ATTACHMENT B

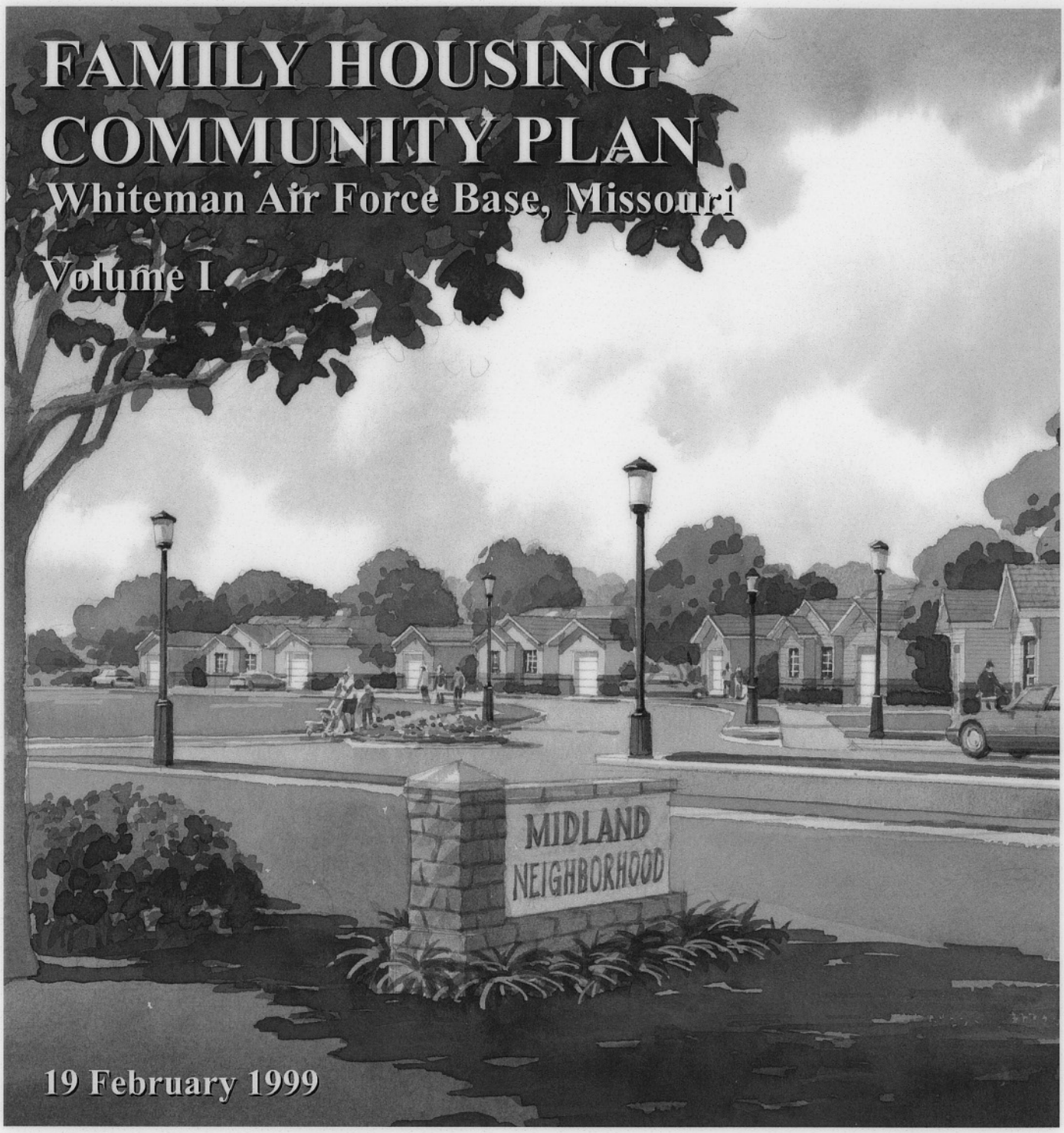
WHITEMAN AIR FORCE BASE

FAMILY HOUSING COMMUNITY PLAN, VOLUME 1

FAMILY HOUSING COMMUNITY PLAN

Whiteman Air Force Base, Missouri

Volume I



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United States Air Force
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U.S. Army Corps of Engineers
Savannah District

Prepared By:
Lopatka & Murdock / Morales & Shumer
Architects Engineers Planners
Winter Park, Florida

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Executive Summary

EXECUTIVE SUMMARY

The purpose of this family Housing Community Plan (HCP) is to provide a long range plan for the planning, programming, design, and improvement of Military Family Housing (MFH) at Whiteman AFB. This HCP accomplishes the following:

- serves as a guide for bringing the entire housing area, both individual units and neighborhood areas, up to contemporary Air Force Whole House/Whole Neighborhood Standards;
- identifies necessary improvements and repairs for housing units and the MFH Community Area, improvements which should also extend the expected life of the units and neighborhoods by twenty-five (25) years;
- functions as a programming guide for development of specific projects, as the plan is implemented over a period of time;
- defines preliminary construction costs for improvements and repairs in the Family Housing Community anticipated over a three to five year period; and
- provides for the orderly and economical implementation of the proposed improvements through the use of a phasing plan.

Further goals, objectives, and methodology used in preparing this HCP are discussed in Chapter 1.

Housing Requirements

Whiteman AFB Military Family Housing currently consists of 1,129 family living units within four distinct on-base neighborhoods (see Section 2.2)

- Woodview Neighborhood (314 units)
- Midland Neighborhood (351 units)
- Lakeside Neighborhood (324 units)
- New Housing Neighborhood (140 units),

Using the Housing Market Analysis (HMA) of 1997 a deficit is projected of 207 units by 2001 (see Table 2.2). The majority of the deficits will be two-bedroom requirements for Junior Non Commissioned Officer (E-1 – E-6) 146 units, Senior Non Commissioned Officer (E-7 – E-9) 18 units, and Company Grade Officer (O-1 – O-3) 16 units (see Section 2.3).

Family Housing Neighborhoods

The image of family housing at Whiteman AFB is pleasant, and there is a feeling that the family housing community is cohesive due to the relative location of the neighborhoods and community facilities. The neighborhoods have been enhanced by the recent development of Spirit Boulevard and the incorporation of a traditional streetscape design with ample street trees, enhancements which help provide the neighborhoods and the entire Base community with a distinctive sense of identity.

The Whiteman AFB greenspace system is an outstanding model for appropriate greenspace preservation to enhance and define the community and neighborhoods. Greenspace preservation is a priority, and it is the Base's desire to not disturb or develop any greenspace within the three existing neighborhoods. The New Housing Area has ample surrounding greenspace that will blend well with the existing neighborhoods.

The recommendations of the Community Development Plans (Chapter 2) include

- Emphasize pedestrian and bicycle circulation systems that unite the entire family housing community by connecting the various neighborhoods to one another and to the Community Center Area and Base at large;
- Incorporate indigenous detailing into the architecture and landscape, including a traditional Midwestern sense of neighborhood-scale and street-scale to further integrate the family housing into the local landscape;

- Follow the Base Landscape Plan (on file in the BCE office) in implementing all landscaping improvements.
- Coordinate landscaping improvements with existing and planned underground fiber optic and telephone cabling throughout the family housing community.
- Use indigenous plant material to create scale, visual focus, and functional space, to appropriately screen and buffer the perimeter of the neighborhoods, and to define private yard space and public greenspace..
- Provide shared facilities within each neighborhood to foster identity and common interest, such as, recreation, greenspace, neighborhood gathering, and other amenities. The incorporation of a new neighborhood meeting building, or the designation of an already existing building, will further enhance the sense of neighborhood for children, teens, and adults.
- Create readily identifiable focal points using site features at heavily traveled or landmark intersections that make them unique and easy to remember and describe. These intersection site features include one or more of the following: seating plazas, static displays, dedication monuments, public art, special plantings, a prominent bus shelter, or special lighting features. Each landmark should have a tasteful feature that can be seen from the road and easily recalled when giving directions.
- Provide crosswalks with adequate pavement markings, signage, and lighting for safe pedestrian and vehicle circulation.
- Maintain the design speed of 15 mph through the incorporation of traffic calming design techniques.
- Retain existing on-street parking.
- Provide sidewalks on both sides of the street, where feasible, while allowing for consistent street tree plantings.
- Modify the non-accessible street crossings to accommodate stroller traffic and the disabled following the Americans with Disabilities Act.
- Use indigenous plantings of trees and shrub masses to supplement the few existing trees within the interiors of the neighborhoods.
- Provide defined parks of varied scales, within the overall greenspace system, to effect greater neighborhood and community identity, while locating the parks to take advantage of neighborhood gathering and meeting buildings.
- Position the community and neighborhood-based multipurpose trails system within and connecting the various neighborhood greenspaces.
- Upgrade the entrances to the neighborhoods.
- Clearly define the perimeters of the neighborhoods with quality materials that blend well with the surrounding Community Center Areas.
- Upgrade the existing neighborhood perimeter fencing along State Highway 23 with a heavy grade of galvanized coated metal fencing, and vegetated with vines that will withstand the harsh Missouri winters.
- Densely re-vegetate the slopes between housing and the highway with indigenous plantings similar to other greenspaces.
- Screen the existing and proposed industrial uses along the eastern edge of the Woodview Neighborhood with additional vegetation and site detailing.
- Views from off the Base into Base family housing should present a favorable image of the Air Force as an aesthetically sensitive steward of the land.
- No housing units or yards should be visible from off the Base.
- Screen the open views of the perimeter fence on both sides with evergreen and flowering vegetation. A cost-effective way to handle this problem is to stagger masses of trees or shrubs on either side of the fence.

- The edge of family housing that borders the rest of the Base should be subtler and should be treated differently than are off-Base edges. This Base edge should be punctuated with easily identified entrances that emphasize the transition between Base operations and a family housing area.

Base Family Housing Reduction Plan

The current trend to reduce the size and cost of the Government in an effort to balance the budget is expected to have a major impact on the Military and Family Housing Community.

In anticipation of possible reductions in the housing inventory, the AE was directed to study the reduction at 75%, 50%, and 25% of the projected HMA for 2001, since the exact reduction is unknown. The reduction was assumed in this study to be uniform in all grades. The concern is how to maintain a cohesive Family Housing Community if a large portion of the housing inventory is declared surplus and is subject to demolition.

An obvious goal is to keep the newest units that would require the least cost to maintain or renovate and to demolish the older units which would be the most expensive to maintain or renovate. However, using this criterion alone may cause large gaps in the neighborhoods and destroy the cohesiveness of the community. Consequently, this study was initiated to suggest housing site plans which, if necessary, could be implemented at any of the three levels of reduction and cause the least disruption to the Housing Community. (See Section 2.5.)

Housing Units

This HCP proposes to revitalize the existing family housing areas and to bring the houses up to contemporary private sector and Air Force family housing standards while extending the useful life of housing an additional 25 years.

The proposed housing unit upgrades include new kitchen cabinets, bathroom vanities, flooring, doors, hardware, as well as additions and interior renovations where required (see Chapter 3).

Lead-based paint and asbestos were detected in all units inspected.

Termite damage was found in all renovated 'M' units and is therefore expected to be found in the remaining 'M' units..

In addition to modernizing housing unit design in terms of the quality of family life,. increased family safety is another of the goals in these housing unit upgrades. To effect family safety, national standards or building codes were used as the basis for the detailed recommendations of Chapter 3 with respect to mechanical and electrical system features as well as fire and building hazards

Energy consumption reduction is also a goal of this HCP with recommendations (Section 3.1.2) that include

- replacing all older, less efficient equipment (e.g., thermostats, furnaces, air-conditioning systems, water heaters, washer/dryer units, and dishwashers) with the latest energy-efficient models
- installing water-saving (flow restricting) shower heads, and
- using energy-efficient fluorescent lighting in the kitchen.

Another goal of this HCP is satisfying the Americans with Disabilities Act (ADA) by following the Air Force Family Housing Guide which requires Barrier Free Features for housing (Section 3.1.5)

Existing barrier free, handicap accessible housing units are described in Section 3.3, "New Housing Units Previously Constructed by Others," and proposed replacement / new housing units designed to be readily adaptable to barrier free living are described in Section 3.4.

Phasing

The HCP Phasing Plan (Chapter 4) programs in nine phases (A, B, C, D, E, F, G, H, and J) for Whole

House / Whole Neighborhood revitalization of the entire MFH community over a ten year period, or longer, subject to funding availability.

Phases A, B, and C are FY 1998, FY 2000 and FY 2001 PAIP Whole House renovation projects. The phasing schedule has been chosen to renovate the worst housing first while providing the least disruption to adjacent residents and grouping of unit types for economy of scale.

Phases have been arranged to accomplish the following:

- Keep the number of unit renovations below 200 and group unit types for economy of scale.
- Provide for minimum disruptions to adjacent residents by closing off entire streets in areas of construction. Only main arterial streets will remain open for accessibility.
- Each phase represents the amount of work that could be accomplished in one year. If full funding is not available in any given year, the phase will have to be divided into subphases to match funding.

The priorities of projects within each phase were determined on a "renovate worst condition first" basis and are summarized in Table 4.1 of Chapter 4.

Detailed cost estimates of Whole House / Whole Neighborhood renovations are broken down into work items for each phase to provide the Base flexibility in selecting projects as funding becomes available.

The phasing plan database reports are found in Chapter 4, while detailed cost estimates of community and housing unit upgrades are found in Appendices II and III.

The implementation of this HCP's proposed improvements would provide Whiteman AFB with a quality family living environment well into the next century.

Chapter 1
General Information And Background

CHAPTER 1 GENERAL INFORMATION and BACKGROUND

1.1 Statement of Purpose

The purpose of this Family Housing Community Plan (HCP) is to provide a long range plan for the planning, programming, design, and improvement of family housing at Whiteman Air Force Base. This HCP accomplishes the following:

- serves as a guide for bringing the entire housing area, both individual units and neighborhood areas, up to contemporary Air Force Whole House/Whole Neighborhood Standards;
- identifies necessary improvements and repairs for housing units and the MFH Community Area, improvements which should also extend the expected life of the units and neighborhoods by twenty-five (25) years;
- functions as a programming guide for development of specific projects, as the plan is implemented over a period of time;
- defines preliminary construction costs for improvements and repairs in the Family Housing Community anticipated over a three to five year period; and
- provides for the orderly and economical implementation of the proposed improvements through the use of a phasing plan.

1.2 Goal and Objectives

The goal of the Family Housing Community Plan is to provide families with homes and communities that are comparable in design and amenities to contemporary Air Force Standards that offer

- adequate transportation and utility systems;
- properly designed and convenient off-street parking;
- family support facilities;
- recreational facilities and athletic areas.

The HCP focuses on improving community areas as shown in Chapter 2, and on improving individual family housing units as shown in Chapter 3.

Community. The Family Housing Community Plan recommends developing a community that supports

- a sense of neighborhood identity through compatible housing styles, architectural features, and landscape development.
- a sense of "Pride of Place" for each resident in the community.

The plan suggests that the above can be achieved by providing

- structured, functional, and uncluttered open spaces;
- complete landscape development for public and private spaces;
- adequate, well-lighted street and sidewalk systems;
- conveniently located tot-lots and playgrounds;
- informal gathering and relaxation spaces.

Housing Units. The Family Housing Community Plan recommends that individual housing units should be revitalized to

- meet all minimum standards in accordance with the Air Force Family Housing Guide to create functional and convenient floor plan layouts;
- meet contemporary housing standards so the base's housing units are equal to or better than what is available off base;
- incorporate quality materials in construction to the fullest extent possible.

Each family housing unit improvement plan suggests that the above can be achieved by making the following improvements:

- renovating or replacing kitchen;,
- upgrading mechanical and electrical systems;
- expanding or adding family rooms;
- expanding or adding bedrooms and or bathrooms;
- adding exterior storage areas;
- providing new plumbing and lighting fixtures;
- increasing unit size up to allowable square footage.

1.3 Methodology

Five separate steps were used in preparing this plan to insure that the project goal was met in a logical and economical manner. Brief descriptions of these steps follow:

Step 1 - Field Survey

During the month of July 1997, a project team of architects, landscape architects, and engineers conducted a survey of the entire Family Housing Community area shown in Section 1.4.1, "Study Area Definition." The project team visited one of each unit type shown in Section 3.2, "Describing Existing Unit Types." The survey team focused on the quality-of-life issues such as community image, the visual environment, and general livability of the housing units and community.

Step 2 - Analysis of Existing Conditions

In the second step, the project team documented and evaluated the Family Housing Community with respect to the plan's goals and objectives. The team's analysis identifies the base's housing assets and deficiencies in Chapter 2 and 3. Guidelines for the team's analysis are contained in the Air Force Family Housing Guide, dated December 1995.

Step 3 - Recommendations for Community and Unit Improvements

In step three, the project team used its analysis to make comprehensive recommendations for improving all components of the Family Housing Community.

Several broad categories are used to organize specific improvements into meaningful and functional groupings. These categories are as follows:

Community Development Plan (Chapter 2)

- Community Character and Identity
- Streetscape Improvements
- Open Space Development
- Utility Systems
- Surrounding Development
- Community Development Plans
- Neighborhood Improvements Plans
- Base Capacity Analysis
- Family Housing Requirements

Unit Improvements Plans (Chapter 3)

- Existing Unit Types: Previously Constructed and/or Designed by Others
- New Housing Units: Previously Constructed By Others
- Replacement / New Housing

Step 4 - Construction Cost Estimating (Chapter 3)

In step four, the project team developed current construction costs (based on FY2001 construction dollars) for all proposed improvements identified in the HCP.

Step 5 - Construction Phasing Plan (Chapter 4)

In the final step of developing this plan, the project team devised an orderly and economical implementation of all proposed improvements over

a three to five year period. The plan remains flexible in order to allow for yearly funding fluctuations.

The phasing plan identifies: (1) incremental phases to be developed and (2) projects within each phase that may be held for later implementation if all funds required for a complete phase can not be obtained.

1.4 Study Area Definition

The family housing community at Whiteman AFB contains 1,129 family housing units in four distinct neighborhoods. The extent of the project study area is shown in figures 1.2 and 1.3. Note that the study area includes the entire Family Housing Community and is not limited to the units and the yard areas. Community open-space and recreational areas are included in this plan.

Figure 1.1 Vicinity Map

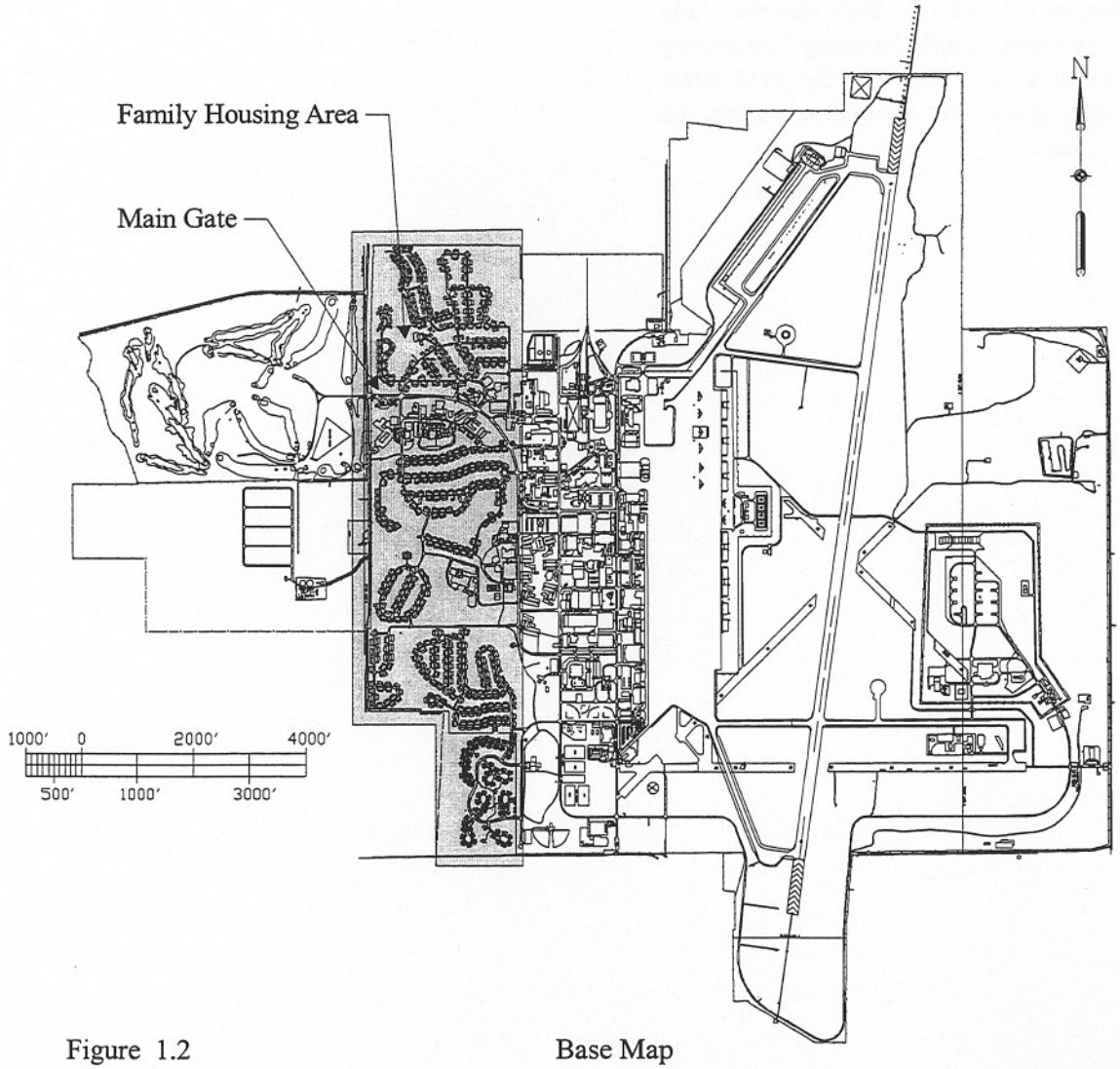

Figure 1.2 Base Map

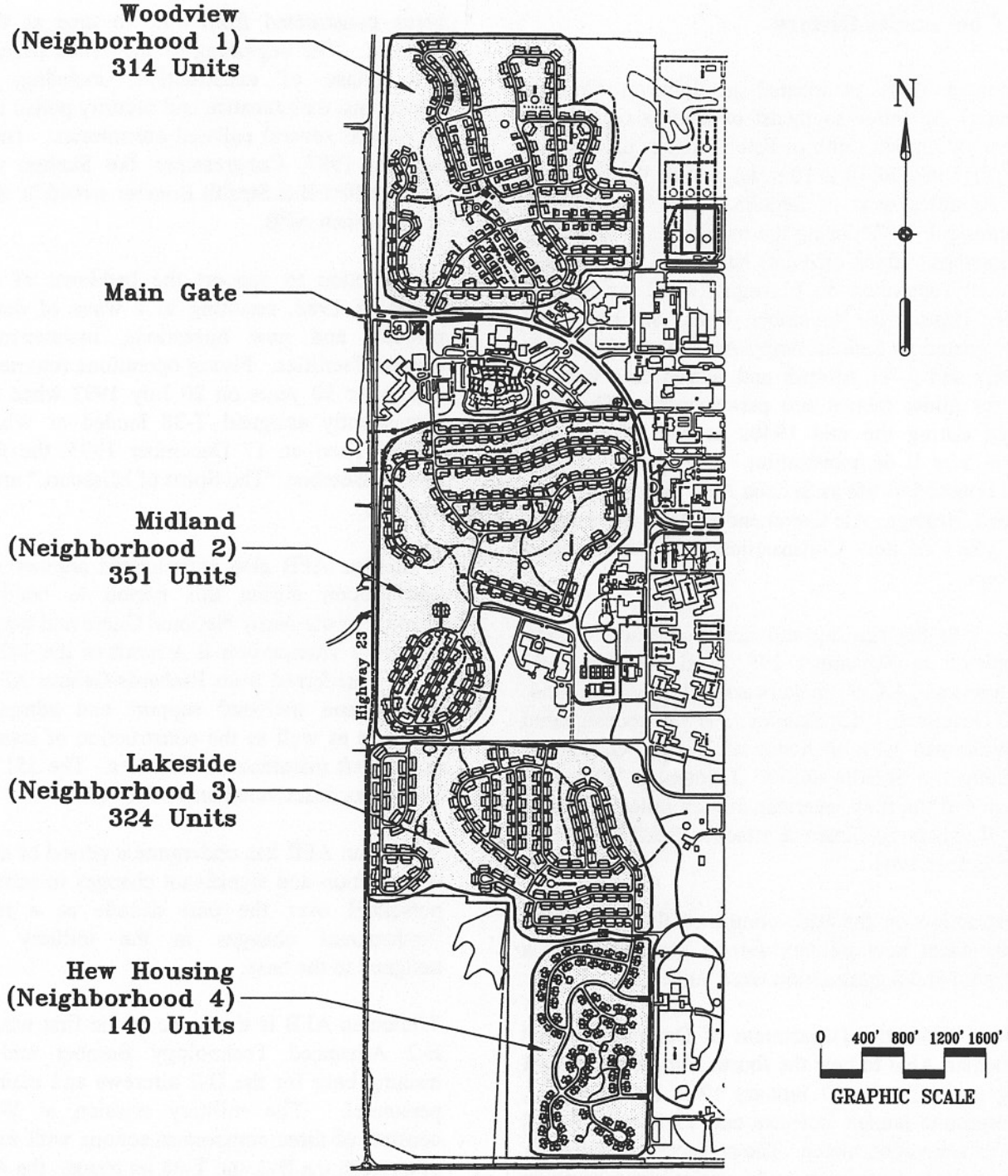

Figure 1.3 Family Housing Community Map

1.5 Community History

Whiteman AFB is located in Johnson County, Missouri, 65 miles southeast of Kansas City. The base is two miles south of Knob Noster, just off the U.S. Highway 50. It is 10 miles east of Warrensburg and 20 miles west of Sedalia. The base had its beginning in 1942 during the mobilization following the Japanese attack on Pearl harbor. The base was originally activated on 6 August 1942, as Sedalia Glider Base. In November 1942, the base was redesignated as Sedalia Army Air Field, with Waco Gliders and C-47 Aircraft and served as a training site for glider tactics and paratroopers. The base closed during the mid 1940s as part of the post World War II demobilization. In August 1951 the field returned to life as Sedalia AFB under the newly formed Strategic Air Command (SAC), ushering in two years of new Construction and rehabilitation projects.

Repairs to the runway and new construction were completed in November 1953, and the first B-47 Stratojets and KC-97 tankers arrived in March 1954. On 3 December 1955, Sedalia AFB was redesignated as Whiteman AFB in honor of 2nd Lt. George A. Whiteman, a Sedalia native. Lieutenant Whiteman was one of the first American airmen killed in World War II, when the Japanese attacked Pearl Harbor on 7 December 1941.

Construction on the base continued throughout the 1950s when new military family housing units, a base pool and a gymnasium were built.

In June 1961, the Department of Defense selected Whiteman AFB to host the fourth Minutemen ICBM wing in SAC. On 17 January 1962 150 hardened, underground launch facilities and 15 launch control centers were constructed. The project also called for the installation of a vast underground intersite cable network. If laid end to end in a straight line, the cable would stretch from Whiteman AFB to Los Angeles. Construction was officially completed in June 1964.

Whiteman AFB remained relatively stable throughout the 1960s and 1970s, with new buildings being constructed from time to time as the base matured. The beginning of the 1980s ushered in a new phase of construction, including missile operations, maintenance and security police facilities as well as several enlisted dormitories. Then on 5 January 1987, Congressmen Ike Skelton revealed that the first B-2 Stealth Bomber would be stationed at Whiteman AFB.

Construction to support the beddown of the B-2 began in 1988, resulting in a wave of demolition projects and new operations, maintenance and support facilities. Flying operations returned to the base after 30 years on 20 July 1993 when the first permanently assigned T-38 landed at Whiteman AFB. Then on 17 December 1993, the first B-2 Stealth Bomber, "The Spirit of Missouri," arrived on the base.

Whiteman AFB also experienced another wave of construction during this period to beddown an Armory of the Army National Guard and the Reserve A/OA-10 Thunderbolt II Aircraft of the 442 Fighter Wing transferred from Richards-Gebaur AFB. The construction included support and administrative facilities as well as the construction of state-of-the-art aircraft maintenance facilities. The 351st Missle Wing was deactivated on 31 July 1995.

Whiteman AFB has undergone a period of extensive construction and significant changes in mission and personnel over the past decade as a result of fundamental changes in the military mission assigned to the base.

Whiteman AFB is the home of the first wing of the B-2 Advanced Technology Bomber and is the training base for the B-2 aircrews and maintenance personnel. The military mission at Whiteman consists of three component actions with four types of aircraft: the B-2, the T-38 jet trainer, the A/OA-10 Thunderbolt, and Missouri National Guard helicopters.

The B-2 and T-38 are under the operational control of the 509th Bomber Wing. The 509th operates the only wing of the B-2 Spirit bombers in the Air Force. The B-2 Spirit is a stealth technology design which

includes composite materials, special coatings, and a flying wing design that give the B-2 Spirit a virtually non-existent radar signature.

The 509th is responsible for operating the B-2 as well as for maintaining the aircraft and its advanced subsystems, and for training the personnel to operate and maintain the B-2 fleet.

The T-38 Talon aircraft is assigned to the 509th Operational Support Squadron as a B-2 aircrew training platform at Whiteman AFB. The T-38 Talon is a supersonic, twin engine jet pilot trainer characterized by high fuel economy and ease of maintenance.

The Defense Base Realignment and Closure Act of 1990 (PL 101-510) closed Richards-Gabaur AFB near Kansas City and transferred the 442 Fighter Wing and it's A/OA-10 aircraft to Whiteman AFB. The A/OA-10 is the observation variant of the A-10 Thunderbolt ground attack aircraft. The A/OA-10 serves as a forward air controller platform, enabling the pilot to report on ground targets and assist A-10s in employing their weapons.

Additionally the Missouri Air National Guard operates UH-1H, OH-58A, and AH-1 helicopters from Whiteman AFB.

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Chapter 2
Community
Development Plans

CHAPTER 2 COMMUNITY DEVELOPMENT PLANS

2.1 Introduction

The Community Development Plans presented in Chapter 2 are designed to assist Air Combat Command (ACC) and Whiteman AFB with future planning and scheduling of improvements to the Base family housing community. The objective of these improvements will be to provide the Whiteman AFB families with a quality, family oriented community that meets current Air Force Guidelines. The Community Development Plans are presented in the following sections:

2.1 Introduction
2.2 Community Analysis and Recommendations
2.2.1 Community Character and Identity
2.2.2 Neighborhood Descriptions
2.2.3 Streetscape Improvements/Parking
2.2.4 Greenspace and Recreation Development
2.2.5 Utility Systems Infrastructure
2.2.6 Surrounding Development
2.2.7 Base Housing Capacity Analysis
2.2.8 Community Development Plan
2.2.9 Neighborhood Improvement Plans
2.2.10 Replacement Housing Plan
2.2.11 Neighborhood Character: Existing Photo Views and Proposed Perspectives
2.2.12 Community Assessment Database Reports
2.3 Housing Requirements
2.4 Rank Distribution Site Plan
2.5 Family Housing Reduction Analysis

These plans provide

- **Analysis:** an evaluation of the existing housing community's environment and its impact on the quality of family life, and a statistical analysis of current and projected housing demand and availability;

- **Recommendations:** proposals for improving community housing areas with cost estimates for these changes, as well as plans for orderly reductions in family housing in case of future budget cuts;

- **Graphic Plans:** Large and small scale drawings illustrating the extent and details of the recommended improvements.

2.2 Community Analysis and Recommendations

2.2.1 Community Character and Identity

The overall environment at Whiteman AFB is attractive and provides residents with opportunities to experience Missouri's local culture and varied terrain. Perhaps, the greatest assets to the community are the beautiful views and proximity to the lush greenspaces, an amenity enjoyed from many homes. These greenspaces buffer views of other nearby neighborhoods and allow residents a greater sense of privacy.

The image of family housing at Whiteman AFB is pleasant, and there is a feeling that the family housing community is cohesive due to the relative location of the neighborhoods and Spirit Avenue community facilities. The neighborhoods have been enhanced by the recent development of and the incorporation of a traditional streetscape design with ample street trees, enhancements that help provide the neighborhoods and the entire Base community with a distinctive sense of identity.

The new family housing management office is described in figures 2.3 and 2.4 (following Section 2.2.7, Base Housing Capacity Analysis). The location is shown on the Existing Unit Type Designation Site Plan, figure 2.13).

2.2.1.1 Community Character and Identity Analysis

The landscape and site detailing beyond the building walls is an important feature to address when analyzing methods to improve the neighborhood's quality of life, community character, and identity. The components of the community landscape include streetscapes, greenspaces, recreational areas, entranceways, and interconnecting bicycle and pedestrian trails.

The vegetation in the family housing area includes mixed deciduous and evergreen trees scattered sparsely throughout the neighborhoods. The few existing trees should be supplemented with indigenous trees that can withstand the climatic conditions at Whiteman AFB (see selected plant list provided in Section 2.2.4). The greenspaces between

neighborhoods contain beautiful stands of indigenous vegetation and are a model for the development of greenspaces to define Air Force neighborhoods.

2.2.1.2 Community Character and Identity Recommendations

The family housing area should have a readily apparent residential character that is distinctly different from the operational portion of the Base (as illustrated in the Community Development Plan, figure 2.6). This distinctive residential area should consist of individual neighborhoods that together form the family housing community. Site design, architecture, trails, and planting are the most important features used to create this residential image.

The site design, architecture and plantings are the most important features used to create this residential image. Whenever possible, the site design at Whiteman AFB should be modified to strengthen the housing community structure by creating visually apparent neighborhoods, each with a distinctively different character. Residents relate more easily to small groups of homes than to large undifferentiated housing tracts. Neighborhoods should be linked together by pedestrian, vehicular, and greenspace amenities to create the community at large. These small, linked neighborhoods make it possible for people to be part of a large housing community, while feeling a secure sense of place and pride in the individual neighborhood where they live. Such a community structure can be achieved at Whiteman AFB by renovation using the following techniques as illustrated in the Community Development Plans (see figures 2.7A, 2.7B,... 2.7I):

- Emphasize pedestrian and bicycle circulation systems that unite the entire family housing community by connecting the various neighborhoods to one another and to the Community Center Area and Base at large.

- Create focal elements that visually punctuate important locations within the community and help strengthen the sense of orientation for residents and visitors. Effective examples of such focal elements are landmark community intersections, neighborhood entrance features, and large recreation areas.

- Incorporate indigenous detailing into the architecture and landscape, including traditional town sense of neighborhood and street "scale" to further integrate the family housing into the local landscape.

Plantings and other landscape elements are another important component of community character and identity. Although Whiteman has well-vegetated greenspaces, plant material is not prevalent within the residential areas where it would have a strong impact if present. Plants should be chosen from indigenous material whenever possible, since these plants are already acclimated to the area. A list of suggested plant materials is presented in Section 2.2.4. Specific landscape planting recommendations are as follows:

- Follow the Base Landscape Plan (on file in the BCE office) in implementing all landscaping improvements.

- Coordinate landscaping improvements with existing and planned underground fiber optic and telephone cabling throughout the family housing community.

- Plant street trees to visually compliment and define street hierarchy (see photo 2.1). Street trees should be planted in formal rows along primary streets at thirty to fifty feet on center, based on species. Locate trees between the sidewalk and curb at least 3 feet from the edge of the sidewalk.

- Plant informal groupings of street trees along secondary streets. This naturalistic planting concept will serve as a visual clue to street hierarchy when compared to formal planting on primary streets.

- Plant trees, at street intersections, on tangent with the corner to provide good visibility and to highlight these prominent locations.

- Utilize flowering trees and shrubs in front of evergreen trees at neighborhood entrances in conjunction with signage, lighting, and special paving to emphasize entering a family housing area.

- Create vegetative screens between units and at critical locations to prevent views from community spaces directly onto rear private areas. Masses of evergreen trees are the most effective means of screening.

- Plan landscape improvements to avoid creating turf areas that are difficult to mow by substituting trees for ground cover or shrubs in masses that require less maintenance.

- Place trees and shrubs so that they will not conflict with or impede maintenance of utilities or other structures. Large trees should never be planted closer than fifteen feet from a building, and large shrubs should never be planted closer than three feet from a structure.

2.2.2 Neighborhood Descriptions

Whiteman AFB Military Family Housing (MFH) consists of 1,129 family living units within four distinct neighborhoods (see figures 1.3, 2.5, 2.6, 2.13, and 2.14):

- Woodview Neighborhood (1)
- Midland Neighborhood (2)
- Lakeside Neighborhood (3)
- New Housing Neighborhood (4)

Housing was built in two phases: Appropriated in 1957 and Capehart in 1962. Appropriated units are in the southern portion of Woodview Neighborhood (south of Westover Road) and in all of Midland Neighborhood. Capehart units are located in the remainder of Woodview Neighborhood and all of Lakeside Neighborhood. The family housing area consists primarily of one story duplex buildings with a scattering of one story single family units.

The neighborhoods are well positioned around the Main Base facilities and are within a short driving distance from the Community Center Area of the base (including the Base Exchange, Commissary, Pool, Theater, etc.). Additionally, many community recreational facilities are adjacent to and within an easy walking or bicycling distance to the neighborhoods.

Most units are similar distances from the street, and closely spaced, creating long uninterrupted building facades on the various curvilinear streetscapes. Prevalent street trees and greenspaces enhance the Whiteman AFB neighborhoods and have an immediate and positive impact on the streetscape. There is variety in both unit design and street layout, although the first impression of the neighborhoods is that most units should be improved and do not reflect contemporary architectural standards.

2.2.2.1 Neighborhood Analysis

Individual housing units are set back from the street allowing for the effective development of the streetscape including parking, street trees, lighting, and walks. However, there is currently not enough parking, adequate street tree plantings, or sufficient lighting. Walks are typically adequate throughout the neighborhoods and are cast-in-place concrete. Although these conditions occur throughout the entire housing community, some areas are worse than others.

The Community Development Plan (see figures 2.7A, 2,7B,... 2.7I) illustrates the three existing neighborhoods and the New Housing Area. The visual characters of these four neighborhoods are described below:

- **Woodview Neighborhood** (Neighborhood 1) has a good streetscape character (see photo 2.2) with well-constructed streets of a curvilinear design. The curvilinear design pattern can be disorienting when navigating these streets without a north-south compass frame of reference or landmarks that are easily seen from the road and readily recalled in giving directions. The neighborhood is ideally positioned adjacent to the Base's new club, chapel, school, and child development center. The units have a dated architectural design and are generally in need of repair. The neighborhood does not have adequate buffering from Spirit Avenue.

- **Midland Neighborhood** (Neighborhood 2) has spacious streetscapes with generous front yard setbacks and usually tight side yard setbacks, denoting a suburban character. The streets are curvilinear yet respond to a sensible interconnecting grid pattern, although some of the blocks are too long creating a monotonous streetscape throughout most of the neighborhood. There is ample greenspace that has been recently enhanced by the placing the utility lines below grade. The neighboring Hospital is contiguous with the neighborhood with little buffering. The Midland neighborhood is at the center of the Whiteman AFB community and is also close to the school, chapel, youth center and child development center.

- **Lakeside Neighborhood** (Neighborhood 3) has ample greenspace and areas for recreation (see photo 2.3). There are areas of high density without adequate street trees; such streetscapes are disorienting. The neighborhood

edge along State Highway 23 is not adequately buffered from perimeter traffic, inviting undesirable views into the residents' homes. The neighborhood is distant from the main Base facilities and there is no adjacent gathering building space within a comfortable walking distance to the homes. The neighborhood is within a short drive of the Community Center Area.

- **New Housing Neighborhood** (Neighborhood 4) is a new housing area under construction; completion is expected in mid 1999. This neighborhood has ample greenspace although it is somewhat undefined. There are ample recreation facilities with good sidewalks providing connectivity. The New Housing Neighborhood is distant from the main Base facilities.

Unfortunately, all the neighborhoods have architecturally dated homes with an institutional character of varying degrees due to the homogeneous unit facades and similar unit massing. Curvilinear street layouts help to soften the military image of Air Force housing but can also cause disorientation when unit facades are so similar, and little street hierarchy exists.

Although there are many unique and positive elements within the neighborhoods, for many residents and visitors alike, the lasting image of family housing is one of disorienting streets with few landmarks. Some of the design deficiencies that contribute to this impression are as follows:

- Minimal street hierarchy—most streets look the same within and between neighborhoods, creating disorientation.

- No spatial hierarchy of neighborhoods—the Whiteman AFB family housing community is not clearly differentiated by separate neighborhoods with any unique entrance or edge identity of their own.

- No sense of entry into the neighborhoods—there is a lack of signage and insufficient pedestrian-scaled site detailing.

- Limited pedestrian or cyclist access to the Community Center Area—this access is not promoted by the community-scale street system leading to the neighborhoods.

2.2.2.2 Neighborhood Recommendations

Street tree plantings should be incorporated into all neighborhood areas. Many of these areas are currently visually unappealing and shadeless in the hot summer months. Street trees alter the microclimate as well as improve the appearance of a neighborhood. In areas where trees do exist, they help break the monotony of the unit facades and provide shade to the streetscape users.

The selective use of indigenous plant material to create scale, visual focus, functional space, and screening is often overlooked in lieu of decorative planting. Planting has not been used to appropriately screen the perimeter of the neighborhoods from visual and acoustical distraction, nor has it been used enough to define private yard space and public greenspace. Single trees or small clusters of trees only serve to enhance the immediate area and are ineffective neighborhood buffers.

While maintenance cost is an important consideration in the proposed planting development, many residents take pride in the design and planting of their individual residences thereby reducing the Base's costs to maintain and develop the common streetscape and greenspace areas. Trees do entail maintenance but they also greatly improve the quality of life for residents.

Shared facilities should be provided within each neighborhood to foster identity and common interest, such as, recreation, greenspace, neighborhood gathering, and other amenities. The incorporation of a new neighborhood meeting building, or the designation of an already existing building, will further enhance the sense of neighborhood for children, teens, and adults.

2.2.3 Streetscape Improvements/Parking

Streetscape improvements include such things as vehicle traffic circulation, sidewalks, street trees, signage, lighting, crosswalks, and all other forms of site amenities seen while walking or driving along the street. Each of these site features, by themselves, may not be a dominant aspect of community character. However, together these site features can have a remarkable impact on the quality of life within an area, and create a strong sense of identity for residents when planned in a coordinated street pattern with a blended palette of site furnishings. These site features should be considered and used in improving the existing streetscape conditions.

2.1 Westover Road Streetscape with Few Street Trees in Woodview Neihborhood

2.2 Excellent Street Tree Plantings in Woodview Neighborhood

2.3 Greenspace in Lakeside Neighborhood

2.4 Woodview Neighborhood Trail

Vehicle traffic circulation was analyzed within the family housing area based on the following criteria:

- Vehicle access to, from, and within family housing should be safe and convenient.
- Street layout should discourage cut-through traffic onto a single street; instead, layout should evenly distribute traffic onto multiple streets.
- Parking lots and areas should be de-emphasized, and on-street parking should complement off-street parking to provide 2.5 spaces per unit.
- Street layout and hierarchy should be easily read by users and structured to create individual neighborhoods within the overall community.
- Barrier-free pedestrian-oriented circulation, such as walks, jogging and bike trails (alternative transportation) should be a priority compared to the motor vehicle traffic circulation system.

2.2.3.1 Streetscape Improvements/Parking Analysis

There are few vehicle traffic circulation problems in family housing at Whiteman AFB that result in safety problems for residents. Traffic levels are low due to the interconnecting grid-like street layout and multiple access points to external arterials. The neighborhood streets are similar in appearance, and there are few distinctive landmarks to help residents and visitors navigate the neighborhood easily.

Although the Base has a good plan in place, there has been little emphasis on implementing the plan's interconnecting pedestrian and bicycle trails within the neighborhoods, from neighborhood to neighborhood, or from the three neighborhoods to the Community Center Area.

Interconnecting Trails: There is currently a well designed plan to provide a community-wide interconnecting pedestrian and jogging trail system at Whiteman AFB (see photo 2.4). Short segments of the system have been developed, although much remains to be constructed to positively affect the safety of the residents. Safe pedestrian and bicycle connections are a necessity.

Disabled Ramps: Sloped ramps at intersections for the disabled (both wheelchair-bound and pedestrian) also accommodate parents pushing baby strollers. These ramps should be provided throughout the neighborhoods and at all of the connections to Community Center Area facilities.

Crosswalk Analysis: Crosswalks are generally not adequately defined with either pavement markings or street signage, and the physical design of the streetscape does not help to promote slower speed vehicular traffic. The recent new development of Spirit Avenue has helped alleviate some of the primary crossing constraints associated with children and adults crossing to the Community Center Area facilities. With the large number of children in the family housing area, and the necessity of walking, this should be a priority issue. Many neighborhood crosswalks do not have adequate lighting—a safety issue especially important in the winter months when the days are shorter.

Neighborhood Entrances: Entrances to family housing areas currently have no signs to identify neighborhoods or to provide a sense of identity. Such entrance locations are critical in establishing the visual character of the housing areas and they should have special treatment.

Parking: Current parking is both on-street and off-street and does not meet the 2½ spaces per unit Air Force requirement. Greenspaces within the residential areas are constructed with only enough space for needed recreational activities and should not be used for parking.

Street Signage: Street signs marking street names are important for orientation. Street signage at Whiteman AFB is effective and easily read by motorists and pedestrians.

2.2.3.2 Streetscape Improvements/Parking Recommendations

Streetscape improvements include both functional and aesthetic recommendations designed to enhance the residential character and safety of family housing per Air

Force Community Guidelines. During renovation, modifying street circulation patterns will be one of the most powerful ways to achieve noticeable improvements in community structure. Where replacement units are programmed, units scheduled for removal can be selected which would strengthen the clustering and acceptable density concept of more traditionally designed neighborhoods.

The Whiteman AFB neighborhoods have simple, well functioning, existing streets that should be supplemented with a trails system to enhance the neighborhood connectivity and provide alternate transportation forms. Design guidelines for vehicle traffic circulation improvements can be summarized by recommendations that will make street hierarchy more apparent and increase the safety of residents. The streetscape recommendations for the four neighborhoods are given below:

- Provide crosswalks with adequate pavement markings, signage, and lighting for safe circulation.
- Maintain the design speed of 15 mph.
- Retain existing on-street parking.
- Provide sidewalks on both sides of the street, where feasible, while allowing for consistent street tree plantings.
- Modify the non-accessible street crossings to accommodate stroller traffic and the disabled per the Americans with Disabilities Act (ADA).
- Incorporate the New Housing Area into the community-wide trails system.

These general streetscape improvements will help people orient themselves throughout the neighborhood, improve the appearance and safety of the streetscape, and foster the residential character of the community.

Landmark Intersections: In order to make it easier to navigate the neighborhood, unique focal points should be created at heavily traveled intersections. These streetscape features, called "Landmark Intersections," should also conform to a hierarchy of primary and secondary amenities with the most prominent located at the intersection of two primary streets. These intersections are designated on the 1"=200' Community Development Plans (see figures 2.7A, 2.7B,... 2.7I). The 1"=50' Detailed Neighborhood Plans (see figures 2.8A, 2.8B,... 2.8D) provide an example of how a primary landmark should be designed.

Primary landmark intersections should be made visually distinct from one another by using one or more of the following site features: seating plazas, static displays, dedication monuments, public art, special plantings, a prominent bus shelter, or special lighting features. Site features for the landmark intersections should differ from one another so that each intersection is easy to remember and describe. Each landmark should have a tasteful feature that can be seen from the road and easily recalled when giving directions or providing a frame of reference for understanding the neighborhood layout.

Secondary landmark intersections should be accentuated with improvements that emphasize special plantings with large canopy trees and smaller scale site elements, rather than significant modifications to the street pattern and site features. While each landmark intersection will have something special and recognizable about it, other intersections that are not designated landmarks will not be memorable. Too many landmarks would be just as confusing as no landmarks.

Entrance and Signage Features: Entrance features at the primary community-scale entrances to the family housing area and the individual neighborhoods should include signage and other amenities. Entrance signs should be recognizable but understated in design and read "Family Housing" with the neighborhood name written above. They should be illuminated with lighting that is aimed directly at the sign and does not cast light or glare on any area outside the immediate entrance area. Prominent entrance columns, special paving, and other landscape features could be incorporated to enhance the appearance of major neighborhood and community entrances.

Signage should be developed to identify community facilities and individual unit addresses as well. To minimize confusion, each unit should be identified with

it's building number at the front door and not elsewhere. Existing street signs work well and should be maintained. Signs are also needed to make motorists aware of the increased presence of children playing near the school, the Youth Center and the Child Development Center.

2.2.4 Greenspace, Multi-Use Trails and Recreation

Greenspace and recreational facilities usually occur within the same general green open space. Together, the nature of the space and its recreational use help define the character and quality of the neighborhoods and community. Quality recreation activities and greenspace amenities are important elements in meeting the social, leisure, and child rearing needs of residents. Both passive and active recreation provides residents with a means for relaxation, exercise, and stress reduction. Trails for walking and biking are a part of the recreational life of the community and are discussed in this section.

Greenspace recreational amenities encourage pride in the community and are perceived by residents as major contributors to a positive quality of life. Greenspaces often contain community infrastructure (drainage, retention, utilities, circulation, etc.) and environmentally sensitive areas (floodplains, urban wildlife habitats, ponds, etc.) which should be considered or enhanced.

2.2.4.1 Greenspace, Multi-Use Trails and Recreation Analysis

The Whiteman AFB greenspace system is an outstanding model for appropriate greenspace preservation to enhance and define the community and neighborhoods. Greenspace preservation is a priority, and it is the Base's desire to not disturb or develop any greenspace within the three existing neighborhoods. The New Housing Area has ample surrounding greenspace that will blend well with the existing neighborhoods.

Throughout the family housing community, steeper terrain is generally vegetated and typically accommodates creeks, while the more level terrain is developed with homes. Greenspace availability and development varies in each of the three neighborhoods. Additionally, recreational facilities are not usually connected in any sort of open greenspace trails system that would serve to connect homes and neighborhoods to one another and to the community. Greenspaces also provide areas for snow storage in the winter months when snowplows are active.

2.2.4.1.1 Greenspace Analysis

Analyses of each neighborhood's greenspace follow:

Woodview Neighborhood Greenspace: The Woodview Neighborhood is well buffered to the north and west with vegetated greenspace, so that the industrial uses to the north are not evident from within the neighborhood. The Base has expressed a desire to maintain the entire greenspace buffer as new development occurs in that area. A section of Westover Road has been closed and converted to makeshift basketball courts and should to be refined as a quality recreational facility. Also, there is no greenspace buffer to provide privacy for residents directly adjacent to State Highway 23.

Midland Neighborhood Greenspace: The interior neighborhood greenspaces have little vegetative cover and buffering from closely positioned neighboring homes. Outer greenspaces define the edges of the neighborhood with the exception of the eastern edge at the Community Center Area, and the northern edge where the greenspace is not well vegetated, allowing incompatible views to and from the Main Base facilities (see photo 2.5).

Lakeside Neighborhood Greenspace: Lakeside Neighborhood has greenspace on all sides, except along State Highway 23. There is ample perimeter greenspace to help accommodate the community trails and recreational facilities as illustrated in the Community Development Plan (see figure 2.7).

Fences and Walls: Fences are usually of galvanized chain link fencing which is harsh to the eye, or of wood which is considered short-lasting material. The "walled" and "gated" neighborhood is not a desired or hospitable effect. The preferred solution is screening and buffering

using native vegetation.

Vegetation and the Greenspace: A major asset at Whiteman Air force Base is the large amount of naturally vegetated greenspace. Due to the contour of the topography, some areas are unsuitable for development and have been preserved as greenspaces throughout and surrounding the family housing area. For the Base, these areas improve the visual quality of the environment and reduce the landscape maintenance costs. Existing greenspaces should be left in their preserved state, rather than being used for future development expansion.

In creating future greenspaces, it is essential to use regionally native plants. Because these plants are suited to the local environment and climate, they protect natural heritage, provide wildlife habitat, and reduce demands for fertilizer, pesticide, and irrigation with their associated costs.

Open space/lawn area plantings are intended to tie the areas of the base together by providing scale and spatial enclosure. These plantings are also useful in modifying the microclimate around adjacent facilities by reducing glare and proving shade during summer months. As with all greenspace vegetation, plantings should be indigenous to the area.

All trees and shrubs should be selected from the list below with regard to their site suitability requirements, such as, formal, informal, and naturalized areas—such a landscape plan is on file at the Base in the BCE office.

Large Trees

Bald Cypress	Pin Oak
Black Gum	Red Oak
Bloodgood Plane Tree	Red Pine
Ginkgo	River Birch
Golden Rain Tree	Seedless Green Ash
Golden Weeping Willow	Sugar Hackberry
Hackberry	Sugar Maple
Japanese Pagoda Tree	Sweet Gum
Kentucky Coffee Tree	Tulip Tree
Mazzard Cherry	White Pine
Norway Maple	

Small Trees

American Hornbeam	Serviceberry
Amur Maple	Sour Gum
Cockspur Hawthorne	Staghorn Sumac
Crabapple	Tatarian Maple
Flowering Dogwood	Washington
Ironwood	Hawthorne
Lavalle Hawthorne	Yellowwood
Redbud	

Shrubs

Arrowood Virburnum	Dwarf Burning Bush
Anglojap Yew	Fragrant Sumac
Border Privet	Japanese Barberry
China Girl Holly	Mapleleaf Viburnum
Chinese Juniper	Savin Juniper

2.2.4.1.2 Multiuse Trails Analysis

Multiuse trails and walkways in family housing are not developed to their full potential. Much of the existing neighborhood greenspace at Whiteman AFB is rendered useless by inaccessibility due to an underdeveloped multi-use trail system. Units are spaced with enough greenspace between them to provide adequate room to access all greenspaces from the trails. Access to the neighborhood trails system from individual units should be quick and convenient.

