III	Arterials	$ -	$ -	$ 7,500	$ -	$ -	$ *7,500*
Ia	Bike/Walk	$ -	$ -	$ 7,500	$ 60,000	$ -	$ *67,500*
Ib	Bike/Walk	$ -	$ -	$ 22,500	$ -	$ -	$ *22,500*
II	Bike/Walk	$ -	$ -	$ 15,000	$ -	$ -	$ *15,000*
III	Bike/Walk	$ -	$ -	$ 15,000	$ -	$ -	$ *15,000*
	Total	$ *150,000*	$ *360,000*	$ *217,500*	$ *840,000*	$ *20,000*	$ *1,587,500*
	Phase Ia	$ *90,000*	$ *60,000*	$ *60,000*	$ *120,000*	$ *5,000*	$ *335,000*
	Phase Ib	$ *30,000*	$ *70,000*	$ *67,500*	$ *270,000*	$ *5,000*	$ *442,500*
	Phase II	$ *30,000*	$ *150,000*	$ *45,000*	$ *210,000*	$ *5,000*	$ *440,000*
	Phase III	$ -	$ *80,000*	$ *45,000*	$ *120,000*	$ *5,000*	$ *250,000*

Other Non-Parcel Costs	
Planning	$ 25,000
Item #2	
Item #3	
Item #4	
Sub-Total	$ 25,000
Total	$ 1,612,500

Assumptions:	Value	Units
a For Total Signage Unit Cost:		
Entry	$ 30,000	each
Parcel ID	$ 10,000	each
Directional	$ 7,500	each
Special	$ 30,000	each
Other	$ 5,000	each

ATTACHMENT 6

UNRESOLVED REGULATORY COMMENTS

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Water: 279-3051
Groundwater: 270-5631
Field Operations: 272-8131
Laboratory: 277-6718
Mining: 394-4326
Education/Outreach: 394-4383

October 1, 2002

Ronald M. Levy
BRAC Environmental Coordinator
Environmental Office, 291 Jimmy Parks Blvd.
US Army Garrison
Fort McClellan, Alabama 36205

RE: **ADEM Review and Comment:** *Final Findings of Suitability to Transfer (FOST) the Superfost No. 2,* dated July 2001, Fort McClellan, Calhoun County, Alabama

Dear Mr. Sakowitz:

The Alabama Department of Environmental Management (ADEM or the Department) has reviewed the *Final Findings of Suitability to Transfer (FOST) the Superfost No. 2,* dated July 2001 for Fort McClellan. The proposed property subject to transfer consists of 314.10 acres of land with 70 facilities. These parcels are summarized in Table 1 and are depicted in Figure 2 of the FOST document. The property proposed for transfer is composed of 194.62 acres of Category 1 sites; 119.06 acres of Category 3 sites; and .42 acres of Category 4 sites. Category 1 sites are areas where no storage, release, or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas). Category 3 represents areas where release, disposal, and/or migration of hazardous substances have occurred, but at concentrations that do not require removal or remedial response. Category 4 represents areas where release, disposal, and/or migration of hazardous substances have occurred, but where all removal or remedial actions to protect human health and the environment have been taken.

The Environmental Protection Agency (EPA) submitted its review comments to the Army on May 16, 2002 and the Army responded to comments and resubmitted the Superfost No. 2 on July 30, 2002. EPA reviewed the revised submittal and forwarded its comments on the *Final Findings of Suitability to Transfer (FOST) the Superfost No. 2* to the Department on August 27, 2002. EPA apparently does not believe that its earlier (May 16, 2002) comments have been adequately addressed. EPA expects that the Army will make note of unresolved comments and present them as an accompanying attachment to the Final Superfost No. 2 (per Department of Defense (DoD) Guidance on the Environmental Review Process to Reach a Finding of Suitability to Transfer (FOST) for Uncontaminated Property, § IV(A)).