2.2.4.1.3 Recreation Analysis

Recreation areas contribute to the quality of life of Air Force personnel and their families by improving the health of installation personnel and broadening their range of social opportunities. Recreational facilities within family housing greenspace provide safe and convenient recreational experiences while creating focal points for neighborhood activities. Locating recreational facilities in proximity to family housing can also promote family unity by reinforcing the neighborhood environment and providing for family-oriented activities.

Neighborhood recreational facilities at Whiteman AFB include a full range of semi-private and shared recreational facilities. Neighborhoods have local play facilities for neighborhood sub-areas, and shared, large scale facilities. The housing community as a whole

benefits from the recreation facilities being located to function as a focal point at landmark intersections.

The existing community recreation fields, courts, swimming pool, and Youth Center are developed directly adjacent to Midland and Lakeside Neighborhoods and are well planned. These facilities also include ball fields, tennis courts, jogging trails, and other Youth Center facilities. There are good pedestrian links to this area from Woodview and Midland Neighborhoods as is illustrated in the Community Development Plan (see figure 2.7). The Woodview Neighborhood does not have adequate multi-use trail access to community recreation facilities.

Playgrounds in family housing neighborhoods are necessary because of the large number of small children. Whiteman AFB has many new playground areas actively used by the resident toddlers and children. Analyses of each neighborhood's recreation facilities follow:

Woodview Neighborhood Recreation: The planned development of a primary neighborhood recreation facility is planned at the intersection of Langley Drive and McConnell Lane (see the Community Development Plan and Neighborhood Improvement Plans in figures 2.7A, 2.7B,... 2.7I and 2.8A, 2.8B,... 2.8D respectively). This location is central to the neighborhood and is tied into the planned multi-use trails system. Other neighborhood recreation facilities are existing and are positioned evenly throughout the neighborhood.

Midland Neighborhood Recreation: The primary neighborhood recreational facility is planned within the greenspace between Barksdale Lane and Minuteman Drive (see photo 2.6). This facility is central to the neighborhood and is connected into the planned and currently undeveloped multi-use trail system. This area is also in close proximity to the community recreational facilities around the Youth Center and pool to the east.

Lakeside Neighborhood Recreation: The primary neighborhood recreational facility is located in the western portion of the neighborhood instead of in a central location that would serve the entire neighborhood. The mass of housing positioned around the intersection of Wright Street and Chennault Lane has insufficient recreational facilities. There are adequate lands for additional neighborhood-scale recreational activities to occur on the "greenspace knoll" located between Midland and Lakeside Neighborhoods, and at the entrance at Atlas lane.

New Housing Area Recreation: Three existing playgrounds are well placed throughout New Housing. A good sidewalk system allows easy accessibility to recreation facilities. This area is also in close proximity to the Community Park, ball fields and jogging trail to the east.

The following conditions are typical of all neighborhoods:

- No neighborhoods have adequately developed primary neighborhood recreational facilities at the planned sites.
- No neighborhoods have adequate neighborhood gathering facilities within walking distance to most homes, for neighborhood functions, such as Girl and Boy Scout club meetings, parent meetings, group parties and socials.
- Currently, there is no existing multi-use trail access to the primary recreational facilities, a condition adversely affecting the cohesiveness of the neighborhoods and entire community.
- Play equipment is not well shaded in all locations and becomes uncomfortably hot in the middle of a summer afternoon.

2.2.4.2 Greenspace and Recreation Development Recommendations

Like other community residential components, greenspace and recreational facilities at Whiteman AFB should be renovated to express a hierarchy of recreational opportunities in order to reinforce a sense of identity for residents. This definition of the greenspaces and recreation will greatly alter the quality of life of the residents, and their sense of community.

The following recommendations will enhance the quality of the planned and existing greenspaces throughout the three neighborhoods:

2.2.4.2.1 Greenspace Recommendations

- Follow the Base Landscape Plan (on file in the BCE office) in implementing all landscaping improvements.
- Use indigenous plantings of trees and shrub masses (provided in the above plant list) to supplement the few existing trees within the interiors of the neighborhoods.
- Provide defined parks of varied scales, within the overall greenspace system, to effect greater neighborhood and community identity (see the Detailed Neighborhood Plans, figures 2.8A, 2.8B,... 2.8D), while locating the parks to take advantage of neighborhood gathering and meeting buildings.
- Position the community and neighborhood-based multipurpose trails system within and connecting the various neighborhood greenspaces.
- Provide adult seating areas throughout the neighborhoods (see figure 2.2).

Greenspace and recreational facilities should be more accessible to residents and more clearly identified from the streets with a common and human scale signage element. The establishment of a stronger streetscape system with full pedestrian and bicycle circulation is desirable (see Section 2.2.3).

2.2.4.2.2 Multiuse Trails Recommendations

A comprehensive trails system plan is provided on the Community Development Plans (see figures 2.7A, 2.7B,... 2.7I) that illustrates the proposed alignment and crossings.

The following multi use trail recommendations are made for all neighborhoods:

- A multi-use trail for walking, jogging and cycling should be developed throughout the four neighborhoods, connecting primary pedestrian destinations, such as the school, neighborhood-wide and community-wide recreational facilities, and other community facilities adjacent to the neighborhoods,
- Trail crossings of the street system should be at level grade (at grade) with well-defined signage.
- Walkways should be expanded to connect with the trails system, to be more than just sidewalks along the streetscape.
- Natural trails of sand, rock, or mulch should be threaded wherever there is room to fit them between units and where people are known to traverse.
- Community walkways should be as wide as the existing sidewalk they are to meet or a minimum of 5 feet wide.

Community trails should be eight feet wide to safely accommodate two-way non-motorized traffic, with all "full-sized" motorized traffic being prohibited. Service "cart" (below standard pick-up truck size) type traffic could use the eight foot wide trails due to their narrow wheel-base, while wider vehicles would destroy the edges of these trails.

2.2.4.2.3 Recreation Recommendations

Recreation and greenspace in family housing should be expanded, per the Housing Community Plan, as possible. Pedestrian, visual, and community ties between Morale, Welfare and Recreation (MWR) facilities and family housing must be strengthened. Greenspaces, parks, crosswalks, signs, trails and plantings all help to enhance this community-wide relationship.

2.5 Vegetated Buffer between Midland Neighborhood and the Main Base

2.6 Primary Neighborhood Park in Midland Neighborhood

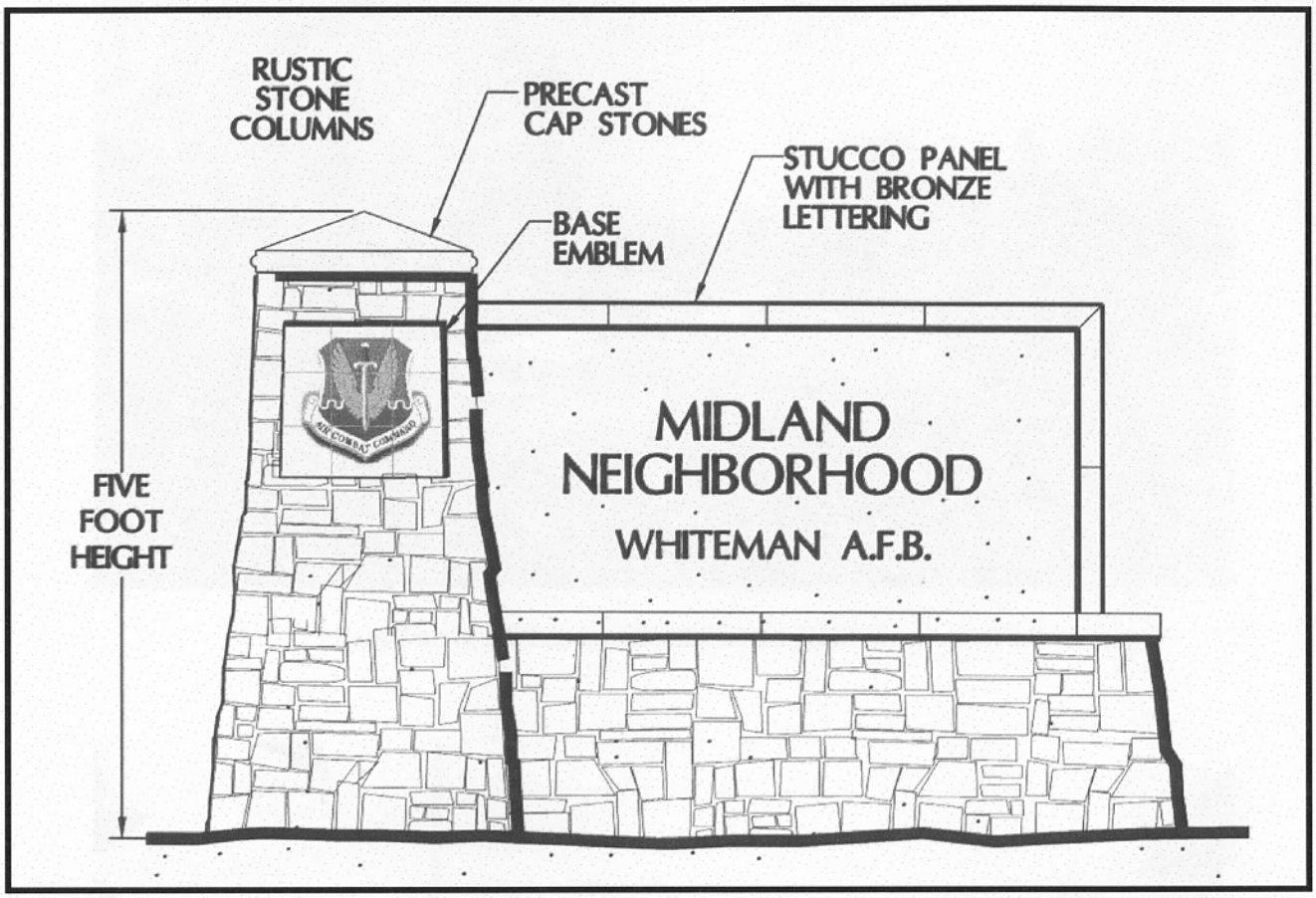


Figure 2.1 Typical Neighborhood Identity Signage

Neighborhood-wide facilities should be designed to focus neighborhoods as shared amenities and community-wide facilities should be more effectively connected to all neighborhoods.

- Local facilities (such as tot-lots) should be provided close to residences as recommended in the Community Development Plan and the Neighborhood Improvement Plans (see figures 2.7A, 2.7B,... 2.7I and 2.8A, 2.8B,... 2.8D).

- To keep teens interested in constructive recreational activities, facilities should accommodate them as a separate interest group. For instance, basketball courts should be sited away from tot-lots designed for young children. Basketball courts should be located in more public greenspace so that noise and activity from the courts do not disturb residents.

- The recreational facilities should be buffered with adequate trees, yet all spaces should be clearly visible to the neighborhood Base Security to help prevent unwanted activities from occurring. Community Planning Through Environmental Design (CPTED) principals are incorporated into this HCP.

As shown on the Community Development Plan, the following recreation improvement recommendations can be used to further enhance community structure and create a desirable residential character per Air Force Community Guidelines.

- Community-wide and neighborhood-wide recreational facilities should be added to the neighborhood interiors.

- Views to community greenspace should be enhanced by an increased definition of the edges in relationship with other site elements.

- Existing playgrounds should be upgraded by replacing the sand with recycled impact-absorbing playground matting.

The following recommendations are adapted from the "Handbook for Public Playground Safety" by the U.S. Consumer Product Safety Commission:

- Equipment with broad, metal surfaces, such as slides, should be oriented generally to the north in order to avoid the sun's direct rays.

- Locations for shade trees, drinking fountains, trash receptacles, bicycle racks, and automobile parking spaces should be included in the planning.

- Benches and picnic tables should be used to encourage family participation and encourage parents to supervise their children's play.

- Play environments should be planned to enable disabled children to move and manipulate objects as independently as possible, per Americans with Disabilities Act recommendations.

- Modular play structures of wood or plastic should be used for their compact form, neat appearance, and because they encourage more creative play. When practical, all other play equipment should have wood or plastic surfaces to prevent children's skin from burning on equipment heated by summer sun.

- Safety and durability should be considered together, since equipment requiring continuous maintenance is unsafe. All materials should be selected to minimize maintenance.

- Materials should be non toxic if swallowed, inhaled or absorbed through the skin.

- Hardware for all equipment should be stainless steel or galvanized metal with self-locking fasteners. Fasteners should not project above the base fitting in such a way as to cut skin or snag clothing. Concrete footings or other anchoring systems should be installed six inches below grade. All exposed edges and corners should be rounded, sanded smooth or covered with a protective cap.

- The playground surface is of primary importance, since it can reduce serious injury from falls.

2.2.5 Utility Systems Infrastructure

An important part of the Military Family Housing (MFH) Community is the Utility Infrastructure. This section is concerned with the condition of the existing utility systems and the visual appearance of the exposed portions of these systems (e.g., overhead wires and cables vs. buried wires and cables). The systems that follow in this section:

- Water
- Sanitary Sewer
- Natural Gas
- Steam Distribution
- Storm Drainage
- Electrical Distribution
- Street Light Lighting

were discussed with Base personnel to establish major issues and identify significant deficiencies. This review was cursory in nature and not intended to provide an in-depth evaluation of the family housing utility systems.

2.2.5.1.1 Water System Analysis

The water supply is from 10 deep wells on-base that provide good quality hard water in need of softening. Adequate water pressure is provided by two elevated storage tanks, one at the north end and one at the south end of the family housing areas. The automated treatment plant has a capacity of 2.8 million gallons per day (GPD) that is more than adequate for present domestic and fire projection requirements.

Water distribution throughout the family housing area is piped through asbestos cement mains that are approximately 35 years old. The mains are in excellent condition and require minimal maintenance. Sources for repair parts (such as, joint seals) are very limited.

Service lines and laterals from mains to units are copper of varying sizes. These odd or nonstandard sizes make repairs more difficult and limit sources for repair parts. The services lines and laterals are approximately 35 years old and pinhole leaks occasionally occur. Most of the problems with mains and laterals are caused by accidental damage when excavating to repair or replace adjacent utilities.

2.2.5.1.2 Water System Recommendations

The GPD supply and pressure available are adequate for current and projected housing demands. However, the water supply system is reaching its useful life of 40 years, and future reliability is questionable. Phased replacement of the mains, service laterals, valves, and hydrants should be programmed for the family housing area.

2.2.5.2.1 Sanitary Sewer System Analysis

Sanitary sewer waste is treated in an on-base treatment plant with trickling filter and secondary treatment. Current capacity is 800,000 gallons per day (GPD), expandable to 1,500,000 GPD.

In the Appropriated housing duplex units, service connections are single six inch vertified clay lines from each building to eight inch laterals and 10 to 20 inches vertified clay mains to the treatment plant. In the Capehart duplex units, service connections are four inch vitrified clay lines from each unit of the duplex units to six and eight inch laterals and twelve inch vitrified clay mains.

Plastic liners have recently been installed in all mains; however, service laterals are still a problem. All manholes have been repaired or replaced, and all lift stations have also been upgraded with new pumps.

2.2.5.2.2 Sanitary Sewer System Recommendations

The sanitary sewer system, having been recently upgraded, is in excellent condition and no major problems were identified. The exceptions are the service lines and laterals between each unit and the main. These service lines and laterals are the original as-built pipes and should be replaced with PVC pipes.

2.2.5.3.1 Natural Gas System Analysis

Natural gas is provided from Kansas Power and Light (KP&L) and reduced to an operating pressure of 15 psig. The gas consumption is metered at a master meter. The original service lines are coated and wrapped, steel lines that are cathodically protected. New polyethylene plastic mains and service laterals have replaced steel lines in two previous phases. Phase Three in FY97, Phase Four in FY98, and

Phase Five in FY99 will complete the total replacement of the natural gas system in the family housing area.

2.2.5.3.2 Natural Gas System Recommendations

The replacement of the natural gas system with new polyethylene mains and laterals should continue as programmed to assure safe and dependable gas service.

2.2.5.4.1 Steam Distribution System Analysis

There is no steam service to the family housing area; however, above ground lines are visible in the backyards of units near the water treatment plant and Hospital. These lines create unattractive views for the adjacent family housing units.

2.2.5.4.2 Steam Distribution System Recommendations

Continue the base-wide program to place the steam lines in underground ducts or to screen the lines with shrubs and trees. This must be done with hospital funds not with housing funds.

2.2.5.5.1 Storm Drainage System Analysis

There is no overall underground storm drainage system. Storm drainage is primarily via surface drainage with some catch basin/drop inlets and corrugated metal or concrete lines to carry storm water under roads to other natural drainage features. The storm lines are both concrete and corrugated metal pipe and range in size from 12 to 30 inches. Some of the drainage features are wetlands for impoundment while other features are rather dramatic ravines, 10 to 20 feet deep. In some relatively shallow areas between rows of houses, there are paved ditches to carry away the storm water more rapidly.

2.2.5.5.2 Storm Drainage System Recommendations

Continue to support funding for completion of the planned project to identify and correct storm drainage problems, e.g., the Houx Street flooding below the hospital.

2.2.5.6.1 Electrical Distribution System Analysis

Base power is fed from the Missouri Public Service Company (MoPub) to two 69-12.5/7.2 kV, 10/14 MVA substations on base. There is 116,400 LF of 500 MCM aluminum feeders with jacketed concentric neutral to major interconnection points, then to 170,300 LF of #4/0 AWG aluminum jacketed conductor.

Within the housing areas, the secondary distribution is all underground with pad-mounted transformers on the ground. The secondary electric distribution poles are currently abandoned and being removed as other utility services are removed. The new substation south of the base elementary school has expansion capability in a fourth feeder for any future housing. The current peak demand of the base is 12-13 MVA. The underground utility runs in the housing area are relatively new and in good condition (according to base personnel, the installation was 6-8 years ago or approximately 1991) eliminating any near future utility revisions.

2.2.5.6.2 Electrical Distribution System Recommendations

Continue to remove dead or abandoned poles in housing area. Remove and replace any remaining overhead utilities with underground service. This should be coordinated with housing area improvements in these areas to minimize disruptions.

2.2.5.7.1 Street Lighting Analysis

Lighting in the housing area contains a mixture of two overhead pole heights. The newer taller fixtures were placed throughout the housing area to increase illumination in areas where the original lighting was sparse. However, the placement of these taller fixtures did not eliminate many dark areas located randomly throughout the neighborhoods. These dark areas are usually located within the neighborhoods and not along major thoroughfares.

2.2.5.7.2 Street Lighting Recommendations

Street lighting should be increased in dark and sparsely lit areas. All lighting fixtures should be uniform to maintain neighborhood appearance during the daytime as well as nighttime. A thorough field observation should be performed in the housing area to place fixtures in locations that maintain a uniform and consistent illumination level to eliminate "patchy" and dark areas. This should be coordinated with the housing area improvements in these areas to avoid any disruptions in current community improvements.

2.2.6 Surrounding Development

Development and land uses surrounding family housing communities can greatly impact the quality of life of residents. The physical appearance of views both into and from the housing area, as well as access, noise, and potential user conflicts should be considered.

2.2.6.1 Surrounding Development Analysis

Edges are also important in creating an image for family housing. An edge is created where family housing meets the rest of the Base. Generally, this is handled well by transition of land uses, such as, a transition from housing units to community facilities and mission facilities. At Whiteman AFB, this sort of transition is effectively addressed with the recent improvements to Spirit Boulevard, with the exception of defined neighborhood entrances to family housing neighborhoods. As a result, one is required to search for small-scale street signage verses a clearly visible neighborhood name.

All four neighborhoods are contiguous with State Highway 23 to the west and have inadequate vegetative or physical buffering of the highway. The other sides of the four neighborhoods are well buffered visually by either dense greenspace vegetation or the Community Center Areas. The Community School is contiguous to Midland Neighborhood and is poorly vegetated. This area should be more attractive to improve the image of the neighborhood, community and School, and to promote a high value of education itself (see photo 2.7).

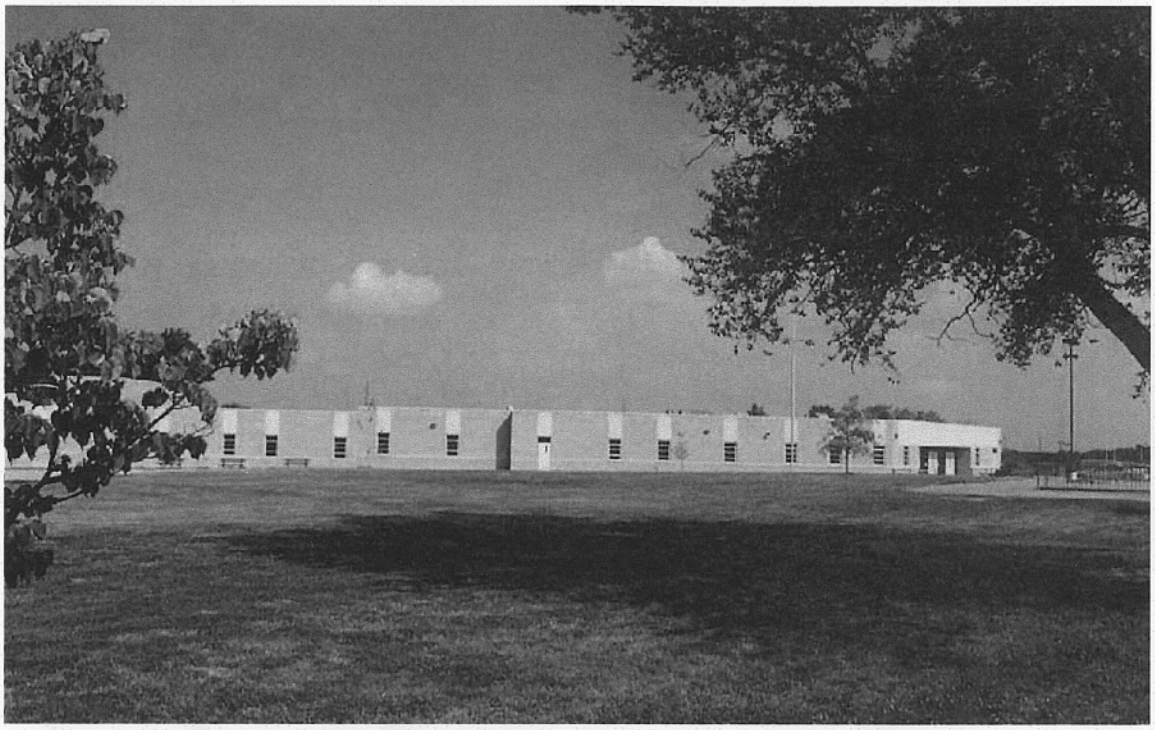
The Midland Neighborhood is contiguous to the west with the Main Base and is partially surrounded by the Community Center Area. Views into and from the neighborhood are not usually compatible, and there is little buffering of the varying uses (see photo 2.8). There are many opportunities for the improvement and integration of this neighborhood (with site detailing) into the immediate area.

2.2.6.2 Surrounding Development Recommendations

Neighborhood images reflect the character of their residents. The image of Air Force family housing should reflect the high caliber of its occupants. The image of family housing at Whiteman AFB should be one of a safe, attractive, healthy neighborhood. It is home to many families and should look and feel like home, rather than institutional housing. For the image of family housing to be similar to neighborhoods in the private sector, amenities provided should be similar. Homes should reflect individuality, and each family should have privacy, yet have direct exposure to the rest of the community.

The following recommendations suggest methods to upgrade the effect of surrounding development on the neighborhood image of the family housing:

- The entrances to the neighborhoods should be upgraded with material denoting the caliber of the residents.
- The perimeters of the neighborhoods should be clearly defined with quality materials that blend well with the surrounding Community Center Areas.
- The eastern edge of Woodview Neighborhood should be reinforced with additional vegetation and site detailing to further screen the existing and proposed industrial uses from the neighborhood.



2.7 Unvegetated Greenspace at Community School

2.8 Unbuffered View from Burksdale Drive in Midland Neighborhood

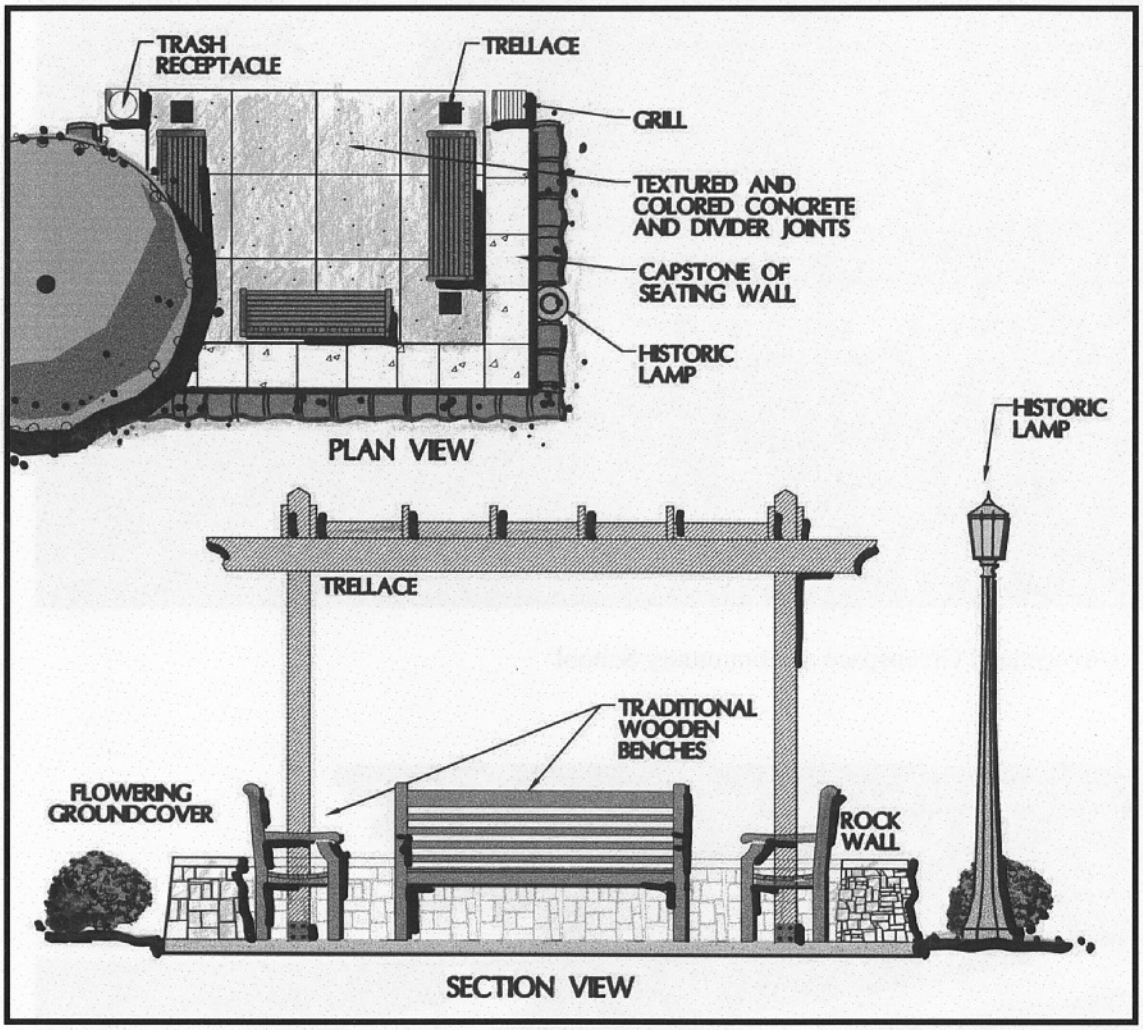


Figure 2.2 Typical Seating Area for Adults

- Views from off the Base into Base family housing should present a favorable image of the Air Force as an aesthetically sensitive steward of the land.

- The existing neighborhood perimeter fencing along State Highway 23 should be upgraded with a heavy grade of galvanized, coated metal fencing, and vegetated with vines that will withstand the harsh Missouri winters. The slopes between housing and State Highway 23 should be seen as similar to other greenspaces and densely re-vegetated with indigenous plantings.

- No housing units or yards should be visible from off the Base.

- Open views of the perimeter fence should be screened on both sides with evergreen and flowering vegetation. A cost-effective way to handle this problem is to stagger masses of trees or shrubs on either side of the fence.

- The edge of family housing that borders the rest of the Base should be subtler and should be treated differently than are off-Base edges. This Base edge should be punctuated with easily identified entrances that emphasize the transition between Base operations and a family housing area.

- To emphasize the edge transition and direct residents and visitors, each entrance should use more than one of the following enhancements:

  - a masonry sign of a tasteful scale, with the neighborhood name, made of materials compatible with the rest of the Base without denoting a "walled" community; and

  - indigenous vegetation as masses of flowering shrubs, groundcover, or annuals.

2.2.7 Base Housing Capacity Analysis

Two possible sites within the base boundaries were identified for future family housing expansion, but neither was found suitable. One site was found to be within a high noise zone near the runway. The other site was within the proximity of the base wastewater treatment plant. Land immediately adjacent to airfield pavement is reserved for potential future aircraft missions and facilities.

Future housing expansion will therefore require the purchase of privately owned land. Such land is available between the 140-unit new housing area and State Highway 23 (see the Area Map, figure 2.6). This land would be a logical choice because the site boundaries are contiguous with the base boundaries on two sides and the base infrastructure could be easily expanded into this area with minimal costs.

This site contains approximately 80 acres. It has a capacity of 320 units at 4 units per acre.

The new family housing management office is described in figures 2.3 and 2.4 beginning on the next page. The office location is shown on the Existing Rank Distribution Site Plan, figure 2.13).

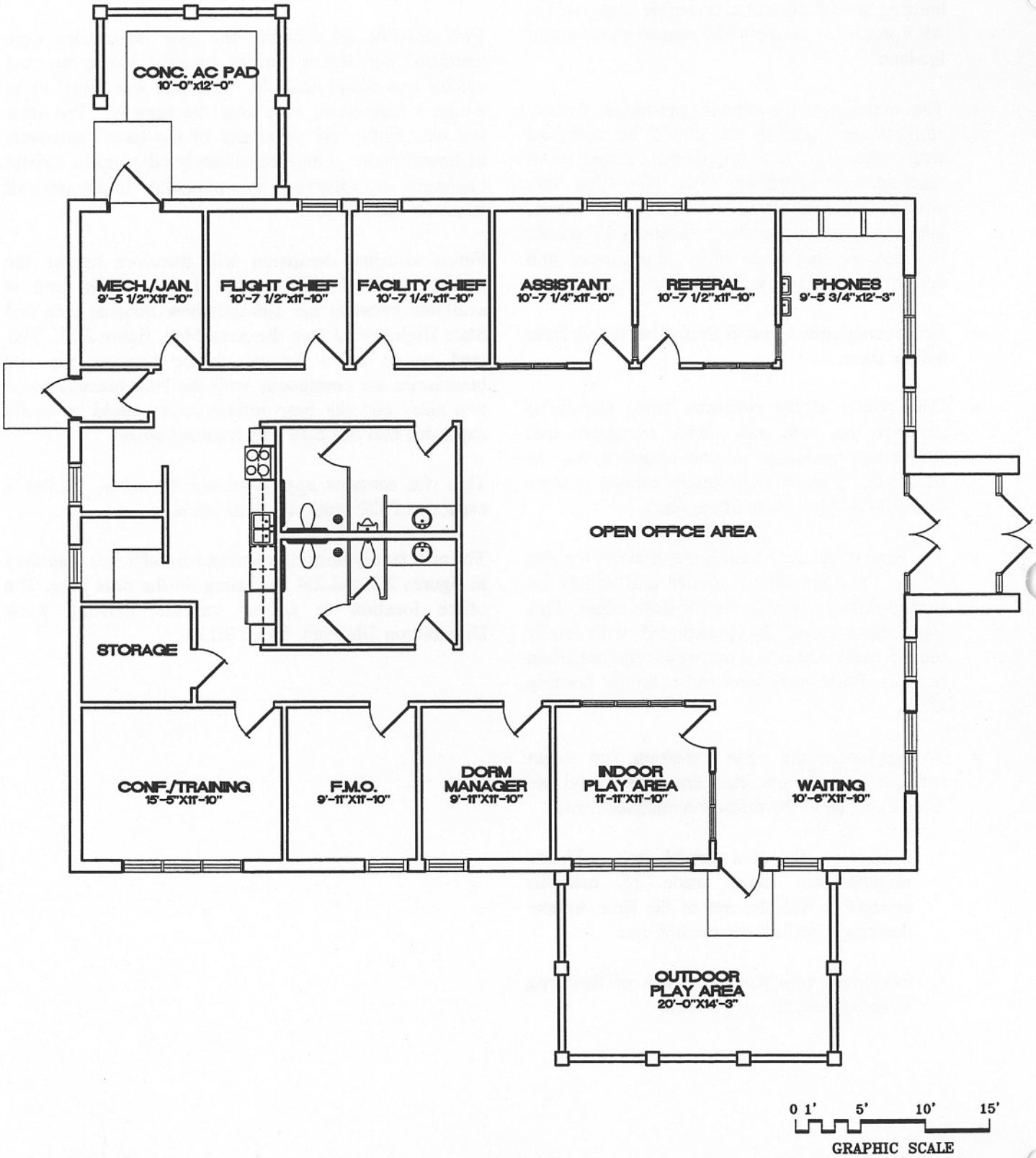
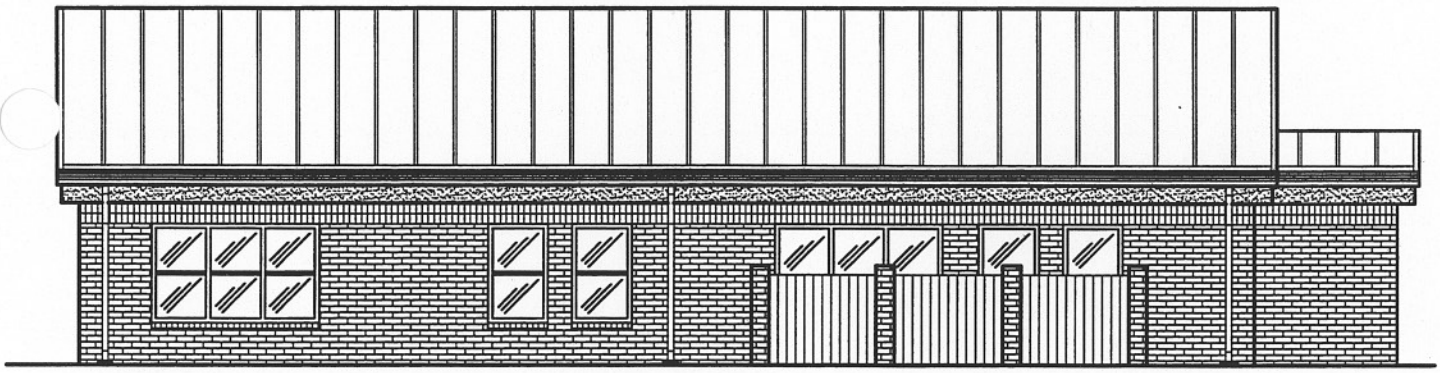


Figure 2.3 - Housing Management Office Floor Plan

FRONT ELEVATION



RIGHT ELEVATION

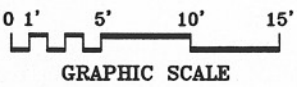


Figure 2.4 - Housing Management Office Elevations

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Section 2.2.8
Community Development Plan

Section 2.2.9
Neighborhood Improvement Plans

Section 2.2.10
Replacement Housing Plan

2.2.8 Community Development Plans

- figure 2.5 Site Analysis Plan
- figure 2.6 Area Map
- figure 2.7A Woodview Neighborhood
- figure 2.7B Woodview Neighborhood
- figure 2.7C Midland Neighborhood
- figure 2.7D Midland Neighborhood
- figure 2.7E Midland Neighborhood
- figure 2.7F Midland Neighborhood
- figure 2.7Fa Midland Neighborhood Replacement Housing
- figure 2.7Fb Midland Neighborhood Replacement Housing
- figure 2.7G Lakeside Neighborhood
- figure 2.7H Lakeside Neighborhood
- figure 2.7I Neighborhood 4

2.2.9 Neighborhood Improvement Plans

The Neighborhood Improvements are contained in the following Detailed Neighborhood Plans:

- figure 2.8A Woodview Neighborhood Gathering Building
- figure 2.8B Woodview Neighborhood Entrance
- figure 2.8C Midland Neighborhood Entrance
- figure 2.8D Lakeside Neighborhood Gathering Building

2.2.10 Replacement Housing Plan

Whiteman AFB is currently planning for a replacement of approximately 75 housing units in the Midland Neighborhood. A replacement Housing Plan is provided (see figures 2.7Fa, and 2.7Fb) which illustrates the addition of small parks and interconnecting greenspace throughout the neighborhood. Additionally, the existing densely placed units have been updated and replaced with new unit designs that will greatly enhance the neighborhood. Figure 2.8C illustrates the existing intersection at Spirit Boulevard which has been modified to achieve greater neighborhood identity—incorporating a traffic circle, safe crosswalks, a neighborhood park, lighting, and additional street trees.

The infrastructure including the streets, utilities, and existing recreation areas remains intact and only a north-south connector street has been added to facilitate traffic flow and the ability of residents to more easily walk from block-to-block. Additional unpaved and paved sidewalks and connector trails are planned within the greenspaces. These additional connections encourage bicycle and pedestrian traffic to the existing school and Child Development Center areas, and to other neighborhood and community recreation areas.

Replacement unit floor plans, elevations, and cost estimates are provided in Section 3.5 "Replacement / New Housing."

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WHITEMAN A.F.B.

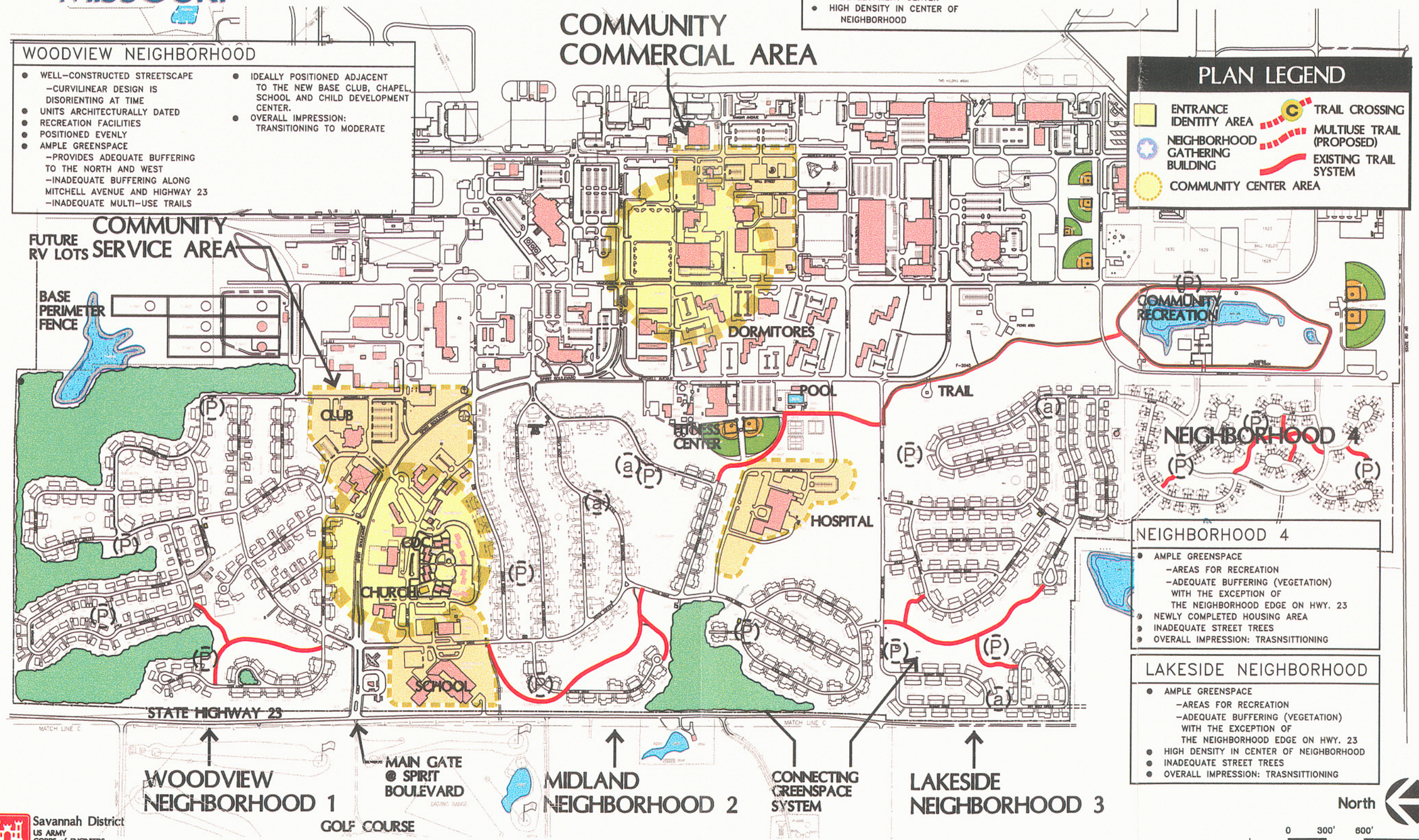
MISSOURI

MIDLAND NEIGHBORHOOD

- STREETSCAPE: POSITIVE
- CENTER OF WHITEMAN AFB HOUSING COMMUNITY
- CLOSE PROXIMITY TO THE SCHOOL, CHAPEL, YOUTH CENTER AND CHILD DEVELOPMENT CENTER
- HIGH DENSITY IN CENTER OF NEIGHBORHOOD
- MODERATE GREENSPACE
  - –GOOD GREENSPACE ALONG NEIGHBORHOOD EDGES
  - –LITTLE VEGETATIVE COVER AND BUFFERING IN THE INTERIOR
- OVERALL IMPRESSION: MODERATE

WOODVIEW NEIGHBORHOOD

- WELL–CONSTRUCTED STREETSCAPE
  - –CURVILINEAR DESIGN IS DISORIENTING AT TIME
- UNITS ARCHITECTURALLY DATED
- RECREATION FACILITIES
- POSITIONED EVENLY
- AMPLE GREENSPACE
  - –PROVIDES ADEQUATE BUFFERING TO THE NORTH AND WEST
  - –INADEQUATE BUFFERING ALONG MITCHELL AVENUE AND HIGHWAY 23
  - –INADEQUATE MULTI–USE TRAILS
- IDEALLY POSITIONED ADJACENT TO THE NEW BASE CLUB, CHAPEL, SCHOOL AND CHILD DEVELOPMENT CENTER.
- OVERALL IMPRESSION: TRANSITIONING TO MODERATE



PLAN LEGEND

- ENTRANCE IDENTITY AREA
- NEIGHBORHOOD GATHERING BUILDING
- COMMUNITY CENTER AREA
- TRAIL CROSSING
- MULTIUSE TRAIL (PROPOSED)
- EXISTING TRAIL SYSTEM

NEIGHBORHOOD 4

- AMPLE GREENSPACE
  - –AREAS FOR RECREATION
  - –ADEQUATE BUFFERING (VEGETATION) WITH THE EXCEPTION OF THE NEIGHBORHOOD EDGE ON HWY. 23
- NEWLY COMPLETED HOUSING AREA
- INADEQUATE STREET TREES
- OVERALL IMPRESSION: TRASNSITTIONING

LAKESIDE NEIGHBORHOOD

- AMPLE GREENSPACE
  - –AREAS FOR RECREATION
  - –ADEQUATE BUFFERING (VEGETATION) WITH THE EXCEPTION OF THE NEIGHBORHOOD EDGE ON HWY. 23
- HIGH DENSITY IN CENTER OF NEIGHBORHOOD
- INADEQUATE STREET TREES
- OVERALL IMPRESSION: TRASNSITTIONING

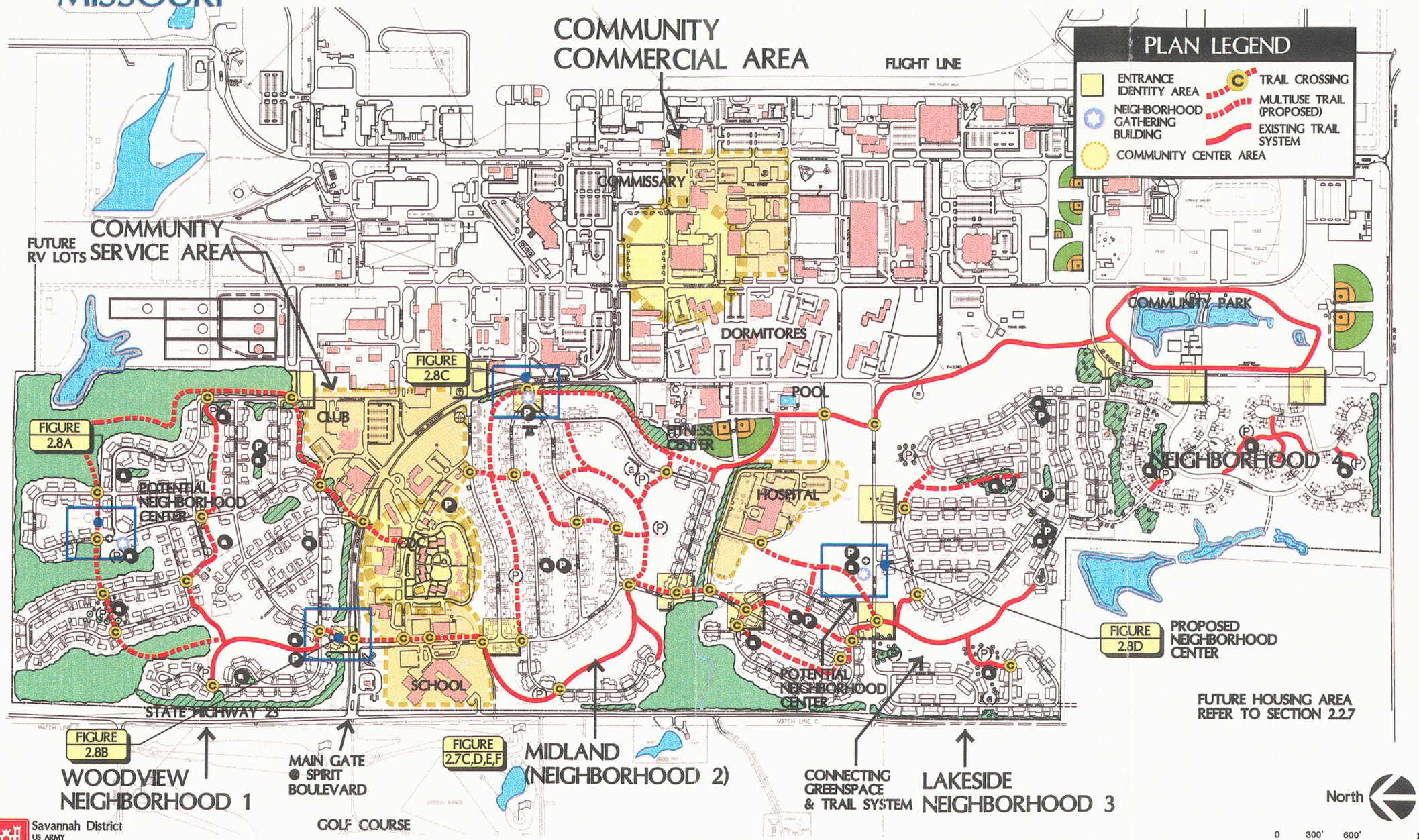
Savannah District
US ARMY CORPS of ENGINEERS

Lopatka Murdock
Morales Shumer
MICHAEL DESIGN ASSOCIATES

SITE ANALYSIS PLAN

WHITEMAN A.F.B.

MISSOURI

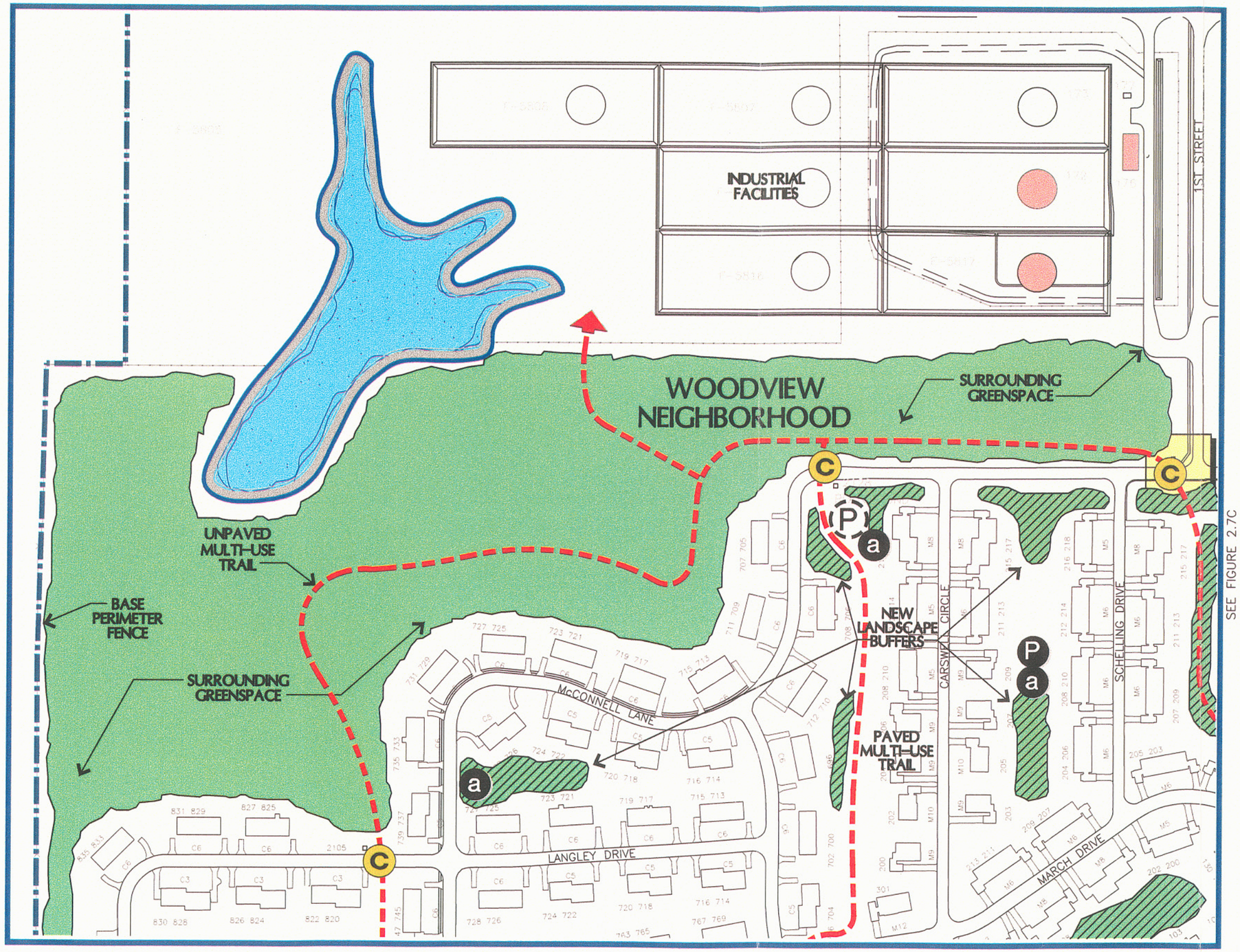


Savannah District
US ARMY CORPS of ENGINEERS

Lopatka Murdock
Morales Shumer
MICHAEL DESIGN ASSOCIATES

COMMUNITY DEVELOPMENT PLAN – AREA MAP

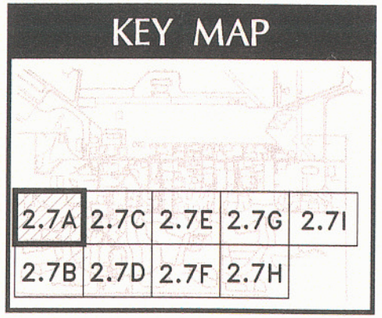
COMMUNITY DEVELOPMENT PLAN



PLAN LEGEND

- EXISTING PLAYGROUND
- NEW PLAYGROUND
- EXISTING ADULT AREA
- NEW ADULT AREA
- ENTRANCE IDENTITY AREA
- EXISTING AND PROPOSED TREES
- EXISTING VEGETATION
- TRAIL CROSSING
- PROPOSED VEGETATION
- MULTIUSE TRAIL (PROPOSED)
- EXISTING FAMILY HOUSING
- EXISTING TRAIL SYSTEM
- BASE FACILITY
- RENDERING VIEW
- NEW REPLACEMENT HOUSING
- BASE PERIMETER FENCE
- BUILDINGS TO BE REMOVED
- PROPOSED NEIGHBORHOOD GATHERING BUILDING

KEY MAP



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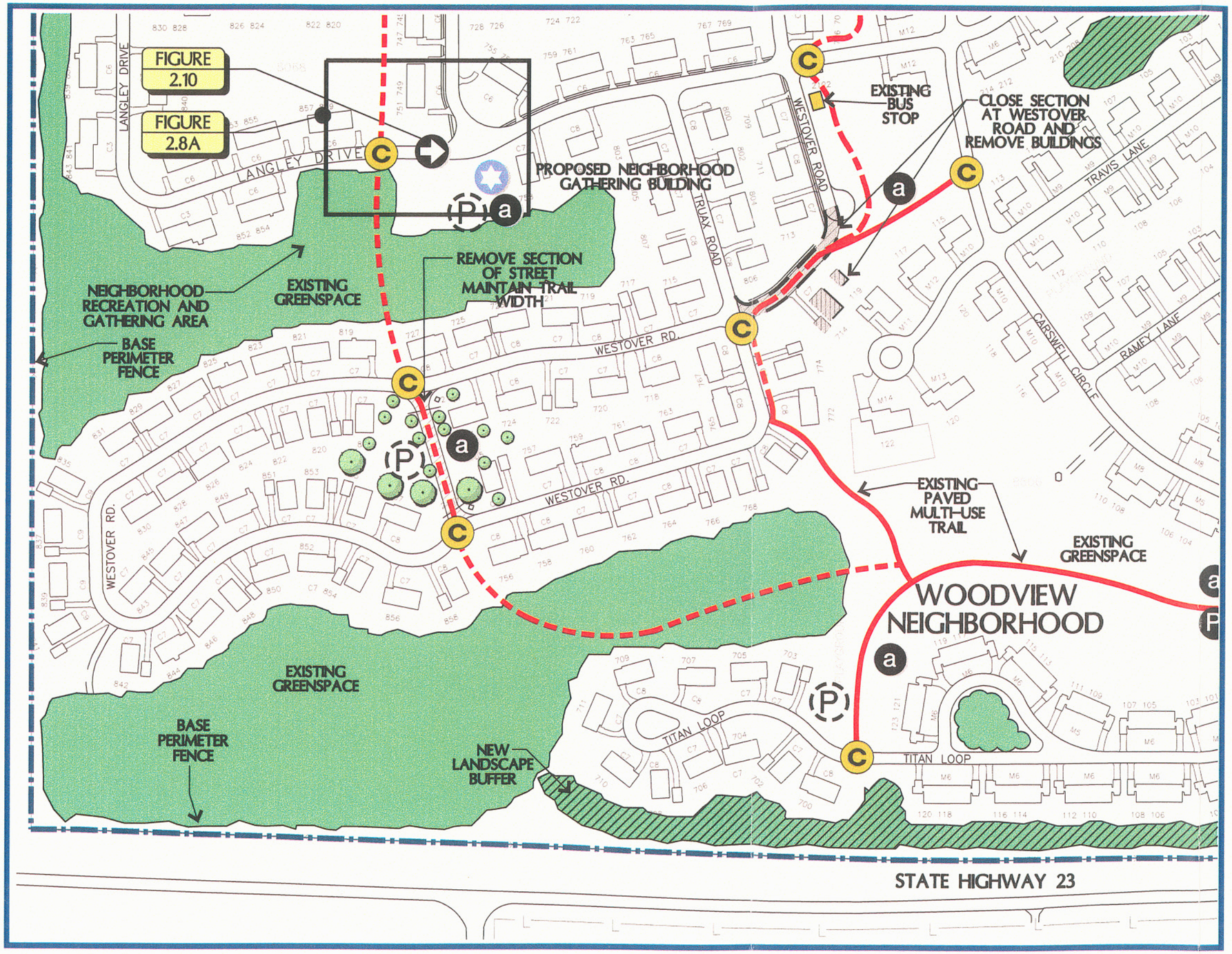
WOODVIEW NEIGHBORHOOD

Whiteman A.F.B.
Missouri

SEE FIGURE 2.7A



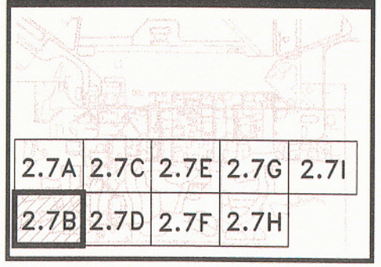
COMMUNITY DEVELOPMENT PLAN

PLAN LEGEND

- EXISTING PLAYGROUND
- NEW PLAYGROUND
- EXISTING ADULT AREA
- NEW ADULT AREA
- ENTRANCE IDENTITY AREA
- EXISTING AND PROPOSED TREES
- EXISTING VEGETATION
- TRAIL CROSSING
- PROPOSED VEGETATION
- MULTIUSE TRAIL (PROPOSED)
- EXISTING FAMILY HOUSING
- EXISTING TRAIL SYSTEM
- BASE FACILITY
- RENDERING VIEW
- NEW REPLACEMENT HOUSING
- BASE PERIMETER FENCE
- BUILDINGS TO BE REMOVED
- PROPOSED NEIGHBORHOOD GATHERING BUILDING

SEE FIGURE 2.7D

KEY MAP



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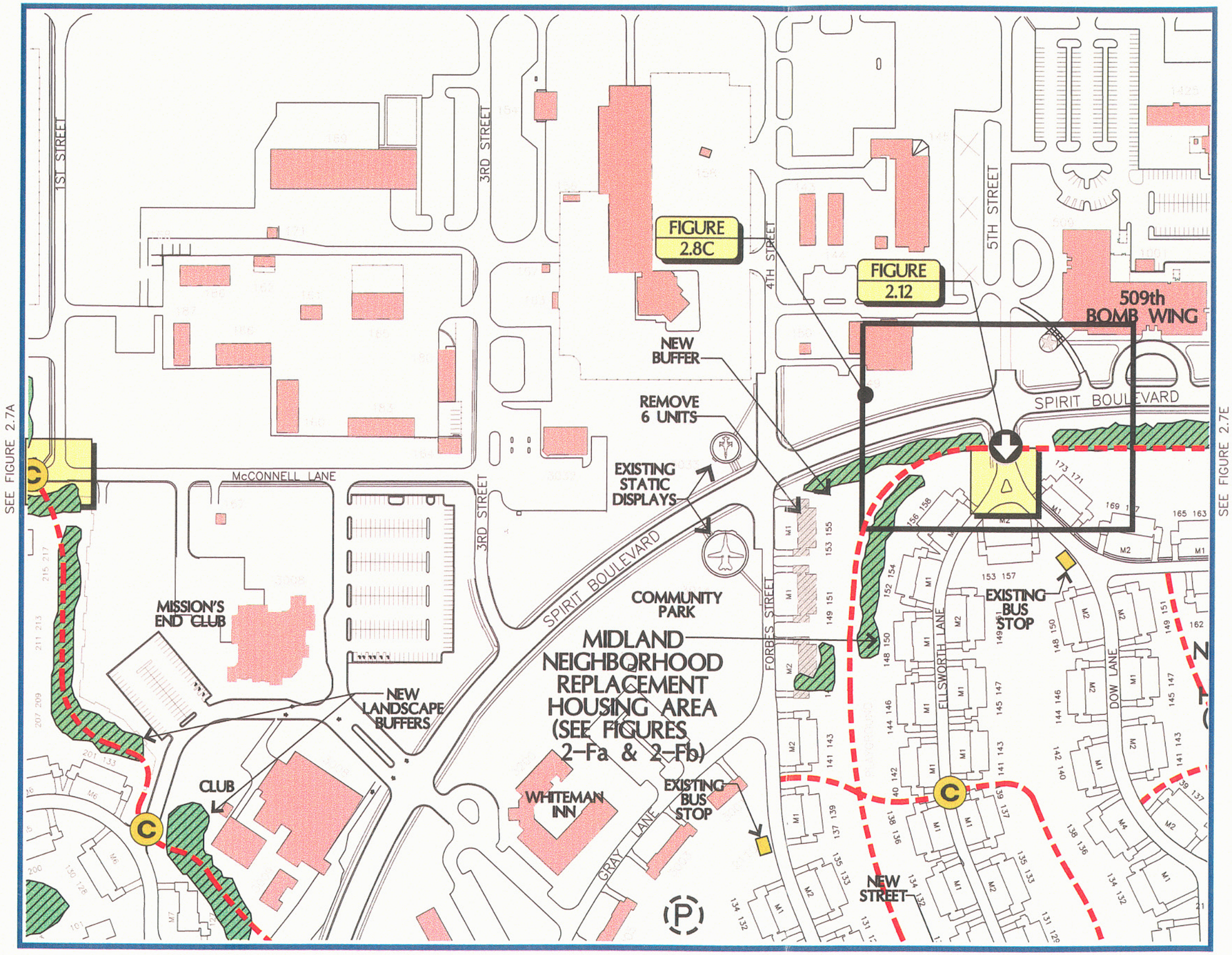
WOODVIEW NEIGHBORHOOD

Whiteman A.F.B.
Missouri

COMMUNITY DEVELOPMENT PLAN



PLAN LEGEND

- EXISTING PLAYGROUND
- NEW PLAYGROUND
- EXISTING ADULT AREA
- NEW ADULT AREA
- ENTRANCE IDENTITY AREA
- EXISTING AND PROPOSED TREES
- EXISTING VEGETATION
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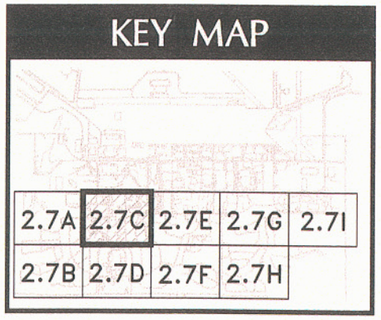
- BUILDINGS TO BE REMOVED
- PROPOSED NEIGHBORHOOD GATHERING BUILDING

KEY MAP



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MIDLAND NEIGHBORHOOD

Whiteman A.F.B.
Missouri

SEE FIGURE 2.7C

SEE FIGURE 2.7B

SEE FIGURE 2.7F

ENTRANCE SIGNAGE

NEW BUFFER

MARCH DRIVE

SPIRIT BOULEVARD

CHILD DEVELOPMENT CENTER

WOODVIEW NEIGHBORHOOD

HOUSING MANAGEMENT OFFICE

CHAPEL

GRAY LANE

YOUTH CENTER

FIGURE 2.9

ENTRANCE SIGNAGE

HOUX DRIVE

NEIGHBORHOOD ENTRANCE SIGNAGE

STATIC DISPLAY

VISITOR'S CENTER

FIGURE 2.8B

SPIRIT GATE

BASE PERIMETER FENCE

WHITEMAN A.F.B. SCHOOL

MIDLAND NEIGHBORHOOD REPLACEMENT HOUSING AREA (SEE FIGURES 2-Fa & 2-Fb)

FORBES STREET

ELLSWORTH LANE

DOW LANE

EXISTING BUS STOP

EXISTING PAVED TRAIL

EXISTING GREENSPACE

SELSER DRIVE

MIDLAND NEIGHBORHOOD

STATE HIGHWAY 23

COMMUNITY DEVELOPMENT PLAN

PLAN LEGEND

- EXISTING PLAYGROUND
- NEW PLAYGROUND
- EXISTING ADULT AREA
- NEW ADULT AREA
- ENTRANCE IDENTITY AREA
- EXISTING AND PROPOSED TREES
- EXISTING VEGETATION
- TRAIL CROSSING
- PROPOSED VEGETATION
- MULTIUSE TRAIL (PROPOSED)
- EXISTING FAMILY HOUSING
- EXISTING TRAIL SYSTEM
- BASE FACILITY
- RENDERING VIEW
- NEW REPLACEMENT HOUSING
- BASE PERIMETER FENCE
- BUILDINGS TO BE REMOVED
- PROPOSED NEIGHBORHOOD GATHERING BUILDING

KEY MAP

2.7A	2.7C	2.7E	2.7G	2.7I
2.7B	2.7D	2.7F	2.7H	

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SCALE: 1"=200'

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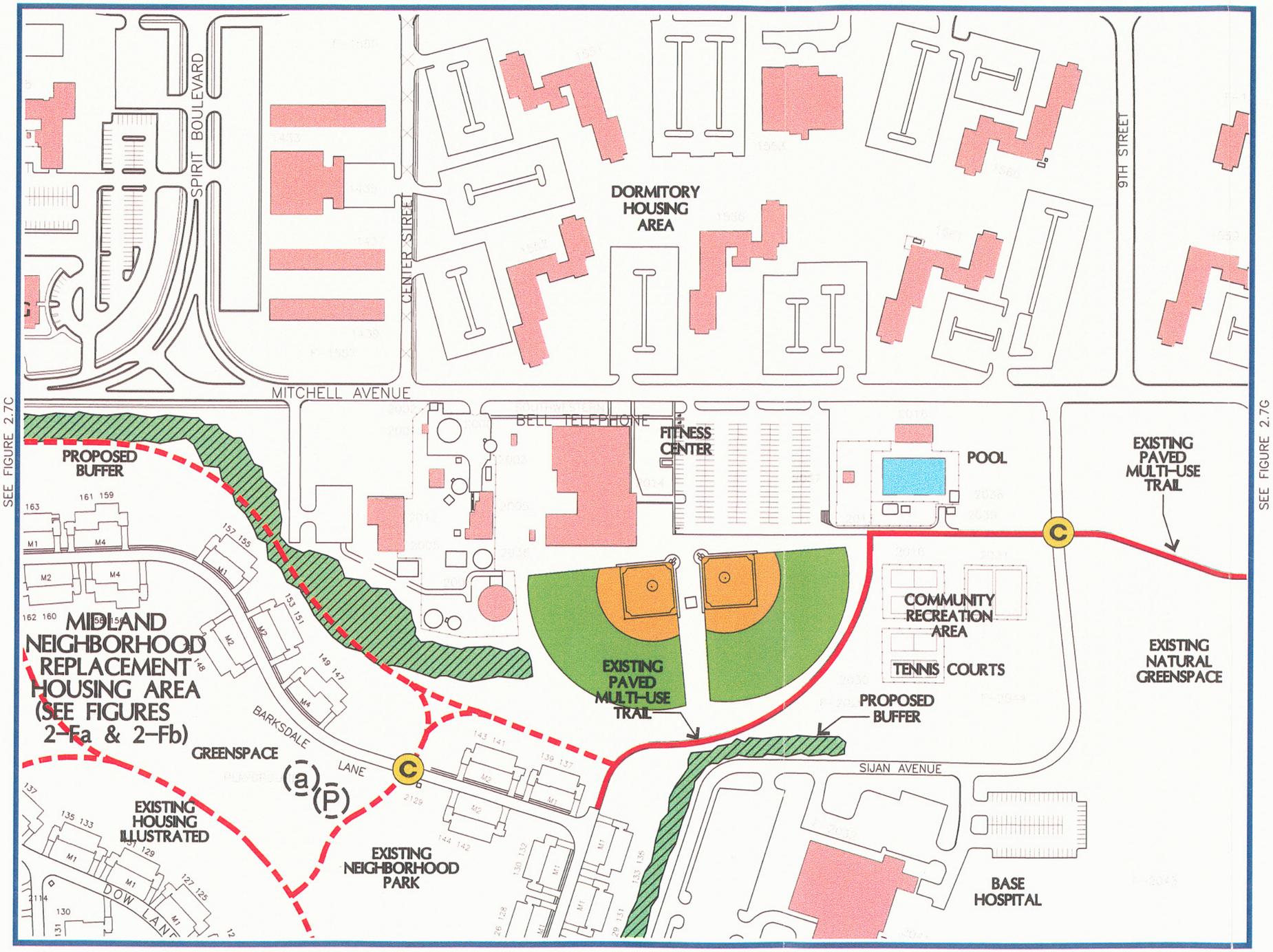
MIDLAND NEIGHBORHOOD

Whiteman A.F.B.
Missouri

COMMUNITY DEVELOPMENT PLAN



PLAN LEGEND

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- NEW PLAYGROUND
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- NEW ADULT AREA
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- EXISTING TRAIL SYSTEM
- BASE FACILITY
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- BUILDINGS TO BE REMOVED
- PROPOSED NEIGHBORHOOD GATHERING BUILDING

KEY MAP

2.7A	2.7C	2.7E	2.7G	2.7I
2.7B	2.7D	2.7F	2.7H	

100' 0 100' 200'

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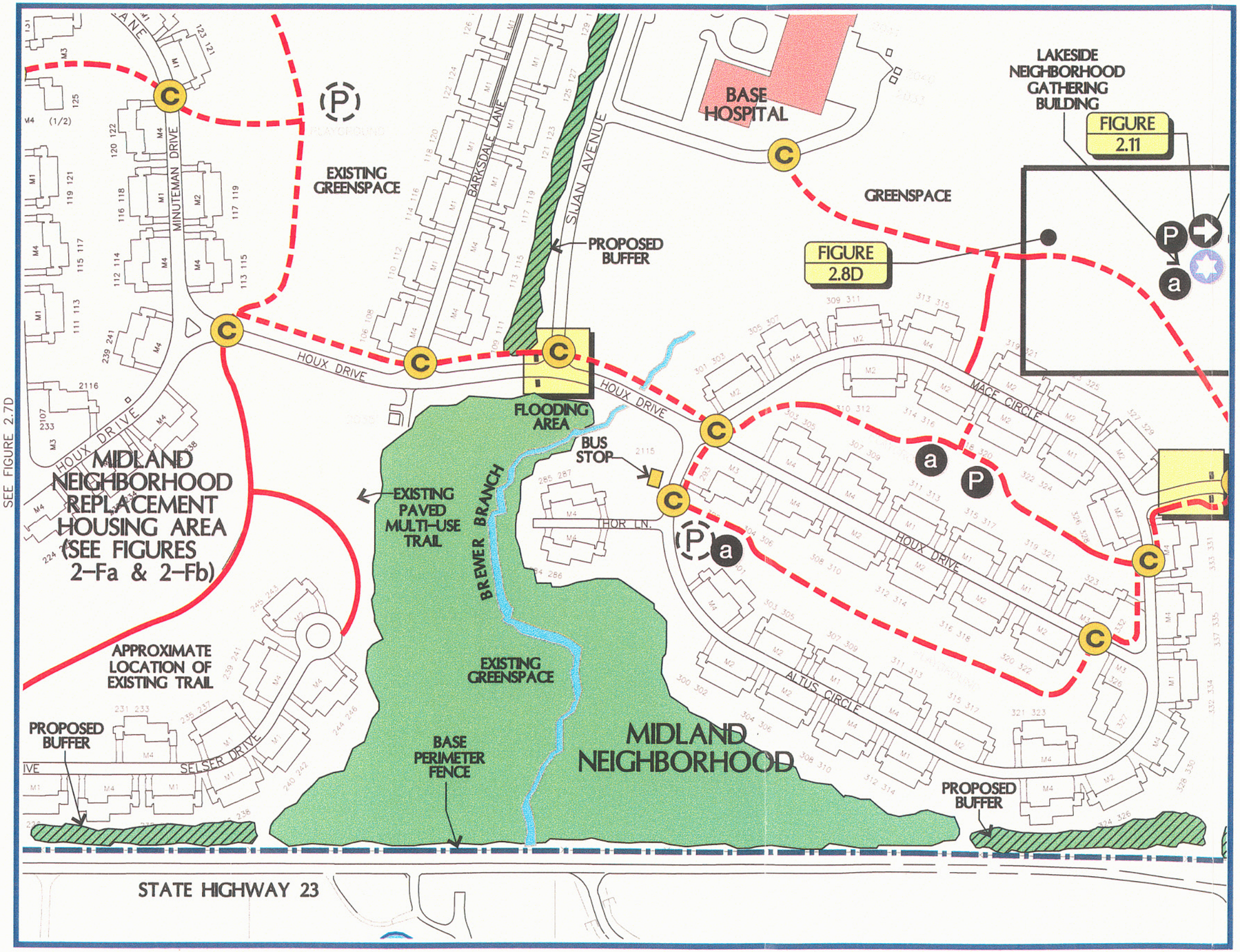
MIDLAND NEIGHBORHOOD

Whiteman A.F.B.
Missouri

SEE FIGURE 2.7E

COMMUNITY DEVELOPMENT PLAN



PLAN LEGEND

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- RENDERING VIEW
- NEW REPLACEMENT HOUSING
- BASE PERIMETER FENCE
- BUILDINGS TO BE REMOVED
- PROPOSED NEIGHBORHOOD GATHERING BUILDING

SEE FIGURE 2.7H

KEY MAP

2.7A	2.7C	2.7E	2.7G	2.7I
2.7B	2.7D	2.7F	2.7H	

100' 0 100' 200'

SCALE: 1"=200'

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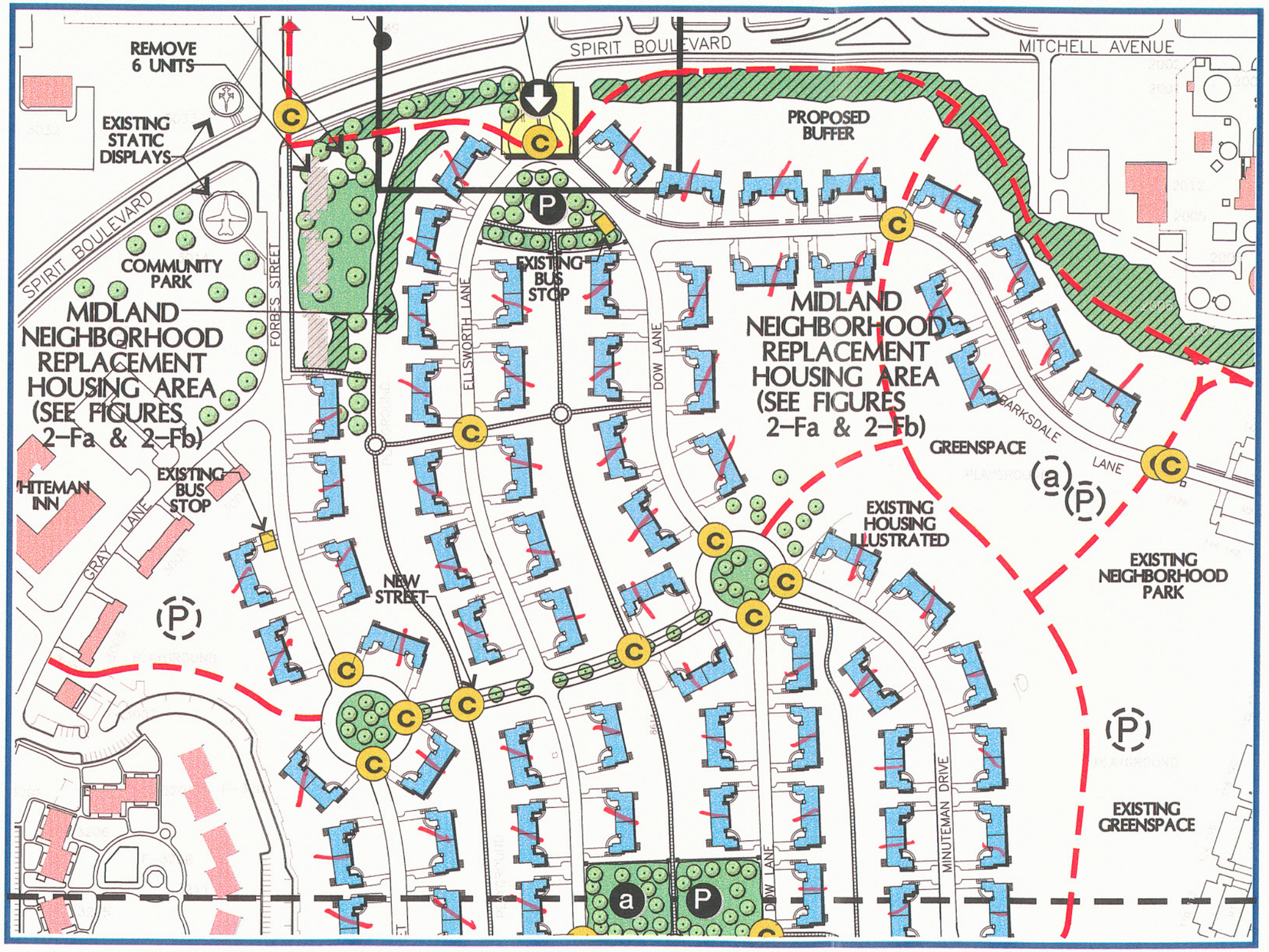
MIDLAND NEIGHBORHOOD

Whiteman A.F.B.
Missouri

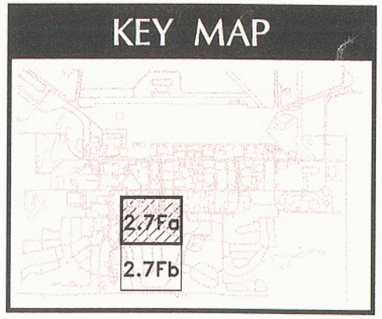
COMMUNITY DEVELOPMENT PLAN



PLAN LEGEND

- EXISTING PLAYGROUND
- NEW PLAYGROUND
- EXISTING ADULT AREA
- NEW ADULT AREA
- ENTRANCE IDENTITY AREA
- EXISTING AND PROPOSED TREES
- EXISTING VEGETATION
- TRAIL CROSSING
- PROPOSED VEGETATION
- MULTIUSE TRAIL (PROPOSED)
- EXISTING FAMILY HOUSING
- EXISTING TRAIL SYSTEM
- BASE FACILITY
- RENDERING VIEW
- NEW REPLACEMENT HOUSING
- BASE PERIMETER FENCE
- BUILDINGS TO BE REMOVED
- PROPOSED NEIGHBORHOOD GATHERING BUILDING

KEY MAP



100' 0 100' 200'

SCALE: 1"=200'

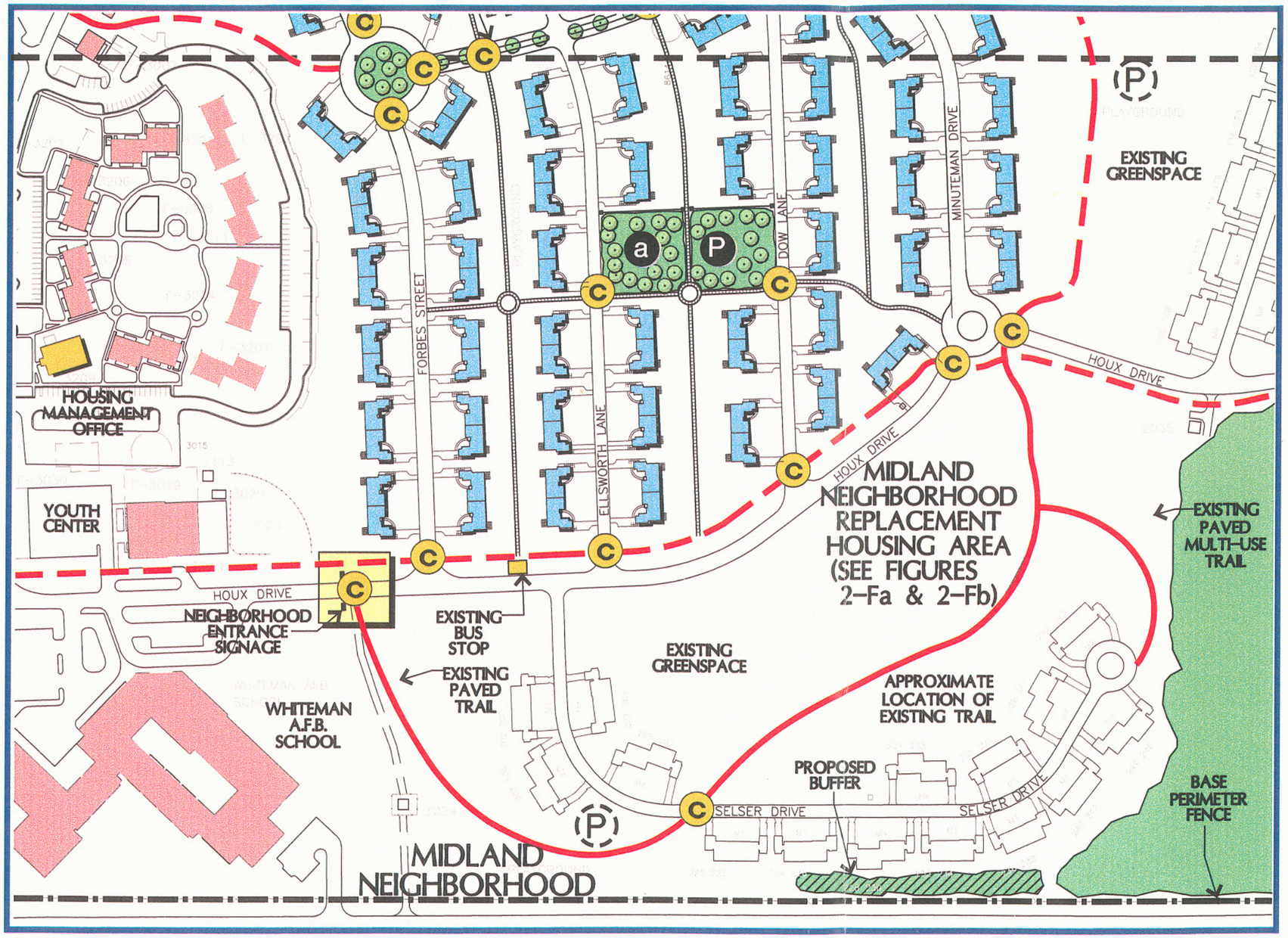
N

MIDLAND NEIGHBORHOOD REPLACEMENT HOUSING

Whiteman A.F.B.
Missouri

COMMUNITY DEVELOPMENT PLAN

SEE FIGURE 2-41A



PLAN LEGEND

- EXISTING PLAYGROUND
- NEW PLAYGROUND
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- NEW ADULT AREA
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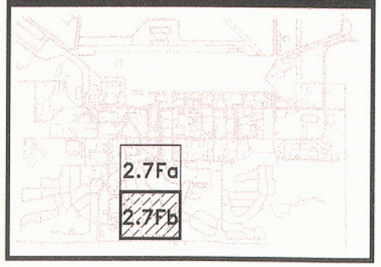
- BUILDINGS TO BE REMOVED
- PROPOSED NEIGHBORHOOD GATHERING BUILDING

KEY MAP



100' 0 100' 200'

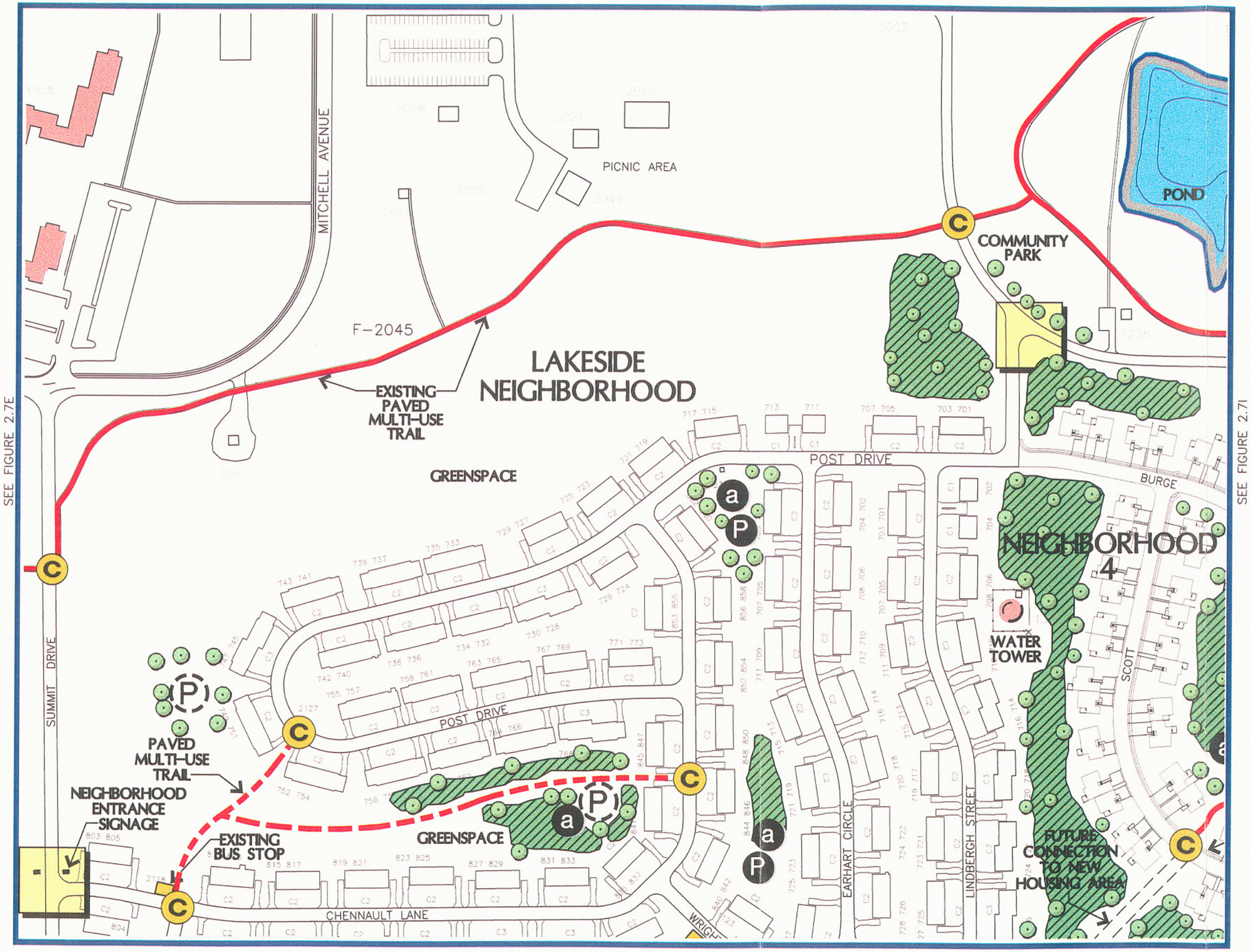
SCALE: 1"=200'

N

MIDLAND NEIGHBORHOOD REPLACEMENT HOUSING

Whiteman A.F.B.
Missouri

COMMUNITY DEVELOPMENT PLAN



PLAN LEGEND

- EXISTING PLAYGROUND
- NEW PLAYGROUND
- EXISTING ADULT AREA
- NEW ADULT AREA
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KEY MAP

2.7A	2.7C	2.7E	2.7G	2.7I
2.7B	2.7D	2.7F	2.7H	

100' 0 100' 200'

SCALE: 1"=200'

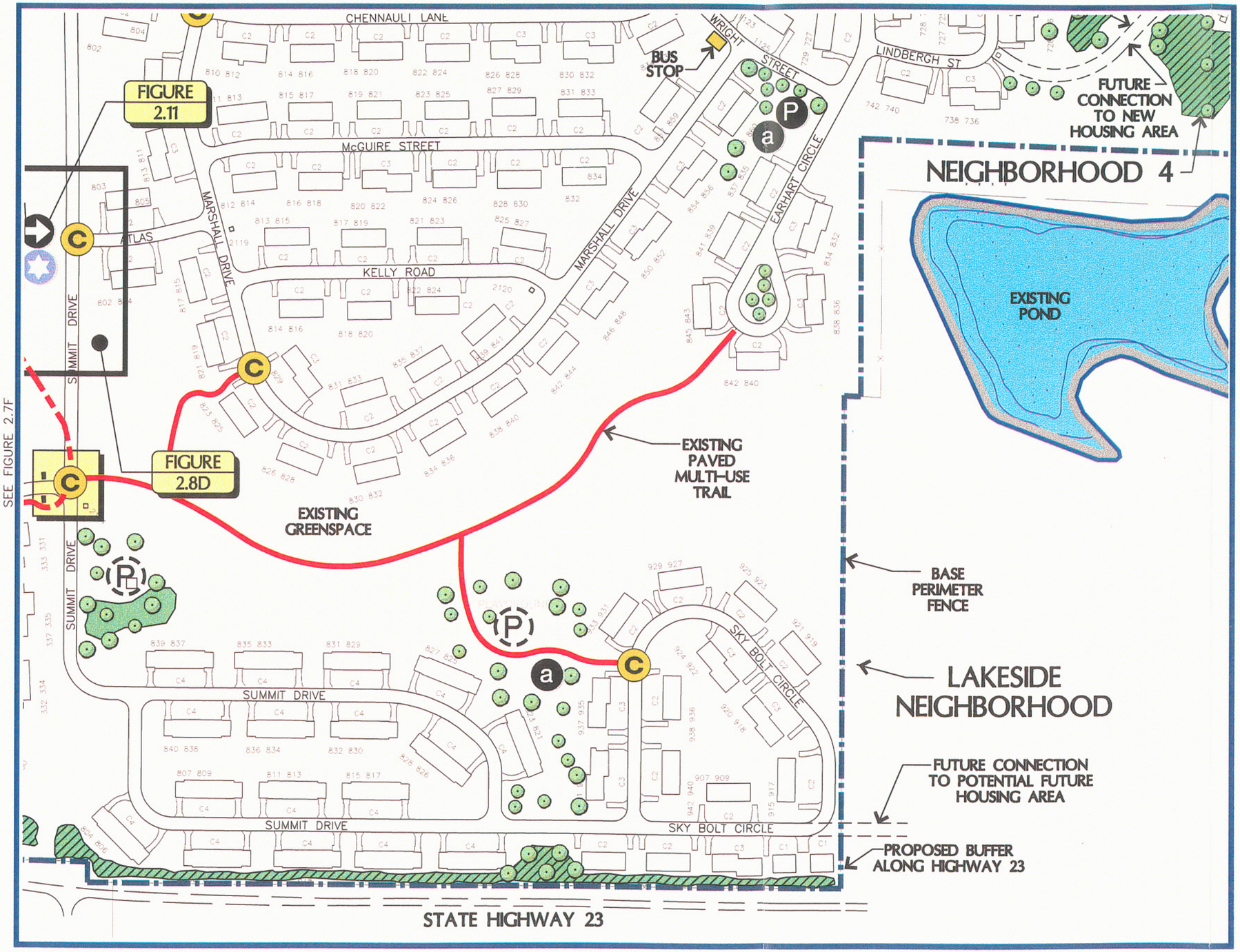
N

LAKESIDE NEIGHBORHOOD

Whiteman A.F.B.
Missouri

SEE FIGURE 2.7G

SEE FIGURE 2.7F



COMMUNITY DEVELOPMENT PLAN

PLAN LEGEND

- EXISTING PLAYGROUND
- NEW PLAYGROUND
- EXISTING ADULT AREA
- NEW ADULT AREA
- ENTRANCE IDENTITY AREA
- EXISTING AND PROPOSED TREES
- EXISTING VEGETATION
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- BUILDINGS TO BE REMOVED
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KEY MAP

2.7A	2.7C	2.7E	2.7G	2.7I
2.7B	2.7D	2.7F	2.7H	

100' 0 100' 200'

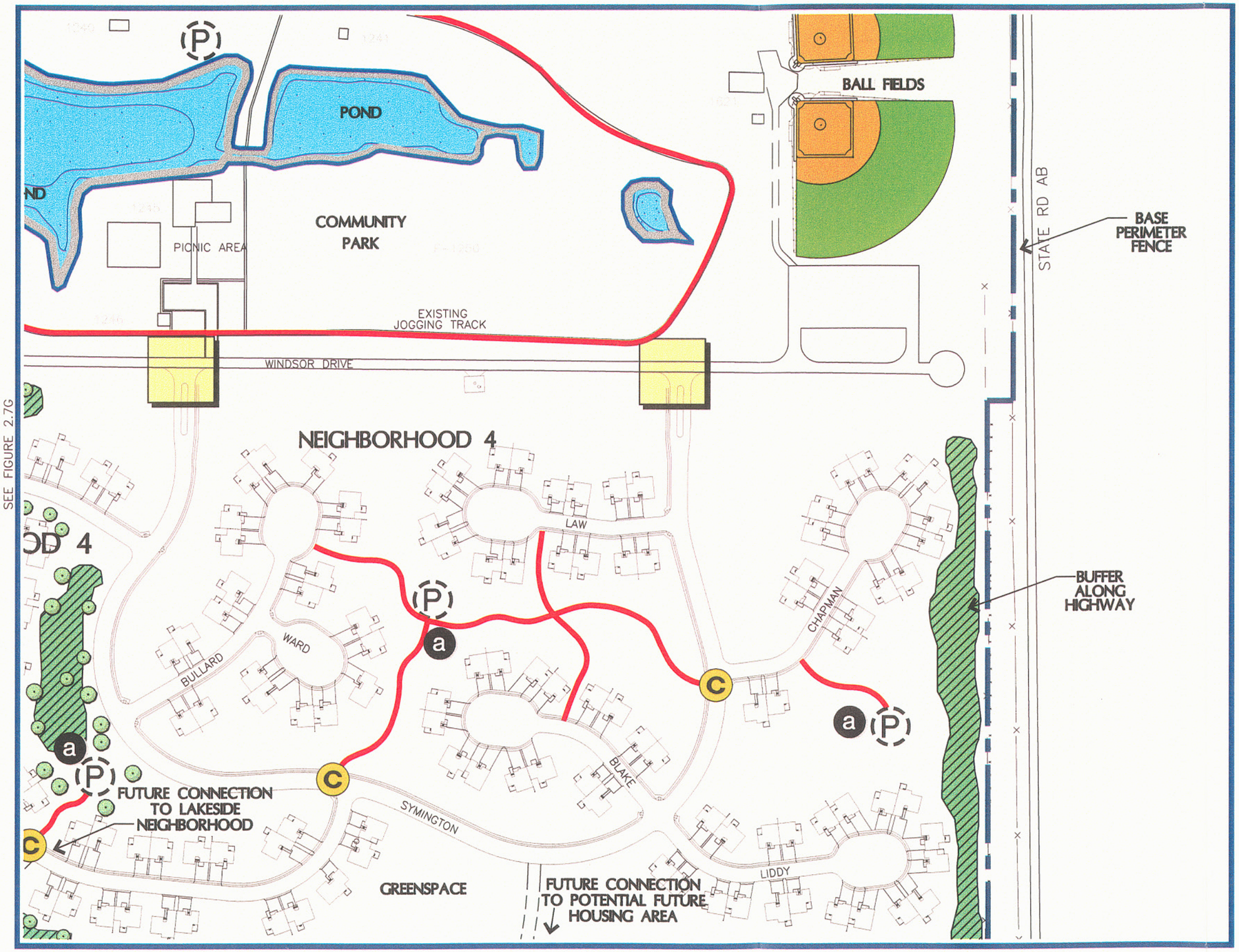
SCALE: 1"=200'

N

LAKESIDE NEIGHBORHOOD

Whiteman A.F.B.
Missouri

COMMUNITY DEVELOPMENT PLAN



PLAN LEGEND

- EXISTING PLAYGROUND
- NEW PLAYGROUND
- EXISTING ADULT AREA
- NEW ADULT AREA
- ENTRANCE IDENTITY AREA
- EXISTING AND PROPOSED TREES
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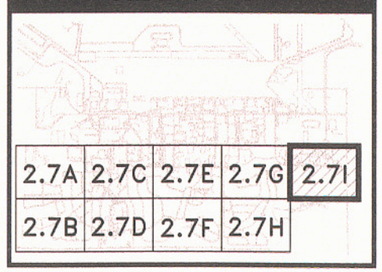
- NEW REPLACEMENT HOUSING
- BASE PERIMETER FENCE
- BUILDINGS TO BE REMOVED
- PROPOSED NEIGHBORHOOD GATHERING BUILDING

KEY MAP



100' 0 100' 200'

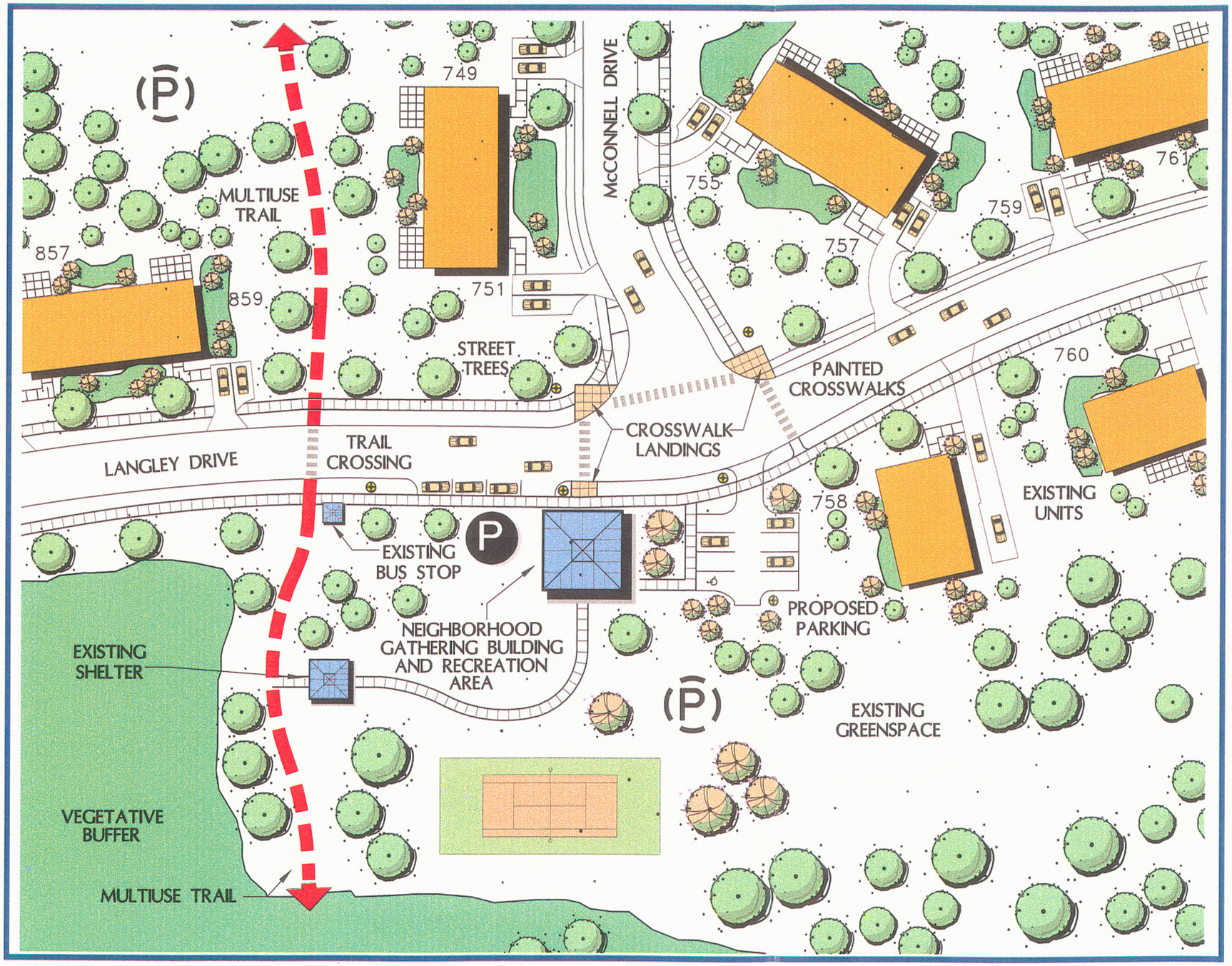
SCALE: 1"=200'

N

NEIGHBORHOOD 4

Whiteman A.F.B.
Missouri

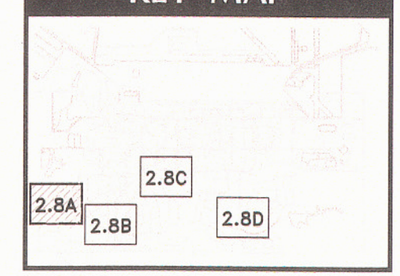
DETAILED NEIGHBORHOOD PLAN



PLAN LEGEND

- (P) EXISTING PLAYGROUND
- P NEW PLAYGROUND
- (a) EXISTING ADULT AREA
- a NEW ADULT AREA
- ENTRANCE IDENTITY AREA
- EXISTING AND PROPOSED TREES
- EXISTING VEGETATION
- MULTIUSE TRAIL (PROPOSED)
- PROPOSED VEGETATION
- EXISTING TRAIL SYSTEM
- EXISTING FAMILY HOUSING
- EXISTING SITE DEVELOPMENT
- BASE FACILITY
- PROPOSED SITE DEVELOPMENT
- NEW REPLACEMENT HOUSING
- BASE PERIMETER FENCE
- BUILDINGS TO BE REMOVED
- PROPOSED PEDESTRIAN LIGHTING

KEY MAP



50' 0 25' 50'

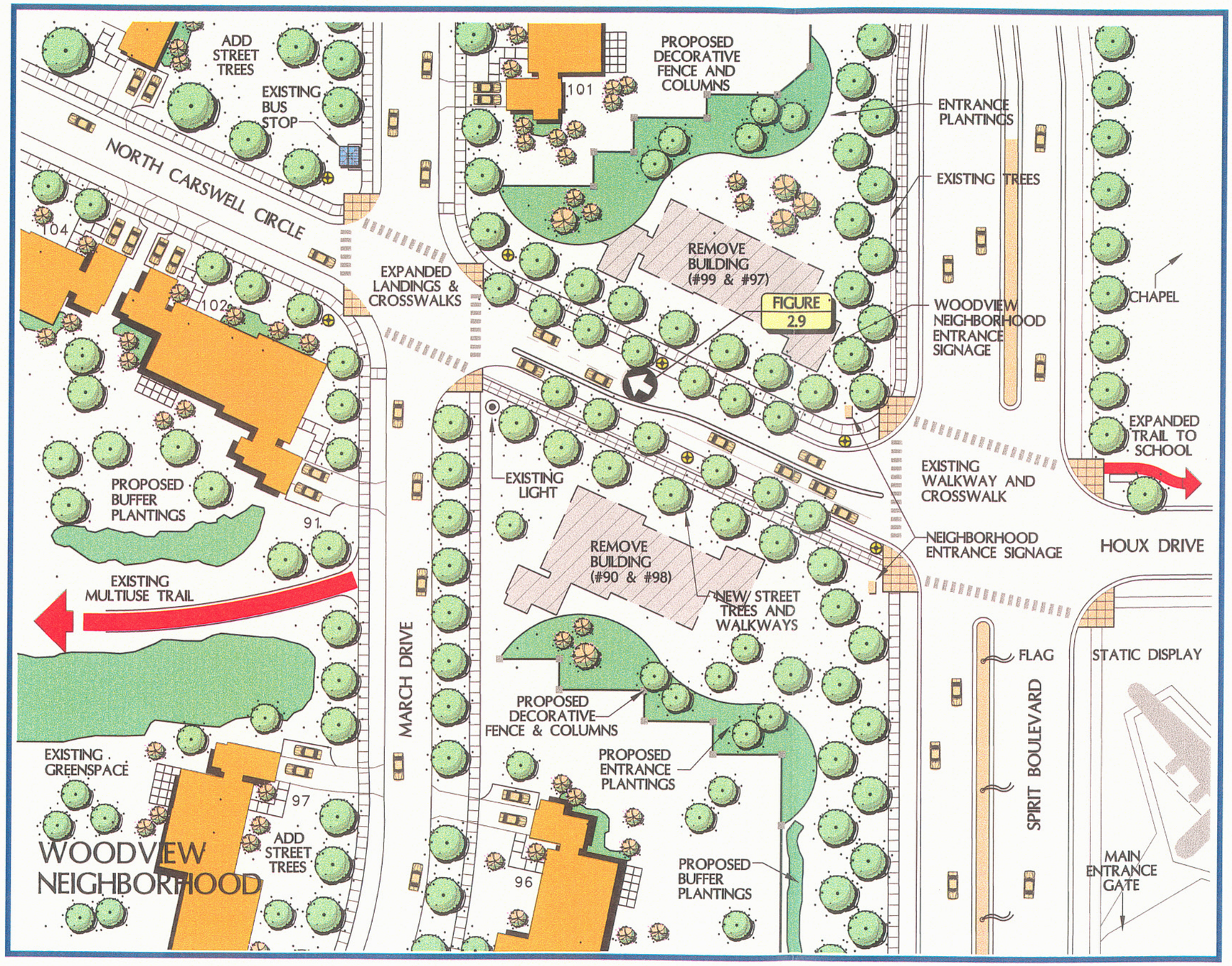
SCALE: 1"=50'

N

WOODVIEW NEIGHBORHOOD GATHERING BUILDING

Whiteman A.F.B.
MISSOURI

DETAILED NEIGHBORHOOD PLAN



PLAN LEGEND

- (P) EXISTING PLAYGROUND
- P NEW PLAYGROUND
- (a) EXISTING ADULT AREA
- a NEW ADULT AREA
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- BASE PERIMETER FENCE
- BUILDINGS TO BE REMOVED
- PROPOSED PEDESTRIAN LIGHTING

KEY MAP

50' 0 25' 50'