Birmingham Branch
110 Vulcan Road
Birmingham, Alabama 35209-4702
(205) 942-6168
(205) 941-1603 [Fax]

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, Alabama 35603-1333
(256) 353-1713
(256) 340-9359 [Fax]

Mobile Branch
2204 Perimeter Road
Mobile, Alabama 36615-1131
(251) 450-3400
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Mobile – Coastal
4171 Commanders Drive
Mobile, Alabama 36615-1421
(251) 432-6533
(251) 432-6598 [Fax]

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DoD should be on notice that their failure to comply with the above-delineated CERCLA requirements, may subject the Facility to citizen suits under CERCLA § 310 for failure to perform specified, non-discretionary duties.

The comment that was not adequately addressed is presented below followed by the Fort McClellan response:

- **Section 330 of the Defense Authorization Act for Fiscal Year 1993, Public Law 102-484 as amended by Section 1002 of the Defense Authorization Act for Fiscal Year 1994, Public Law 103-160 provides that the Secretary of Defense shall hold harmless, defend and indemnify the persons that acquire ownership or control of any facility at a military installation that is closing or closed pursuant to a base closure law from any claim for personal injury or property damage or economic loss that results from the release of hazardous substances or petroleum products as a result of DoD activities. Please include such a provision in the FOST and/or deed.**

RESPONSE:

It is inappropriate for the Army to include PL 102-484 Section 330 indemnification language in the FOST. The primary purpose of the FOST is to document the environmental condition of the property and certify that the property is suitable for transfer based on the environmental restrictions that will be incorporated in the real estate document. Furthermore, absent actual indemnification language being included in the FOST, as a matter of law, the Army has an obligation to meet its requirements under Section 330 of PL 102-484. However, the Army will place PL 102-484 Section 330, indemnification language in the Deed, at the appropriate place to notice a legal right or responsibility afforded to the transferee.

It is unclear to the Department why the stated indemnification language (PL 102-484 Section 330) will not be included in the FOST. The Department requests that the DoD fully address this comment or call it out as an "unresolved regulatory comments" pursuant to DoD policy on FOSTs and include the comment and response as an attachment to the FOST.

For any questions or concerns regarding this matter, please contact Mr. Philip Stroud at 334-270-5646 or via email at pns@adem.state.al.us.

Sincerely,

Stephen A. Cobb, Chief
Hazardous Waste Branch
Land Division

SAC/ps

Attachment

cc: Mr. Doyle Brittain/EPA Region 4
Mr. Lee Coker/USA COE, Mobile District
Mr. Jim Grassiano/ADEM
Mr. Mark Harrison/ADEM

File: ADEM Land Division/Hazardous Waste Branch/Fort McClellan, Correspondence, 2002

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW
ATLANTA, GEORGIA 30303-8909

August 27, 2002

EMAIL & US MAIL

4WD-FFB

Mr. Philip Stroud
Alabama Department of Environmental Management
Hazardous Waste Branch, Land Division
1400 Coliseum Boulevard
PO Box 301463
Montgomery, AL 36110-2059

SUBJ: Final Finding of Suitability To Transfer (FOST); Super FOST No. 2
Fort McClellan

Dear Mr. Stroud:

The Environmental Protection Agency (EPA) has reviewed the subject document and is not satisfied that all May 16, 2002, EPA comments have been adequately addressed. (Copy enclosed). Therefore, EPA expects to attach any of our comments, to the extent they are not incorporated into or addressed by the final FOST and/or deed or assignment of transfer, as unresolved regulatory comments in an attachment to the documents.[1]

If the military chooses not to respond to these comments, EPA will consider characterizing our comments as "unresolved regulatory comments" pursuant to DoD policy on FOSTs, and have said comments placed as an attachment to the FOST. DoD should be on notice that their failure to comply with the above-delineated CERCLA requirements, may subject the Facility to citizen suits under CERCLA § 310 for failure to perform specified, non-discretionary duties.

---

[1]"Regulatory agencies will be notified at the initiation of the EBS and the FOST. The process of development of these documents will be designed to assure that regulators are provided adequate opportunity to express their views. Regulators will be provided with workable draft documents as they become available. Regulatory comments received during the development of these documents will be reviewed and incorporated as appropriate. Any unresolved regulatory comments will be included as attachments to the EBS or the FOST." DoD Guidance on the Environmental Review Process to Reach a Finding of Suitability to Transfer (FOST) for Uncontaminated Property, § IV(A).