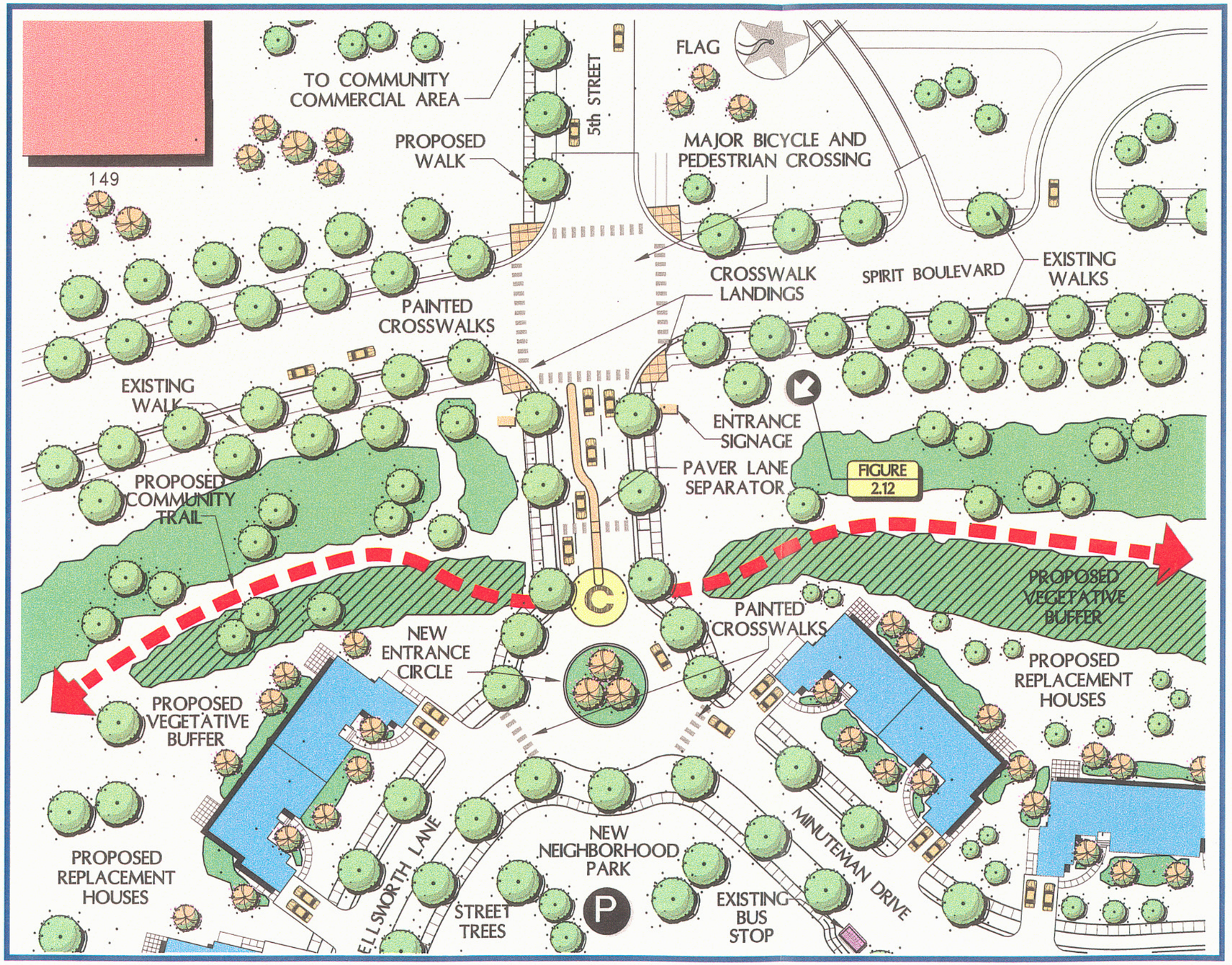
SCALE: 1"=50'

N

WOODVIEW NEIGHBORHOOD ENTRANCE

Whiteman A.F.B.
MISSOURI

DETAILED NEIGHBORHOOD PLAN



PLAN LEGEND

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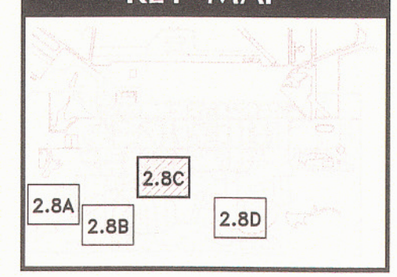
KEY MAP



50' 0 25' 50'

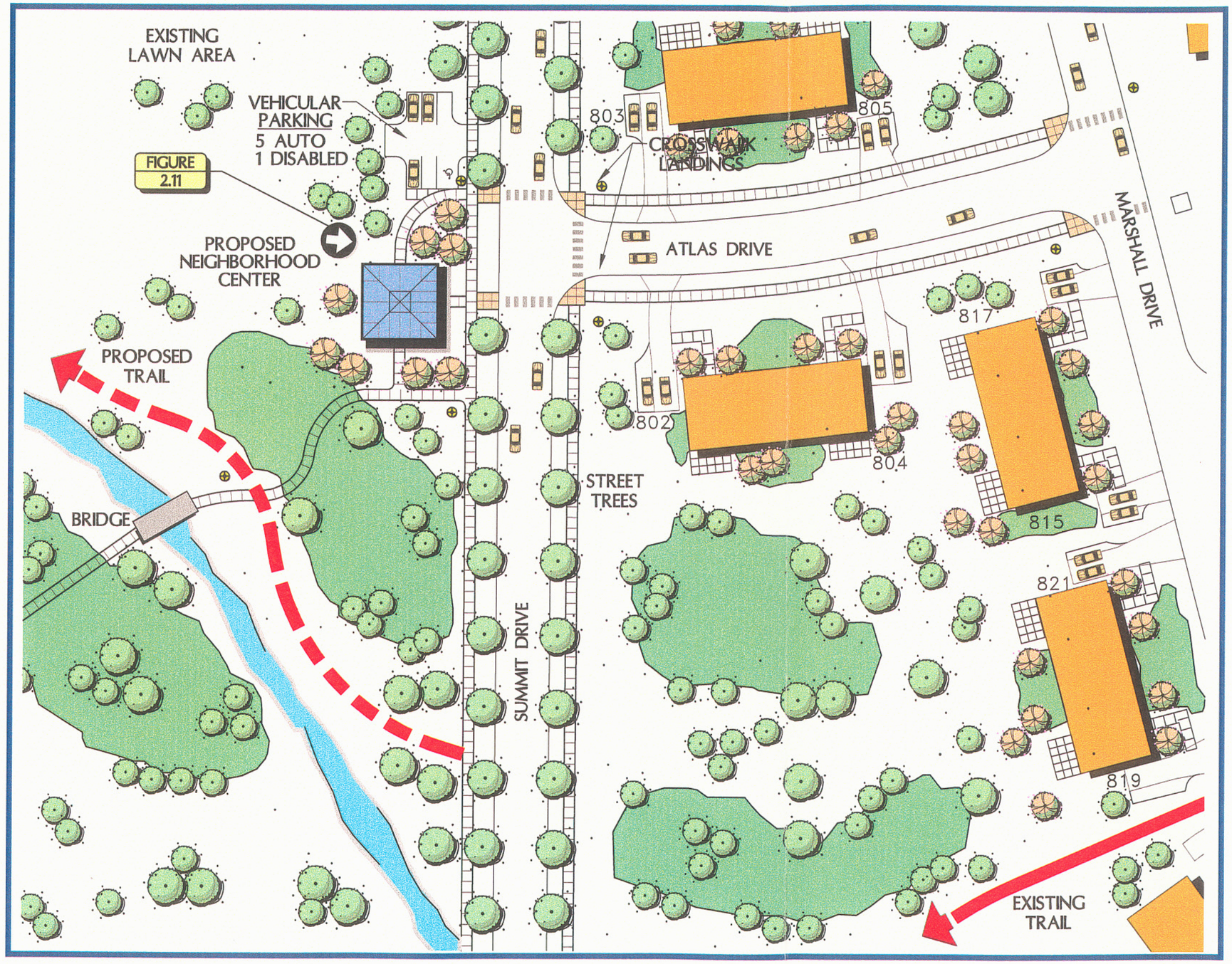
SCALE: 1"=50'

N

MIDLAND NEIGHBORHOOD ENTRANCE

Whiteman A.F.B.
MISSOURI

DETAILED NEIGHBORHOOD PLAN



PLAN LEGEND

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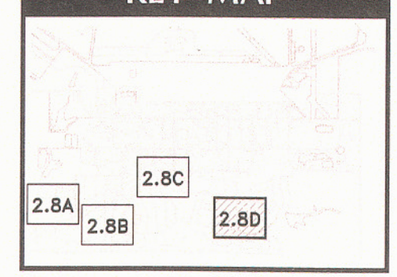
KEY MAP



50' 0 25' 50'

SCALE: 1"=50'

N

LAKESIDE NEIGHBORHOOD GATHERING BUILDING

Whiteman A.F.B.
MISSOURI

Section 2.2.11
Neighborhood Character:
Existing Photo Views and Proposed Perspectives

Whiteman AFB

Air Combat Command

HCP Date: 1998

MFH Requirements - Detailed Summary

Enlisted

	E1 - E3 ENL					E4 - E6 JNCO					E7 - E9 SNCO					Total Enlisted
	2 BR	3 BR	4BR	Other	Total	2 BR	3 BR	4BR	Other	Total	2 BR	3 BR	4BR	Other	Total	
1. Total Family Load-Current	225	1	0	0	226	970	219	100	0	1289	111	92	47	0	250	1765
2. Total Fam Load 5 YR Frcst	371	1	0	0	372	851	209	98	0	1158	107	91	47	0	245	1775
3. Available Comm Housing	93	13	4	0	110	347	22	25	0	394	79	3	22	0	104	608
4. Net MFH Requirement	278	-12	-4	0	262	504	187	73	0	764	28	88	25	0	141	1167
5. MFH Assets - Existing	0	0	0	0	0	160	611	80	0	851	0	0	12	0	12	863
6. Mismatches	278	-12	-4	0	262	344	-424	-7	0	-87	28	88	13	0	129	304
7. Renovation Decision	0	0	0	0	0	508	303	70	0	881	10	86	26	0	122	1003
8. Revised Mismatches	278	-12	-4	0	262	-4	-116	3	0	-117	18	2	-1	0	19	164

Officer

	O1 - O3 CGO					04 - O5 FGO					O6 SGO					O7 - O10 GO					Total Officer	Grand Total
	2 BR	3 BR	4BR	Other	Total	2 BR	3 BR	4BR	Other	Total	2 BR	3 BR	4BR	Other	Total	2 BR	3 BR	4BR	Other	Total		
1. Total Family Load-Current	96	36	12	0	144	0	69	14	0	83	0	0	8	0	8	0	0	0	0	0	235	2000
2. Total Fam Load 5 YR Frcst	98	37	13	0	148	0	67	15	0	82	0	0	8	0	8	0	0	0	0	0	238	2013
3. Available Comm Housing	48	0	0	0	48	0	18	1	0	19	0	0	2	0	2	0	0	0	0	0	69	677
4. Net MFH Requirement	50	37	13	0	100	0	49	14	0	63	0	0	6	0	6	0	0	0	0	0	169	1336
5. MFH Assets - Existing	0	63	24	0	87	0	29	8	0	37	0	0	1	0	1	0	0	1	0	1	126	989
6. Mismatches	50	-26	-11	0	13	0	20	6	0	26	0	0	5	0	5	0	0	-1	0	-1	43	347
7. Renovation Decision	33	18	12	0	63	0	41	20	0	61	0	0	1	0	1	0	0	1	0	1	126	1129
8. Revised Mismatches	17	19	1	0	37	0	8	-6	0	2	0	0	5	0	5	0	0	-1	0	-1	43	207

Whiteman AFB

Air Combat Command

HCP Date: 1998

MFH Requirements - General Summary

	Enlisted				Officer					
	E1 - E3 ENL	**E4 - E6** JNCO	**E7 - E9** SNCO	Total Enlisted	**O1 - O3** CGO	**04 - O5** FGO	**O6** SGO	**O7 - O10** GO	Total Officer	Grand Total
1. Total Family Load-Current	226	1289	250	1765	144	83	8	0	235	2000
2. Total Fam Load 5 YR Frcst	372	1158	245	1775	148	82	8	0	238	2013
3. Available Comm Housing	110	394	104	608	48	19	2	0	69	677
4. Net MFH Requirement	262	764	141	1167	100	63	6	0	169	1336
5. MFH Assets - Existing	0	851	12	863	87	37	1	1	126	989
Mismatches	262	-87	129	304	13	26	5	-1	43	347
7. Renovation Decision	0	881	122	1003	63	61	1	1	126	1129
8. Revised Mismatches	262	-117	19	164	37	2	5	-1	43	207

Whiteman AFB

Air Combat Command

HCP Date: 1998

Proposed MFH Inventory by Grade & Bedrooms - Detailed Summary

Unit Type	Design Standard (Grade) and Quantity by Number of Bedrooms																												Total
	E1 - E3 ENL				**E4 - E6** JNCO				**E7 - E9** SNCO				**O1 - O3** CGO				**O4 - O5** FGO				**O6** SGO				**O7 - O10** GO				
	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	
M-9 CGO 2.1	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
M-10 CGO 2.1	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
M-12B FGO 4.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
M-13 SGO 4.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
M-14 GO 4.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
C-1B NCO 3.2	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
C-2B NCO 3.2	0	0	0	0	0	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150
C-2C SNCO 3.1	0	0	0	0	0	0	0	0	0	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86
C-3C NCO 4.1	0	0	0	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
C-3D SNCO 4.1	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
C-3A SNCO 4.2	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
M-1B NCO 2.1(incl 10 M-3)	0	0	0	0	142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	142
C-3B NCO 4.2	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
C-4 NCO 4.3	0	0	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
C-5 NCO 3.3	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
C-6 NCO 2.4	0	0	0	0	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
C-6 SNCO 2.4	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
C-7 CGO 3.1	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
C-7 FGO 3.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0	0	0	0	0	0	0	0	0	0	41
C-8C FGO 4.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	7
C-8D CGO 4.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
C-8A CGO 4.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
C-8A FGO 4.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	6
C-9 FGO 4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4

Proposed MFH Inventory by Grade & Bedrooms - Detailed Summary

Unit Type	Design Standard (Grade) and Quantity by Number of Bedrooms																												Total
	E1 - E3 ENL				E4 - E6 JNCO				E7 - E9 SNCO				O1 - O3 CGO				O4 - O5 FGO				O6 SGO				O7 - O10 GO				
	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	
M-2B NCO 2.2(incl 10 M-3)	0	0	0	0	112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112
M-4B NCO 2.2	0	0	0	0	97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97
M-5B NCO 2.3(incl 4 M-7)	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
M-6B NCO 3.1(incl 4 M-7)	0	0	0	0	0	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54
M-8B NCO 3.1	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
A	0	0	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46
B	0	0	0	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
C	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
D	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
E	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
F	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
G	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Totals:	0	0	0	0	508	303	70	0	10	86	26	0	33	18	12	0	0	41	20	0	0	0	1	0	0	0	1	0	1129

Proposed MFH Inventory by Grade & Bedrooms - Detailed Summary

Unit Type	Design Standard (Grade) and Quantity by Number of Bedrooms																												Total
	E1 - E3 ENL				E4 - E6 JNCO				E7 - E9 SNCO				O1 - O3 CGO				O4 - O5 FGO				O6 SGO				O7 - O10 GO				
	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	
M-2B NCO 2.2(incl 10 M-3)	0	0	0	0	112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	112
M-4B NCO 2.2	0	0	0	0	97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97
M-5B NCO 2.3(incl 4 M-7)	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
M-6B NCO 3.1(incl 4 M-7)	0	0	0	0	0	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54
M-8B NCO 3.1	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
A	0	0	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46
B	0	0	0	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
C	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
D	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
E	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
F	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
G	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Totals:	0	0	0	0	508	303	70	0	10	86	26	0	33	18	12	0	0	41	20	0	0	0	1	0	0	0	1	0	1129

Whiteman AFB

Air Combat Command

HCP Date: 1998

Proposed MFH Inventory by Grade & Bedrooms - General Summary

Grade / No. Bedrooms	2 BR	3 BR	4 BR	Other	TOTAL
ENL	0	0	0	0	0
JNCO	508	303	70	0	881
SNCO	10	86	26	0	122
Total Enlisted	518	389	96	0	1003
CGO	33	18	12	0	63
FGO	0	41	20	0	61
SGO	0	0	1	0	1
GO	0	0	1	0	1
Total Officer	33	59	34	0	126
Total Inventory	**551**	**448**	**130**	**0**	**1129**

Whiteman AFB

Air Combat Command

HCP Date: 1998

Existing MFH Inventory by Grade & Bedrooms - Detailed Summary

Unit Type	Year Built	Design Standard (Grade) and Quantity by Number of Bedrooms																												Total
		E1 - E3 ENL				E4 - E6 JNCO				E7 - E9 SNCO				O1 - O3 CGO				O4 - O5 FGO				O6 SGO				O7 - O10 GO				
		2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	
M-9 CGO 2.1	1957	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
M-10 CGO 2.1	1957	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
M-12 FGO 4.1	1957	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
M-13 SGO 4.1	1957	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
M-14 GO 4.1	1957	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
C-1 NCO 3.2	1962	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
C-2 NCO 3.2	1962	0	0	0	0	0	236	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	236
C-3 NCO 4.1	1962	0	0	0	0	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46
C-3 SNCO 4.1	1962	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
C-3A SNCO 4.2	1962	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
M-1 NCO 2.1	1957	0	0	0	0	132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	132
C-4 NCO 4.3	1962	0	0	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34
C-5 NCO 3.3	1962	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
C-6 NCO 2.4	1962	0	0	0	0	0	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62
C-7 CGO 3.1	1962	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
C-7 FGO 3.1	1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	0	0	0	0	0	0	0	29
C-8 CGO 4.1	1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15
C-8 FGO 4.2	1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
C-8A CGO 4.2	1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
C-9 FGO 4.3	1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4
M-2 NCO 2.2	1957	0	0	0	0	0	102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	102
M-3 NCO 2.1	1957	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
M-3 NCO 2.2	1957	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
M-4 NCO 2.2	1957	0	0	0	0	0	97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97
M-5 NCO 2.3	1957	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
M-6 NCO 3.1	1957	0	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50

Existing MFH Inventory by Grade & Bedrooms - Detailed Summary

Unit Type	Year Built	Design Standard (Grade) and Quantity by Number of Bedrooms																												Total
		E1 - E3 ENL				E4 - E6 JNCO				E7 - E9 SNCO				O1 - O3 CGO				O4 - O5 FGO				O6 SGO				O7 - O10 GO				
		2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	
M-7 NCO 2.3	1957	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
M-7 NCO 3.1	1957	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
M-8 NCO 3.1	1957	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Totals:		0	0	0	0	160	611	80	0	0	0	12	0	0	63	24	0	0	29	8	0	0	0	1	0	0	0	1	0	989

Existing MFH Inventory by Grade & Bedrooms - Detailed Summary

Unit Type	Year Built	Design Standard (Grade) and Quantity by Number of Bedrooms																												Total
		E1 - E3 ENL				E4 - E6 JNCO				E7 - E9 SNCO				O1 - O3 CGO				O4 - O5 FGO				O6 SGO				O7 - O10 GO				
		2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	
M-7 NCO 2.3	1957	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
M-7 NCO 3.1	1957	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
M-8 NCO 3.1	1957	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Totals:		0	0	0	0	160	611	80	0	0	0	12	0	0	63	24	0	0	29	8	0	0	0	1	0	0	0	1	0	989

Existing MFH Inventory by Grade & Bedrooms - Detailed Summary

Unit Type	Year Built	Design Standard (Grade) and Quantity by Number of Bedrooms																												Total
		E1 - E3 ENL				E4 - E6 JNCO				E7 - E9 SNCO				O1 - O3 CGO				O4 - O5 FGO				O6 SGO				O7 - O10 GO				
		2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	2 BR	3 BR	4 BR	Other	
M-7 NCO 2.3	1957	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
M-7 NCO 3.1	1957	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
M-8 NCO 3.1	1957	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Totals:		0	0	0	0	160	611	80	0	0	0	12	0	0	63	24	0	0	29	8	0	0	0	1	0	0	0	1	0	989

Section 2.2.12
Community Assessment
Database Reports: A-H and J

2.2.11 Neighborhood Character: Existing Photo Views and Proposed Perspectives

For each neighborhood, the existing photo view and proposed perspective are shown on opposite pages (even-odd page pairs) as follows:

Photo 2.9 Existing Woodview Neighborhood Character

Figure 2.9 Woodview Neighborhood – Proposed Neighborhood Entrance at Carswell Circle and March Drive Intersection

Photo 2.10 Existing Woodview Neighborhood Character

Figure 2.10 Woodview Neighborhood – Proposed Neighborhood Gathering Building on Langley Drive

Photo 2.11 Existing Lakeside Neighborhood Character

Figure 2.11 Lakeside Neighborhood – Atlas Drive from Proposed Neighborhood Gathering Building

Photo 2.12 Midland Neighborhood – Existing View of Replacement Housing Site
Photo 2.13 Midland Neighborhood – Existing View of Replacement Housing Site

Figure 2.12 Midland Neighborhood – Proposed Replacement Housing Area Entrance at Spirit Avenue and Fifth Street

Following these photo-figure pairs is Section 2.2.12, the Community Assessment Database Reports.

2.9 Existing Carswell Circle and March Drive Intersection

Woodview Neighborhood – Proposed Neighborhood Entrance at Carswell Circle and March Drive Intersection

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2.10 Existing View of Langley Drive Site for Woodview Neighborhood Gathering Building

Woodview Neighborhood –
Proposed Neighborhood Gathering Building on Langley Drive

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2.11 Existing View of Lakeside Neighborhood Gathering Building Site

Lakeside Neighborhood –
Atlas Drive from Proposed Neighborhood Gathering Building

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2.12 Existing View of Midland Neighborhood Replacement Housing Site

2.13 Existing View of Midland Neighborhood Replacement Housing Site

Midland Neighborhood – Proposed Replacement Housing Area Entrance at Spirit Avenue and Fifth Street

Section 2.3
Family Housing Requirements

2.3 Family Housing Requirements

2.3.1 Introduction

A key objective is to modify the available base housing assets with projected requirements by military grade and family size. The projected Housing Requirements Market Analysis, revised in 1997, is shown in Table 2.1, "Net Military Family Housing (MFH) Requirements, 2001," and Table 2.2, "Mismatches: Deficits (Surplus), 2001." Table 2.2 indicates unit assignments in the current inventory to fulfil projected deficit assignments.

A new FY96/FY97 housing project has been awarded in 1997 to construct 140 homes south of the existing housing area. All new housing is assigned to the Junior NCO rank group as indicated in Table 2.2.

The database develops housing requirement tables from the Housing Requirements Analysis and the existing and proposed inventories. Information on total family load and available community housing is entered from the revised Housing Market Analysis (HMA) of 1997. The database report identifies Net MFH Requirements, MFH Assets (Existing and Mismatches), renovation proposed by the HCP, renovation decisions, proposed inventory, and revised mismatches.

The current inventory list (Table 2.3) is included to give an overview of the number of unit types in the current housing inventory. Refer to Section 2.3.2 for detailed summaries of the current MFH inventory.

Table 2.1 Net MFH* Requirements, 2001
Whiteman Air Force Base, Missouri

	Number of Bedrooms			
Rank Group	**Two or Less**	**Three**	**Four or More**	**Total**
GO	0	0	0**	0
SGO	0	0	6	6
FGO	0	49	14	63
CGO	50	37	13	100
Officer Subtotal	50	86	33	169
SNCO	28	88	25	141
JNCO	504	187	73	764
E1-E3	278	(12)	(4)	262
Enlisted Subtotal	810	263	94	1167
Total	860	349	127	1336

* MFH Military Family Housing
** One GOQ exists but is not recognized in HMA

Table 2.2 Mismatches: Deficits (Surplus), 2001 *
Whiteman Air Force Base, Missouri

	Number of Bedrooms						
Rank Group	**Two or Less**		**Three**		**Four or More**		**Total**
SGO	0		0		4	1-M13 1-M14	4
FGO	0		1	41-C7 7-C8 **	2	6-C8 4-C9 2-M12	3
CGO	16	16-M9 18-M10	19	18-C7	1	12-C8	36
Officer Subtotal	16		20		7		43
SNCO	18	10-C6	2	86-C2	(1)	26-C3	19
JNCO	146	87-A/B/C 128-C2* 52-C6 132-M1 102-M2 20-M3 97-M4 14-M5 4-M7	0	49-D/E 6-C1 22-C2 20-C5 50-M6 4-M7 24-M8	(1)	32-C3 34-C4 4-G	145
Enlisted Subtotal	164		2		(2)		164
Total	180		22		5		207

* 3 BR units assigned to 2 BR deficits
** 4 BR units assigned to 3 BR deficits
*** 140 unit new housing area is included in Tabulation

Table 2.3 Whiteman Housing Inventory 1997

UNIT TYPES		MODS.	RANK	ORIG. BRs (CONV. BRs)	NO. UNITS	REMARKS
M-1			JNCO	2	116	
M-1B		98 PAIP	JNCO	2	16	
M-2			JNCO	3	100	Same as M-4
M-2B		98 PAIP	JNCO	3(2)	2	
M-3			JNCO/SNCO	2/3(2)	20	Duplex W/ M-1 & M-2
M-4			JNCO	3	81	Same as M-2, 1 Bldg. Is Single Unit
M-4B		98 PAIP	JNCO	3(2)	16	
M-5	*		JNCO/CGO	2	10	
M-5B		98 PAIP	JNCO/CGO	2	4	
M-6	*		JNCO/CGO	3	30	Same as M-8
M-6B		98 PAIP	JNCO/CGO	3	20	
M-7	*		JNCO	2/3	8	Duplex W/ M-5 & M-6
M-8	*		JNCO/CGO	3	20	Same as M-6
M-8B		98 PAIP	JNCO/CGO	3	4	
M-9	*		SNCO/CGO	3(2)	16	Same as M-10
M-10	*		SNCO/CGO	3	17	Same as M-9 + 1 unit used as DVQ
M-11			VOQ	3	0	Used as VOQ
M-12			FGO	4	2	
M-12B	*	98 PAIP	FGO	4	1	
M-13	*		SGO	4	1	
M-14	*		SGO	4	1	
C-1			JNCO	3	4	
C-1B		98 PAIP	JNCO	3	2	
C-2			JNCO	3	216	
C-2B		98 PAIP	JNCO	3	20	
C-3			JNCO/SNCO	4	42	Same as C-4
C-3B		98 PAIP	JNCO.SNCO	4	10	
C-3A		90 PAIP	JNCO/SNCO	4	6	
C-4			JNCO	4	34	Same as C-3
C-5			JNCO/CGO	3	20	Same as C-6
C-6			JNCO/CGO	3(2)	62	Same as C-5
C-7			CGO/FGO	3	59	
C-8			CGO/FGO	4	16	
C-8A		90 PAIP	CGO/FGO	4(3)	9	
C-9			SGO	4	4	
				Subtotal existing housing	989	
New Housing (Under Construction)						
A			JNCO	2	46	
B			JNCO	2	36	
C-HC			JNCO	2	5	
D			JNCO	3	25	
E			JNCO	3	21	
F-HC			JNCO	3	3	
G-HC			JNCO	4	4	
				Subtotal new housing	140	
				Total Housing Units	1,129 + 1 VOQ & 1 DVQ	
Replacement Units (Proposed)						
R-1			JNCO	2		
R-2			JNCO	3		
R-3			CGO	3		
R-4			FGO	3		
R-5			FGO	4		

* replacement cost evaluation required

2.3.2 Housing Requirements Database Reports

The Database reports include:

Existing MFH Inventory by Grade & Bedroom:

- General Summary
- Detailed Summary

Proposed MFH Inventory by Grade & Bedroom:

- General Summary
- Detailed Summary

MFH Requirements:

- General Summary
- Detailed Summary

The database used in this FHCP update has E1-E3 shown as "ENL" and E4-E6 shown as "JNCO." A revision to the database will be undertaken in CY 1999 (through a separate contract) to revise this notation to E1-E4 as "ENL" and E5-E6 as "JNCO."

Whiteman AFB

Air Combat Command

HCP Date: 1998

Existing MFH Inventory by Grade & Bedrooms - General Summary

Grade / No. Bedrooms	2 BR	3 BR	4 BR	Other	TOTAL
ENL	0	0	0	0	0
JNCO	160	611	80	0	851
SNCO	0	0	12	0	12
Total Enlisted	160	611	92	0	863
CGO	0	63	24	0	87
FGO	0	29	8	0	37
SGO	0	0	1	0	1
GO	0	0	1	0	1
Total Officer	0	92	34	0	126
Total Inventory	**160**	**703**	**126**	**0**	**989**

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [ ] *Whole House Improvement*
- [x] *Major M & R*
- [ ] *Improvements and Remaining Repairs*

*Community Assessment Phase J - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$4,362**
Roads & Streets	$4,362	
Sidewalks	$0	
Site Development		**$121,046**
Demo Site Utilities	$121,046	
Site Improvements		**$625,217**
Housing Area Signs	$0	
Landscaping	$562,387	
Playgrounds	$62,830	
Trails	$0	
Site Utilities		**$211,746**
Electrical Distribution	$54,532	
Gas Distribution	$46,274	
Water Distribution	$110,940	

Sub-Total:	$962,370
Sub-Total adjusted to ACF of: 104.00%	$1,000,865
Contingency @ 5.00 %	$50,043
SIOH @ 5.50 %	$57,800
Major M & R Total - Community Assessment - Phase J	**$1,108,708**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [ ] *Whole House Improvement*
- [ ] *Major M & R*
- [x] *Improvements and Remaining Repairs*

*Community Assessment Phase J - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$481,508**
Roads & Streets	$178,640	
Sidewalks	$302,868	
Site Development		**$0**
Demo Site Utilities	$0	
Site Improvements		**$206,058**
Housing Area Signs	$2,545	
Landscaping	$0	
Playgrounds	$154,932	
Trails	$48,581	
Site Utilities		**$0**
Electrical Distribution	$0	
Gas Distribution	$0	
Water Distribution	$0	

Sub-Total:	$687,566
Sub-Total adjusted to ACF of: 104.00%	$715,069
Contingency @ 5.00 %	$35,753
SIOH @ 5.50 %	$41,295
Remaining Improvements & Repairs Total - Community Assessment - P	**$792,118**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Community Assessment Phase H - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$229,731**
Roads & Streets	$97,440	
Sidewalks	$132,291	
Site Development		**$0**
Demo Site Utilities	$0	
Site Improvements		**$116,036**
Fencing/Gates	$0	
Landscaping	$0	
Playgrounds	$92,103	
Trails	$23,933	
Site Utilities		**$0**
Electrical Distribution	$0	
Gas Distribution	$0	
Water Distribution	$0	

Sub-Total:	$345,767
Sub-Total adjusted to ACF of: 104.00%	$359,598
Contingency @ 5.00 %	$17,980
SIOH @ 5.50 %	$20,767
Remaining Improvements & Repairs Total - Community Assessment - P	**$398,345**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Community Assessment Phase J - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$449,915**
Roads & Streets	$169,439	
Sidewalks	$280,477	
Site Development		**$112,067**
Demo Site Utilities	$112,067	
Site Improvements		**$769,691**
Housing Area Signs	$2,357	
Landscaping	$520,729	
Playgrounds	$201,631	
Trails	$44,974	
Site Utilities		**$196,074**
Electrical Distribution	$50,493	
Gas Distribution	$42,857	
Water Distribution	$102,725	

Sub-Total:	$1,527,748
Sub-Total adjusted to ACF of: 104.00%	$1,588,858
Contingency @ 5.00 %	$79,443
SIOH @ 5.50 %	$91,757
Whole House Total - Community Assessment - Phase J	**$1,760,057**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Community Assessment Phase H - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$169,377**
Roads & Streets	$46,866	
Sidewalks	$122,511	
Site Development		**$39,836**
Demo Site Utilities	$39,836	
Site Improvements		**$442,052**
Fencing/Gates	$71,379	
Landscaping	$224,452	
Playgrounds	$124,064	
Trails	$22,157	
Site Utilities		**$108,468**
Electrical Distribution	$44,882	
Gas Distribution	$18,723	
Water Distribution	$44,863	

Sub-Total:	$759,733
Sub-Total adjusted to ACF of: 104.00%	$790,122
Contingency @ 5.00 %	$39,506
SIOH @ 5.50 %	$45,630
Whole House Total - Community Assessment - Phase H	**$875,257**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [ ] *Whole House Improvement*
- [x] *Major M & R*
- [ ] *Improvements and Remaining Repairs*

*Community Assessment Phase H - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$1,905**
Roads & Streets	$1,905	
Sidewalks	$0	
Site Development		**$43,028**
Demo Site Utilities	$43,028	
Site Improvements		**$361,399**
Fencing/Gates	$77,105	
Landscaping	$242,408	
Playgrounds	$41,886	
Trails	$0	
Site Utilities		**$117,139**
Electrical Distribution	$48,473	
Gas Distribution	$20,215	
Water Distribution	$48,451	

Sub-Total:	$523,470
Sub-Total adjusted to ACF of: 104.00%	$544,409
Contingency @ 5.00 %	$27,220
SIOH @ 5.50 %	$31,440
Major M & R Total - Community Assessment - Phase H	**$603,069**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Community Assessment Phase G - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$2,356**
Roads & Streets	$2,356	
Sidewalks	$0	
Site Development		**$65,394**
Demo Building	$0	
Demo Pavement	$0	
Demo Site Utilities	$65,394	
Site Improvements		**$273,048**
Housing Area Signs	$0	
Landscaping	$252,105	
Playgrounds	$20,943	
Trails	$0	
Site Utilities		**$115,223**
Electrical Distribution	$30,296	
Gas Distribution	$25,002	
Water Distribution	$59,926	

Sub-Total:	$456,021
Sub-Total adjusted to ACF of: 104.00%	$474,262
Contingency @ 5.00 %	$23,713
SIOH @ 5.50 %	$27,389
Major M & R Total - Community Assessment - Phase G	**$525,364**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Community Assessment Phase G - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$291,582**
Roads & Streets	$127,984	
Sidewalks	$163,599	
Site Development		**$14,287**
Demo Building	$11,760	
Demo Pavement	$2,527	
Demo Site Utilities	$0	
Site Improvements		**$79,436**
Housing Area Signs	$5,091	
Landscaping	$0	
Playgrounds	$41,886	
Trails	$32,458	
Site Utilities		**$0**
Electrical Distribution	$0	
Gas Distribution	$0	
Water Distribution	$0	

Sub-Total:	$385,305
Sub-Total adjusted to ACF of: 104.00%	$400,717
Contingency @ 5.00 %	$20,036
SIOH @ 5.50 %	$23,141
Remaining Improvements & Repairs Total - Community Assessment - P	**$443,894**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Community Assessment Phase F - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$379,603**
Roads & Streets	$97,440	
Sidewalks	$282,163	
Site Development		**$0**
Demo Site Utilities	$0	
Site Improvements		**$171,972**
Fencing/Gates	$0	
Housing Area Signs	$5,091	
Landscaping	$0	
Playgrounds	$113,046	
Trails	$53,836	
Site Utilities		**$0**
Electrical Distribution	$0	
Gas Distribution	$0	
Steam Distribution	$0	
Water Distribution	$0	

Sub-Total:	$551,575
Sub-Total adjusted to ACF of: 104.00%	$573,638
Contingency @ 5.00 %	$28,682
SIOH @ 5.50 %	$33,128
Remaining Improvements & Repairs Total - Community Assessment - P	**$635,448**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Community Assessment Phase G - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$272,188**
Roads & Streets	$120,684	
Sidewalks	$151,504	
Site Development		**$73,802**
Demo Building	$10,920	
Demo Pavement	$2,339	
Demo Site Utilities	$60,543	
Site Improvements		**$326,368**
Housing Area Signs	$4,714	
Landscaping	$233,430	
Playgrounds	$58,175	
Trails	$30,049	
Site Utilities		**$106,696**
Electrical Distribution	$28,052	
Gas Distribution	$23,156	
Water Distribution	$55,489	

Sub-Total:	$779,053
Sub-Total adjusted to ACF of: 104.00%	$810,215
Contingency @ 5.00 %	$40,511
SIOH @ 5.50 %	$46,790
Whole House Total - Community Assessment - Phase G	**$897,516**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Community Assessment Phase F - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$355,267**
Roads & Streets	$93,965	
Sidewalks	$261,302	
Site Development		**$61,402**
Demo Site Utilities	$61,402	
Site Improvements		**$705,088**
Fencing/Gates	$0	
Housing Area Signs	$4,714	
Landscaping	$448,904	
Playgrounds	$201,631	
Trails	$49,839	
Site Utilities		**$231,403**
Electrical Distribution	$44,882	
Gas Distribution	$19,972	
Steam Distribution	$70,845	
Water Distribution	$95,702	

Sub-Total:	$1,353,161
Sub-Total adjusted to ACF of: 104.00%	$1,407,287
Contingency @ 5.00 %	$70,364
SIOH @ 5.50 %	$81,271
Whole House Total - Community Assessment - Phase F	**$1,558,922**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [ ] *Whole House Improvement*
- [x] *Major M & R*
- [ ] *Improvements and Remaining Repairs*

*Community Assessment Phase F - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$4,064**
Roads & Streets	$4,064	
Sidewalks	$0	
Site Development		**$66,323**
Demo Site Utilities	$66,323	
Site Improvements		**$589,532**
Fencing/Gates	$0	
Housing Area Signs	$0	
Landscaping	$484,816	
Playgrounds	$104,716	
Trails	$0	
Site Utilities		**$249,906**
Electrical Distribution	$48,473	
Gas Distribution	$21,565	
Steam Distribution	$76,513	
Water Distribution	$103,356	

Sub-Total:	$909,826
Sub-Total adjusted to ACF of: 104.00%	$946,219
Contingency @ 5.00 %	$47,311
SIOH @ 5.50 %	$54,644
Major M & R Total - Community Assessment - Phase F	**$1,048,174**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [ ] *Whole House Improvement*
- [x] *Major M & R*
- [ ] *Improvements and Remaining Repairs*

*Community Assessment Phase E - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$2,390**
Roads & Streets	$2,390	
Sidewalks	$0	
Site Development		**$66,326**
Demo Site Utilities	$66,326	
Site Improvements		**$334,327**
Housing Area Signs	$0	
Landscaping	$271,497	
Playgrounds	$62,830	
Trails	$0	
Site Utilities		**$116,434**
Electrical Distribution	$30,296	
Gas Distribution	$25,358	
Water Distribution	$60,781	

Sub-Total:	$519,477
Sub-Total adjusted to ACF of: 104.00%	$540,256
Contingency @ 5.00 %	$27,013
SIOH @ 5.50 %	$31,200
Major M & R Total - Community Assessment - Phase E 2001 Dollars	**$598,469**

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Community Assessment Phase E - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$247,132**
Roads & Streets	$81,200	
Sidewalks	$165,932	
Site Development		**$0**
Demo Site Utilities	$0	
Site Improvements		**$60,074**
Housing Area Signs	$2,545	
Landscaping	$0	
Playgrounds	$20,943	
Trails	$36,585	
Site Utilities		**$0**
Electrical Distribution	$0	
Gas Distribution	$0	
Water Distribution	$0	

Sub-Total:	$307,206
Sub-Total adjusted to ACF of: 104.00%	$319,494
Contingency @ 5.00 %	$15,975
SIOH @ 5.50 %	$18,451
Remaining Improvements & Repairs Total - Community Assessment - P	**$353,919**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Community Assessment Phase D - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$300,025**
Roads & Streets	$113,680	
Sidewalks	$186,345	
Site Development		**$0**
Demo Site Utilities	$0	
Site Improvements		**$84,655**
Landscaping	$0	
Playgrounds	$41,886	
Trails	$42,769	
Site Utilities		**$0**
Electrical Distribution	$0	
Gas Distribution	$0	
Water Distribution	$0	

Sub-Total:	$384,680
Sub-Total adjusted to ACF of: 104.00%	$400,067
Contingency @ 5.00 %	$20,003
SIOH @ 5.50 %	$23,104
Remaining Improvements & Repairs Total - Community Assessment - P	**$443,175**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Community Assessment Phase E - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$231,055**
Roads & Streets	$77,391	
Sidewalks	$153,664	
Site Development		**$61,407**
Demo Site Utilities	$61,407	
Site Improvements		**$365,180**
Housing Area Signs	$2,357	
Landscaping	$251,386	
Playgrounds	$77,567	
Trails	$33,870	
Site Utilities		**$107,817**
Electrical Distribution	$28,052	
Gas Distribution	$23,486	
Water Distribution	$56,280	

Sub-Total:	$765,458
Sub-Total adjusted to ACF of: 104.00%	$796,077
Contingency @ 5.00 %	$39,804
SIOH @ 5.50 %	$45,973
Whole House Total - Community Assessment - Phase E	**$881,854**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Community Assessment Phase D - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$282,769**
Roads & Streets	$110,200	
Sidewalks	$172,568	
Site Development		**$85,352**
Demo Site Utilities	$85,352	
Site Improvements		**$429,958**
Landscaping	$332,189	
Playgrounds	$58,175	
Trails	$39,594	
Site Utilities		**$133,537**
Electrical Distribution	$28,052	
Gas Distribution	$35,217	
Water Distribution	$70,268	

Sub-Total:	$931,616
Sub-Total adjusted to ACF of: 104.00%	$968,881
Contingency @ 5.00 %	$48,444
SIOH @ 5.50 %	$55,953
Whole House Total - Community Assessment - Phase D	**$1,073,278**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [ ] *Whole House Improvement*
- [x] *Major M & R*
- [ ] *Improvements and Remaining Repairs*

*Community Assessment Phase D - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$5,368**
Roads & Streets	$5,368	
Sidewalks	$0	
Site Development		**$92,190**
Demo Site Utilities	$92,190	
Site Improvements		**$379,707**
Landscaping	$358,764	
Playgrounds	$20,943	
Trails	$0	
Site Utilities		**$144,208**
Electrical Distribution	$30,296	
Gas Distribution	$38,025	
Water Distribution	$75,888	

Sub-Total:	$621,473
Sub-Total adjusted to ACF of: 104.00%	$646,332
Contingency @ 5.00 %	$32,317
SIOH @ 5.50 %	$37,326
Major M & R Total - Community Assessment - Phase D	**$715,974**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Community Assessment Phase B - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$303,065**
Roads & Streets	$116,928	
Sidewalks	$186,137	
Site Development		**$0**
Demo Site Utilities	$0	
Site Improvements		**$135,623**
Housing Area Signs	$2,545	
Landscaping	$0	
Playgrounds	$71,159	
Trails	$61,918	
Site Utilities		**$0**
Electrical Distribution	$0	
Gas Distribution	$0	
Water Distribution	$0	

Sub-Total:	$438,688
Sub-Total adjusted to ACF of: 104.00%	$456,235
Contingency @ 5.00 %	$22,812
SIOH @ 5.50 %	$26,348
Remaining Improvements & Repairs Total - Community Assessment - P	**$505,395**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Community Assessment Phase C - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$392,083**
Roads & Streets	$125,650	
Sidewalks	$266,433	
Site Development		**$108,008**
Demo Site Utilities	$108,008	
Site Improvements		**$533,004**
Fencing/Gates	$17,347	
Landscaping	$377,079	
Playgrounds	$77,567	
Trails	$61,010	
Site Utilities		**$184,707**
Electrical Distribution	$44,882	
Gas Distribution	$41,536	
Water Distribution	$98,288	

Sub-Total:	$1,217,803
Sub-Total adjusted to ACF of: 104.00%	$1,266,515
Contingency @ 5.00 %	$63,326
SIOH @ 5.50 %	$73,141
Whole House Total - Community Assessment - Phase C	**$1,402,982**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Community Assessment Phase B - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$283,176**
Roads & Streets	$110,800	
Sidewalks	$172,375	
Site Development		**$69,743**
Demo Site Utilities	$69,743	
Site Improvements		**$441,236**
Housing Area Signs	$2,357	
Landscaping	$296,277	
Playgrounds	$85,280	
Trails	$57,322	
Site Utilities		**$119,526**
Electrical Distribution	$28,052	
Gas Distribution	$26,928	
Water Distribution	$64,546	

Sub-Total:	$913,680
Sub-Total adjusted to ACF of: 104.00%	$950,227
Contingency @ 5.00 %	$47,511
SIOH @ 5.50 %	$54,876
Whole House Total - Community Assessment - Phase B	**$1,052,614**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [ ] *Whole House Improvement*
- [x] *Major M & R*
- [ ] *Improvements and Remaining Repairs*

*Community Assessment Phase B - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$2,741**
Roads & Streets	$2,741	
Sidewalks	$0	
Site Development		**$75,330**
Demo Site Utilities	$75,330	
Site Improvements		**$340,922**
Housing Area Signs	$0	
Landscaping	$319,979	
Playgrounds	$20,943	
Trails	$0	
Site Utilities		**$129,079**
Electrical Distribution	$30,296	
Gas Distribution	$29,075	
Water Distribution	$69,708	

Sub-Total:	$548,072
Sub-Total adjusted to ACF of: 104.00%	$569,995
Contingency @ 5.00 %	$28,500
SIOH @ 5.50 %	$32,917
Major M & R Total - Community Assessment - Phase B	**$631,411**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Community Assessment Phase A - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$2,608**
Roads & Streets	$2,608	
Sidewalks	$0	
Site Development		**$72,387**
Demo Site Utilities	$72,387	
Site Improvements		**$459,250**
Fencing/Gates	$58,599	
Landscaping	$358,764	
Playgrounds	$41,886	
Trails	$0	
Site Utilities		**$124,306**
Electrical Distribution	$30,296	
Gas Distribution	$27,675	
Water Distribution	$66,335	

Sub-Total:	$658,551
Sub-Total adjusted to ACF of: 104.00%	$684,893
Contingency @ 5.00 %	$34,245
SIOH @ 5.50 %	$39,553
Major M & R Total - Community Assessment - Phase A	**$758,690**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [ ] *Whole House Improvement*
- [ ] *Major M & R*
- [x] *Improvements and Remaining Repairs*

*Community Assessment Phase A - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$229,816**
Roads & Streets	$48,720	
Sidewalks	$181,096	
Site Development		**$0**
Demo Site Utilities	$0	
Site Improvements		**$186,424**
Fencing/Gates	$0	
Landscaping	$0	
Playgrounds	$113,046	
Trails	$73,378	
Site Utilities		**$0**
Electrical Distribution	$0	
Gas Distribution	$0	
Water Distribution	$0	

Sub-Total:	$416,240
Sub-Total adjusted to ACF of: 104.00%	$432,889
Contingency @ 5.00 %	$21,644
SIOH @ 5.50 %	$24,999
Remaining Improvements & Repairs Total - Community Assessment - P	**$479,533**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

2.2.12 Community Assessment Database Reports: Phases A,B,C,D,E,F,G,H, and J

The Database is a summary of community improvement costs by phase divided into three funding categories

(1) "Whole House Improvements,"
(2) "Major M&R Repairs," and
(3) "Improvements and Remaining Repairs."

The community improvements are further divided into four categories

(*i*) "Community Character and Identity,"
(*ii*) "Open Space Development,"
(*iii*) "Streetscape Improvements," and
(*iv*) "Utility Systems"

as per the narrative and figures of Sections 2.2.1 through 2.2.11.

Whole House cost estimates are also given in the database report "MFH Whole House Summary" in Chapter 4.

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Community Assessment Phase A - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$215,218**
Roads & Streets	$47,511	
Sidewalks	$167,707	
Site Development		**$67,018**
Demo Site Utilities	$67,018	
Site Improvements		**$597,824**
Fencing/Gates	$54,248	
Landscaping	$332,189	
Playgrounds	$143,456	
Trails	$67,931	
Site Utilities		**$115,106**
Electrical Distribution	$28,052	
Gas Distribution	$25,631	
Water Distribution	$61,423	

Sub-Total:	$995,166
Sub-Total adjusted to ACF of: 104.00%	$1,034,972
Contingency @ 5.00 %	$51,749
SIOH @ 5.50 %	$59,770
Whole House Total - Community Assessment - Phase A	**$1,146,490**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Community Assessment Phase C - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$4,174**
Roads & Streets	$4,174	
Sidewalks	$0	
Site Development		**$104,102**
Demo Site Utilities	$104,102	
Site Improvements		**$446,928**
Fencing/Gates	$18,739	
Landscaping	$407,246	
Playgrounds	$20,943	
Trails	$0	
Site Utilities		**$199,469**
Electrical Distribution	$48,473	
Gas Distribution	$44,848	
Water Distribution	$106,149	

Sub-Total:	$754,672
Sub-Total adjusted to ACF of: 104.00%	$784,859
Contingency @ 5.00 %	$39,243
SIOH @ 5.50 %	$45,326
Major M & R Total - Community Assessment - Phase C	**$869,428**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [ ] *Whole House Improvement*
- [ ] *Major M & R*
- [x] *Improvements and Remaining Repairs*

*Community Assessment Phase C - Summary Cost Estimate**

Work Item	Sub-Total	Total
Pavements		**$406,125**
Roads & Streets	$131,544	
Sidewalks	$274,581	
Site Development		**$0**
Demo Site Utilities	$0	
Site Improvements		**$128,732**
Fencing/Gates	$0	
Landscaping	$0	
Playgrounds	$62,830	
Trails	$65,902	
Site Utilities		**$0**
Electrical Distribution	$0	
Gas Distribution	$0	
Water Distribution	$0	

Sub-Total:	$534,857
Sub-Total adjusted to ACF of: 104.00%	$556,251
Contingency @ 5.00 %	$27,813
SIOH @ 5.50 %	$32,123
Remaining Improvements & Repairs Total - Community Assessment - P	**$616,187**

2001 Dollars

* See Detailed Cost Estimate for Back-Up Data

Section 2.4
Rank Distribution Site Plans

2.4 Rank Distribution Site Plans

The following site plans (see figures 2.13 and 2.14) indicate the existing and proposed distribution of unit rank assignments in the current housing inventory. Unit assignments are based on the projected housing market analysis discussed in the Housing Requirements of Section 2.3.

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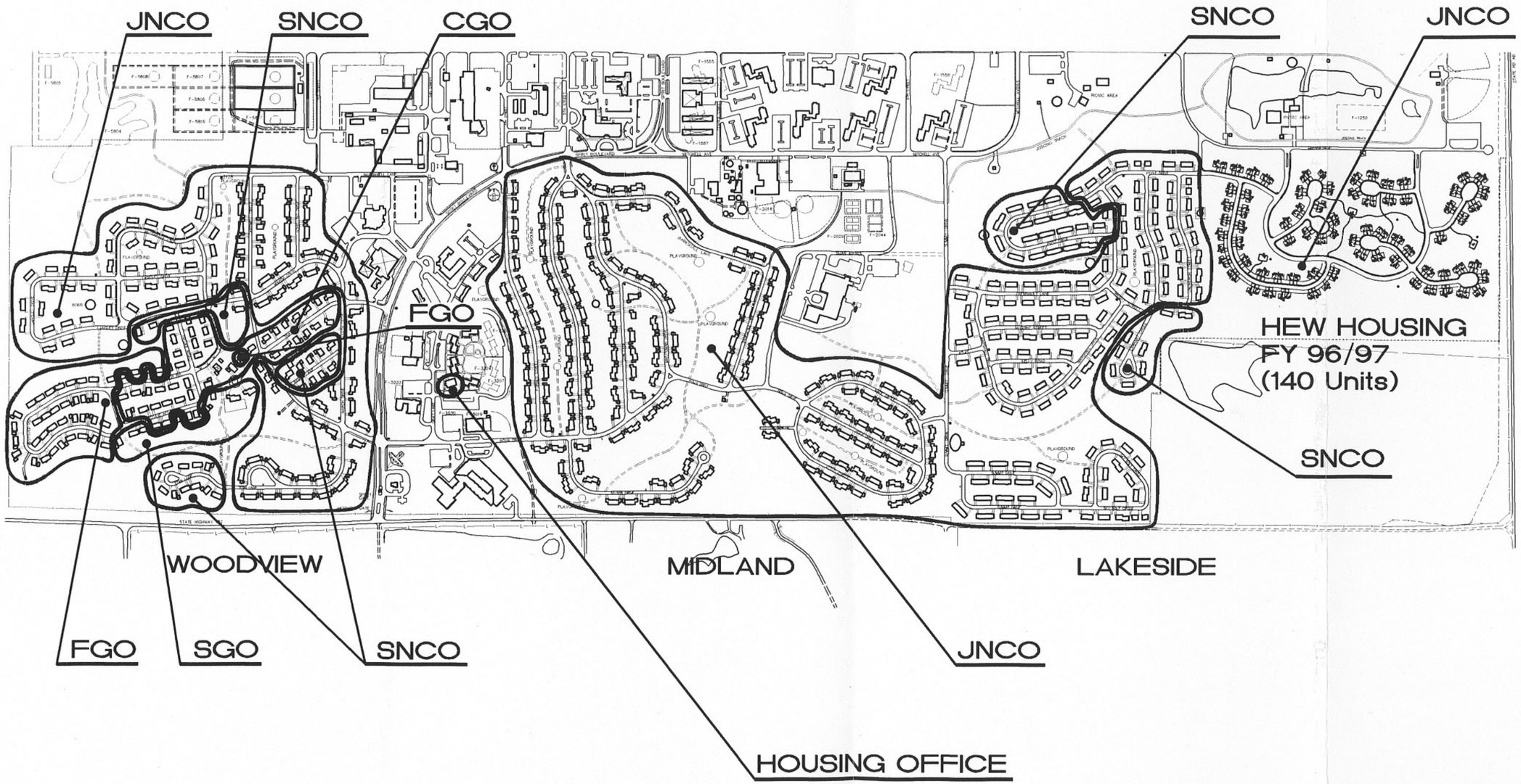

North

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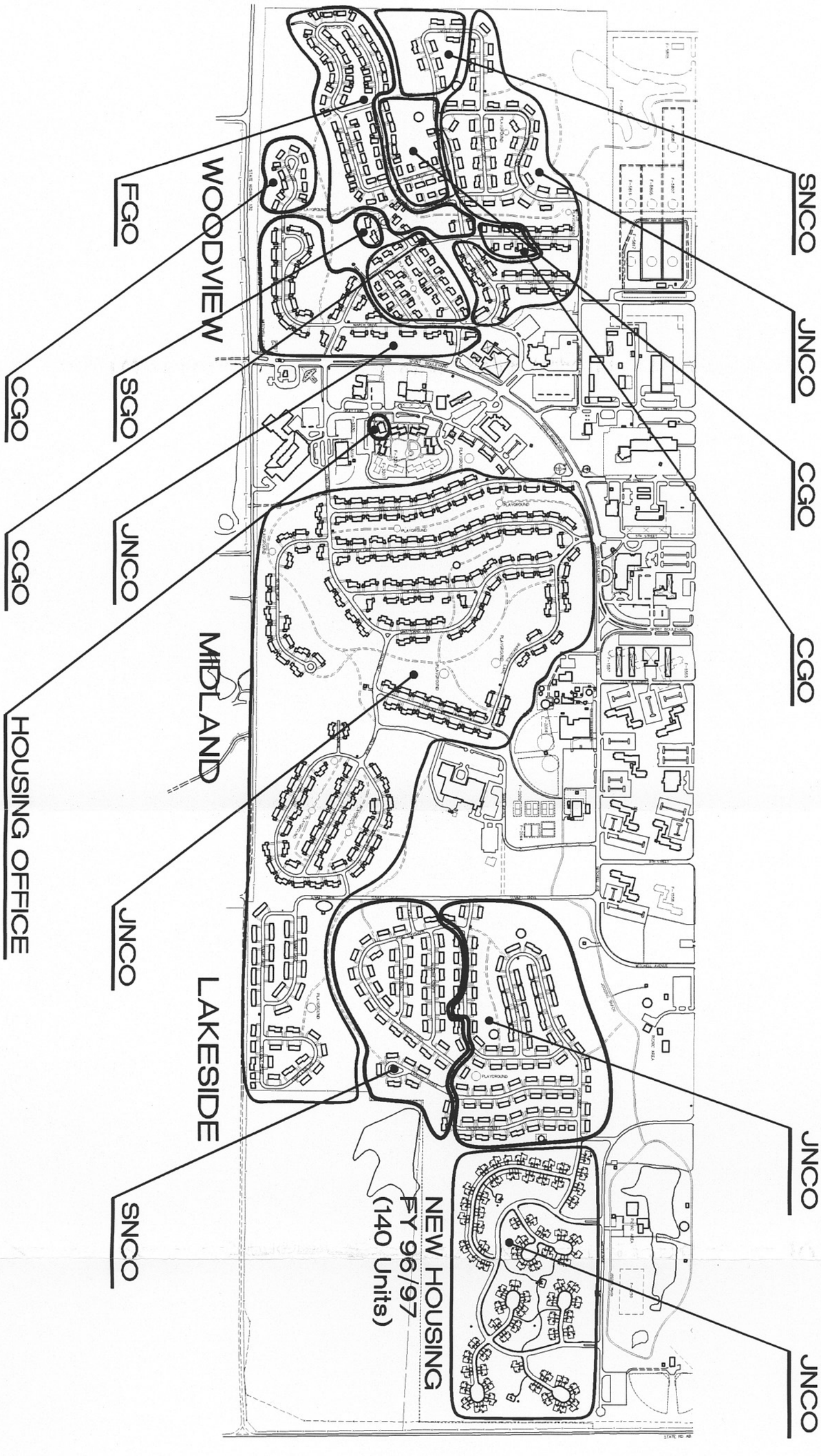
GRAPHIC SCALE

Existing Rank Distribution Site Plan

Whiteman AFB, Missouri

Fig. 2.13

Section 2.5
Base Family
Housing Reduction Plan



Proposed Rank Distribution Site Plan

Whiteman AFB, Missouri

0 400' 800' 1200' 1600'

GRAPHIC SCALE

North

Fig. 2.14

2.5 Base Family Housing Reduction Plan

2.5.1 Introduction

The current trend to reduce the size and cost of the Government in an effort to balance the budget is expected to have a major impact on the Military and Family Housing Community. The expected replacement of many non-combat positions with civilians through privatization will reduce the size of the military work force significantly.

In anticipation of possible reductions in the housing inventory, the AE was directed to study the reduction at 75%, 50%, and 25% of the projected HMA for 2001, since the exact reduction is unknown. The reduction has been assumed to be uniform in all grades. The concern is how to maintain a cohesive Family Housing Community if a large portion of the housing inventory is declared surplus and is subject to demolition.

An obvious goal is to keep the newest units that would require the least cost to maintain or renovate and to demolish the older units which would be the most expensive to maintain or renovate. However, using this criterion alone may cause large gaps in the neighborhoods and destroy the cohesiveness of the community. Consequently, this study was initiated to suggest housing site plans which, if necessary, could be implemented at any of the three levels of reduction and cause the least disruption to the Housing Community.

The progression of the proposed housing reduction plans from 75% to 25% of the projected HMA for 2001 reduces the housing area from three neighborhoods to two. In the consolidation, the Woodview Neighborhood contains primarily officer housing, while the Lakeside Neighborhood, with the new FY96/97 housing, contains JNCO and SNCO housing.

In studying the various levels of reduction, the reference point, the 100% point, is the projected HMA for year 2001 (see Table 2.1, Net MFH Requirements: 2001). For each reduction level as a percentage of projected HMA 2001 studied, two tables and a site plan are given.

- Housing Inventory Reduction:
  100% of Projected HMA 2001
  (tables 2.1 &2.2, figure 2.14, are the reference point)

- Housing Inventory Reduction:
  75% of Projected HMA 2001
  (tables 2.4 &2.5, figure 2.15)

- Housing Inventory Reduction:
  50% of Projected HMA 2001
  (tables 2.6 &2.7, figure 2.16)

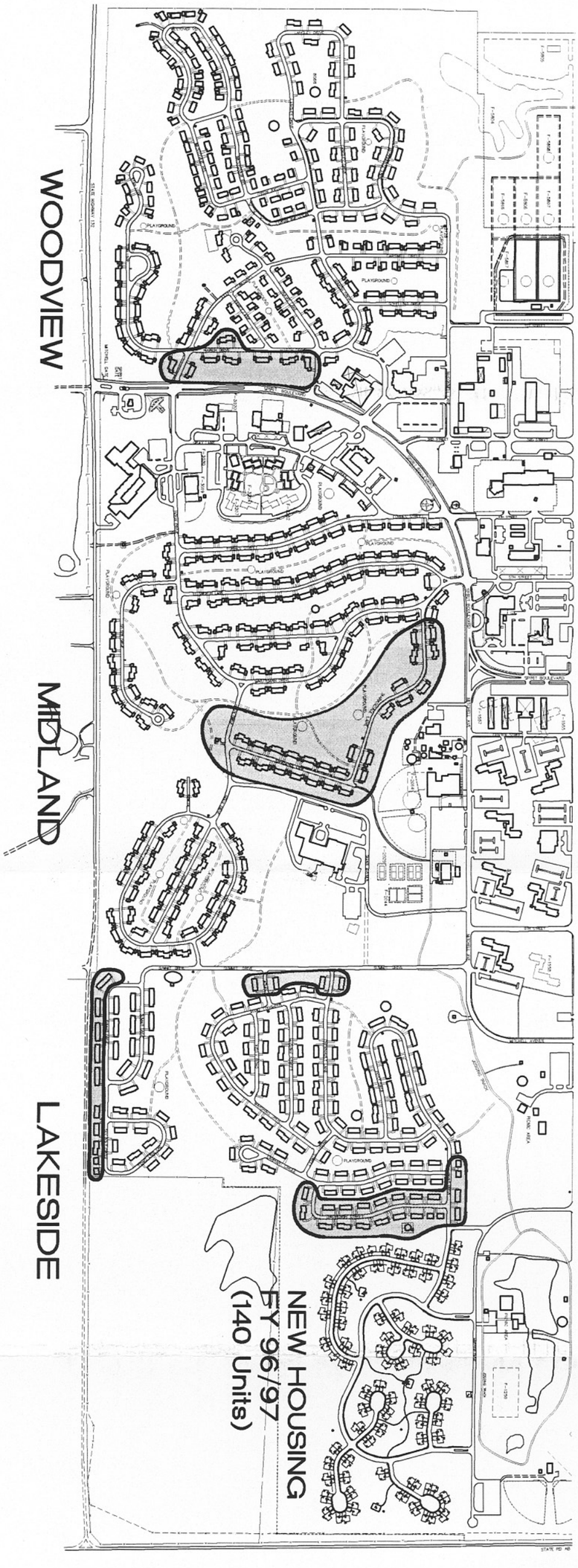
- Housing Inventory Reduction:
  25% of Projected HMA 2001
  (tables 2.8 &2.9, figure 2.17)

Table 2.4 Housing Inventory Reduction to 75% of Projected HMA 2001
Whiteman Air Force Base, Missouri

	Number of Bedrooms			
Rank Group	**Two or Less**	**Three**	**Four or More**	**Total**
GO	0	0	0	0
SGO	0	0	5	5
FGO	0	37	11	48
CGO	38	28	10	76
Officer Subtotal	38	65	26	129
SNCO	21	66	19	106
JNCO	378	131	52	571
E1-E3	208	0	0	208
Enlisted Subtotal	607	197	71	875
Total	645	262	97	1004

Table 2.5 Mismatches: Deficits (Surplus) to 75% of Projected HMA 2001
Whiteman Air Force Base, Missouri

	Number of Bedrooms						
Rank Group	**Two or Less**		**Three**		**Four or More**		**Total**
SGO	0		0		1	2-M12 1-M13 1-M14	1
FGO	0		(1)	31-C7 7-C8	0	7-C8 4-C9	(1)
CGO	4	16-M9 18-M10	0	28-C7	(1)	11-C8	3
Officer Subtotal	4		(1)		0		3
SNCO	0	21-C6	0	66-C2	(1)	20-C3	(1)
JNCO	5	87-A/B/C 136-C2 41-C6 104-M1 92-M2 20-M3 85-M4 14-M5 2-M7	2	4-C1 20-C5 49-D/E 14-M6 18-M8	0	24-C3 24-C4 4-G	7
Enlisted Subtotal	5		2		(1)		6
Total	9		1		(1)		9



Housing Inventory Reduction: 75% Of Projected HMA To Remain

Whiteman AFB, Missouri

0 400' 800' 1200' 1600'

GRAPHIC SCALE

North

Fig. 2.15

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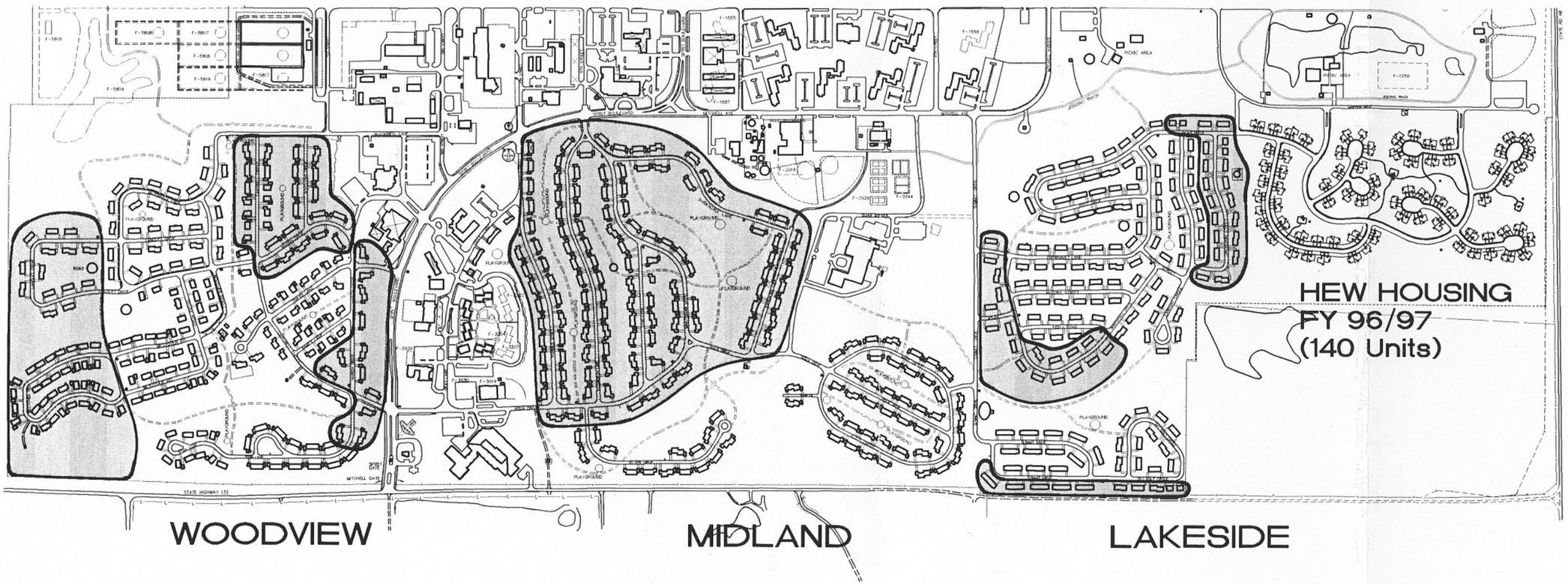
Table 2.6 Housing Inventory Reduction to 50% of Projected HMA 2001
Whiteman Air Force Base, Missouri

	Number of Bedrooms			
Rank Group	**Two or Less**	**Three**	**Four or More**	**Total**
GO	0	0	0	0
SGO	0	0	3	3
FGO	0	24	7	31
CGO	25	18	7	50
Officer Subtotal	25	42	17	84
SNCO	14	44	12	70
JNCO	252	88	35	375
E1-E3	139	0	0	139
Enlisted Subtotal	405	132	47	584
Total	430	174	64	668

Table 2.7 Mismatches: Deficits (Surplus) to 50% of Projected HMA 2001
Whiteman Air Force Base, Missouri

	Number of Bedrooms						
Rank Group	**Two or Less**		**Three**		**Four or More**		**Total**
SGO	0		0		0	1-M12 1-M13 1-M14	0
FGO	0		0	24-C7	0	6-C8 1-M12	0
CGO	(2)	11-M9 16-M10	2	6-C7 10-C8	0	7-C8	0
Officer Subtotal	(2)		2		0		0
SNCO	0	14-C6	2	42-C2	0	12-C3	2
JNCO	0	87-A/B/C 138-C2 11-C4 32-C6 30-M1 38-M2 6-M3 41-M4 6-M5 2-M7	(4)	2-C1 20-C5 49-D/E 20-M6	0	18-C3 13-C4 4-G	(4)
Enlisted Subtotal	0		(2)		0		(2)
Total	(2)		0		0		(2)



LEGEND

HOUSING TO BE DELETED FROM INVENTORY

North

0 400' 800' 1200' 1600'

GRAPHIC SCALE

Housing Inventory Reduction: 50% Of Projected HMA To Remain

Whiteman AFB, Missouri

Fig. 2.16

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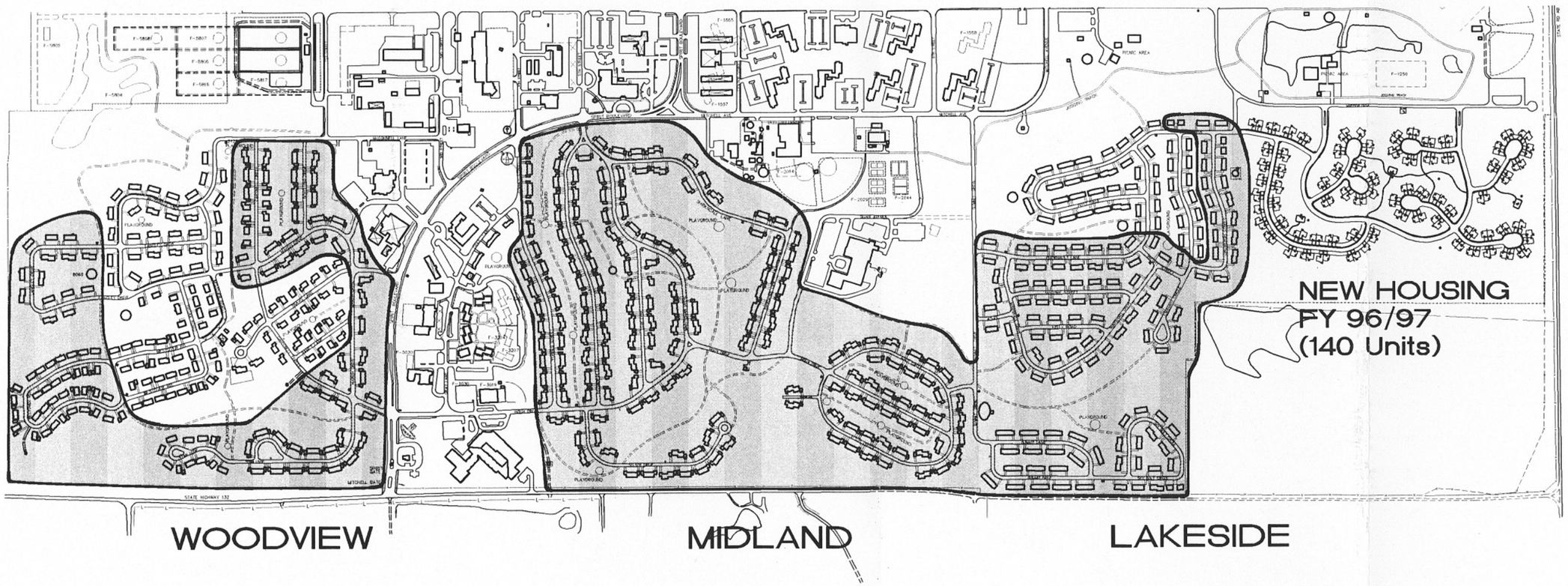
Table 2.8 Housing Inventory Reduction to 25% of Projected HMA 2001
Whiteman Air Force Base, Missouri

	Number of Bedrooms			
Rank Group	**Two or Less**	**Three**	**Four or More**	**Total**
GO	0	0	0	0
SGO	0	0	2	2
FGO	0	12	4	16
CGO	12	10	3	25
Officer Subtotal	12	22	9	43
SNCO	7	22	6	35
JNCO	126	44	17	187
E1-E3	69	0	0	69
Enlisted Subtotal	202	66	23	291
Total	214	88	32	334

Table 2.9 Mismatches: Deficits (Surplus) to 25% of Projected HMA 2001
Whiteman Air Force Base, Missouri

	Number of Bedrooms						
Rank Group	**Two or Less**		**Three**		**Four or More**		**Total**
SGO	0		0		0	1-M13 1-M14	0
FGO	0		0	5-C7 7-C8	0	4-C8	0
CGO	(9)	10-M9 11-M10	0	10-C7	0	3-C8	(9)
Officer Subtotal	(9)		0		0		(9)
SNCO	0	7-C6	0	22-C2	0	6-C3	0
JNCO	0	87-A/B/C 62-C2 5-C5 41-C6	(14)	9-C5 49-D/E	13	4-G	(1)
Enlisted Subtotal	0		(14)		13		(1)
Total	(9)		(14)		13		(10)



HOUSING TO BE DELETED FROM INVENTORY

North

0 400' 800' 1200' 1600'

GRAPHIC SCALE

Housing Inventory Reduction: 25% Of Projected HMA To Remain

Whiteman AFB, Missouri

Fig. 2.17

Chapter 3
Unit Improvement Plans

CHAPTER 3
UNIT IMPROVEMENTS PLANS

3.1 Introduction

3.1.1 Unit Improvement Overview

A primary objective of this study is to revitalize the existing housing units to bring them up to contemporary private sector standards while extending their useful life an additional 25 years. Accordingly, the findings and solutions presented here can greatly influence the quality of life for USAF personnel well into the 21st century

Whiteman AFB is divided into two housing types: Appropriated housing (designated by an 'M' prefix) and Capehart housing (designated by a 'C' prefix). The Capehart housing is located at the north and south sides of the base housing area.

Whiteman is also divided into four distinct housing neighborhoods: Woodview (314 units), Midland (351 units), Lakeside (324 units), and New Housing (140 units). In every neighborhood except New Housing, one unit of each unit type was surveyed; the units surveyed are identified in Table 3.1 below.

Each unit surveyed was given a Condition Assessment Matrix Rating (CAMR) based on the scale:

1 = Major maintenance/renovation required
2 = Moderate maintenance/ renovation required
3 = Minor maintenance/ renovation required
4 = Meets Whole House Standards
5 = Exceeds Whole House Standards.

This scale was first used in assessing the condition of the housing unit against each work item identified in the Military Family Housing Community Database Users Guide and in the unit summary cost estimates. The CAMR is the average of all work item ratings. See Section 3.1.6.3 for definitions of these work items.

3.1.2 Organization

Chapter 3 – Unit Improvement Plans

- Section 3.1 – Introduction
- Section 3.2 – Existing Unit Types Previously Constructed and/or Designed by Others
- Section 3.3 – New Housing Units Previously Constructed by Others
- Section 3.4 – Replacement/New Housing
- Section 3.5 – Community Assessment Database Reports

Table 3.1 Housing Units Surveyed

Neighbor-hood	Existing Unit Types	Address	# BRs	CAMR
Midland	M-1	237 Selser Drive	2	3.64
Midland	M-2	245 Selser Drive	3	3.62
Woodview	M-5	210 Carswell Cr.	2	3.52
Woodview	M-6	110 Titan Loop	3	3.62
Woodview	M-9	103 Travis Lane	3	3.66
Woodview	M-12	300 March Drive	4	3.71
Woodview	M-13	120 Travis lane	4	3.83
Woodview	M-14	122 Travis Lane*	4	3.84
Lakeside	C-2	815 Marshall Dr.	3	3.68
Lakeside/ Woodview	C-3	811 Marshall Dr.	4	3.76
Lakeside	C-3A	836 Earhart	4	3.92
Lakeside	C-4	837 Summit Dr.	4	3.66
Woodview	C-6	729 McConnel Ln	3	3.65
Woodview	C-7	851 Westover Rd.	3	3.68
Woodview	C-8	765 Westover Rd.	4	3.68
Woodview	C-8A	770 Westover Rd.	4	3.69
Woodview	C-9	839 Westover Rd.	4	3.76

* M-14 not inspected, but assumed similar to M-13

Section 3.2 contains Whole House designs by others including the 1990 and 1998 Post Acquisition Improvement Projects (PAIP). Section 3.4 contains Whole House designs prepared as part of the scope of this study. The organization of material presented for each unit type is as follows.

1. Analysis of Existing Conditions
   - Architectural Exterior
   - Architectural Interior
   - Mechanical
   - Electrical
2. Recommendations
   - Architectural Exterior
   - Architectural Interior
   - Mechanical
   - Electrical

3. Exterior and Interior Photographs
4. Cost Estimates
   - Whole House Improvements
   - Major Maintenance & Repairs
   - Improvements and Remaining Repairs
5. Existing Floor Plan
6. Proposed Floor Plan
7. Proposed Elevations

3.1.3 Area Analysis

In Sections 3.2 "Existing Unit Types Previously Constructed and/or Designed by Others," 3.3 " New Housing Units Previously Constructed by Others," and Section 3.4 "Replacement/New Housing," the proposed plans have been prepared in accordance with the "Air Force Family Housing Guide." A Tabulation of Net Square Feet (NSF) for each unit type is shown on the drawings.

3.1.4 Energy-Efficient Design

The reduction of energy consumption within the MFH units is another goal of this study. This can be accomplished by the using the following guidelines:

(1) *Design Guide for MFH: Energy Efficient Revitalization and New Construction* and
(2) *Retrofit Guide for MFH: Energy-Efficient Wetherization and Improvements*

prepared for the Air Force in 1996 and 1997 respectively, and by implementing the mechanical and electrical improvements below.

Mechanical

Replace the older conventional style thermostats with programmable types that have night setback and auto-reset features. Verify adequate insulation levels in attics and walls. Replace all of the older, less efficient equipment, (such as furnaces, air-conditioning systems, water heaters, and dishwashers) with the latest energy-efficient models that meet or exceed the American Society of Heating, Refrigeration, and Air-conditioning Engineers (ASHRAE) Standard 90A. This standard calls out specific minimum coefficients of performance (COP) and Energy Efficient Ratios (EER) for all heating and cooling equipment. In addition to these minimum standards for heating, ventilating, and air-conditioning equipment, install "condensing type" furnaces that eliminate standard flues and provide operating efficiencies of 90-93 percent (standard atmospheric furnaces operate at 75-80 percent).

The ASHRAE standard also specifies minimum insulation on water heaters, dishwashers, and ductwork installed in unconditioned spaces.

Use toilets with 1.5 gallons/flush. Install flow restrictors on showerheads. This will reduce the standard 3 GPM water output for a shower to approximately 1.5 GPM. A substantial saving in water and energy could be obtained with these changes.

Electrical

For the lighting of all kitchens, use fluorescent, energy-efficient lamps and ballast. For other areas all lighting should be energy efficient to the extent possible. Make the lighting levels for all spaces as outlined in Illuminating Engineering Society (IES) handbook. Where possible, use motion sensors to turn off lights.

In recommending upgrades to the electrical system of the housing units, the current (at the time of renovation) National Electrical Code (NEC) should be used in making renovations. In no case should electrical service entrances be less than 200 Amps.

Initiate an energy management program to monitor energy usage; to establish, implement, and manage occupant guidelines; to maintain system equipment and the integrity of the building envelope; and to develop future energy projects.

3.1.5 Units for Barrier Free Design

Mandated by the Americans with Disabilities Act (ADA), the Air Force Family Housing Guide requires that design and construction of all common areas (such as walks, streets, parking, play areas, and common entrances to multi-use facilities) are accessible to the handicapped. Barrier Free Features for housing, for either newly constructed or readily adaptable renovated units, are identified below. A minimum of 5% of units should be identified as adaptable for handicapped.

Unit Improvements

Key reasonable accommodations for wheel-chair handicapped individuals within a typical dwelling unit include:

Utility Room

- Install washer and dryer—a handicap set with front openings.
- Replace standard interior doors with pocket doors using extra long "C" grip handles.

Kitchen

- Install handicap range with oven-front knobs and side-opening doors
- Provide a 6-½ inch deep sink and drop sink to 34" with drain in rear. Provide disposal unit with an ADA switch.
- Provide a work area 34" high and 30" wide that is open under the counter.
- Move range and refrigerator near 30" under-the-counter openings.
- Cut cabinetry for (1) 30" open workspace.
- Provide a 30" open work space below the sink.
- Provide 8" shelves between wall cabinetry and base cabinetry for ease of reach.
- Provide ADA dishwasher & switches (including disposal).
- Replace cabinet handles with extra-long "C" grip.
- Patch and paint demolished area.

Bathroom

- Move handicap lavatory next to tub; use handicap cantilever sink.
- Remove all cabinetry.
- Provide handicap tilted medicine cabinet.
- Provide seat in tub.
- Provide higher handicap seat for water closet.
- Provide (4) grab bars in tub area.
- Move control valves in tub area to lower area offset.
- Provide (1) grab bar for each water closet.
- Replace standard interior doors with pocket doors using extra long "C" grip handles.

Closets (walk in only)

- Remove clothes rod from one side of closet.
- Replace standard interior doors with pocket doors using extra long "C" grip handles.

Doors

- Replace all standard doorknobs with lever handles.

Exterior

- Provide (3) platforms and ramps for screen area, Carport entrance, and front entrance.

Table 3.1 Barrier Free Adaptable Units

Area	Unit Type	# of Bedrooms	Grade
New Housing Area	C-HC F-HC G-HC	2 3 4	E-1 – E-6 E-1 – E-6 E-1 – E-6
Existing housing Capehart appropriated	All units are capable of handicap conversions. Washer/dryer will need to be relocated to ground floor from basement where applicable.		

Standards

- Uniform Federal Accessibility Standards (UFAS).
- ANSI A 117.1 "Providing Accessibility and Usability for Physically Handicapped People."

Barrier Free Cost Estimates

Handicapped unit types, C-HC, F-HC, and G-HC, are New Housing Constructed by Others, Section 3.3. the handicap revisions detailed above for a typical 3-bedroom and 2-bath unit would lead to a probable cost of $12,600 (including patch work) over and above the Whole House unit upgrade. A

cost that applies in adapting other units (e.g., existing Capehart, Appropriated, and proposed New Housing of Section 3.4) to a Barrier Free unit.

3.1.6 Basis for Cost Estimates

3.1.6.1 Introduction

For each Unit Improvement Plan, separate estimates are prepared for "Whole House Improvements," "Major Maintenance & Repairs" and "Remaining Improvements and Repairs." The distinction between these funding categories is as follows:

- Whole House Improvements is the combination of repairs and improvements proposed in this HCP.
- Major Maintenance & Repairs is the repair work that can be done as a separate project without compromising the Whole House / Whole Neighborhood Plan.
- Improvements and Remaining Repairs is the work to be done after a repair project to achieve the total Whole House / Whole Neighborhood Plan.

The unit cost construction estimates, displayed with the proposed floor plan for each unit, were established using a quantity take off (QTO) system of estimating and costs based on the U.S. Air Force Parametric Cost Engineering System (PACES) assembly database. The PACES assembly database gives average direct costs based on the U.S. Army Corps of Engineers' *Unit Price Book* (UPB). Overhead, profit and escalation amounts are added to the direct costs from the PACES assembly database to give the subtotal costs. FY 2001 was used as a base year for the escalation factor.

The *Area Cost Factor Indexes* are used to project the construction cost subtotals to Whiteman Air Force Base, Missouri. The "Contingency" and "SIOH" are then added to the "Construction Cost" to give the programmed amount.

Design fees, surveys, and other similar costs are not included.

For clarity and ease of use, unit costs for each funding category are displayed in a summary format with each UIP, while only detailed Whole House cost information is included in Appendix III. The outline in Section 3.1.6.3, Summary of Work Items, lists the types of factors that are included in the various line item costs. The format follows the established HCP Data Base Summary outline.

Replacement Cost estimates were also developed using the PACES assembly database with overhead, profit, escalation, location, contingency, and SIOH applied to give the total project cost.

3.1.6.2 Funding Alternatives and Budget Planning

Major Maintenance & Repair (Major M&R) cost estimates are included in this HCP update to provide the Base Civil Engineer and programmers with essential costs on alternative means of accomplishing major work items in either community or unit improvements. The items shown in this section are still part of the Whole House / Whole Neighborhood projects. However, they are also items that could be accomplished using Major M&R funds. This approach provides a dual plan for programmers to comprehensively develop and manage their Investment and Major M&R budgets using the same phased plan approach to optimize all available funds to accomplish the worst conditions first.

The Major Maintenance & Repair cost estimates represent major work items relating to the repair or replacement of existing elements of the community infrastructure or individual unit types. These estimates do not include routine maintenance or change of occupancy maintenance items. For example:

- If cost estimates are shown for improvement of <u>existing</u> sidewalks under Whole House, this same repair will also be included under Major Maintenance & Repair cost estimates.

- If, on the other hand, cost estimates are shown for new sidewalks, as opposed to repair of sidewalks, these costs will only be included under Whole House / Whole Neighborhood and will not be included under Major Maintenance & Repair estimates.

- If a unit improvement plan recommends an existing kitchen undergo a major renovation without an increase in size or a change in location within the unit, the costs associated with this major work item will be included in Whole House, and will also be included under Major Maintenance & Repair.

- If, on the other hand, an existing kitchen was proposed to be enlarged or relocated within the unit, this will only be reflected as a Whole Hose cost and will not be included as a Major Maintenance & Repair cost.

Due to project size differential, Major Maintenance & Repair cost estimates will generally reflect different per unit costs than those shown in the detailed Whole House cost estimates.

Improvements and Remaining Repairs cost estimates reflect those elements of a community or unit improvement project that remain to be accomplished if Major Maintenance & Repairs, rather than Whole House improvements, are undertaken and completed using major M&R funds. Again, costs shown in these estimates will also generally reflect a different value than those shown for the complete Whole House / Whole Neighborhood project due to scope differences.

The "Major Maintenance & Repairs" and "Improvements and Remaining Repairs" cost estimates also serve to provide a comparison of the cost differential between projects accomplished entirely by investment dollars versus incremental repairs.

3.1.6.3 Summary of Work Items

The organization of work items for unit cost estimates follow the categories established in the Military Family Housing Community Plan Database Users Guide.

Roof: The costs included in this category represent all new roofing work including: roof framing, sheathing, insulation, roof coverings, fascia, flashing, gutters and downspouts.

Structural – Foundation/Exterior Walls: The costs included in this category represent the following: wall foundations, slab on grade, exterior CMU and wood stud walls, insulation, drywall, stucco, soffits, windows, doors, and related demolition.

Structural – Other Building Elements: The costs included in this category represent the following: garage addition, garage door, patio, storage areas, trash enclosures, privacy fencing, landscaping and related demolition.

Interior – Mechanical: The costs included in this category represent all work associated with plumbing and HVAC in the entire unit, including added areas. Items of work include equipment, controls, piping, fittings, insulation, water heaters, heat pumps, ductwork and accessories, as well as their associated installation costs. All related demolition is also included.

Interior – Electrical: The costs included in this category represent all equipment, controls, wiring, devices, panels, and fixtures, as well as related installation costs. All related demolition is also included.

Interiors, General – All but Kitchen, Baths and Laundry: The costs included in this category represent all work relating to renovation and plan changes within the original footprint of the unit, exclusive of kitchen, baths and laundry. This includes interior wall framing, gypsum board, stucco, interior doors, hardware, paint, flooring, base, ceilings, shelving, window shutters, and related demolition.

Interiors – Kitchen: The costs included in this category represent all work associated with the

renovated kitchens. This includes interior wall framing, gypsum board, stucco, interior doors, hardware, cabinets, shelving, paint, flooring, base, ceilings, plumbing fixtures, vent hood, garbage disposal, window shutters, and related demolition.

Interiors – Bathroom 1, 2, & 3: The costs included in these categories represent all work associated with the new and renovated bathrooms. This includes interior wall framing, gypsum board, stucco, interior doors, hardware, cabinets, shelving, paint, tile, flooring, base, ceilings, plumbing fixtures, window shutters, and related demolition.

Interiors – Laundry Room: The cost included in this category represents all work associated with the renovated laundry rooms. This includes interior wall framing, gypsum board, stucco, interior doors, hardware, shelving, paint, flooring, base, and related demolition.

Special – Assessments: Costs included in this category include selective building demolition necessitated by the presence of hazardous materials such as lead-based paint or asbestos.

- Whether or not an asbestos hazard is suspected is recorded in the "Environmental Issues" portion of the "Analysis of Existing Conditions" in each Unit Improvement Plan in Sections 3.2.2 through 3.2.27,
- If hazardous materials are detected, further field analysis of each unit will be required to determine the extent of the asbestos or lead-based paint hazard and the cost of mitigation or abatement.

House Sitework: The costs included in this line item represent sidewalks, driveways, utility service, and parking pads.

3.1.7 Economic Analysis

There are two family housing improvement cost thresholds which, when exceeded, require preparing a detailed economic analysis. The first threshold pertains to the estimated cost for individual housing units, and the second applies to the average housing unit cost for a specific project. For future programming considerations, this Housing Community Plan indicates where these thresholds may be exceeded based on the approximations below. However, a detailed analysis is required for each project developed from this plan to verify requirement(s) for an associated economic analysis.

Recent guidance from the Congress pertains to the threshold for individual unit improvement cost. The base must prepare an economic analysis for any unit where its estimated revitalization costs exceed $50,000 multiplied by the Area Cost Factor (ACF). For Whiteman, AFB, this threshold currently equals ($50,000) x 1.04 = $52,000.

The second housing revitalization threshold pertains to the average housing unit cost for a specific project. The base must prepare an economic analysis when the average cost of all units in a project exceeds 70% of their replacement costs calculated using Replacement Unit Plans developed by the A/E.

Each unit whose estimated improvement cost exceeds this adjusted threshold has been identified in Table 3.3 on the next page.

The next step in evaluating renovation versus replacement costs is to compare community cost in addition to housing unit costs utilizing Phase 'B' (see Chapter 4). As a representative project, the upgrading of 52 units (M-5, M-6, M-8, M-9, M-10, and M-12) was used. Three project packages were considered (1) New Replacement Housing (new site), (2) Renovation of Existing Units, and (3) Replacement Housing within the existing infrastructure (i.e., Infill). Contingency and SIOH were not incorporated in the cost analysis.

	Unit Costs (52 total)	Community Cost	Total
Replacement (New Site)	$5,604,620	$2,574,000	$8,178,620
Renovation Existing Units	$4,243,269	$ 992,582	$5,235,851
Replacement (Infill)	$5,604,620	$ 992,582	$6,597,202

Table 3.3 Replacement Cost Analysis*

HCP Ref. No.	Unit Type	U.I.P Cost Estimate	Replacement Cost Estimate @ 70%	$ Cost Exceed $52,000	$ Cost Exceeds 70% repl.
3.2.2	M-1	$61,460	$64,118	Yes	No
3.2.3	M-2	52,312	64,118	Yes	No
3.2.4	M-3	61,460	64,118	Yes	No
3.2.5	M-4	52,312	64,118	Yes	No
3.2.6	M-5	51,242	64,118	No	No
3.2.7	M-6	85,258	79,480	Yes	Yes
3.2.8	M-7	85,258	79,480	Yes	Yes
3.2.9	M-8	85,228	79,480	Yes	Yes
3.2.10	M-9	67,846	64,118	Yes	Yes
3.2.11	M-10	60,200	64,118	Yes	No
3.2.12	M-11	N/A	N/A	N/A	N/A
3.2.13	M-12	75,990	97,530	Yes	No
3.2.14	M-12B	N/A	N/A	N/A	N/A
3.2.15	M-13	14,685	106,968	No	No
3.2.16	M-14	40,916	132,137	No	No
3.2.17	C-1	77,607	79,480	Yes	No
3.2.18	C-2	77,607	79,480	Yes	No
3.2.19	C-3	83,632	89,414	Yes	No
.3.2.20	C-3A	N/A	N/A	N/A	N/A
3.2.21	C-3B	N/A	N/A	N/A	N/A
3.2.22	C-4	83,632	89,414	Yes	No
3.2.23	C-5	84,850	79,480	Yes	Yes
3.2.24	C-6	67,069	79,480	Yes	No
3.2.25	C-7	74,281	84,456	Yes	No
3.2.26	C-8	96,772	96,037	Yes	Yes
3.2.27	C-8A	N/A	N/A	N/A	N/A
3.2.28	C-9	79,924	106,968	Yes	No

* SIOH and Contingency Cost Factors not included

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Section 3.2
Existing Unit Types: Previously Constructed and/or Designed by Others

3.2 Existing Unit Types: Previously Designed and/or Constructed by Others

3.2.1 Introduction

Unit Improvement Plans in this section fall into one of the following categories:

- Plan was originally "Designed By Others" in the May 1992 family Housing Community Plan (HCP) prepared by Michael Baker Jr. Inc., Architects, Engineers, and Planners.

- Plan was originally "Designed By Others" through other sources such as Base Civil Engineering, Outside Contractors, or Design/Build Contractors.

Some unit improvement plans in the previous HCP may not appear in this section for one of the following reasons:

- Plan is no longer needed due to changes in Grade/Rank and bedroom requirements determined by the latest "Housing Market Analysis."

- Plan has been superseded by a later plan developed the Base or a Base Contractor.

- Economic Analysis determined that unit replacement was more feasible than renovation.

- The Base requested this firm to modify the plan while updating this HCP.

These plans not in this section have been filed in Appendix V for record purposes and future reference.

Acronyms

ACF	Area Cost Factor
BR	Bed Room
CAMR	Condition Assessment Matrix Rating
CMU	Concrete Masonry Unit
GFCI	Ground Fault Circuit Interrupter
GPM	Gallons Per Minute
HCP	Housing Community Plan
PAIP	Post Acquisition Improvement Project(s)
NCO	Non-Commissioned Officer
NEC	National Electrical Code
NSF	Net Square Feet
SIOH	Supervision, Inspection, & Overhead
UIP	Unit Improvement Plan

Military Rank or Grade Acronyms

GO = General Officer (O-7)
SGO = Senior Grade Officer (O-6)
FGO = Field Grade Officer (O-4 to O-5)
CGO = Company Grade Officer (O-1 to O-3)
SNCO = Senior Non-Commissioned Officer (E-7 to E-9)
= Senior NCO (E-7 to E-9)
JNCO = Junior Non-Commissioned Officer (E-1 to E-6)
= Junior NCO (E-1 to E-6)

Conventions used in Recommendations

In recommending upgrades to the electrical system of the housing units, the current (at the time of renovation) National Electrical Code (NEC) should be used in making renovations.

Cost Estimate Existing Unit Type Designation Distinct from Existing Unit Type in Section Heading

The cost estimate's existing unit type designation differs from the existing unit type identified in the Section heading for unit types M-1, M-2, M-5, M-6, and M-8.

This difference occurs when the existing unit type has some unrenovated units and some FY98 PAIP renovated. units. For example, the 132 units of Unit Type M-1 include 16 FY98 PAIP renovated units designated M-1B. If the proposed Whole House renovated unit type uses the PAIP M-1B floor plan, the cost estimate is identified as Unit Type "M-1B NCO2.1," while M-1, the original unit type, is the Section 3.2.2 existing unit type identification.

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3.2.2 Unit Type M-1 NCO2.1 Midland Neighborhood

Summary

237 Selser Drive Inspected

Built in 1957 (Appropriated)

Condition Assessment Matrix Rating: 3.64

Grades E-1 through E-6

2 Bedrooms, 1 Bath

950 NSF authorized
890 NSF existing
950 NSF proposed

Whole House renovation,
M-1B, 16 units – FY98 PAIP

3.2.2.1 Analysis of Existing Conditions

Each unit in this duplex has 2 bedrooms and 1 bath with an area of 890 NSF. Exterior construction is standard wood framing on CMU foundation wall with a crawlspace and a 2x10 inch floor joist. All 132 of these units are currently assigned to Junior NCOs. A Whole House renovation of 16 units was part of an FY98 PAIP creating unit type M-1B. The FY98 PAIP design followed the 1992 HCP Unit Improvement Plan.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- The carport is flat with a built-up roof.
- This unit does not have a patio or trash enclosure.
- Off-street parking is inadequate.
- Termite damage was detected.

Architectural Interior

- The kitchen cabinets are marginally adequate.
- The ceiling mounted exhaust fan is not adequate.
- The task lighting is poor.
- Bathrooms were recently refurbished.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor runs of the air-conditioner condensation drain may become a stumble hazard.
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

- No working clearance in front of electrical panels in mechanical closets.
- Lack of GFCI receptacles in proper locations along kitchen counter spaces.

3.2.2.2 Recommendations

M-1B, NCO2.1: With a minor addition, this unit will have the maximum authorized area of 950 NSF and will be suitable as 2-bedroom housing for Junior NCOs.

Architectural Exterior

- Construct a new kitchen/entry addition at the front of the unit to bring the area up to the allowed square footage.
- Remove existing carport, and construct a new garage with storage and trash enclosure.
- Construct a new gabled roof entry element over the front door to add visual relief and interest to the front of the unit.
- Provide a new concrete entrance stoop, sidewalks, and patio.
- Provide off-street parking for 2.5 cars per unit.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

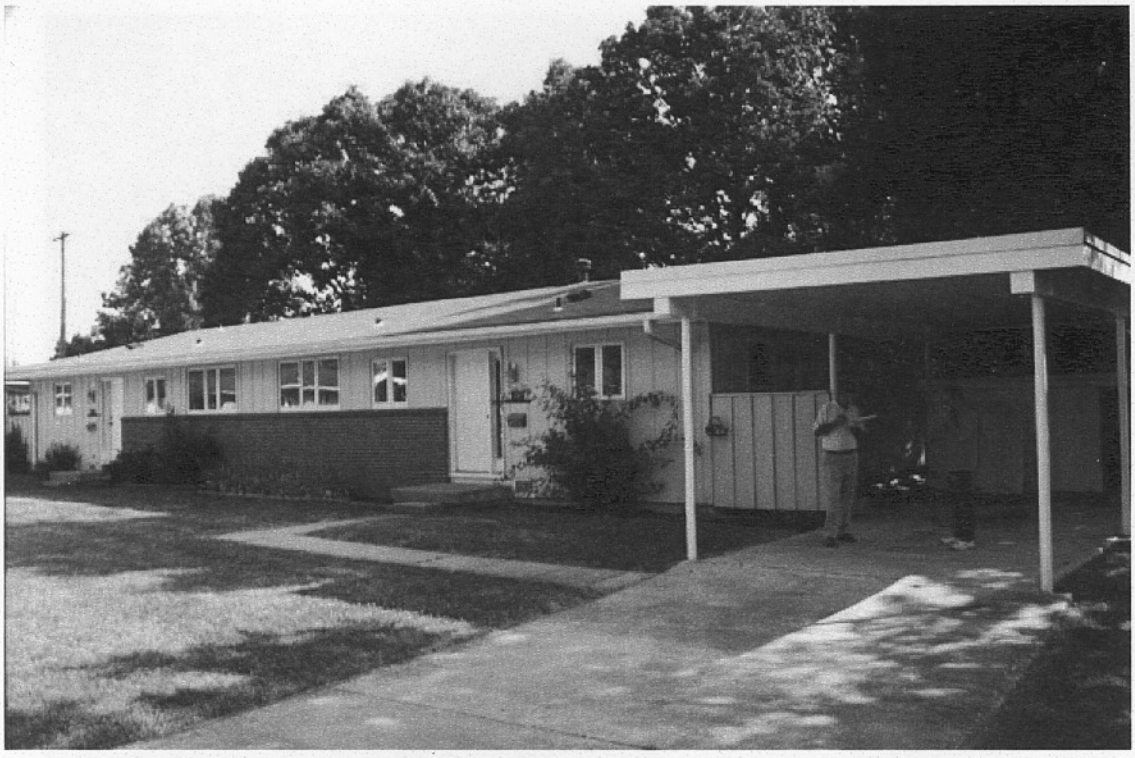
- Install new sheet vinyl flooring in kitchen, bathroom, and utility room.
- Install vinyl tiles at the entry, and install carpeting elsewhere.
- Remove existing kitchen cabinets.
- Provide new cabinets and plastic laminated countertops.
- Provide new deep sink with disposal, dishwasher, fixtures, and range with hood.
- Provide the bathroom with a new sink, fixtures, tub, and vanity.
- Insure bedroom windowsill height and window area meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

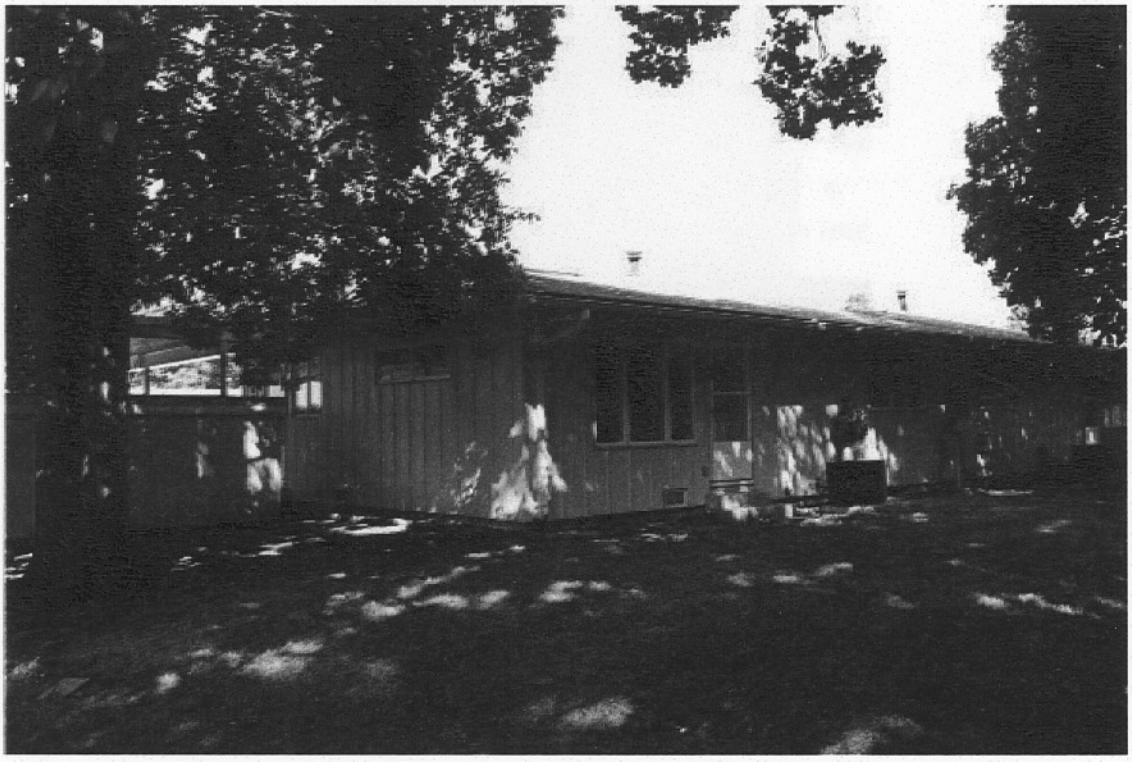
- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.
- Install proper water-saving plumbing fixtures and flow restrictors.
- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

- Relocate electrical panel to provide working clearance as per the current NEC.
- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles as per the current NEC.
- Provide two small appliance circuits for kitchen counter receptacles per the current NEC.