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While EPA is concerned that all comments previously submitted be addressed, we understand the commitment of FTMC to address some at the appropriate time in the future. However, EPA is particularly concerned that General Comment Number 3 and Specific Comment Number 3 have not been adequately addressed at this time.

EPA offers the enclosed comments for consideration by the Alabama Department of Environmental Management (ADEM). As ADEM considers appropriate, please transmit these comments to Fort McClellan (FTMC). If you have any questions, please call me at (404) 562-8549.

Sincerely,

Doyle T. Brittain

Doyle T. Brittain
Senior Remedial Project Manager

Enc.

cc: Ron Levy, FTMC
Lisa Holstein, FTMC
Lee Coker, USA/COE
Jeanne Yacoub, Shaw Environmental
Daniel Copeland, CEHNC-OE-DC
Maj. Wayne Sartwell, ALANG
Maj. Bernie Case, ALANG
Miki Schneider, JPA
Hugh Vick, Gannett-Fleming

May 16, 2002

EMAIL & US MAIL

4WD-FFB

Mr. Ron Levy
BRAC Environmental Coordinator
U.S. Army Garrison/Transition Force
Environmental Office
Bldg. 215, 291 Jimmy Parks Boulevard
Fort McClellan, AL 36205-5000

SUBJ: Finding of Suitability to Transfer (FOST) Number 2; Fort McClellan

Dear Mr. Levy:

In accordance with CERCLA § 120(h), the Environmental Protection Agency (EPA) has reviewed the Draft Finding of Suitability to Transfer (FOST), dated April, 2002, for the SUPERFOST No. 2 property, Fort McClellan (FTMC), Calhoun County, Alabama, and offers the enclosed comments for consideration. These comments are based on information provided by Fort McClellan and oversight provided by EPA of hazardous waste activities. Please note that EPA is not providing any comments regarding ordnance and explosives.

If Fort McClellan chooses not to respond to these comments, EPA would characterize our comments as "unresolved regulatory comments" pursuant to DoD policy on FOSTs, and expect said comments to be placed as an attachment to the FOST. Fort McClellan should be on notice that failure to comply with CERCLA requirements, may subject the Facility to citizen suits under CERCLA § 310 for failure to perform specified, non-discretionary duties.

According to the FOST provided, the Army intends to transfer approximately 356.91 acres, including 99 facilities, to the Anniston-Calhoun County Fort McClellan Development Joint Powers Authority (JPA), and 0.56 acres with 1 facility, to the City of Anniston, totaling 357.47 acres, for use consistent with the Fort McClellan Comprehensive Reuse Plan, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and with Department of Defense and Army policy.

If you have any questions, please call me at (404) 562-8549.

Sincerely,

Doyle T. Brittain
Senior Remedial Project Manager

Enc.

cc: Lisa Holstein, Ft. McClellan
Ellis Pope, USA/COE
Phil Stroud, ADEM
Jeanne Yacoub, IT
Daniel Copeland, CEHNC-OE-DC
Maj. Wayne Sartwell, ALANG
Maj. Bernie Case, ALANG
Hugh Vick, Gannett-Fleming

Environmental Protection Agency Comments on
Finding of Suitability to Transfer (FOST) Number 2

GENERAL COMMENTS

1. The Environmental Protection Agency (EPA) will issue final comment(s) on the FOST expressly contingent upon final documents being provided to EPA by DoD. EPA comments provided herein, as the underlying DoD documents, are draft in nature.

2. EPA expects a copy of the deed(s) or other transfer documents inclusive of all terms (including notices/covenants) both prior to and after execution of the documents. The statement in the FOST that notices and restrictions will be included in the transfer documents affords less certitude of protection of human health and the environment than do the complete transfer documents.