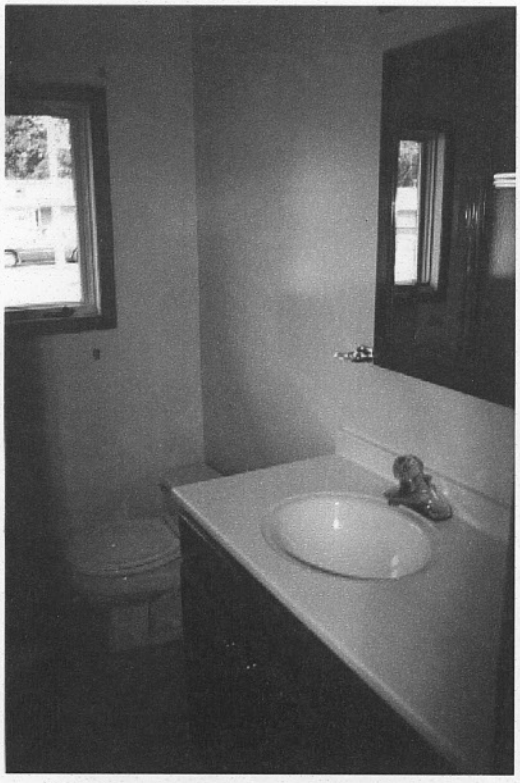


3.1 Unit Type M-1 - Front Elevation



3.2 Unit Type M-1 - Rear and Side Elevation

3.3 Unit Type M-1 - Kitchen



3.4 Unit Type M-1 - Bathroom

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type M-1B NCO 2.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$3,338
Interior - Mechanical	$3,062
Interiors - Bathroom #1	$3,107
Interiors - Kitchen	$8,834
Interiors - Laundry Room	$834
Interiors, General - All but Kitchen, Baths & Laundry	$5,579
Roof	$2,384
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$6,506
Structural - Other Building Elements	$20,583
Sub-Total:	$59,097
Sub-Total adjusted to ACF of: 104.00%	$61,460
Contingency @ 5.00 %	$3,073
SIOH @ 5.50 %	$3,549
Total - Unit Type M-1B NCO 2.1	$68,083

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	16
	C	2
	D	29
	E	54
	F	41
Total Quantity: UNIT TYPE M-1B NC		**142**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type M-1B NCO 2.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$2,079
Interior - Mechanical	$3,308
Interiors - Bathroom #1	$3,355
Interiors - Kitchen	$0
Interiors - Laundry Room	$900
Interiors, General - All but Kitchen, Baths & Laundry	$5,972
Roof	$0
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$584
Structural - Other Building Elements	$3,459
Sub-Total:	$24,527
Sub-Total adjusted to ACF of: 104.00%	$25,508
Contingency @ 5.00 %	$1,275
SIOH @ 5.50 %	$1,473
Total - Unit Type M-1B NCO 2.1	$28,257

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	16
	C	2
	D	29
	E	54
	F	41
Total Quantity: UNIT TYPE M-1B NC		**142**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type M-1B NCO 2.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$1,526
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Kitchen	$9,540
Interiors - Laundry Room	$0
Interiors, General - All but Kitchen, Baths & Laundry	$50
Roof	$2,574
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$6,436
Structural - Other Building Elements	$18,751
Sub-Total:	$38,877
Sub-Total adjusted to ACF of: 104.00%	$40,432
Contingency @ 5.00 %	$2,022
SIOH @ 5.50 %	$2,335
Total - Unit Type M-1B NCO 2.1	$44,789

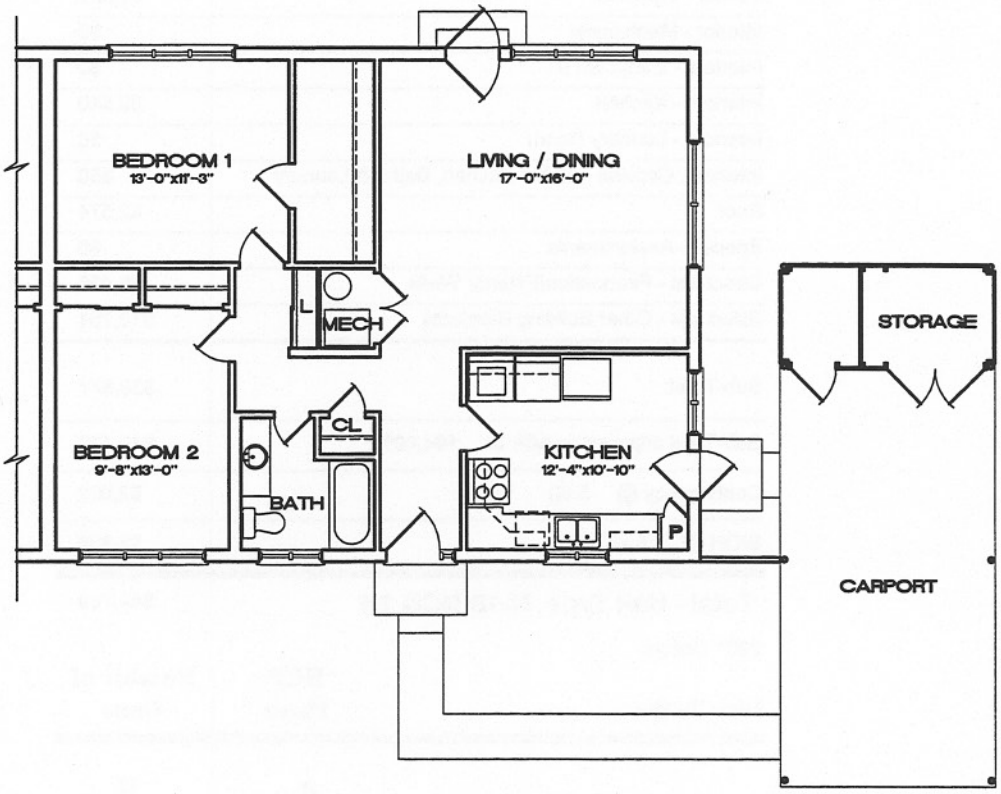
2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	16
	C	2
	D	29
	E	54
	F	41
Total Quantity: UNIT TYPE M-1B NC		**142**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.2 Unit Type M-1

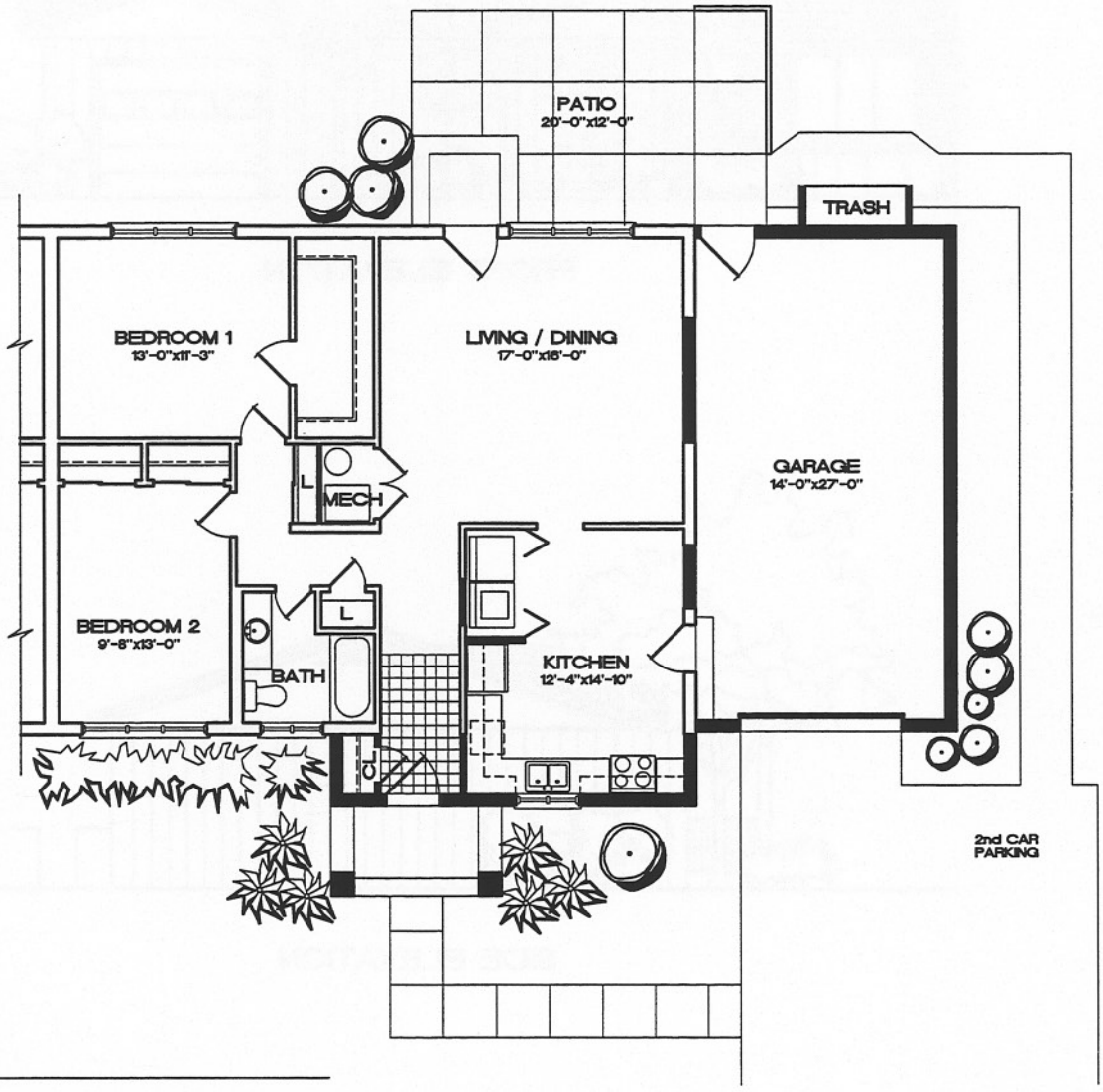


Unit Summary

Unit Type:	M-1, 2 Br.
Grade:	E1-E6
Existing Net Area:	890 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

EXISTING FLOOR PLAN



Unit Summary

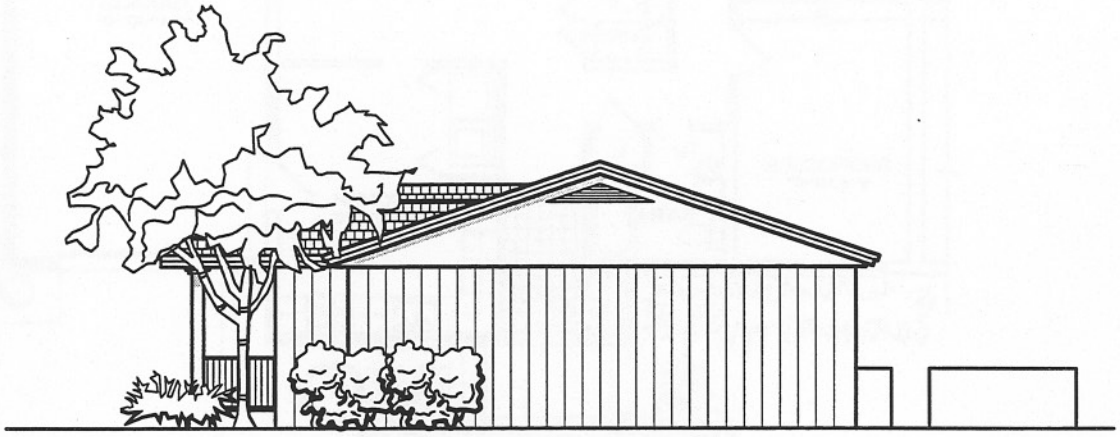
Unit Type:	M-1B NC02.1 2 Br.
Grade:	E1-E6
Proposed Net Area:	950 S.F.
Authorized Net Area:	950 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

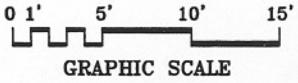
PROPOSED FLOOR PLAN

(FY 98 PAIP PLAN DESIGNED BY OTHERS)

FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE NCO2.1 ELEVATIONS

(FY 98 PAIP DESIGNED BY OTHERS)

3.2.3 Unit Type M-2 NCO2.2 Midland Neighborhood

Summary

245 Selser Drive Inspected

Built in 1957 (Appropriated)

Condition Assessment Matrix Rating: 3.62

Grades E-1 through E-6

3 Bedrooms, 1 Bath converted to
2 Bedrooms, 1 Bath

998 NSF authorized
988 NSF existing
965 NSF proposed

Whole House Renovation
M-2B, 2 units – FY98 PAIP

3.2.3.1 Analysis of Existing Conditions

Each unit in this duplex has 3 bedrooms and 1 bath with an area of 988 NSF. Construction is standard wood framing on CMU foundation wall with a crawlspace and a 2x10 inch floor joist. All 102 of these units are currently assigned to Junior NCOs. Two units were Whole House renovated (3-BR to 2-BR conversion) as part of an FY98 PAIP creating unit type M-2B. The FY98 PAIP design followed the 1992 HCP Unit Improvement Plan.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- The carport is flat with a built-up roof.
- This unit does not have adequate trash enclosure provisions.
- The gable end roof vents need replacement
- Off-street parking is inadequate.
- Termite damage was detected.

Architectural Interior

- The windows in bedroom #2 do not meet fire egress codes for the maximum floor-to-sill height of 44 inches.
- The kitchen cabinets are marginally adequate.
- The ceiling mounted exhaust fan is not adequate.
- The task lighting is poor.
- The bathrooms were recently refurbished.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor runs of the air-conditioner condensation drain may become a stumble hazard
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

3.2.3 Unit Type M-2 NCO2.2 Midland Neighborhood

Summary

245 Selser Drive Inspected

Built in 1957 (Appropriated)

Condition Assessment Matrix Rating: 3.62

Grades E-1 through E-6

3 Bedrooms, 1 Bath converted to 2 Bedrooms, 1 Bath

998 NSF authorized
988 NSF existing
965 NSF proposed

Whole House Renovation
M-2B, 2 units – FY98 PAIP

3.2.3.1 Analysis of Existing Conditions

Each unit in this duplex has 3 bedrooms and 1 bath with an area of 988 NSF. Construction is standard wood framing on CMU foundation wall with a crawlspace and a 2x10 inch floor joist. All 102 of these units are currently assigned to Junior NCOs. Two units were Whole House renovated (3-BR to 2-BR conversion) as part of an FY98 PAIP creating unit type M-2B. The FY98 PAIP design followed the 1992 HCP Unit Improvement Plan.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- The carport is flat with a built-up roof.
- This unit does not have adequate trash enclosure provisions.
- The gable end roof vents need replacement
- Off-street parking is inadequate.
- Termite damage was detected.

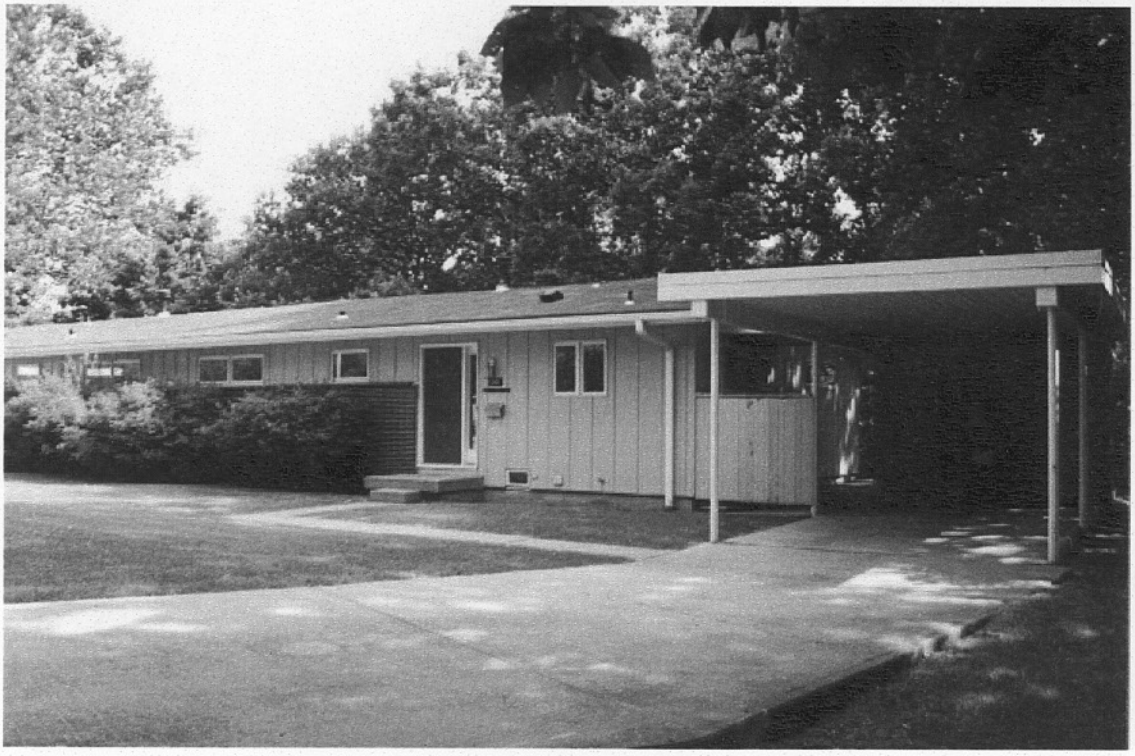
Architectural Interior

- The windows in bedroom #2 do not meet fire egress codes for the maximum floor-to-sill height of 44 inches.
- The kitchen cabinets are marginally adequate.
- The ceiling mounted exhaust fan is not adequate.
- The task lighting is poor.
- The bathrooms were recently refurbished.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor runs of the air-conditioner condensation drain may become a stumble hazard
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

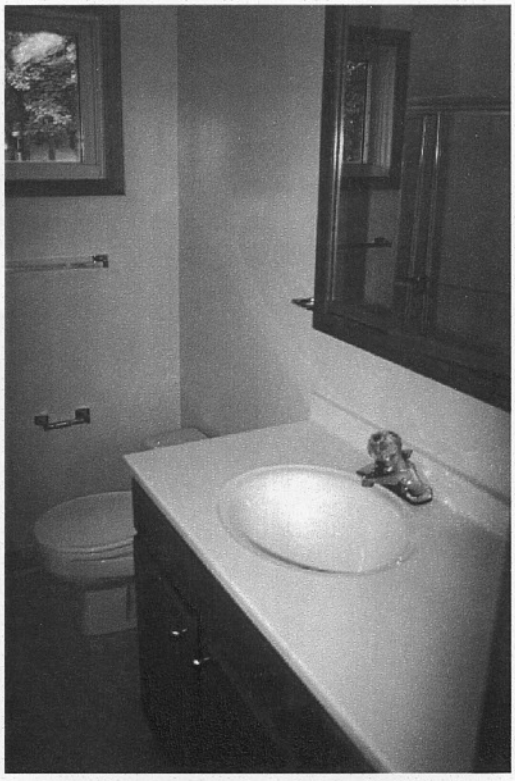
Electrical



3.5 Unit Type M-2 - Front Elevation

3.6 Unit Type M-2 - Rear and Side Elevation

3.7 Unit Type M-2 - Kitchen



3.8 Unit Type M-2 - Bathroom

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type M-2B NCO 2.2 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$469
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Kitchen	$0
Interiors - Laundry Room	$0
Interiors, General - All but Kitchen, Baths & Laundry	$0
Roof	$1,085
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$0
Structural - Other Building Elements	$18,824
Sub-Total:	$20,379
Sub-Total adjusted to ACF of: 104.00%	$21,194
Contingency @ 5.00 %	$1,060
SIOH @ 5.50 %	$1,224
Total - Unit Type M-2B NCO 2.2	$23,477

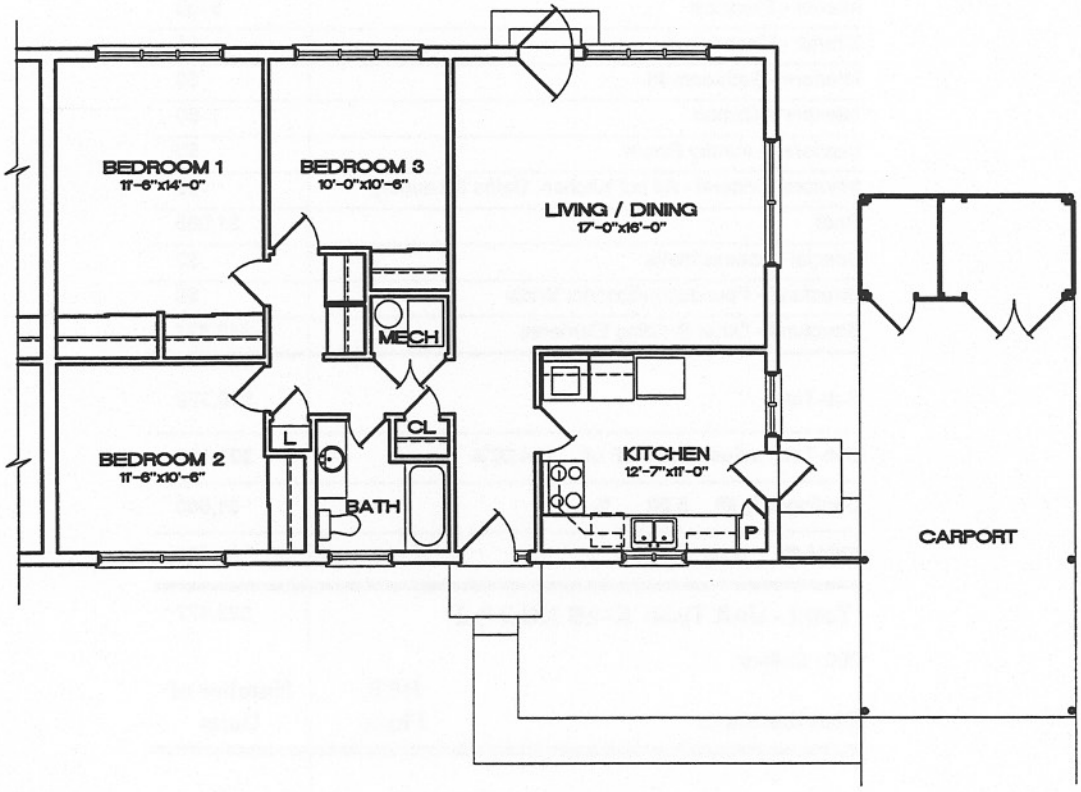
2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	2
	C	4
	D	25
	E	38
	F	43
Total Quantity: UNIT TYPE M-2B NC		**112**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.3 Unit Type M-2



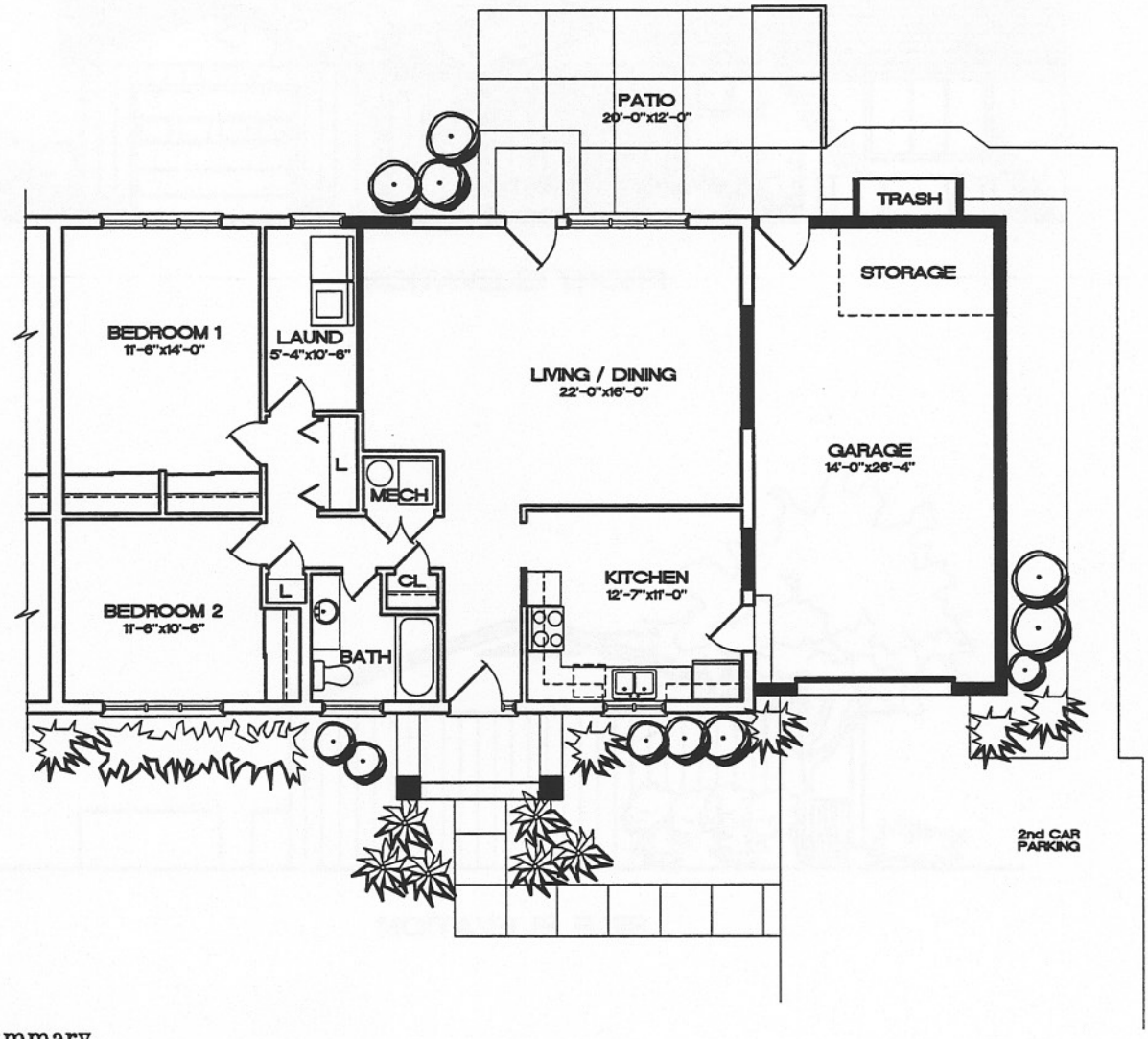
Unit Summary

Unit Type:	M-2, 3 Br.
Grade:	E1-E6
Existing Net Area:	988 S.F.

1310 - net
1830 - gross

0 1' 5' 10' 15'
GRAPHIC SCALE

EXISTING FLOOR PLAN



Unit Summary

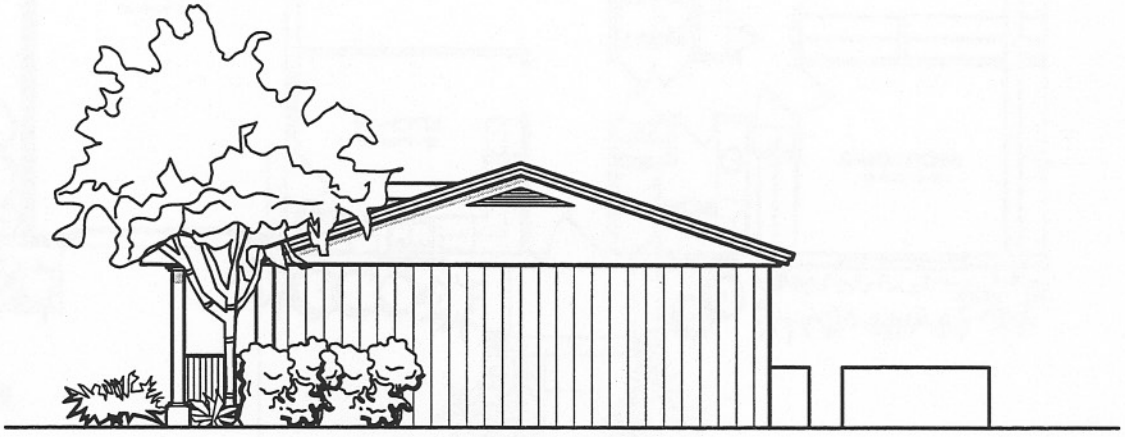
Unit Type:	M-2B NC02.2 2 Br.
Grade:	E1-E6
Proposed Net Area:	965 S.F.
Authorized Net Area:	998 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

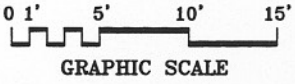
PROPOSED FLOOR PLAN

(FY 98 PAIP PLAN DESIGNED BY OTHERS)

FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE NCO2.2 ELEVATIONS

(FY 98 PAIP DESIGNED BY OTHERS)

3.2.4 Unit Type M-3 NCO2.1 & NCO2.2 Midland Neighborhood

Summary

See unit types M-1 and M-2

Built in 1957 (Appropriated)

Condition Assessment Matrix Rating: 3.63

Grades E-1 through E-6

2 Bedroom, 1 Bath

950 NSF authorized
890 NSF existing
950 NSF proposed (M-1B, NCO2.1)

998 NSF authorized (converted 3BR)
988 NSF existing
965 NSF proposed (M-2B, NCO2.2)

3.2.4.1 Analysis of Existing Conditions

This duplex contains two different unit types. One unit has 2 bedrooms and 1 bath with an area of 890 NSF. For an analysis of existing conditions of this unit refer to Unit Type M-1 in section 3.2.2.1. The other unit has 3 bedrooms and 1 bath with an area of 988 NSF. For an analysis of existing conditions of this unit, refer to Unit Type M-2, Section 3.2.3.1.

These 20 units (10 duplex buildings) are currently assigned to Junior NCOs. These units occur on corner lots so that one unit is turned to face the side street.

3.2.4.2 Recommendations

- With minor modifications, both of these unit types will be suitable as 2-bedroom housing for Junior NCOs.
- Refer to Unit Type NCO2.1, Section 3.2.2.2, and Unit Type NCO2.2, Section 3.2.3.2, for recommendations and cost estimates.

3.2.5 Unit Type M-4 NCO2.2 Midland Neighborhood

Summary

See unit type M-2

Built in 1957 (Appropriated)

Condition Assessment Matrix Rating: 3.62

Grades E-1 through E-6

2 Bedrooms, 1 Bath

998 NSF authorized
988 NSF existing
965 NSF proposed

Whole House Renovation
M-4B, 16 units – FY98 PAIP

3.2.5.1 Analysis of Existing Conditions

Each unit in this duplex contains 3 bedrooms and 1 bath with an area of 988 NSF. The floor plan for each unit is the same as Unit Type M-2. As duplexes, the M-2 units have a continuous front façade, while the M-4 units are offset (staggered) from each other in duplex format. A single M-4 unit has been demolished, apparently due to a fire. All 97 of these units are currently assigned to Junior NCOs. For an analysis of existing conditions, refer to Unit Type M-2 in Section 3.2.3.1. A Whole House renovation (3-BR to 2-BR conversion) of 16 units was part of an FY98 PAIP creating unit type M-4B. The FY98 PAIP design followed the 1992 HCP Unit Improvement Plan.

3.2.5.2 Recommendations (M-4B, NCO2.2)

- With minor revisions, this unit will be suitable as 2-BR housing of 965 NSF for Junior NCOs.
- Refer to Unit Type NCO2.2, Section 3.2.3.2, for recommendations and cost estimates.

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type M-2B NCO 2.2 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$2,640
Interior - Mechanical	$2,991
Interiors - Bathroom #1	$3,062
Interiors - Kitchen	$7,854
Interiors - Laundry Room	$1,146
Interiors, General - All but Kitchen, Baths & Laundry	$5,664
Roof	$1,005
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$372
Structural - Other Building Elements	$20,696
Sub-Total:	$50,300
Sub-Total adjusted to ACF of: 104.00%	$52,312
Contingency @ 5.00 %	$2,616
SIOH @ 5.50 %	$3,021
Total - Unit Type M-2B NCO 2.2	$57,949

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	2
	C	4
	D	25
	E	38
	F	43
Total Quantity: UNIT TYPE M-2B NC		**112**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type M-2B NCO 2.2 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$2,381
Interior - Mechanical	$3,230
Interiors - Bathroom #1	$3,306
Interiors - Kitchen	$8,481
Interiors - Laundry Room	$1,235
Interiors, General - All but Kitchen, Baths & Laundry	$6,116
Roof	$0
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$400
Structural - Other Building Elements	$3,506
Sub-Total:	$33,527
Sub-Total adjusted to ACF of: 104.00%	$34,868
Contingency @ 5.00 %	$1,743
SIOH @ 5.50 %	$2,014
Total - Unit Type M-2B NCO 2.2	$38,625

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	2
	C	4
	D	25
	E	38
	F	43
Total Quantity: UNIT TYPE M-2B NC		**112**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.6 Unit Type M-5 NCO2.3 Woodview Neighborhood

Summary

210 Carswell Circle Inspected

Built in 1957 (Appropriated)

Condition Assessment Matrix Rating: 3.52

Grades E-1 through E-6

2 Bedrooms, 1 Bath

950 NSF authorized
946 NSF existing
950 NSF proposed

Whole House Renovation
M-5B, 4 units – FY98 PAIP

3.2.6.1 Analysis of Existing Conditions

Each unit in this duplex has 2 bedrooms and 1 bath with an area of 946 NSF. Construction is standard wood framing on CMU foundation wall with a crawlspace and a 2x10 inch floor joist. All 14 of these units are currently assigned to Junior NCOs and CGOs. Four units were scheduled for Whole House renovation as part of an FY98 PAIP creating unit type M-5B. The FY98 PAIP design follows the FY92 HCP Unit Improvement Plan.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- The carport is flat with a built-up roof.
- The gable end vents need replacing.
- This unit does not have adequate trash enclosure provisions.
- The outside storage shed is 4 feet high and prohibits adequate access.
- Off-street parking is inadequate.
- Termite damage was detected.

Architectural Interior

- The kitchen cabinets are marginally adequate.
- The ceiling mounted exhaust fan is not adequate.
- The task lighting is poor.
- The single bathroom in this 2-BR unit is generally in satisfactory condition.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor runs of the air-conditioner condensation drain may become a stumble hazard
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

- No working clearance in front of electrical panels in mechanical closets.

- Lack of GFCI receptacles in proper locations along kitchen counter spaces.

3.2.6.2 Recommendations

M-5B, NCO2.3: With minor interior revisions, this unit will be suitable as 2-bedroom housing of 946 NSF for Junior NCOs. The maximum authorized area is 950 NSF.

Architectural Exterior

- Remove existing carport, and construct a new garage with storage and trash enclosure.
- Construct a new gabled roof entry element over the front door to add visual relief and define the front entry of the unit.
- Provide a new concrete entrance stoop, sidewalks, and patio.
- Provide off-street parking for 2.5 cars per unit.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

In this "designed by others" plan, both bedrooms are undersized

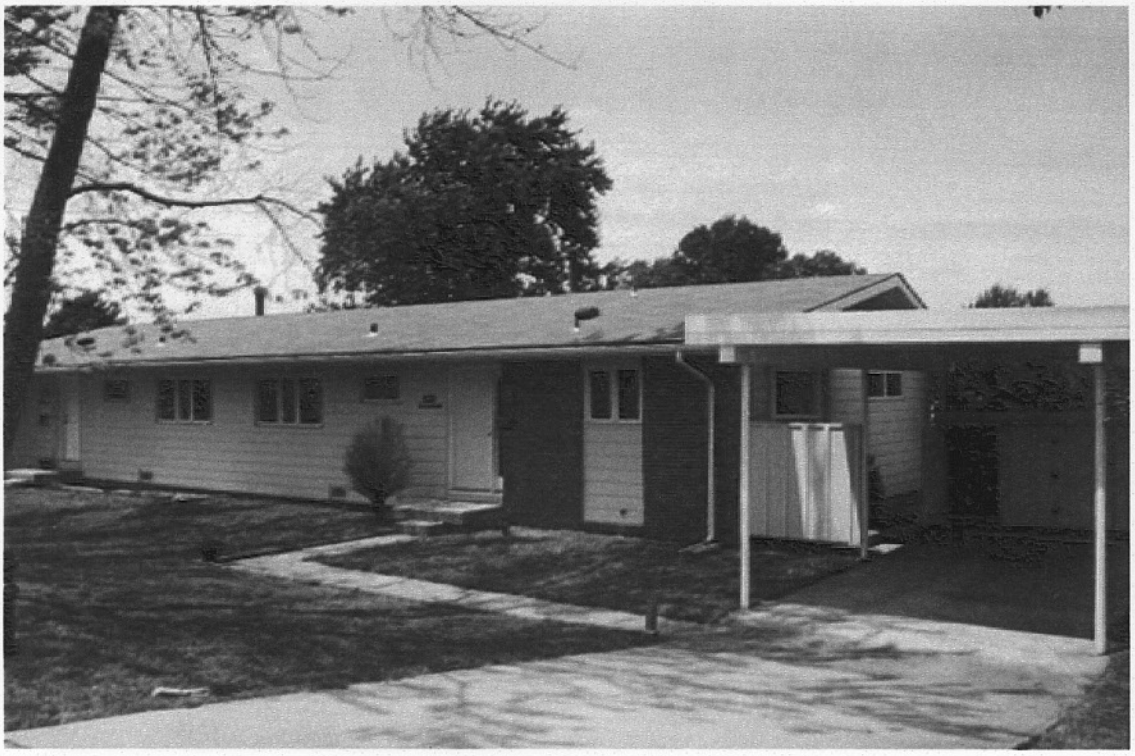
- Install new sheet vinyl flooring in kitchen, bathroom, and utility room.
- Install vinyl tiles at entry, and install carpeting elsewhere.
- Revise layout of walls in the corridor, moving the mechanical room to allow space for a laundry closet.
- Remove existing kitchen cabinets, and provide new cabinets and plastic laminated countertops.
- Provide new deep sink, dishwasher, fixtures, and range with hood.
- Provide the bathroom with a new sink, vanity, tub, and plumbing fixtures.
- Insure bedroom windowsill height and window area meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

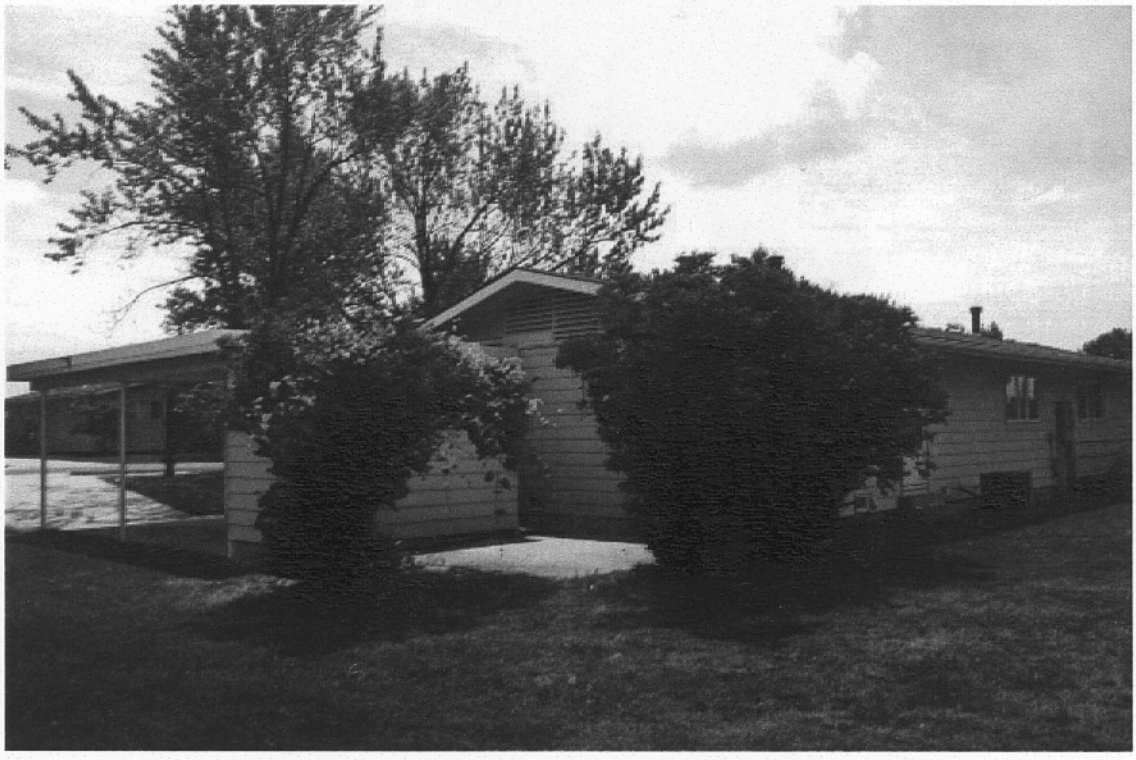
- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc
- Install proper water-saving plumbing fixtures and flow restrictors.
- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

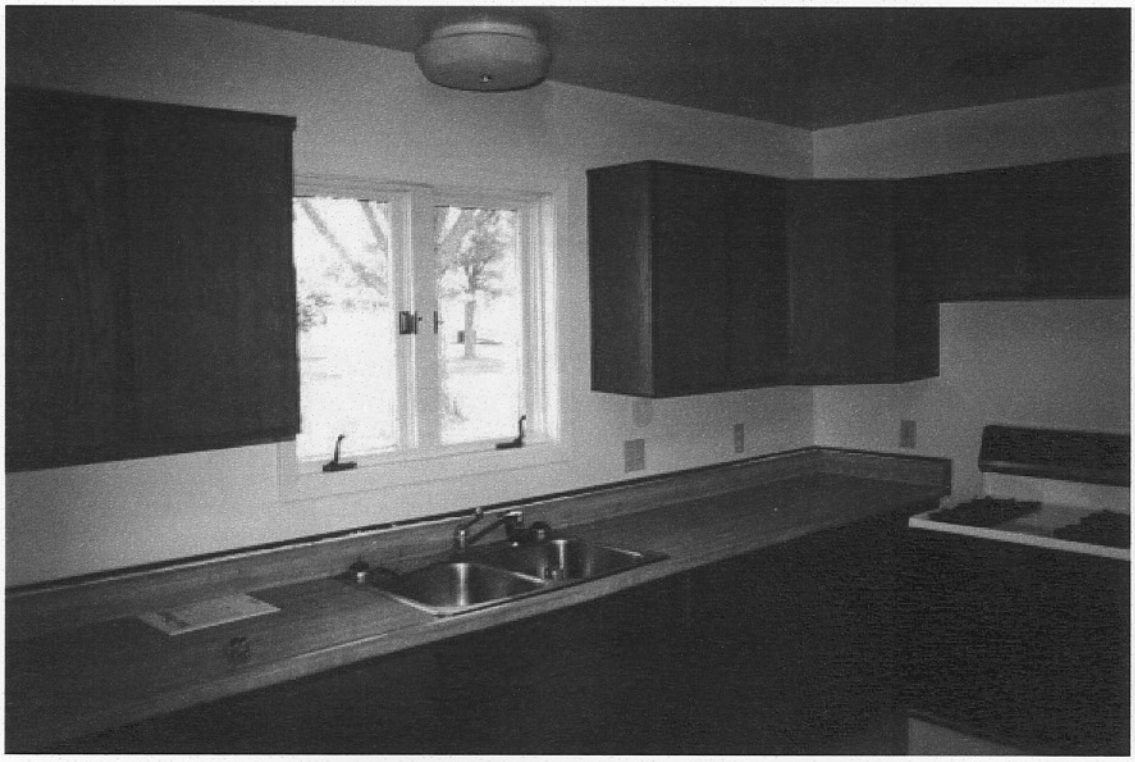
- Relocate electrical panel to provide working clearance as per current NEC.
- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles as per the current NEC.
- Provide two small appliance circuits for kitchen counter receptacles per the current NEC.



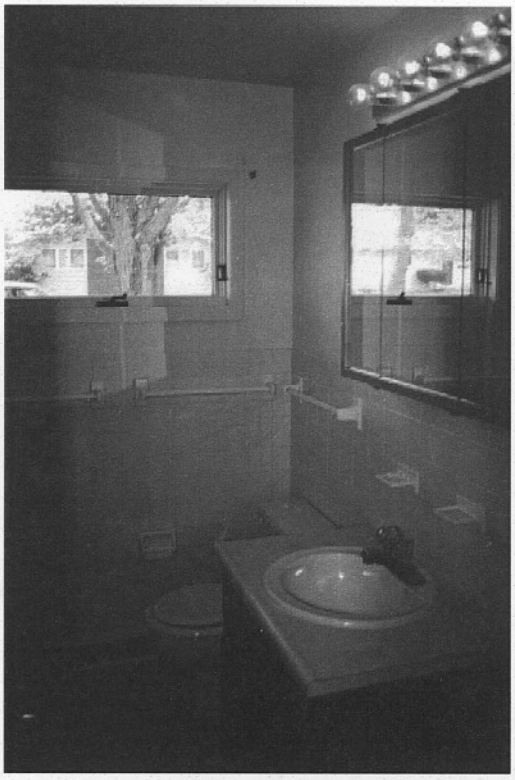
3.9 Unit Type M-5 - Front Elevation



3.10 Unit Type M-5 - Rear and Side Elevation



3.11 Unit Type M-5 - Kitchen



3.12 Unit Type M-5 - Bathroom

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type M-5B NCO 2.3 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$428
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Kitchen	$0
Interiors - Laundry Room	$0
Interiors, General - All but Kitchen, Baths & Laundry	$0
Roof	$1,085
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$0
Structural - Other Building Elements	$19,112
Sub-Total:	$20,626
Sub-Total adjusted to ACF of: 104.00%	$21,451
Contingency @ 5.00 %	$1,073
SIOH @ 5.50 %	$1,239
Total - Unit Type M-5B NCO 2.3	$23,762

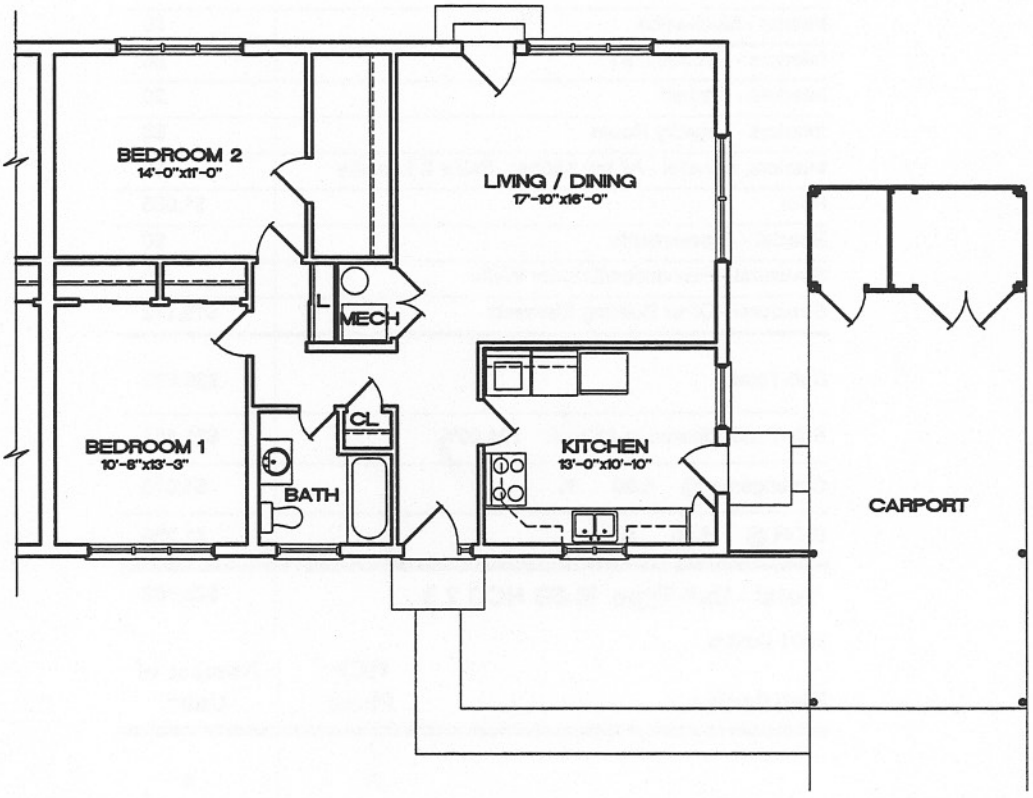
2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	4
	C	8
	G	6
Total Quantity: UNIT TYPE M-5B NC		**18**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.6 Unit Type M-5

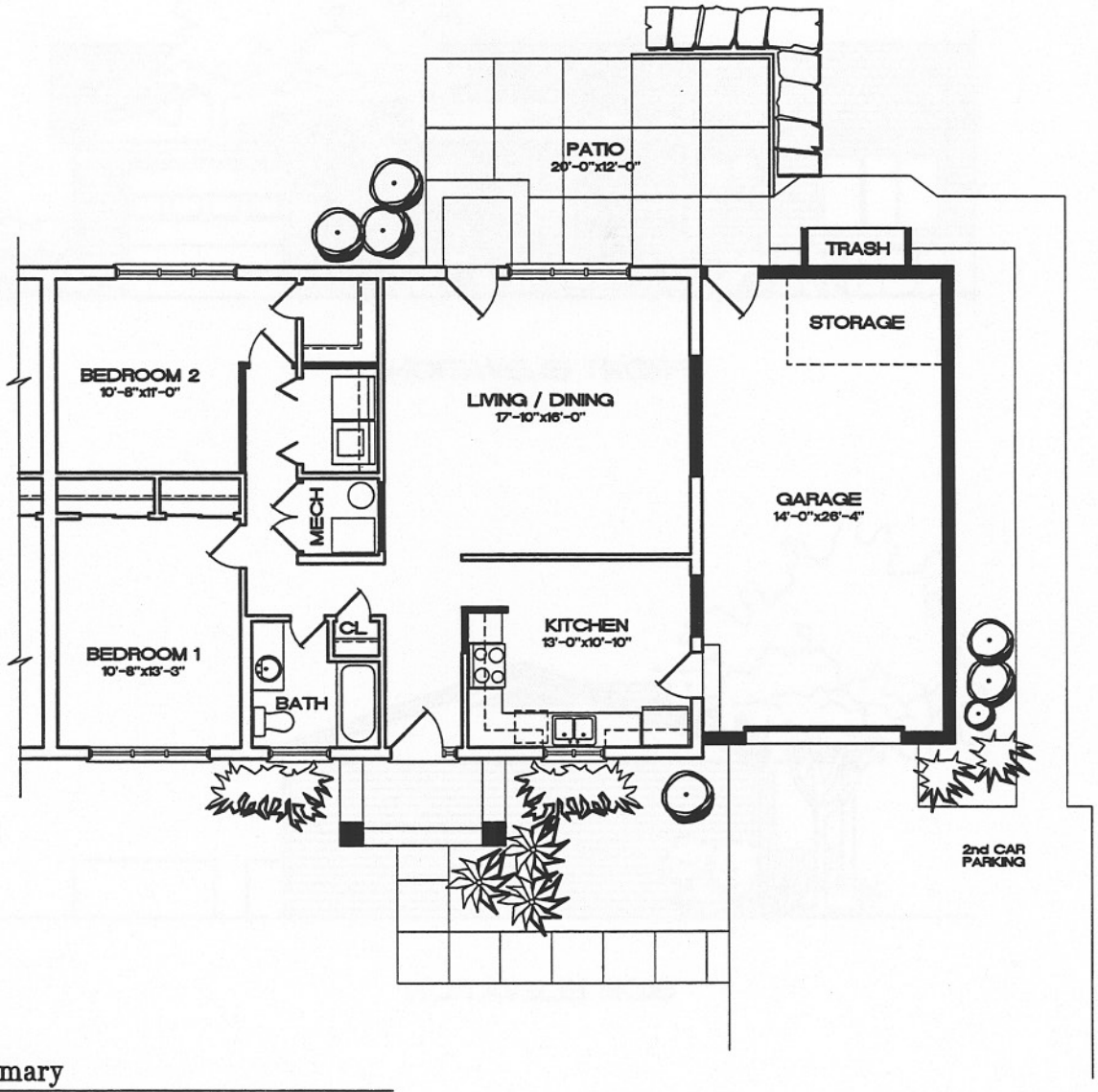


Unit Summary

Unit Type:	M-5, 2 Br.
Grade:	E1-E6
	01-03
Existing Net Area:	946 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

EXISTING FLOOR PLAN



Unit Summary

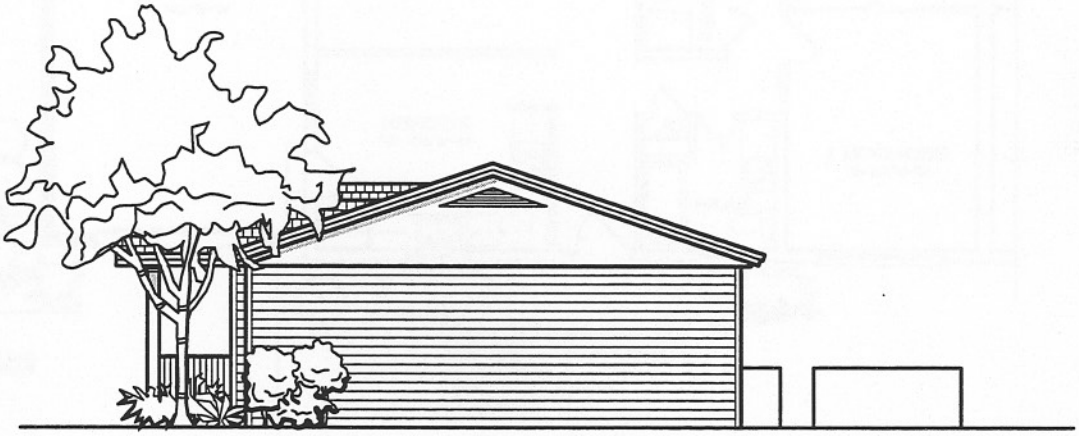
Unit Type:	M-5B NC02.3 2 Br.
Grade:	E1-E6
Proposed Net Area:	950 S.F.
Authorized Net Area:	950 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

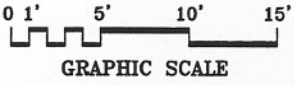
PROPOSED FLOOR PLAN

(FY98 PAIP PLAN DESIGNED BY OTHERS)

FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE NCO2.3 ELEVATIONS

(DESIGNED BY OTHERS)

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type M-5B NCO 2.3 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$1,254
Interior - Mechanical	$2,492
Interiors - Bathroom #1	$3,112
Interiors - Kitchen	$8,353
Interiors - Laundry Room	$595
Interiors, General - All but Kitchen, Baths & Laundry	$6,509
Roof	$1,020
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$90
Structural - Other Building Elements	$20,975
Sub-Total:	$49,271
Sub-Total adjusted to ACF of: 104.00%	$51,242
Contingency @ 5.00 %	$2,562
SIOH @ 5.50 %	$2,959
Total - Unit Type M-5B NCO 2.3	$56,763

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	4
	C	8
	G	6
Total Quantity: UNIT TYPE M-5B NC		**18**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type M-5B NCO 2.3 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$926
Interior - Mechanical	$2,692
Interiors - Bathroom #1	$3,361
Interiors - Kitchen	$9,019
Interiors - Laundry Room	$642
Interiors, General - All but Kitchen, Baths & Laundry	$7,024
Roof	$16
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$96
Structural - Other Building Elements	$3,522
Sub-Total:	$32,169
Sub-Total adjusted to ACF of: 104.00%	$33,456
Contingency @ 5.00 %	$1,673
SIOH @ 5.50 %	$1,932
Total - Unit Type M-5B NCO 2.3	$37,060

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	4
	C	8
	G	6
Total Quantity: UNIT TYPE M-5B NC		**18**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.7 Unit Type M-6 NCO3.1 Woodview Neighborhood

Summary

110 Titan Loop Inspected
Built in 1957 (Appropriated)

Grades E-1 through E-6

3 Bedrooms, 2 Baths

Condition Assessment Matrix Rating: 3.62

1,200 NSF authorized
1,068 NSF existing
1,200 NSF proposed
Whole House Renovation
M-6B, 20 units – FY98 PAIP

3.2.7.1 Analysis of Existing Conditions

Each unit in this duplex has 3 bedrooms and 1 bath with an area of 1,068 NSF. Construction is standard wood framing on CMU foundation wall with a crawlspace and a 2x10 inch floor joist. All 50 of these units are currently assigned to Junior NCOs and CGOs. A Whole House renovation of 20 units was part of an FY98 PAIP creating unit type M-6B. The FY98 PAIP design did not follow the 1992 HCP unit improvement plan. The 1992 HCP Unit Improvement Plan is filed in Appendix VII for future reference.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- The carport is flat with a built-up roof.
- The gable-end roof vent needs replacing.
- This unit does not have provisions for a patio or trash enclosure.
- The outside storage shed is 4 feet high and prohibits adequate access.
- Off-street parking is inadequate.
- Termite damage was detected.

Architectural Interior

- The kitchen cabinets are marginally adequate.
- The ceiling mounted exhaust fan is not adequate and the task lighting is poor.
- The single bathroom in this 3-bedroom unit is generally in satisfactory condition.
- Some windows do not meet fire egress codes for the maximum floor-to-sill height of 44 inches.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units. The across the floor runs of the air-conditioner condensation drain may become a stumble hazard.
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

- No working clearance in front of electrical panels in mechanical closets. Panel-board and breakers are outdated and in need of replacement.
- Ungrounded wiring conditions and devices apply throughout the facility. Poor wiring and outdated conditions apply.

- Lack of GFCI receptacles in proper locations throughout unit (note particularly kitchen counter spaces, bathrooms and outside).

3.2.7.2 Recommendations

M-6B, NCO3.1: With an addition and interior modifications, this unit will be suitable as 3-bedroom housing for Junior NCOs with a maximum authorized area of 1,200 NSF.

Architectural Exterior

- Remove existing carport, and construct a new garage with storage and trash enclosure.
- Construct a new gabled roof entry element over the front door to add visual relief and define the front entry of the unit.
- Provide a new concrete entrance stoop, sidewalks, and patio.
- Provide off-street parking for 2.5 cars per unit.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

In this "designed by others" unit, bedroom #2 remains undersized.