3. Section 330 of the Defense Authorization Act for Fiscal Year 1993, Public Law 102-484 as amended by Section 1002 of the Defense Authorization Act for Fiscal Year 1994, Public Law 103-160 provides that the Secretary of Defense shall hold harmless, defend and indemnify the persons that acquire ownership or control of any facility at a military installation that is closing or closed pursuant to a base closure law from any claim for personal injury or property damage or economic loss that results from the release of hazardous substances or petroleum products as a result of DoD activities. Please include such a provision in the FOST and/or deed.

4. EPA expects to attach any of our comments, to the extent they are not incorporated into or addressed by the final FOST and/or deed or assignment of transfer, as unresolved regulatory comments in an attachment to the documents.[3]

SPECIFIC COMMENTS

1. Section 1.0, Purpose. This section states that the property is intended to be used consistent with the Fort McClellan Comprehensive Reuse Plan, CERCLA and DoD and Army policy. In this section, please provide a brief summary description of the proposed uses.

---

[3]"Regulatory agencies will be notified at the initiation of the EBS and the FOST. The process of development of these documents will be designed to assure that regulators are provided adequate opportunity to express their views. Regulators will be provided with workable draft documents as they become available. Regulatory comments received during the development of these documents will be reviewed and incorporated as appropriate. Any unresolved regulatory comments will be included as attachments to the EBS or the FOST." DoD Guidance on the Environmental Review Process to Reach a Finding of Suitability to Transfer (FOST) for Uncontaminated Property, § IV(A).

2. Section 3.1, Environmental Condition of Property Categories. The property is characterized as either ECP Category 1 (areas where there has been no release or disposal of hazardous substances or petroleum products), Category 3 (areas where there has been a release of hazardous substances but below levels that require remediation) or Category 4 (areas where there has been a release of hazardous substances but all remedial action necessary to protect human health and the environment has been taken). Please clarify whether the FOST is intended to document the identification of the Categories 1 and 3 property as uncontaminated under CERCLA § 120(h)(4) and to request that the State concur in that identification. Note that CERCLA mandates the identification of uncontaminated property. Consulting EPA memorandum, *Military Base Closures: Revised Guidance on EPA Concurrence in the Identification of Uncontaminated Parcels under CERCLA Section 129(h)(4)*, may prove helpful in determining whether property may be characterized as uncontaminated, though EPA's concurrence is, of course, not required for the identification process at Ft. McClellan.

   Aerial photos consulted in making such determination should reflect prior usage of the property. The text does not state that aerial photos reflecting past uses were reviewed (current photos alone may not be sufficient). In addition, the requirement from CERCLA to conduct interviews with employees reads, "Interviews with current or former employees involved in operations on the real property." Please clarify whether interviewing FTMC Real Estate Personnel is sufficient to satisfy this statutory requirement.

3. Section 3.2, Storage, Release or Disposal of Hazardous Substances. This section states that there is no evidence that hazardous substances were stored, released or disposed of on the property in excess of reportable quantities. Since facilities located on the property (for example, Parcels 2(4), 6(4), and 20(4)) stored waste oil, a hazardous substance not exempted from coverage under CERCLA, it appears that this statement is inaccurate. Further, releases on those parcels justified conducting removal actions. Please quantify as best as can be done the amount of the release. CERCLA §120(h)(3)(A)(i) requires, in addition to the notice of the type and quantity of such hazardous substances, that notice be placed in the deed of the time at which such storage, release or disposal took place and of a description of the remedial action taken. Please verify whether such notice is required by 40 CFR 373 at these parcels, and modify the text in this section accordingly.

4. Section 3.3.2, Underground Storage Tanks. This section mentions some underground storage tanks (USTs) that have been removed and some that have been left in place. Mention should be made as to whether the USTs that were removed were removed in accordance with state and federal requirements, and those that were left in place were tested and determined to be in compliance in accordance with state and federal requirements.

5. Section 3.10, Ordnance and Explosive. EPA is not commenting on this.

6. Section 11.0, Finding of Suitability to Transfer. Because of the question about whether portions of the property should be identified as uncontaminated (see comment 2), it is unclear whether the covenants of CERCLA § 120(h)(3) or § 120(h)(4) are appropriate for some of the Category 3 property. Note that if portions of the property are determined to be "uncontaminated", it will be appropriate to revise the covenant and access clause accordingly.