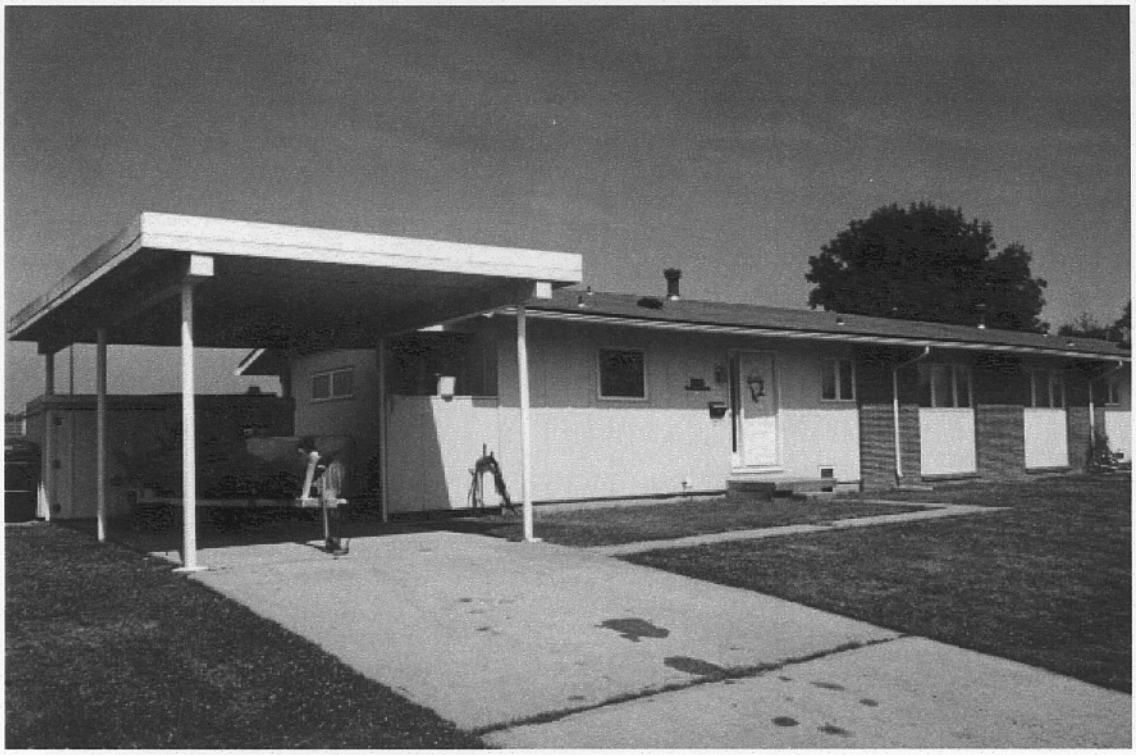
- Install new sheet vinyl flooring in kitchen, bathroom, and utility room; and install new vinyl tiles at entry, and carpeting elsewhere.
- Revise interior walls to enlarge master bedroom and add bathroom for master bedroom.
- Relocate kitchen and provide a family room and enlarge living/dining room by making an addition at the rear of the unit.
- Rearrange mechanical room to provide a laundry area in the bedroom area.
- Remove existing kitchen cabinets, and provide new cabinets and plastic laminated countertops.
- Provide new deep sink, dishwasher, fixtures, and range with hood.
- Provide each bathroom with a new sink, vanity, tub/shower, and plumbing fixtures.
- Insure bedroom windowsill height and window area meet the emergency egress requirements of a maximum sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

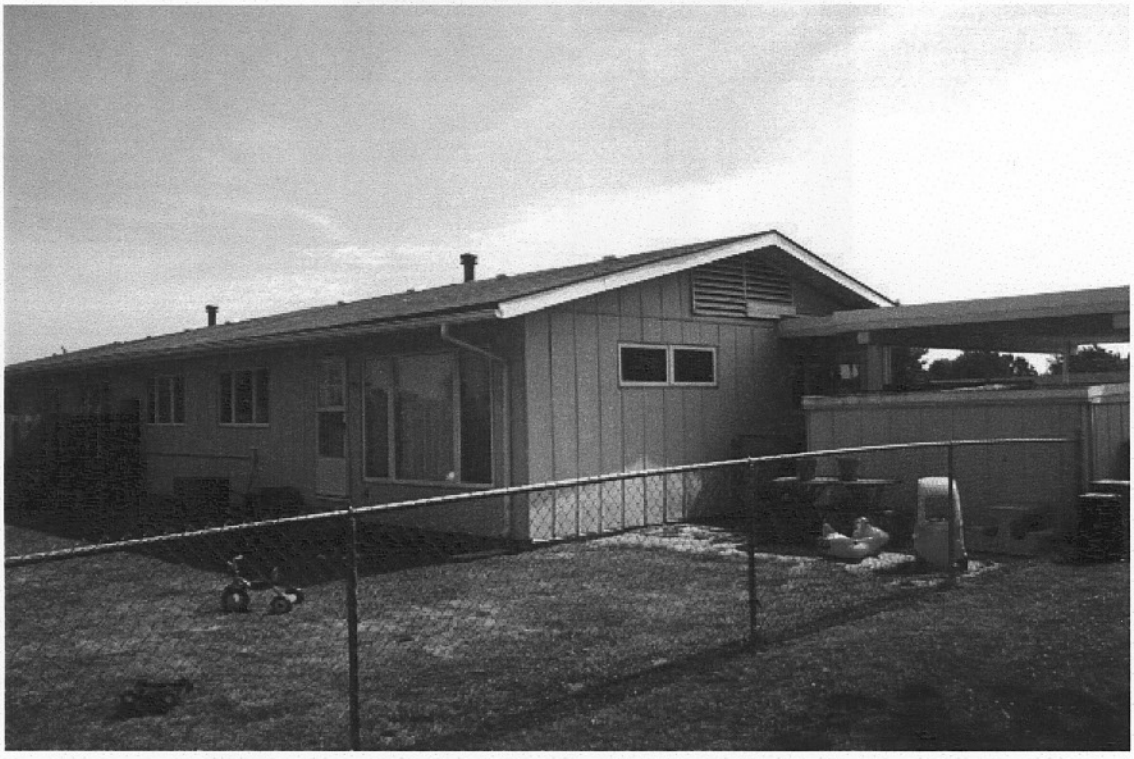
- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.
- Install proper water-saving plumbing fixtures and flow restrictors.
- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

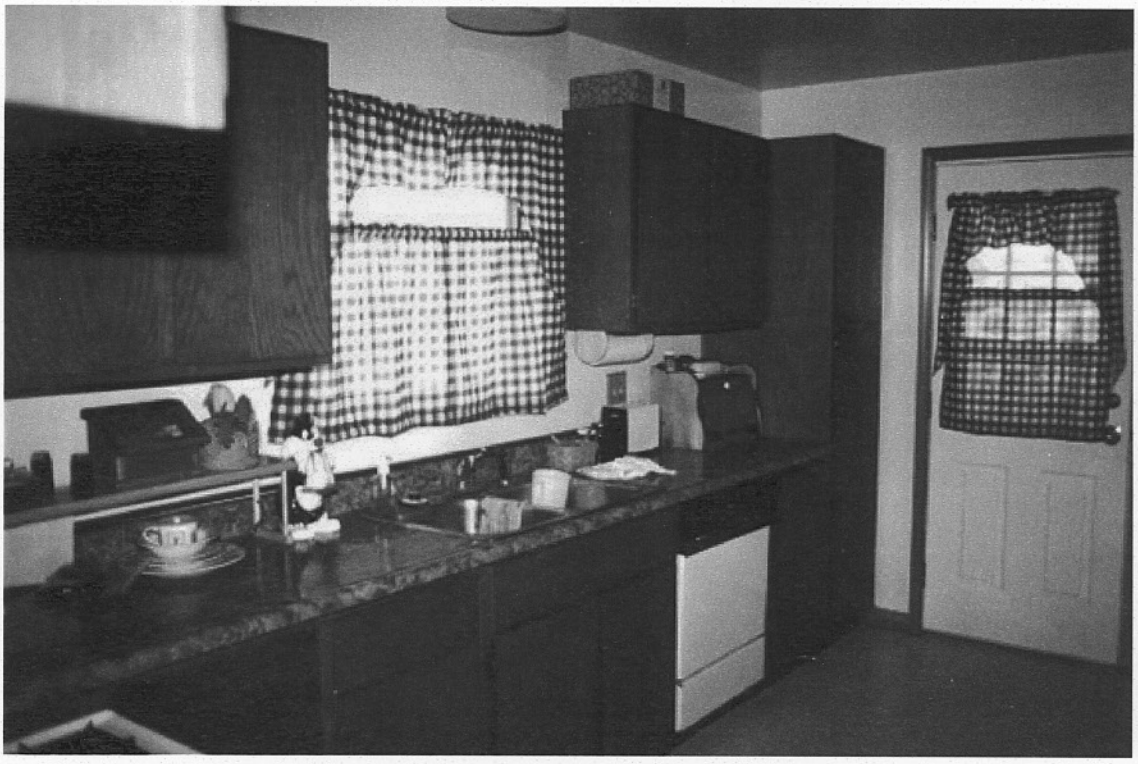
- Rewire entire unit to provide properly grounded system.
- Provide GFCI receptacles in bathrooms, for outside receptacles per the current NEC.
- Provide new panel-board and circuit breakers, and relocate electrical panel to provide working clearance per the current NEC.
- Provide two small kitchen counter appliance circuits and the proper number of kitchen counter receptacles with GFCI protection as per the current NEC.



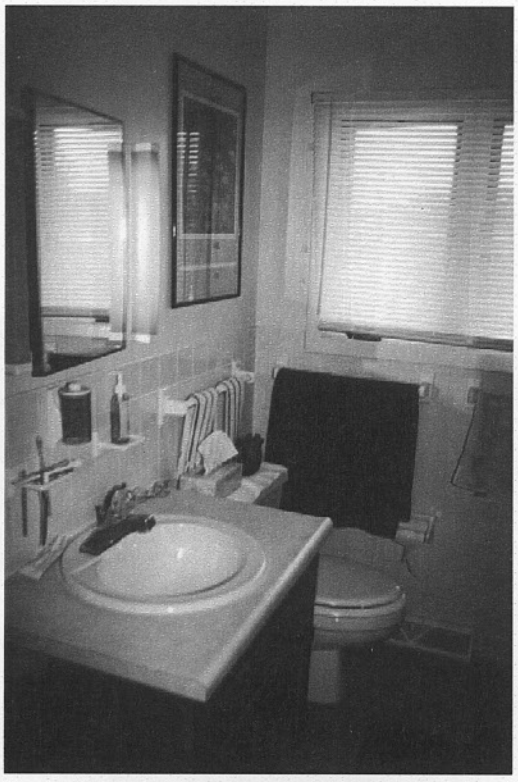
3.13 Unit Type M-6 - Front Elevation



3.14 Unit Type M-6 - Rear and Side Elevation



3.15 Unit Type M-6 - Kitchen



3.16 Unit Type M-6 - Bathroom

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type M-6B NCO 3.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$7,858
Interior - Mechanical	$5,112
Interiors - Bathroom #1	$3,499
Interiors - Bathroom #2	$3,929
Interiors - Kitchen	$10,814
Interiors - Laundry Room	$804
Interiors, General - All but Kitchen, Baths & Laundry	$14,814
Roof	$2,820
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$8,106
Structural - Other Building Elements	$19,353
Sub-Total:	$81,979
Sub-Total adjusted to ACF of: 104.00%	$85,258
Contingency @ 5.00 %	$4,263
SIOH @ 5.50 %	$4,924
Total - Unit Type M-6B NCO 3.1	$94,444

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	20
	C	24
	G	10
Total Quantity: UNIT TYPE M-6B NC		**54**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [ ] *Whole House Improvement*
- [x] *Major M & R*
- [ ] *Improvements and Remaining Repairs*

*Unit Type M-6B NCO 3.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$8,031
Interior - Mechanical	$5,522
Interiors - Bathroom #1	$3,776
Interiors - Bathroom #2	$4,240
Interiors - Kitchen	$11,677
Interiors - Laundry Room	$867
Interiors, General - All but Kitchen, Baths & Laundry	$15,578
Roof	$9
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$4,232
Structural - Other Building Elements	$3,137
Sub-Total:	$61,939
Sub-Total adjusted to ACF of: 104.00%	$64,417
Contingency @ 5.00 %	$3,221
SIOH @ 5.50 %	$3,720
Total - Unit Type M-6B NCO 3.1	$71,358

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	20
	C	24
	G	10
Total Quantity: UNIT TYPE M-6B NC		**54**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type M-6B NCO 3.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$455
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors - Laundry Room	$0
Interiors, General - All but Kitchen, Baths & Laundry	$406
Roof	$3,036
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$4,516
Structural - Other Building Elements	$17,753
Sub-Total:	$26,166
Sub-Total adjusted to ACF of: 104.00%	$27,212
Contingency @ 5.00 %	$1,361
SIOH @ 5.50 %	$1,572
Total - Unit Type M-6B NCO 3.1	$30,145

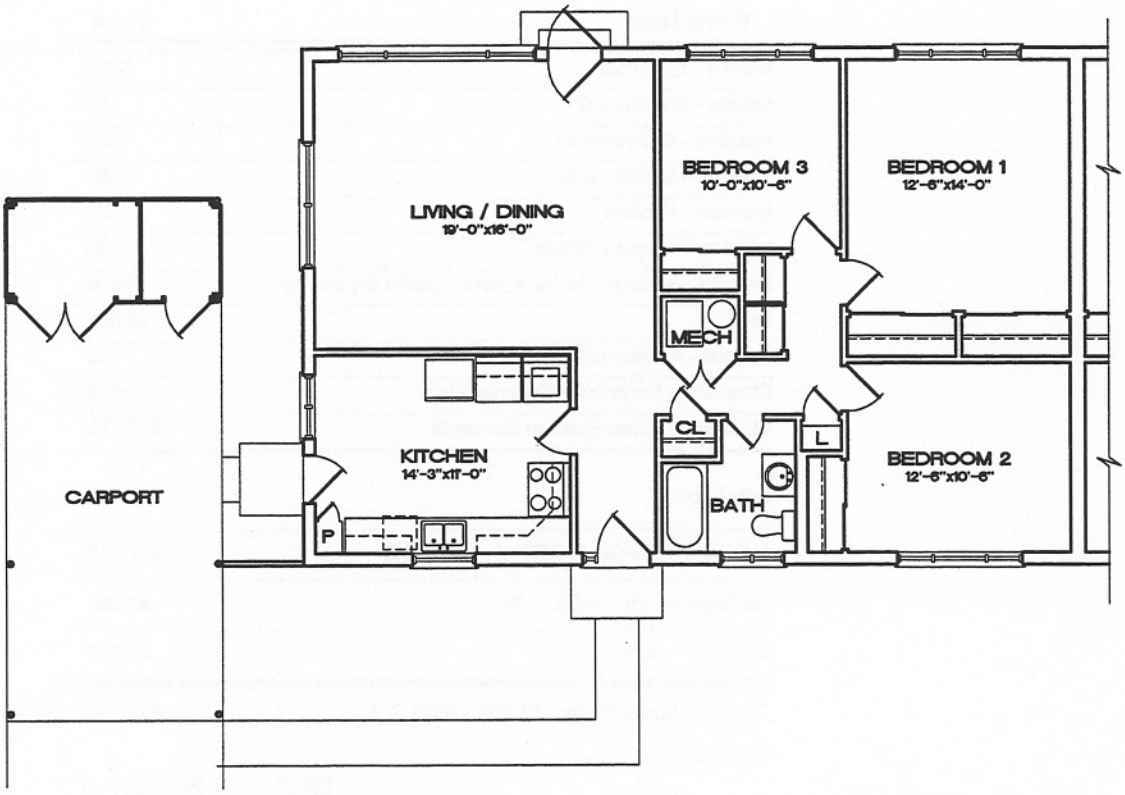
2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	20
	C	24
	G	10
Total Quantity: UNIT TYPE M-6B NC		**54**

** See Detailed Cost Estimate for Back-Up Data*

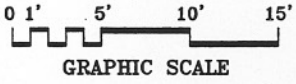
Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.7 Unit Type M-6

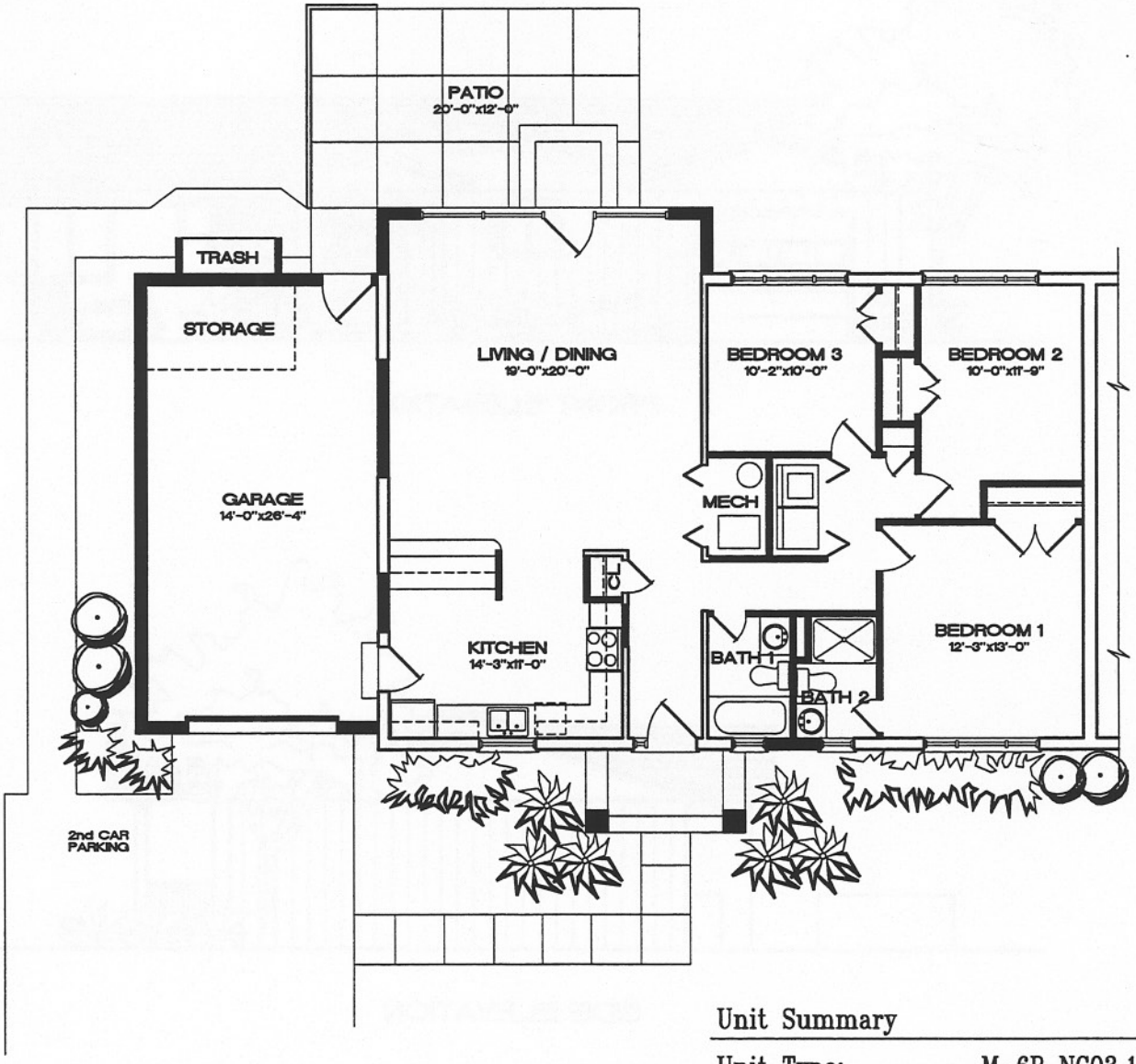


Unit Summary

Unit Type:	M-6, 3 Br.
Grade:	E1-E6
	01-03
Existing Net Area:	1,068 S.F.



EXISTING FLOOR PLAN



Unit Summary

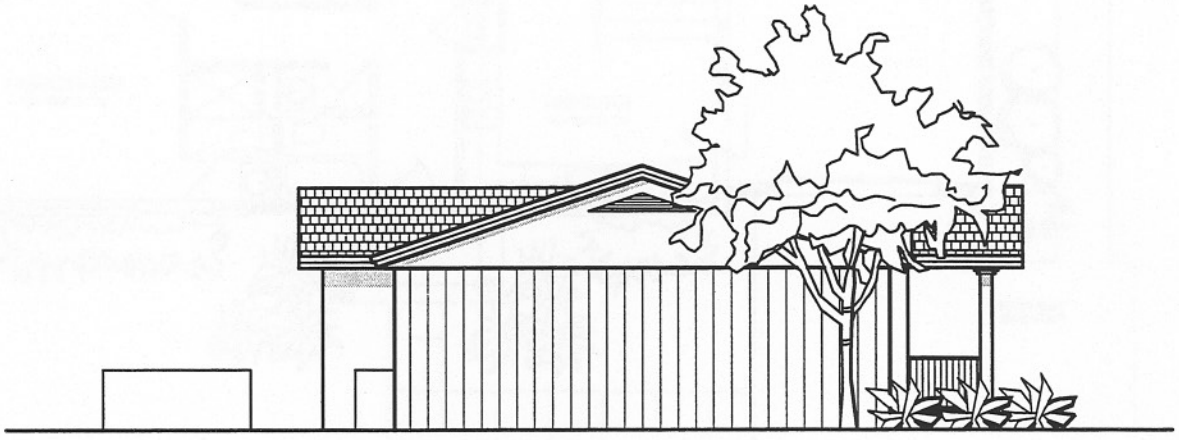
Unit Type:	M-6B NC03.1 3 Br.
Grade:	E1-E6
Proposed Net Area:	1,200 S.F.
Authorized Net Area:	1,200 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

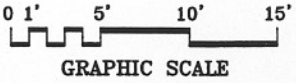
PROPOSED FLOOR PLAN

(FY 98 PAIP PLAN DESIGNED BY OTHERS)

FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE NCO3.1 ELEVATIONS

(FY 98 PAIP PLAN DESIGNED BY OTHERS)

3.2.8 Unit Type M-7 NCO2.3 & NCO3.1 Woodview Neighborhood

Summary

See unit types M-5 and M-6

Built in 1957 (Appropriated)

Condition Assessment Matrix Rating: 3.57

Grades E-1 through E-6

2 Bedrooms, 1 Bath
950 NSF authorized
946 NSF existing
950 NSF proposed (M-5B, NCO2.3)

3 Bedrooms, 2 Baths
1,200 NSF authorized
1,068 NSF existing
1,200 NSF proposed (M-6B, NCO3.1)

3.2.8.1 Analysis of Existing Conditions

This duplex contains two different unit types. One unit has 2 bedrooms and 1 bath with an area of 946 NSF. For an analysis of existing conditions of this unit, refer to Unit Type M-5 in Section 3.2.6.1. The other unit has 3 bedrooms and 1 bath with an area of 1,068 NSF. For an analysis of existing conditions for this unit refer to Unit Type M-6 in Section 3.2.7.1. These 8 units (4 duplex buildings) are currently assigned to Junior NCOs.

3.2.8.2 Recommendations

For recommendations and cost estimates for these unit types, refer to Unit Type NCO2.3 (M-5B) in Section 3.2.6.2 and Unit Type NCO3.1 (M-6B) in Section 3.2.7.2.

3.2.9 Unit Type M-8 NCO3.1 Woodview Neighborhood

Summary

See unit type M-6

Built in 1957 (Appropriated)

Condition Assessment Matrix Rating: 3.62

Grades E-1 through E-6

3 Bedrooms, 2 Baths

1,200 NSF authorized
1,068 NSF existing
1,200 NSF proposed

Whole House Renovation
M-8B, 4 units – FY98 PAIP

3.2.9.1 Analysis of Existing Conditions

Each unit in this duplex contains 3 bedrooms and 1 bath with an area of 1,068 NSF. The floor plan for each unit is the same as Unit Type M-6. As duplexes, the M-6 units have a continuous front façade, while the M-8 units are offset (staggered) from each other in duplex format. All 24 of these units are currently assigned to Junior NCOs and CGOs. Four units were Whole House renovated as part of an FY98 PAIP creating unit type M-8B. The FY98 PAIP design did not follow the 1992 HCP unit improvement plan.

Environmental Issues

- Lead-based paint and asbestos were detected.

For a complete analysis of existing conditions, refer to Unit Type M-6 in Section 3.2.7.1.

3.2.9.2 Recommendations (M-8B, NCO3.1)

- With an addition and interior modifications, this unit will be suitable as 3-BR housing for Junior NCOs.

- For recommendations and cost estimates on these unit types, refer to Unit Type NCO3.1 in Section 3.2.7.2.

3.2.10 Unit Type M-9 CGO2.1 Woodview Neighborhood

Summary

103 Travis Lane Inspected

Built in 1957 (Appropriated)

Condition Assessment Matrix Rating: 3.66

Grades O-1 through O-3

3 Bedrooms, 2 Baths converted to 2 Bedrooms, 2 Baths

998 NSF authorized
1,146 NSF existing
998 NSF proposed

3.2.10.1 Analysis of Existing Conditions

This single-family unit has 3 bedrooms and 1 bath with an area of 1,146 NSF. Construction is standard wood framing on CMU foundation wall with a crawlspace and a 2x10 inch floor joist. All 16 of these units are currently assigned to Junior NCOs, Senior NCOs, and CGOs

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- This unit does not have trash enclosure provisions.
- The outside storage shed is 4 feet high and prohibits adequate access.
- This unit has a concrete patio.
- Off-street parking is inadequate.
- Termite damage was detected.

Architectural Interior

- The kitchen cabinets are marginally adequate.
- The ceiling mounted exhaust fan is not adequate.
- The task lighting is poor. Bathroom #1 has dated cabinets and sink.
- Bathroom #1 has a dated cabinet and sink.
- Bathroom #2 is in satisfactory condition.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor runs of the air-conditioner condensation drain may become a stumble hazard
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

- No working clearance in front of electrical panels in mechanical closets.
- Lack of GFCI receptacles in proper locations along kitchen counter spaces.

3.2.10.2 Recommendations

With minor interior modifications, this unit will be suitable as 2-bedroom housing of 990 NSF for Company Grade Officers.

The maximum authorized area is 950 NSF, plus 5% for conversion from another unit type.

Architectural Exterior

- Remove existing carport, and construct a new garage with storage and trash enclosure.
- Construct a new gabled roof entry element over the front door to add visual relief and define the front entry of the unit.
- Provide a new concrete entrance stoop, sidewalks, and patio.
- Provide off-street parking for 2.5 cars per unit.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

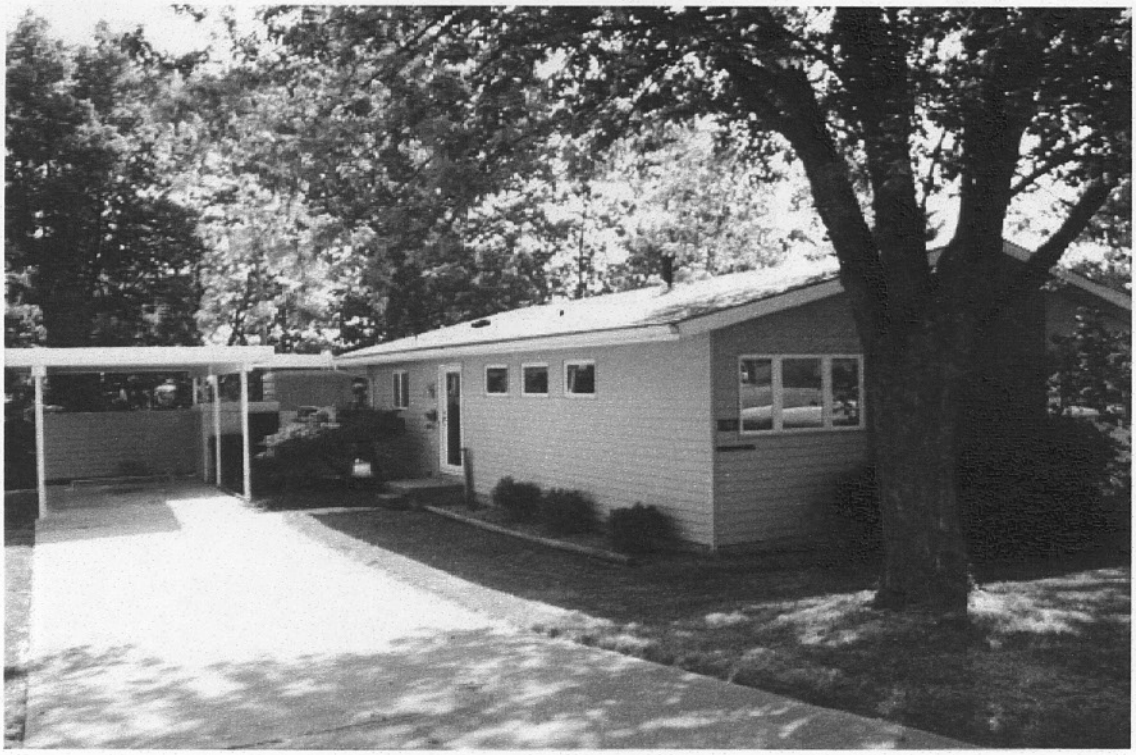
- Install new sheet vinyl flooring in kitchen, bathroom, and utility room.
- Install vinyl tiles at entry, and install carpeting elsewhere.
- Convert existing bedroom #3 to a laundry/storage room, and add a coat closet.
- Remove existing kitchen cabinets, and provide new cabinets and plastic laminated countertops.
- Provide new deep sink, dishwasher, fixtures, and range with hood.
- Provide each bathroom with a new sink, vanity, tub/shower, and plumbing fixtures.
- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

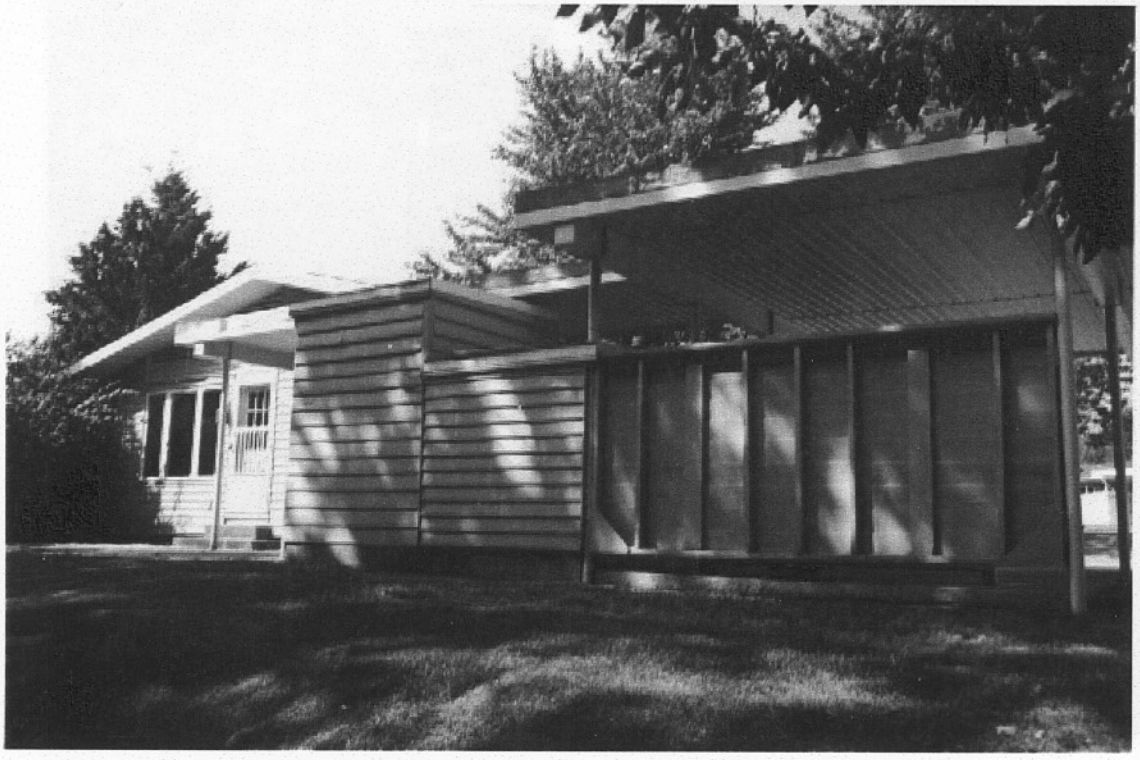
- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.
- Install proper water-saving plumbing fixtures and flow restrictors.
- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

- Relocate electrical panel to provide working clearance as per the current NEC.
- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles as per the current NEC.
- Provide two small appliance circuits for kitchen counter receptacles per the current NEC.

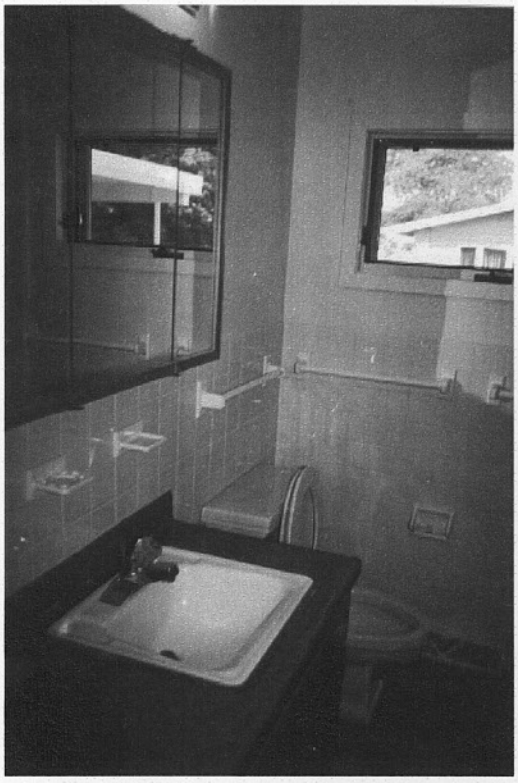


3.17 Unit Type M-9 - Front and Side Elevation

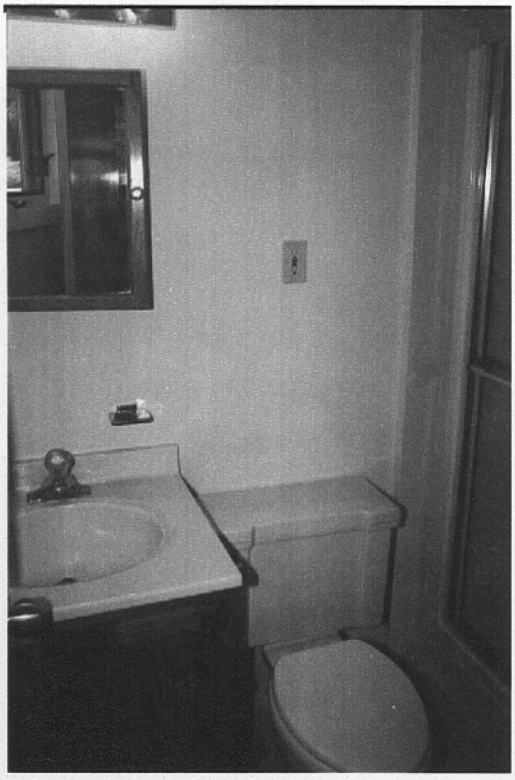


3.18 Unit Type M-9 - Rear Elevation

3.19 Unit Type M-9 - Kitchen



3.20 Unit Type M-9 - Bathroom 1



3.21 Unit Type M-9 -Bathroom 2

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Air Combat Command

HCP Date: 1998

- [x] *Whole House Improvement*
- [ ] *Major M & R*
- [ ] *Improvements and Remaining Repairs*

*Unit Type M-9 CGO 2.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$4,404
Interior - Mechanical	$2,930
Interiors - Bathroom #1	$2,244
Interiors - Bathroom #2	$3,021
Interiors - Kitchen	$10,520
Interiors - Laundry Room	$1,141
Interiors, General - All but Kitchen, Baths & Laundry	$8,311
Roof	$1,311
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$7,933
Structural - Other Building Elements	$18,551
Sub-Total:	$65,236
Sub-Total adjusted to ACF of: 104.00%	$67,846
Contingency @ 5.00 %	$3,392
SIOH @ 5.50 %	$3,918
Total - Unit Type M-9 CGO 2.1	$75,156

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	C	6
	G	10
Total Quantity: UNIT TYPE M-9 CGO		**16**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type M-9B CGO 2.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$4,277
Interior - Mechanical	$3,164
Interiors - Bathroom #1	$2,423
Interiors - Bathroom #2	$3,262
Interiors - Kitchen	$11,360
Interiors - Laundry Room	$1,229
Interiors, General - All but Kitchen, Baths & Laundry	$8,278
Roof	$60
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$3,594
Structural - Other Building Elements	$2,382
Sub-Total:	$44,899
Sub-Total adjusted to ACF of: 104.00%	$46,695
Contingency @ 5.00 %	$2,335
SIOH @ 5.50 %	$2,697
Total - Unit Type M-9B CGO 2.1	$51,726

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	C	6
	G	10
Total Quantity: UNIT TYPE M-9B CG		**16**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type M-9B CGO 2.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$479
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors - Laundry Room	$0
Interiors, General - All but Kitchen, Baths & Laundry	$692
Roof	$1,355
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$4,968
Structural - Other Building Elements	$17,637
Sub-Total:	$25,130
Sub-Total adjusted to ACF of: 104.00%	$26,136
Contingency @ 5.00 %	$1,307
SIOH @ 5.50 %	$1,509
Total - Unit Type M-9B CGO 2.1	$28,952

2001 Dollars

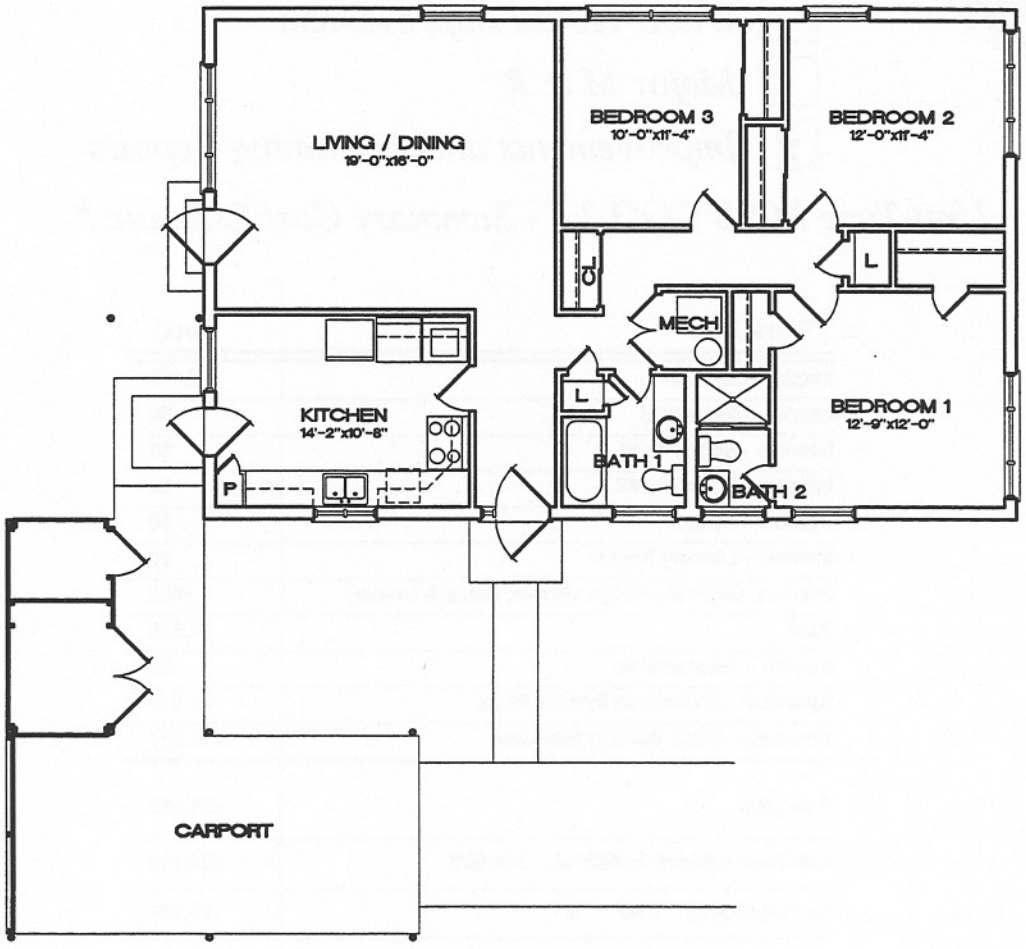
Distribution ...	HCP Phase	Number of Units
	C	6
	G	10

Total Quantity: UNIT TYPE M-9B CG **16**

** See Detailed Cost Estimate for Back-Up Data*

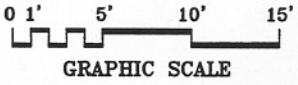
Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.10 Unit Type M-9

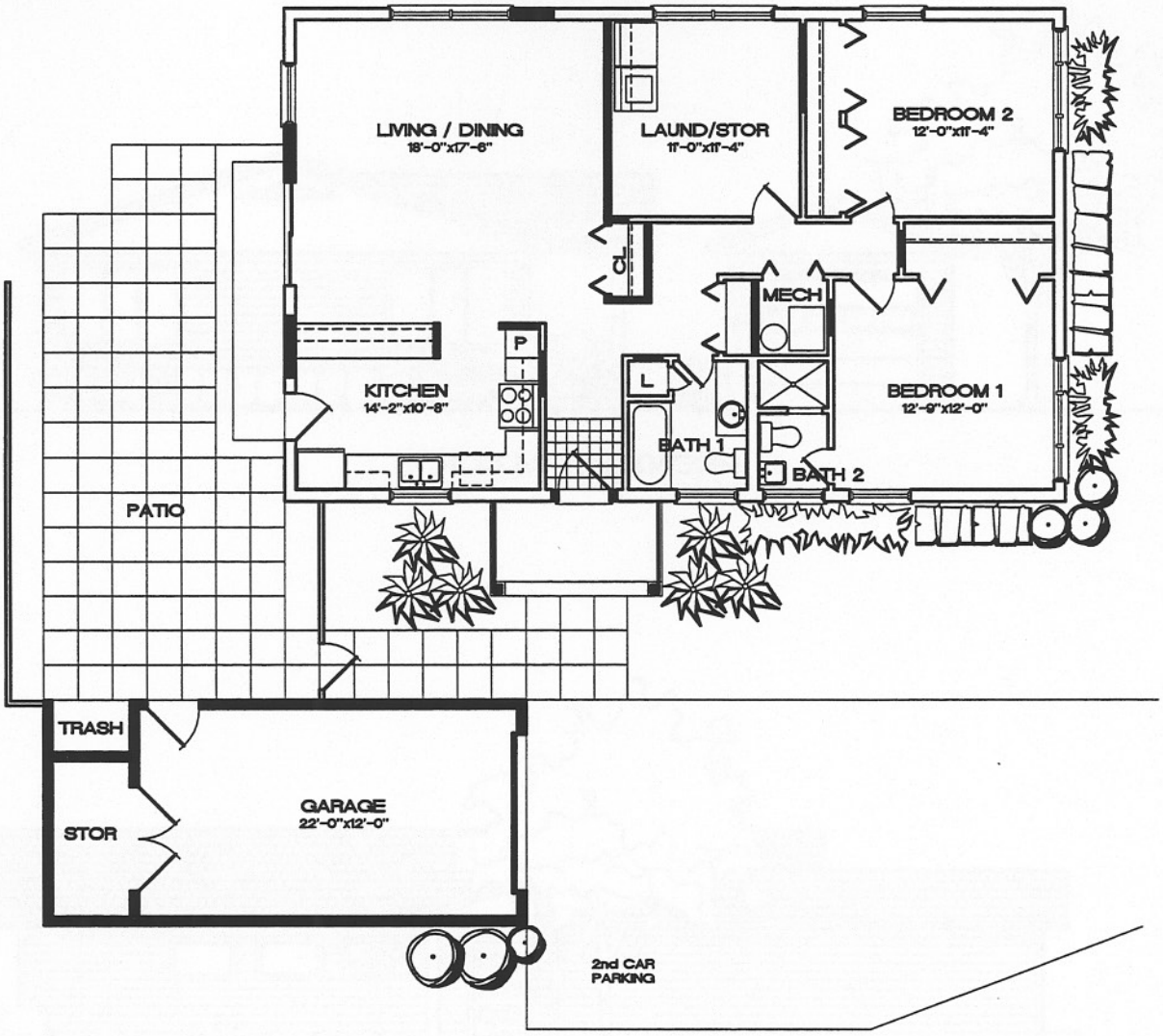


Unit Summary

Unit Type:	M-9, 3 Br.
Grade:	E1-E6
	E7-E9
	01-03
Existing Net Area:	1,146 S.F.



EXISTING FLOOR PLAN



Unit Summary

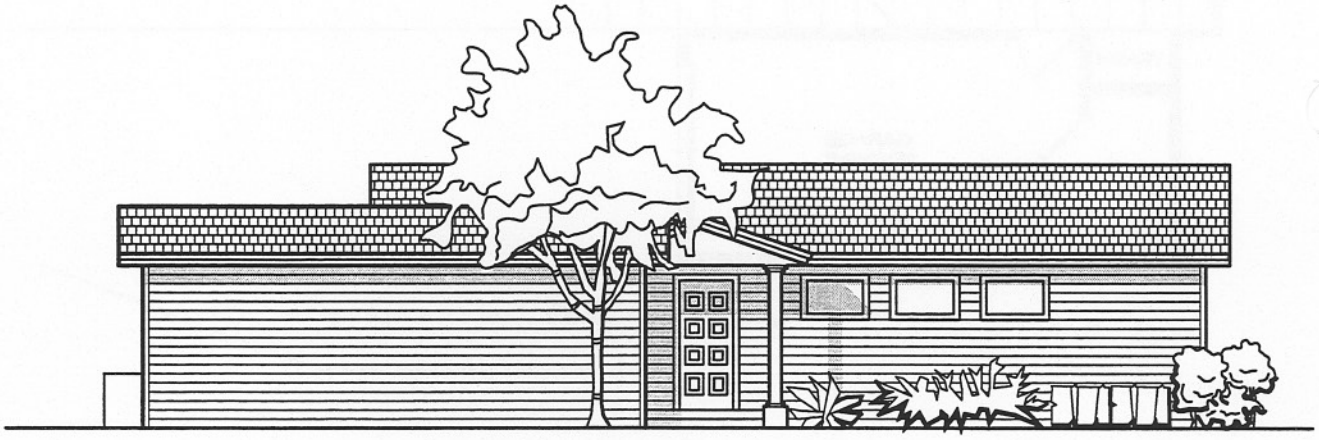
Unit Type:	M-9 CG02.1 2 Br.
Grade:	01-03
Proposed Net Area:	998 S.F.
Authorized Net Area:	998 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

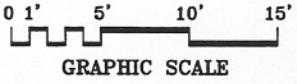
PROPOSED FLOOR PLAN

(DESIGNED BY OTHERS)

FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE CGO2.1 ELEVATIONS

(DESIGNED BY OTHERS)

3.2.11 Unit Type M-10 CGO2.1 Woodview Neighborhood

Summary

See unit type M-9

Built in 1957 (Appropriated)

Condition Assessment Matrix Rating: 3.66

Grades O-1 through O-3

3 Bedrooms, 2 Baths converted to
2 Bedrooms, 2 Baths

998 NSF authorized
1,146 NSF existing
998 NSF proposed

3.2.11.1 Analysis of Existing Conditions

This single-family unit has 3 bedrooms and 1 bath with an area of 1,146 NSF. The floor plan for each unit is the same as Unit Type M-9. The M-9 units are perpendicular to the street and the M-10 units are parallel to the street. All 18 of these units are currently assigned to Junior NCOs, Senior NCOs, and CGOs. For complete analysis, refer to Section 3.2.10.1.

Environmental Issues

- Lead-based paint and asbestos were detected.

3.2.11.2 Recommendations

With minor interior modifications, this unit will be suitable as 2-BR housing for Company Grade Officers.

For complete recommendations, refer to unit type CGO2.1 in Section 3.2.10.2. The M-10 / CGO2.1 unit cost estimates and plans (which differ from the M-9 / CGO2.1 in the attached garage and patio details) are on the next seven pages.

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Whiteman AFB

Air Combat Command

HCP Date: 1998

- [x] *Whole House Improvement*
- [ ] *Major M & R*
- [ ] *Improvements and Remaining Repairs*

*Unit Type M-10 CGO 2.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$3,016
Interior - Mechanical	$2,824
Interiors - Bathroom #1	$2,118
Interiors - Bathroom #2	$2,456
Interiors - Kitchen	$10,833
Interiors - Laundry Room	$1,183
Interiors, General - All but Kitchen, Baths & Laundry	$8,493
Roof	$1,383
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$4,123
Structural - Other Building Elements	$16,587
Sub-Total:	$57,885
Sub-Total adjusted to ACF of: 104.00%	$60,200
Contingency @ 5.00 %	$3,010
SIOH @ 5.50 %	$3,477
Total - Unit Type M-10 CGO 2.1	$66,687

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	C	2
	G	15
Total Quantity: UNIT TYPE M-10 CG		**17**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type M-10B CGO 2.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$2,732
Interior - Mechanical	$3,050
Interiors - Bathroom #1	$2,287
Interiors - Bathroom #2	$2,652
Interiors - Kitchen	$11,697
Interiors - Laundry Room	$1,273
Interiors, General - All but Kitchen, Baths & Laundry	$9,168
Roof	$95
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$3,393
Structural - Other Building Elements	$2,558
Sub-Total:	$43,775
Sub-Total adjusted to ACF of: 104.00%	$45,526
Contingency @ 5.00 %	$2,276
SIOH @ 5.50 %	$2,629
Total - Unit Type M-10B CGO 2.1	$50,432

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	C	2
	G	15
Total Quantity: UNIT TYPE M-10B CG		**17**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type M-10B CGO 2.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$525
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors - Laundry Room	$0
Interiors, General - All but Kitchen, Baths & Laundry	$0
Roof	$1,397
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$1,058
Structural - Other Building Elements	$15,340
Sub-Total:	$18,320
Sub-Total adjusted to ACF of: 104.00%	$19,053
Contingency @ 5.00 %	$953
SIOH @ 5.50 %	$1,100
Total - Unit Type M-10B CGO 2.1	$21,106

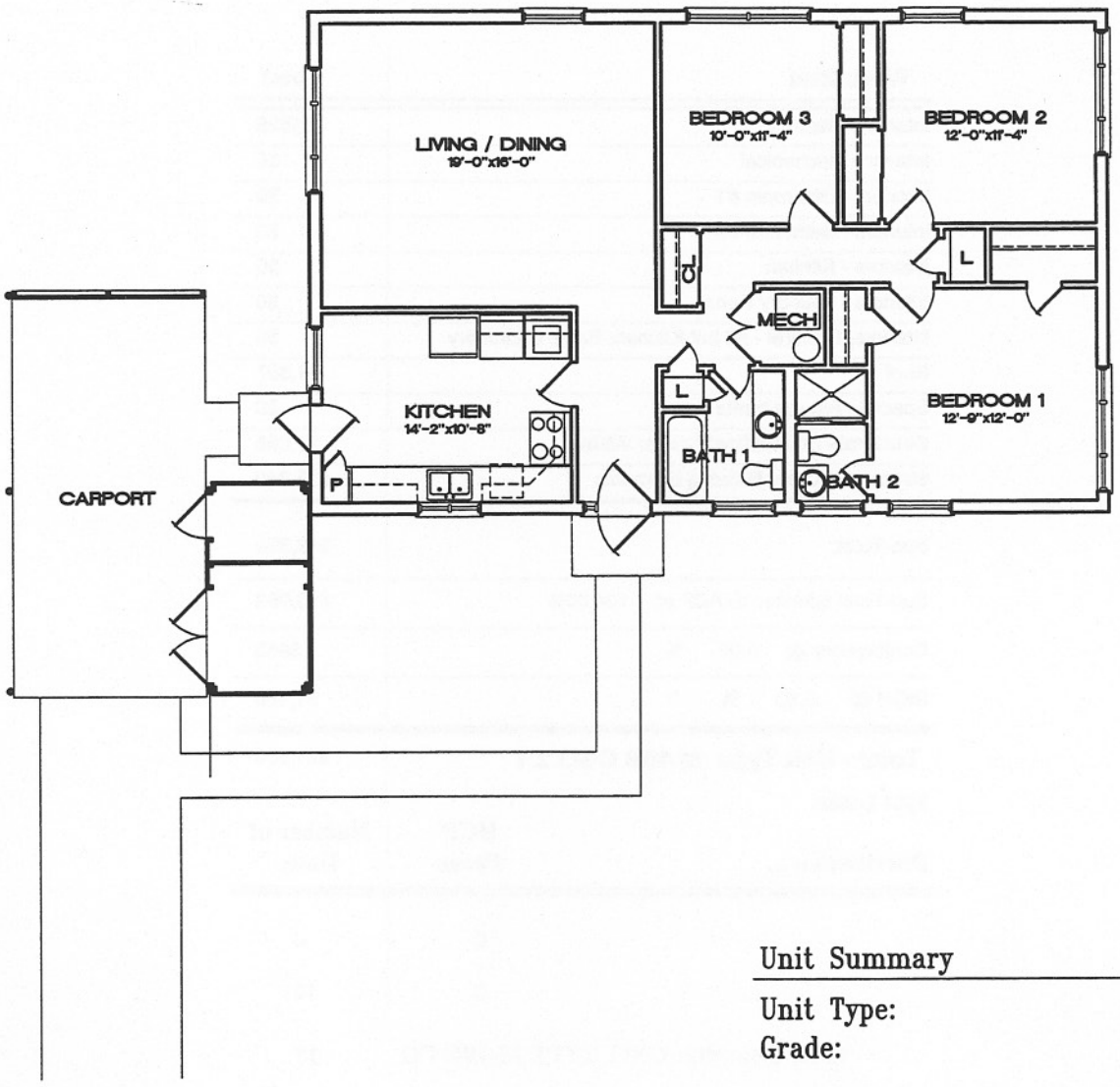
2001 Dollars

Distribution ...	HCP Phase	Number of Units
	C	2
	G	15
Total Quantity: UNIT TYPE M-10B CG		**17**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.11 Unit Type M-10

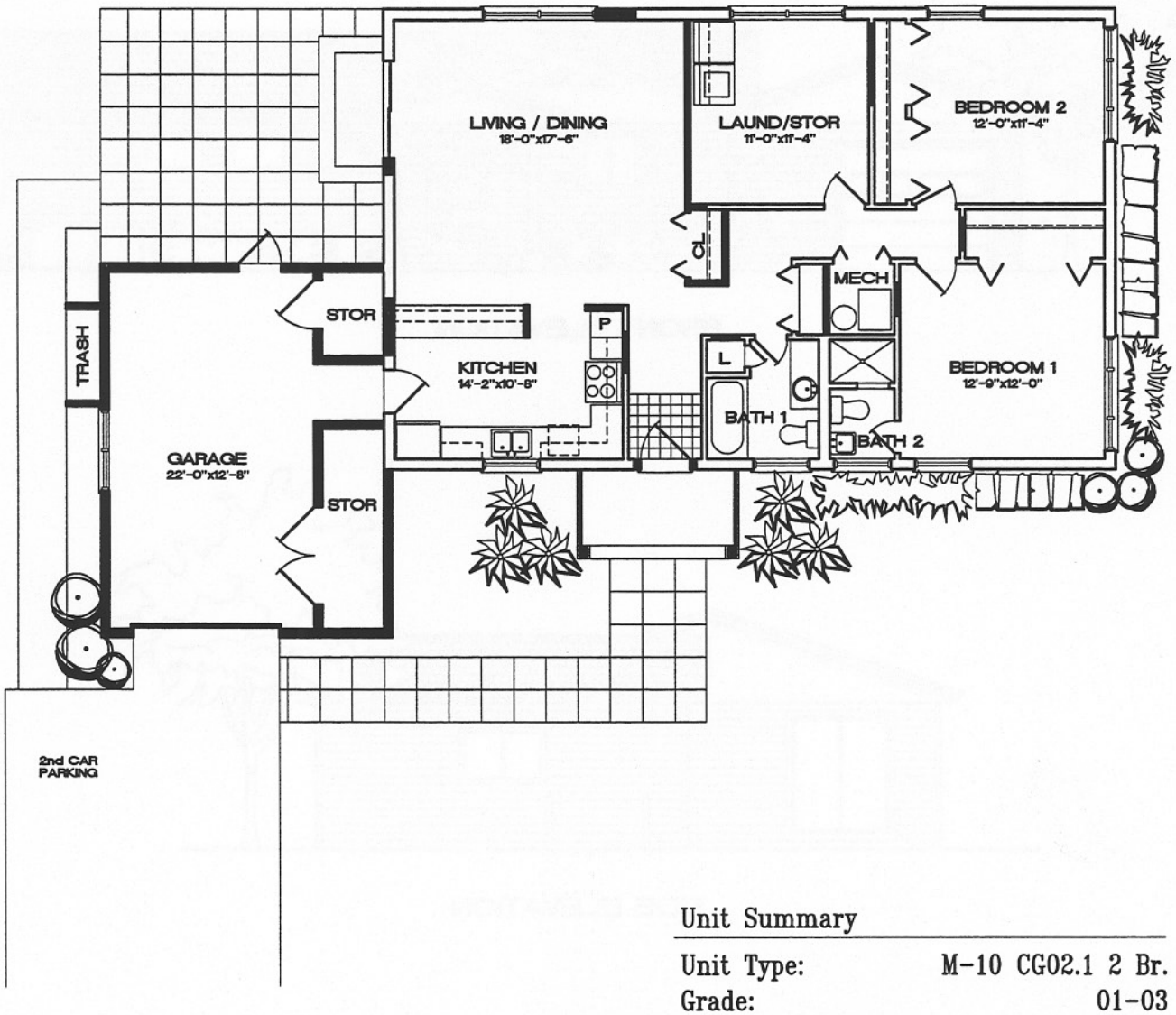


Unit Summary

Unit Type:	M-10 3 Br.
Grade:	01-03
	E1-E6
	E7-E9
Existing Net Area:	1,146 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

EXISTING FLOOR PLAN



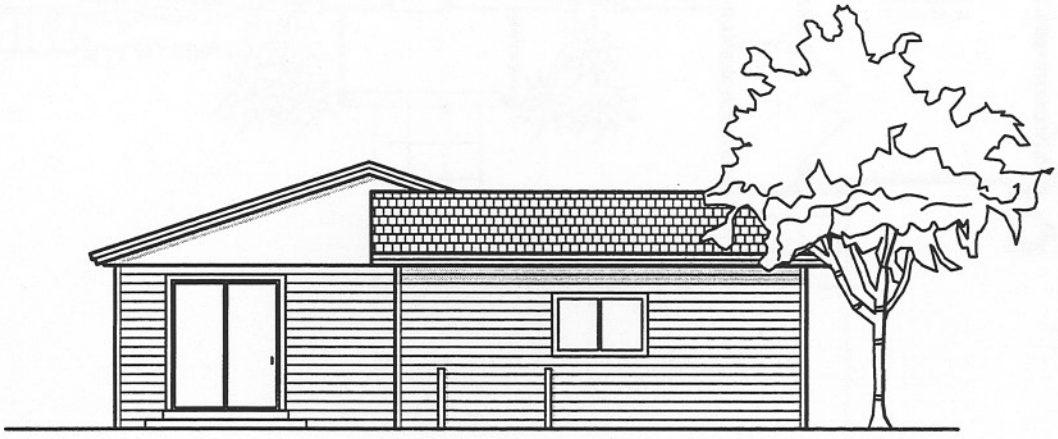
Unit Summary

Unit Type:	M-10 CG02.1 2 Br.
Grade:	01-03
Proposed Net Area:	998 S.F.
Authorized Net Area:	998 S.F.

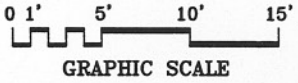
0 1' 5' 10' 15'
GRAPHIC SCALE

PROPOSED FLOOR PLAN
(DESIGNED BY OTHERS)

FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE CGO2.1 ELEVATIONS

(DESIGNED BY OTHERS)

3.2.12 Unit Type M-11 Woodview Neighborhood

Summary

119 Travis Lane Inspected

Built in 1957 (Appropriated)

Deleted From Housing Inventory

3.2.12.1 Analysis of Existing Conditions

This single-family unit has been removed from the housing inventory, and has been converted to Visiting Officer's Quarters (VOQ).

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3.2.13 Unit Type M-12 FGO4.1 Woodview Neighborhood

Summary

300 March Drive Inspected

Built in 1957 (Appropriated)

Condition Assessment Matrix Rating: 3.71

Grades O-4 and O-5

4 Bedrooms, 2 Baths

1,550 NSF authorized
1,593 NSF existing
1,593 NSF proposed
Whole House renovated
M12B, 1 unit FY98 PAIP

3.2.13.1 Analysis of Existing Conditions

This single-family unit has 4 bedrooms and 2 baths with an area of 1,593 NSF. Construction is standard wood framing on CMU foundation wall with a crawlspace and a 2x10 inch floor joist.

Two of these units are currently assigned to FGOs; another has been assigned as a VOQ, and deleted from the housing inventory. One unit was upgraded to Whole House Standards in an FY98 PAIP and is designated as M-12B.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- The carport is flat with a built-up roof.
- This unit does not have trash enclosure provisions.
- This unit does not have a rear door for access to the back yard.
- The outside storage shed is 4 feet high and prohibits adequate access.
- Off-street parking is inadequate.
- Termite damage was detected.

Architectural Interior

- The interior of this unit is in generally good condition.
- The kitchen cabinets are marginally adequate.
- The ceiling mounted exhaust fan is not adequate.
- The task lighting is poor.
- The sheet vinyl flooring is in good condition.
- The two bathrooms in this 4 bedroom unit are dated and require remodeling

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor runs of the air-conditioner condensation drain may become a stumble hazard.
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

- No working clearance in front of electrical panels in mechanical closets.
- The panel-board and breakers are outdated and in need of replacement.
- Ungrounded and/or outdated wiring conditions and devices apply throughout the facility.
- Lack of GFCI receptacles in proper locations along kitchen counter spaces.

3.2.13.2 Recommendations

With minor interior modifications, this unit will be suitable 4-bedroom housing of 1,593 NSF for Field Grade Officers within the maximum authorized area of the existing unit.

Architectural Exterior

- Remove existing carport and construct a new garage with storage.
- Provide a new concrete entrance stoop, sidewalks, and patio.
- Provide off-street parking for 2.5 cars per unit..
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

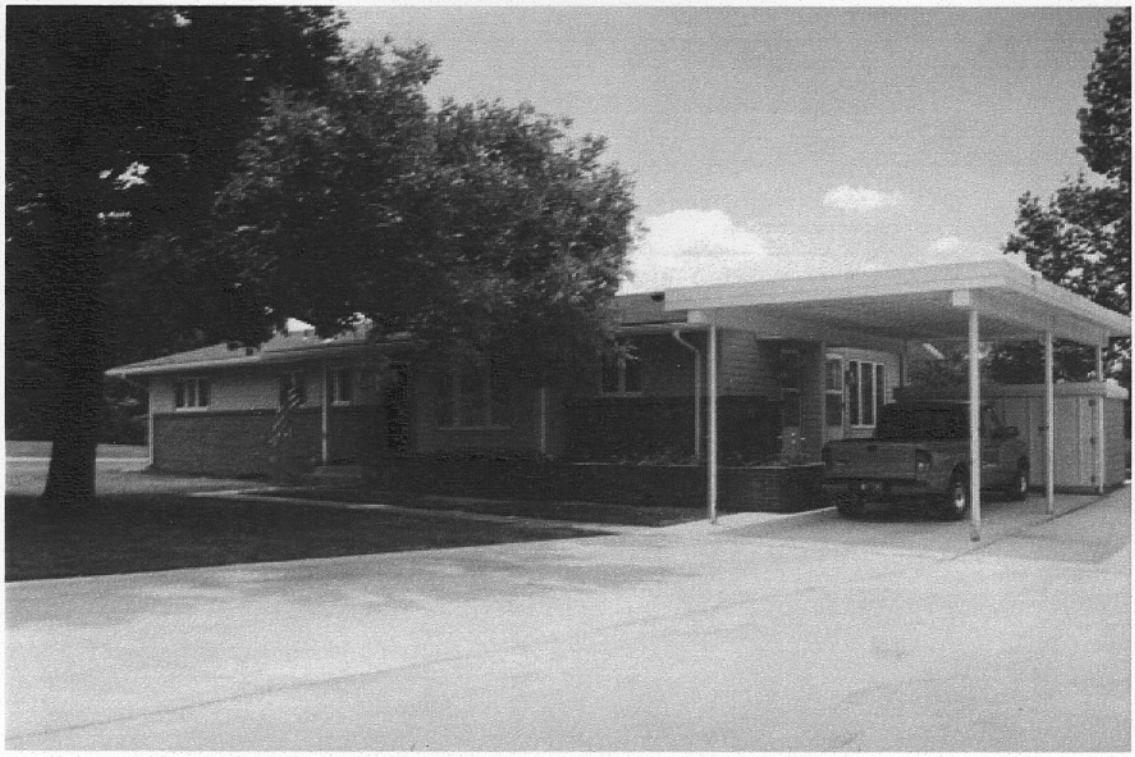
- Install new sheet vinyl flooring in bathrooms and utility room.
- Install vinyl tiles at entry, and install carpeting elsewhere.
- Convert new walls to define a new family room and kitchen providing an eat-in kitchen bar.
- Revise master bathroom, allowing for a washer/dryer area.
- Remove existing kitchen cabinets, and provide new cabinets and plastic laminated countertops.
- Provide new deep sink, dishwasher, fixtures, and range with hood.
- Provide each bathroom with a new sink, fixtures, and vanity.
- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

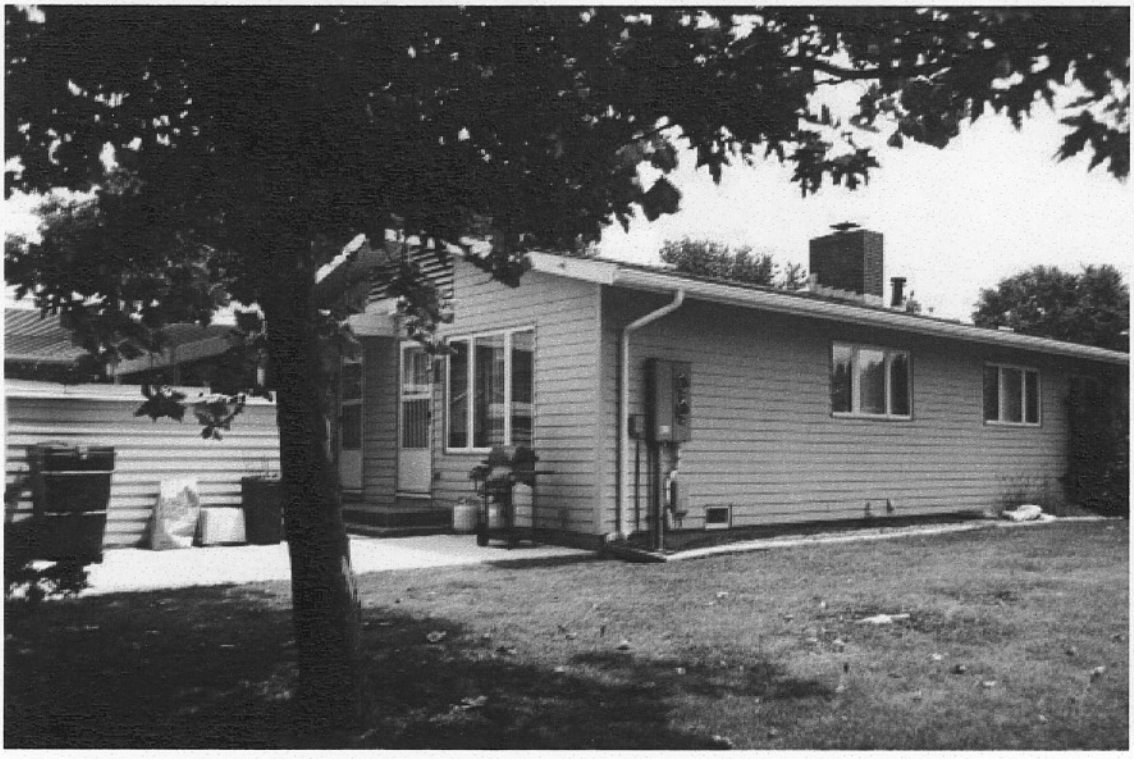
- Level existing support slab, or provide a new level one for the air-conditioning condenser unit
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.
- Install proper water-saving plumbing fixtures and flow restrictors.
- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

- Provide new panel-board and circuit breakers.
- Relocate electrical panel to provide working clearance as per the current NEC.
- Rewire entire unit to provide properly grounded system.
- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles as per the current NEC.
- Provide two small appliance circuits for kitchen counter receptacles per the current NEC.

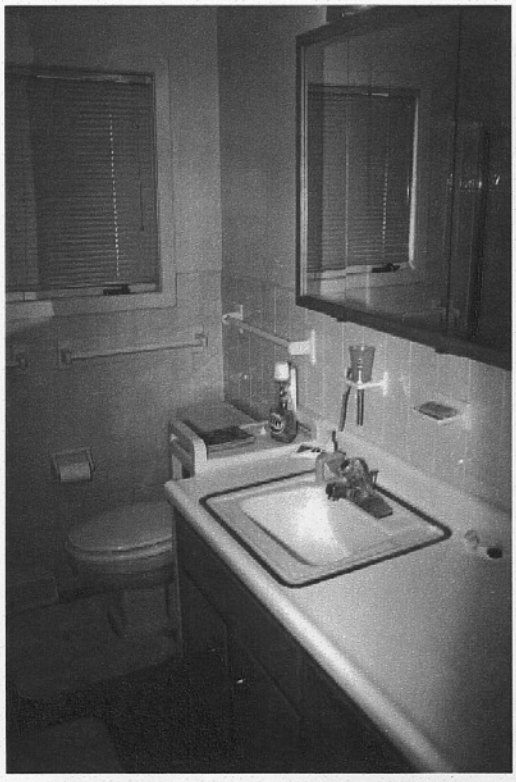


3.22 Unit Type M-12 - Front Elevation

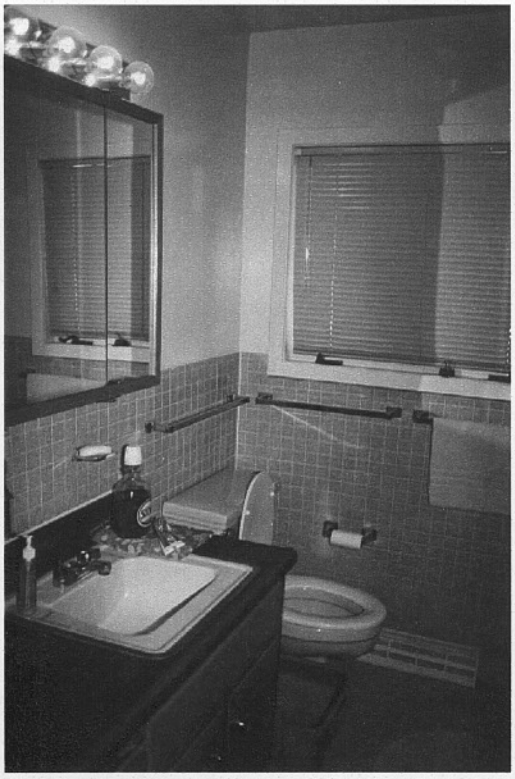


3.23 Unit Type M-12 - Rear and Side Elevation

3.24 Unit Type M-12 - Kitchen



3.25 Unit Type M-12 - Bathroom 1



3.26 Unit Type M-12 - Bathroom 2

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type M-12B FGO 4.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$10,074
Interior - Mechanical	$2,953
Interiors - Bathroom #1	$2,983
Interiors - Bathroom #2	$2,968
Interiors - Kitchen	$9,398
Interiors - Laundry Room	$761
Interiors, General - All but Kitchen, Baths & Laundry	$10,859
Roof	$139
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$3,814
Structural - Other Building Elements	$24,248
Sub-Total:	$73,067
Sub-Total adjusted to ACF of: 104.00%	$75,990
Contingency @ 5.00 %	$3,800
SIOH @ 5.50 %	$4,388
Total - Unit Type M-12B FGO 4.1	$84,178

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	C	2
	G	1
Total Quantity: UNIT TYPE M-12B FG		**3**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type M-12B FGO 4.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$10,378
Interior - Mechanical	$3,190
Interiors - Bathroom #1	$3,219
Interiors - Bathroom #2	$3,202
Interiors - Kitchen	$10,148
Interiors - Laundry Room	$820
Interiors, General - All but Kitchen, Baths & Laundry	$11,717
Roof	$0
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$4,118
Structural - Other Building Elements	$3,601
Sub-Total:	$55,263
Sub-Total adjusted to ACF of: 104.00%	$57,474
Contingency @ 5.00 %	$2,874
SIOH @ 5.50 %	$3,319
Total - Unit Type M-12B FGO 4.1	$63,666

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	C	2
	G	1
Total Quantity: UNIT TYPE M-12B FG		**3**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type M-12B FGO 4.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$502
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors - Laundry Room	$0
Interiors, General - All but Kitchen, Baths & Laundry	$0
Roof	$150
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$0
Structural - Other Building Elements	$22,568
Sub-Total:	$23,220
Sub-Total adjusted to ACF of: 104.00%	$24,148
Contingency @ 5.00 %	$1,207
SIOH @ 5.50 %	$1,395
Total - Unit Type M-12B FGO 4.1	$26,750

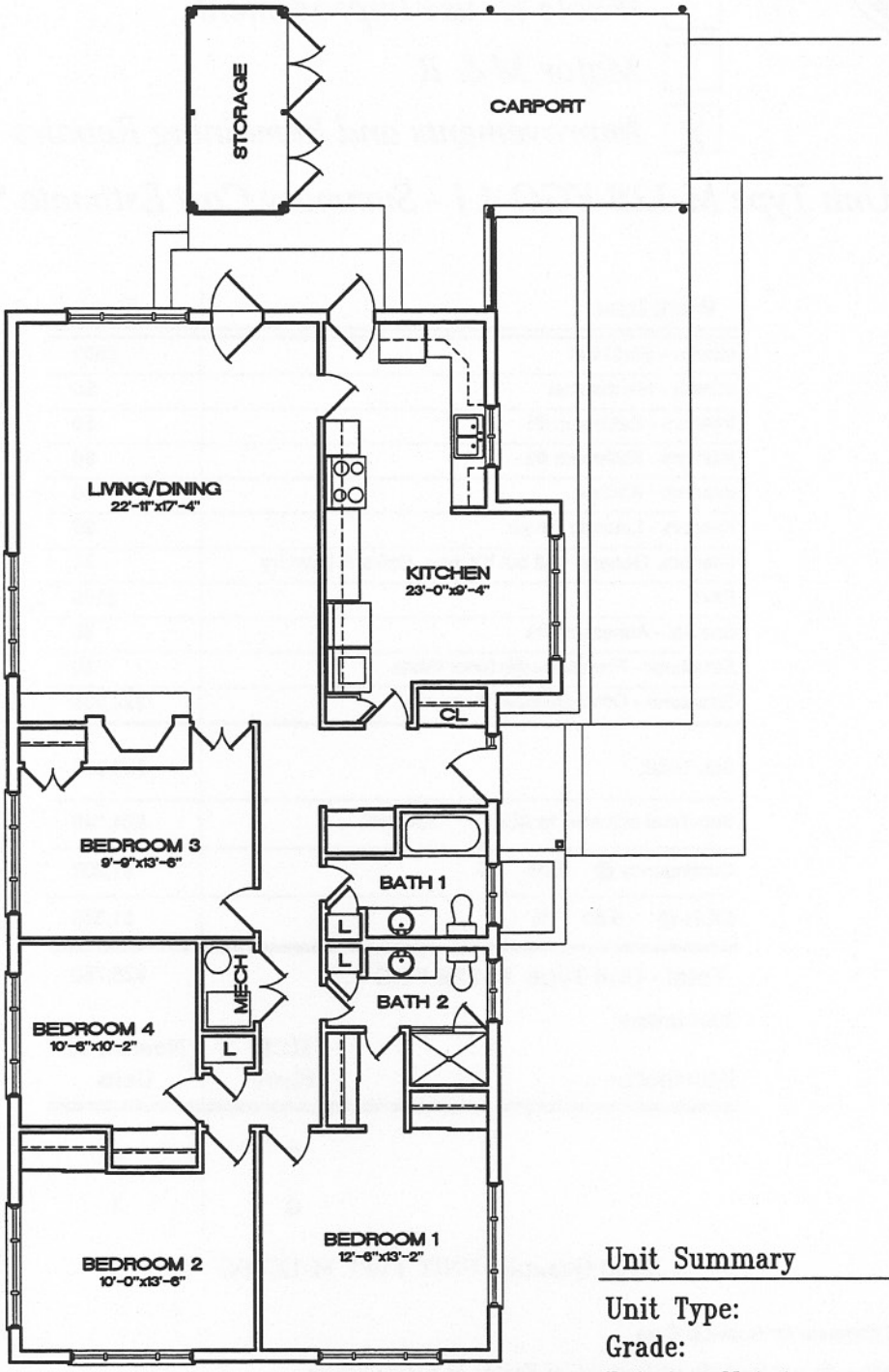
2001 Dollars

Distribution ...	HCP Phase	Number of Units
	C	2
	G	1
Total Quantity: UNIT TYPE M-12B FG		**3**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.13 Unit Type M-12

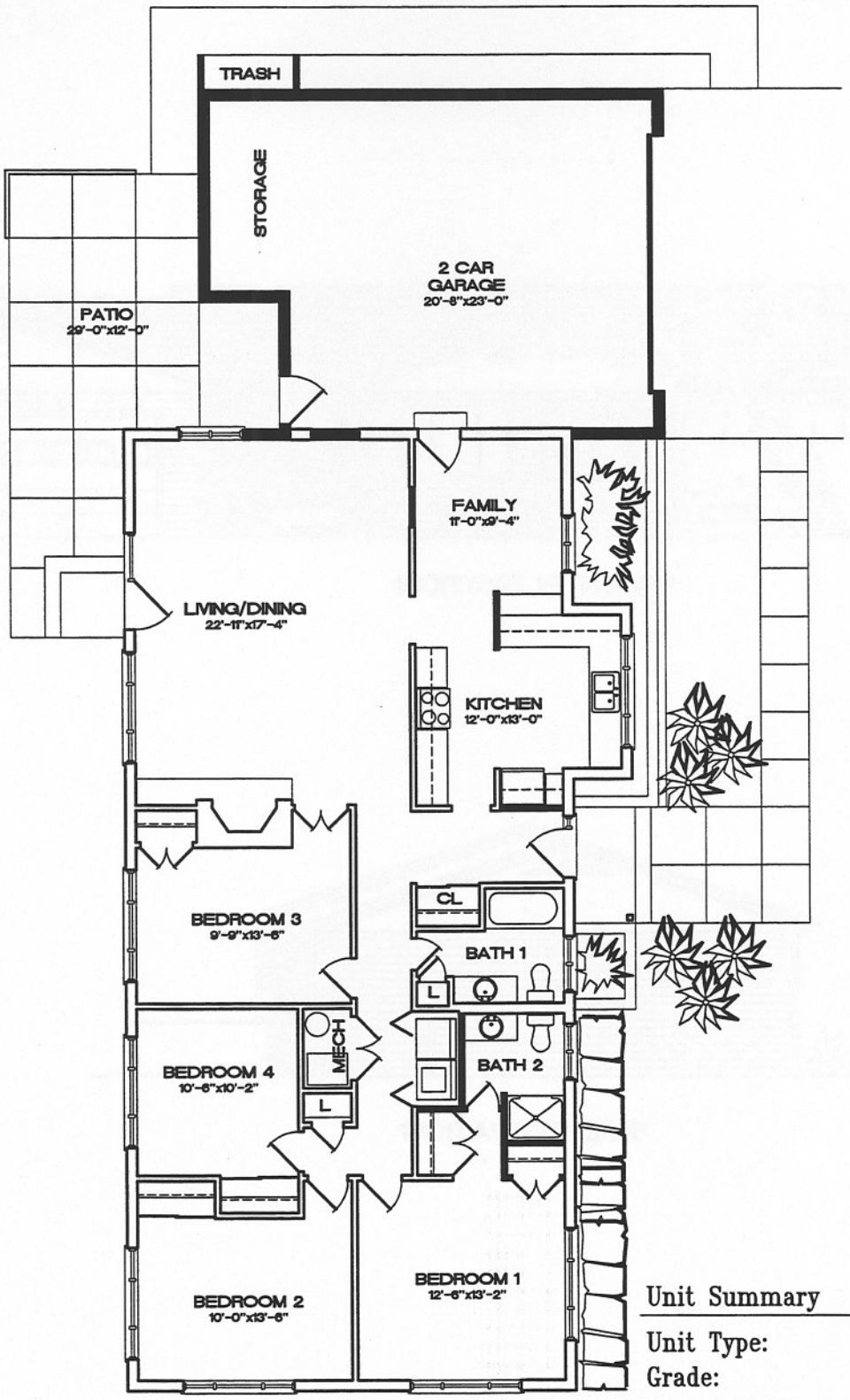


Unit Summary

Unit Type:	M-12 4 Br.
Grade:	04-05
Existing Net Area:	1,593 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

EXISTING FLOOR PLAN



Unit Summary

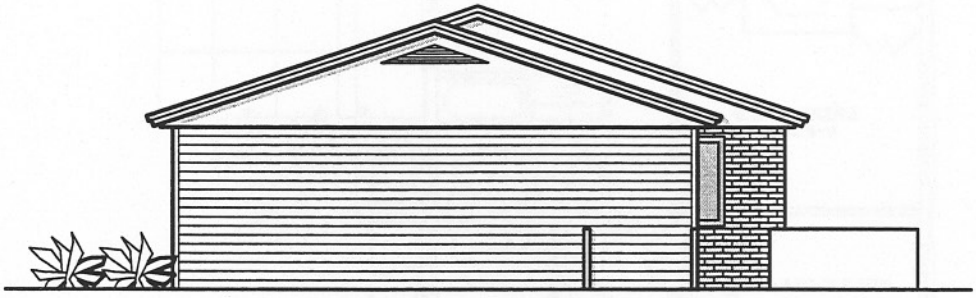
Unit Type:	M-12B FG04.1 4 Br.
Grade:	04-05
Proposed Net Area:	1,593 S.F.
Authorized Net Area:	1,550 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

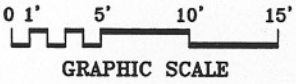
PROPOSED FLOOR PLAN

(DESIGNED BY OTHERS)

FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE FGO4.1 ELEVATIONS

(DESIGNED BY OTHERS)

3.2.14 Unit Type M-13 SGO4.1 Woodview Neighborhood

Summary

120 Travis Lane Inspected

Built in 1957 (Appropriated)

Condition Assessment Matrix Rating: 3.83

Grade O-6

4 Bedrooms, 2 Baths

1,700 NSF authorized
2,479 NSF existing
2,479 NSF proposed

3.2.14.1 Analysis of Existing Conditions

This single-family unit has 4 bedrooms and 2 baths with an area of 2,479 NSF. Construction is standard wood framing on the CMU and concrete foundation wall with a half-finished basement. This unit is assigned to an SGO.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- This unit has a 2 car-garage with a storage room.
- Termite damage was detected.

Architectural Interior

- The kitchen was recently remodeled.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor runs of the air-conditioner condensation drain may become a stumble hazard
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

- Lack of GFCI receptacles in proper locations along kitchen counter spaces.

3.2.14.2 Recommendations

With minor interior modifications, this unit will be suitable as 4-BR housing for a Senior Grade Officers.

The maximum authorized area is normally 1,700, unless the existing unit is already larger.

Architectural Exterior

- The exterior of this unit is in good condition.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

- The interior of this unit is in generally good condition; however, heavy paint build-up on the walls will eventually need to be removed.

- The bathroom cabinets should be upgraded.

- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.

- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.

- Install proper water-saving plumbing fixtures and flow restrictors.

- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).

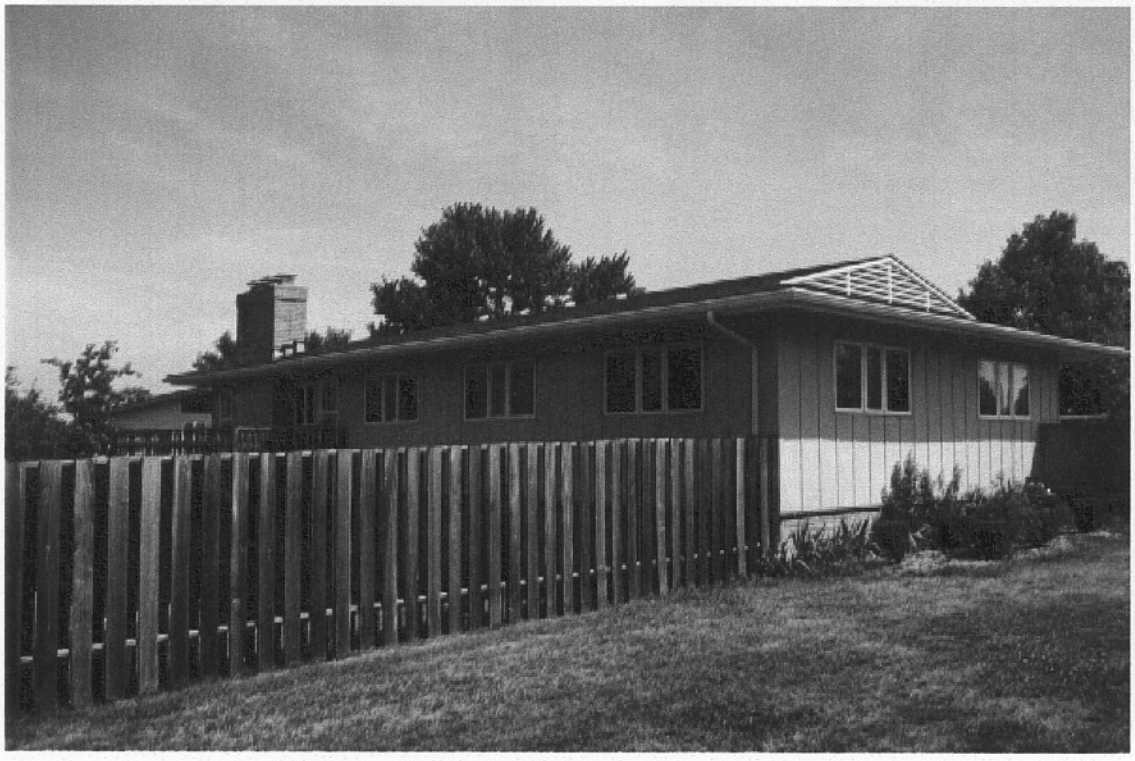
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

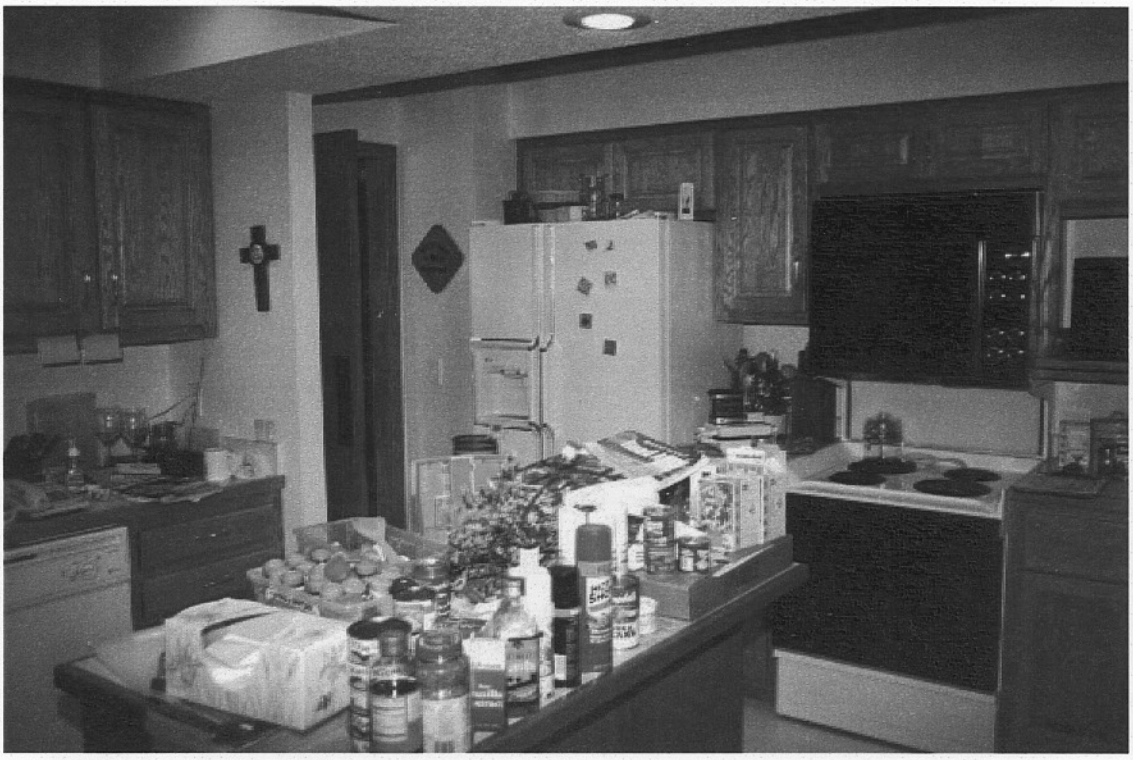
- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles as per the current NEC.

- Provide two small appliance circuits for kitchen counter receptacles per the current NEC.

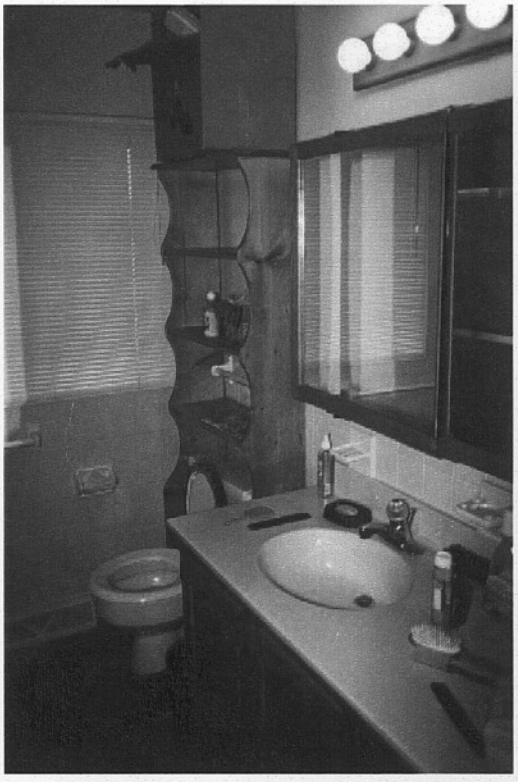
3.27 Unit Type M-13 - Front Elevation



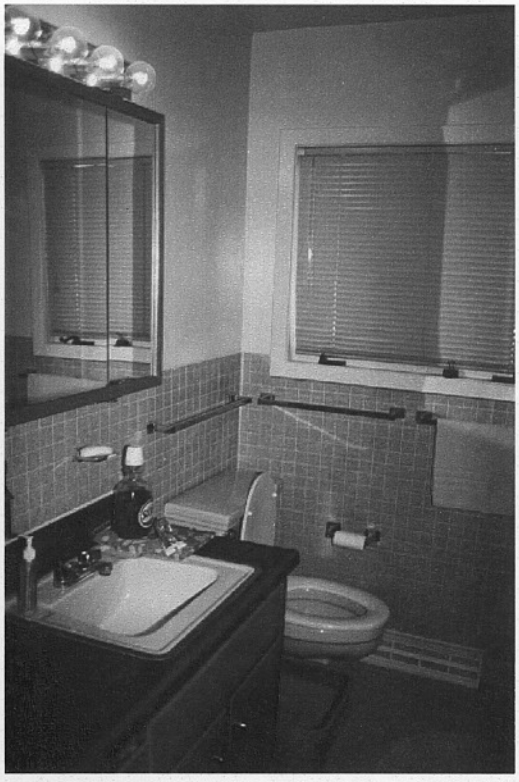
3.28 Unit Type M-13 - Rear and Side Elevation



3.29 Unit Type M-13 - Kitchen



3.30 Unit Type M-13 - Bathroom 1



3.31 Unit Type M-13 - Bathroom 2

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type M-13 SGO 4.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$207
Interior - Mechanical	$1,705
Interiors - Bathroom #1	$2,611
Interiors - Bathroom #2	$2,844
Interiors - Kitchen	$562
Interiors, General - All but Kitchen, Baths & Laundry	$1,322
Special - Assessments	$4,870
Sub-Total:	$14,120
Sub-Total adjusted to ACF of: 104.00%	$14,685
Contingency @ 5.00 %	$734
SIOH @ 5.50 %	$848
Total - Unit Type M-13 SGO 4.1	$16,268

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	G	1

Total Quantity: UNIT TYPE M-13 SGO **1**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type M-13 SGO 4.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$223
Interior - Mechanical	$1,841
Interiors - Bathroom #1	$2,820
Interiors - Bathroom #2	$3,072
Interiors - Kitchen	$606
Interiors, General - All but Kitchen, Baths & Laundry	$1,427
Special - Assessments	$4,870
Sub-Total:	$14,859
Sub-Total adjusted to ACF of: 104.00%	$15,453
Contingency @ 5.00 %	$773
SIOH @ 5.50 %	$892
Total - Unit Type M-13 SGO 4.1	$17,118

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	G	1

Total Quantity: UNIT TYPE M-13 SGO **1**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type M-13 SGO 4.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$0
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$0
Special - Assessments	$0
Sub-Total:	$0
Sub-Total adjusted to ACF of: 104.00%	$0
Contingency @ 5.00 %	$0
SIOH @ 5.50 %	$0
Total - Unit Type M-13 SGO 4.1	$0

2001 Dollars

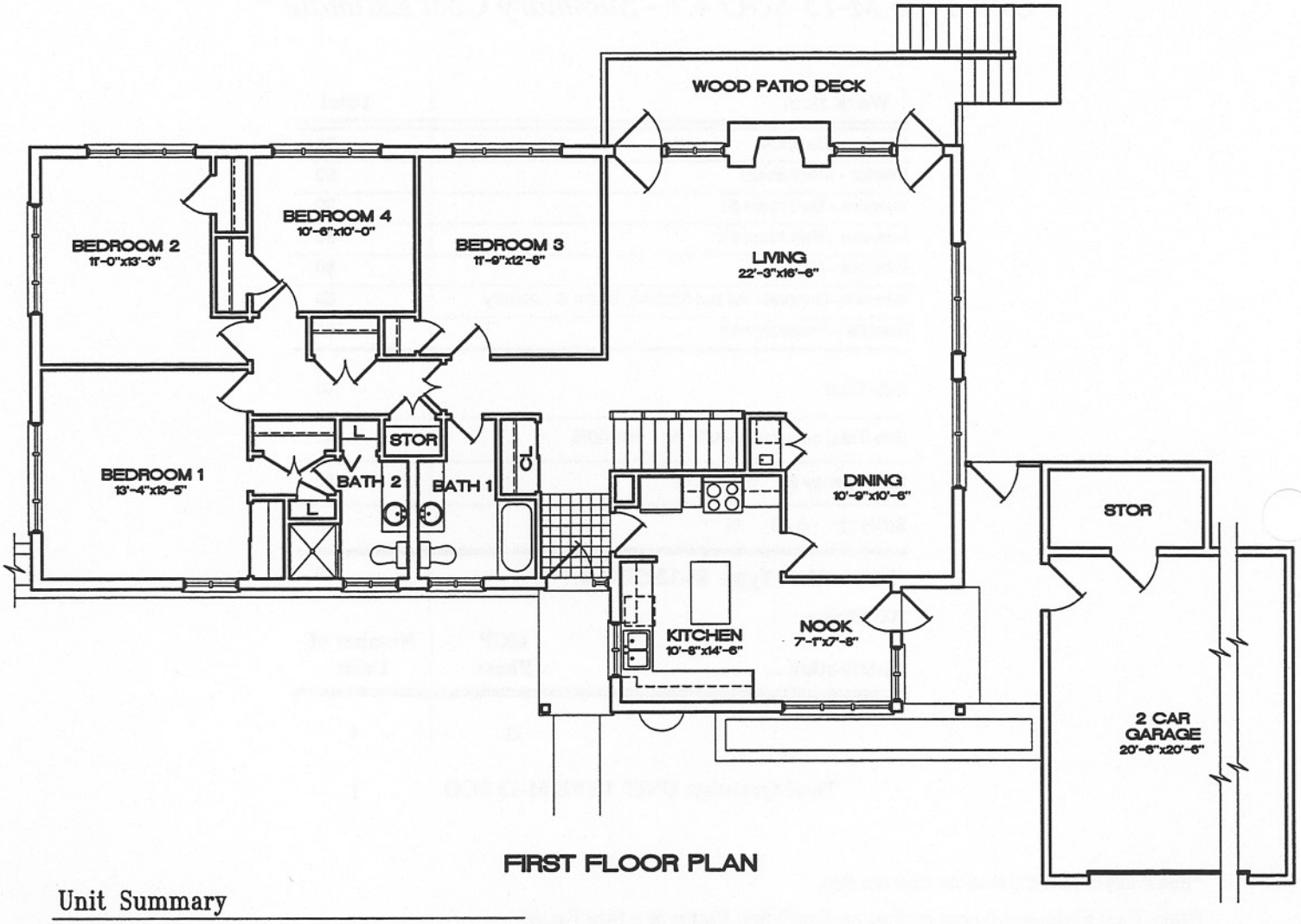
Distribution ...	HCP Phase	Number of Units
	G	1

Total Quantity: UNIT TYPE M-13 SGO **1**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

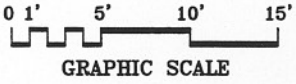
3.2.14 Unit Type M-13



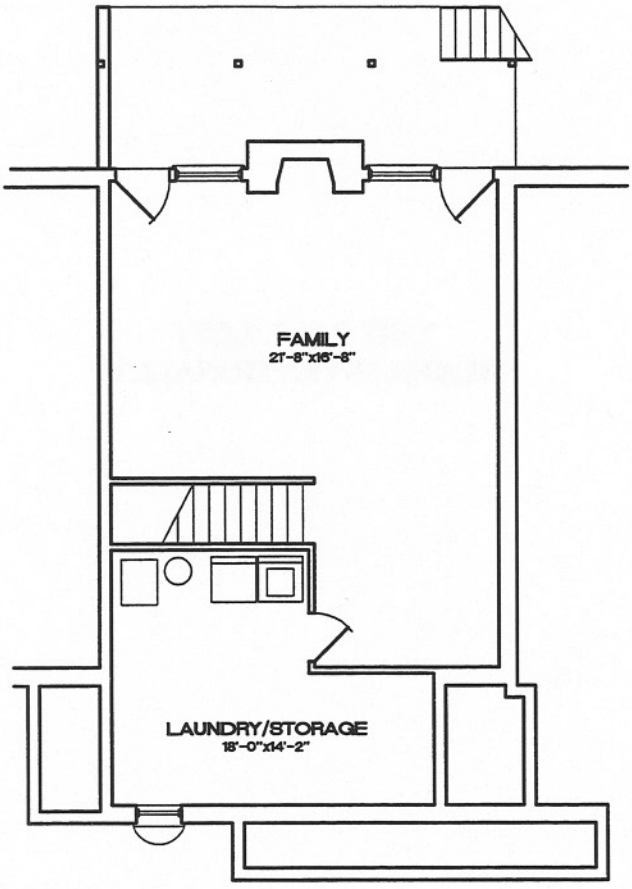
FIRST FLOOR PLAN

Unit Summary

Unit Type:	M-13 SG04.1 4 Br.
Grade:	06
Existing Net Area:	2,479 S.F.



EXISTING FLOOR PLAN



BASEMENT PLAN

GRAPHIC SCALE

EXISTING FLOOR PLAN

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Architectural Interior

- Install new sheet vinyl flooring in kitchen, bathrooms, and utility room.
- Install vinyl tiles at entry.
- Provide new plastic laminate countertops.
- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

- Remove existing exterior air-conditioner condenser unit and slab.
- Provide, in the same location, a new concrete slab and condenser unit compatible with the existing system.

Electrical

- Provide GFCI in kitchen, baths, and at exterior receptacles.
- Provide grounded circuits elsewhere and additional receptacles per code requirements.
- Replace light fixtures in bathroom and kitchen.
- Conceal exterior surface–mounted conduits
- Relocate exposed exterior conduit.

3.2.15 Unit Type M-14 GO4.1 Woodview Neighborhood

Summary

122 Travis Lane Not Inspected

Built in 1962 (Appropriated)

Condition Assessment Matrix Rating: 3.84

Grade O-7

4 Bedrooms, 2 Baths

2,100 NSF authorized
2,714 NSF existing
2,714 NSF proposed

3.2.15.1 Analysis of Existing Conditions

This single-family unit has 4 bedrooms and 2 baths with an area of 2,714 NSF. Construction is standard wood framing on CMU and concrete foundation wall with a family room basement. This unit is currently assigned to an SGO.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- This unit has a 2 car-garage with a storage room.
- The shingle roof is well weathered, and although not leaking at present, it needs replacing.
- Termite damage was detected.

Architectural Interior

- The kitchen countertops are marginally adequate.
- The task lighting is poor.

Mechanical

- The forced air gas heat furnace in this unit is in good condition.
- The air-conditioner condenser problems are common in these units.
- The support slab is uneven.

Electrical

- The panel board to this unit is 100 Amps, and is adequate.
- No GFI (ground fault interrupter) circuits are in the kitchen and bathroom, or on the exterior.
- Exposed conduit along the exterior of this unit requires concealment.

3.2.15.2 Recommendations

With minor modifications, this unit will be suitable as 4-bedroom housing for a General Officer.

The maximum authorized area is normally 2,100 NSF, unless the existing unit is already larger.

Architectural Exterior

- Remove and replace existing fiberglass shingle roofing system.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

3.32 Unit Type M-14 - Front Elevation

3.33 Unit Type M-14 - Rear and Side Elevation

Photo not available

3.34 Unit Type M-14 - Kitchen

Photo not available

3.35 Unit Type M-14 – Bathroom 1

Photo not available

3.36 Unit Type M-14 – Bathroom 2

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type M-14 GO 4.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$6,480
Interior - Mechanical	$5,012
Interiors - Bathroom #1	$796
Interiors - Bathroom #2	$930
Interiors - Kitchen	$2,147
Interiors - Laundry Room	$722
Interiors, General - All but Kitchen, Baths & Laundry	$12,352
Roof	$4,829
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$10
Structural - Other Building Elements	$1,195
Sub-Total:	$39,342
Sub-Total adjusted to ACF of: 104.00%	$40,916
Contingency @ 5.00 %	$2,046
SIOH @ 5.50 %	$2,363
Total - Unit Type M-14 GO 4.1	$45,324

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	G	1
Total Quantity: UNIT TYPE M-14 GO		**1**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type M-14 GO 4.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$6,997
Interior - Mechanical	$5,413
Interiors - Bathroom #1	$857
Interiors - Bathroom #2	$1,002
Interiors - Kitchen	$2,315
Interiors - Laundry Room	$776
Interiors, General - All but Kitchen, Baths & Laundry	$13,318
Roof	$5,206
Special - Assessments	$4,870
Structural - Foundation/Exterior Walls	$11
Structural - Other Building Elements	$1,293
Sub-Total:	$42,058
Sub-Total adjusted to ACF of: 104.00%	$43,740
Contingency @ 5.00 %	$2,187
SIOH @ 5.50 %	$2,526
Total - Unit Type M-14 GO 4.1	$48,453

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	G	1

Total Quantity: UNIT TYPE M-14 GO **1**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type M-14 GO 4.1 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$0
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors - Laundry Room	$0
Interiors, General - All but Kitchen, Baths & Laundry	$0
Roof	$0
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$0
Structural - Other Building Elements	$0
Sub-Total:	$0
Sub-Total adjusted to ACF of: 104.00%	$0
Contingency @ 5.00 %	$0
SIOH @ 5.50 %	$0
Total - Unit Type M-14 GO 4.1	$0

2001 Dollars

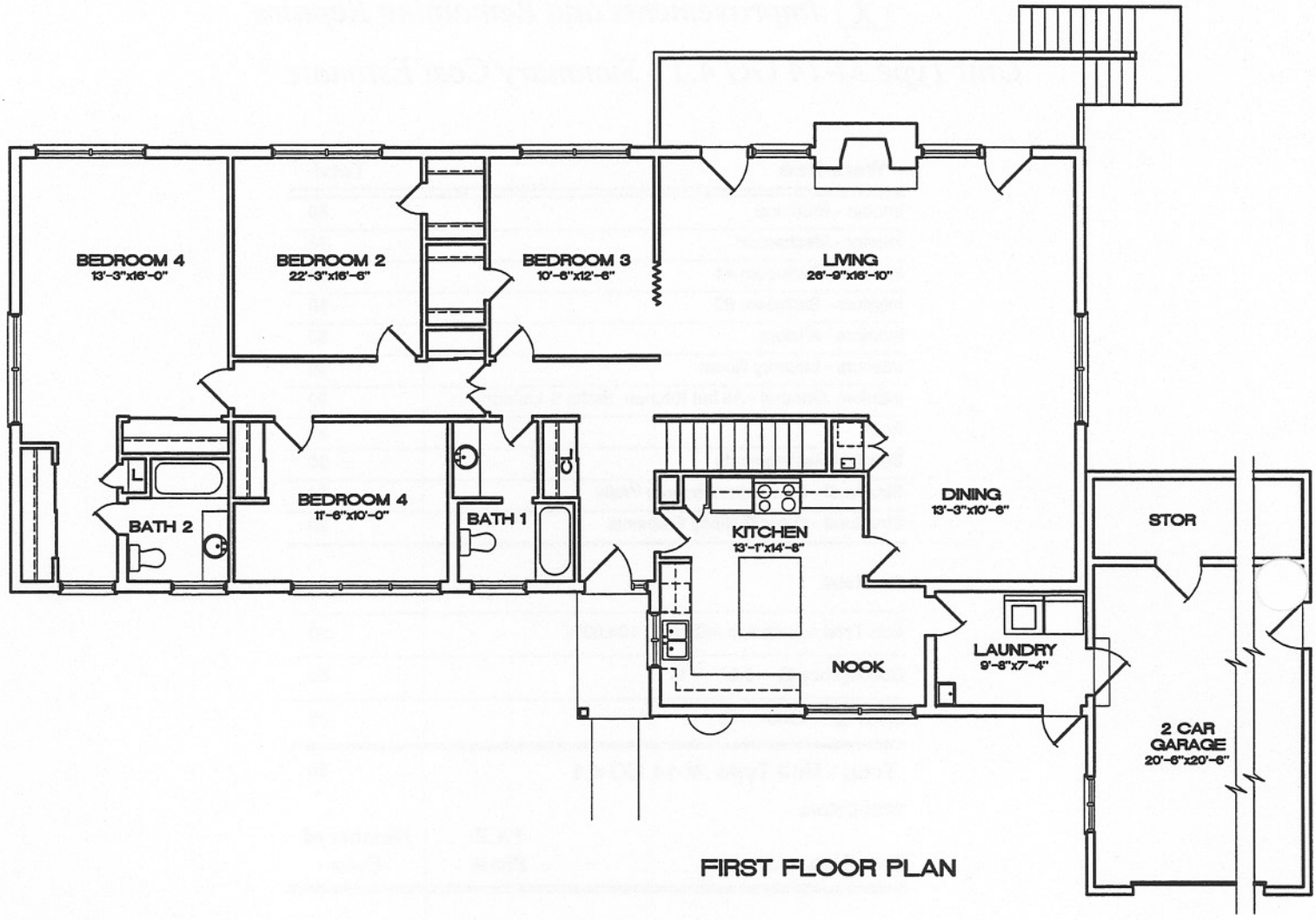
Distribution ...	HCP Phase	Number of Units
	G	1

Total Quantity: UNIT TYPE M-14 GO **1**

** See Detailed Cost Estimate for Back-Up Data*

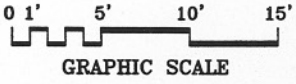
Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.15 Unit Type M-14

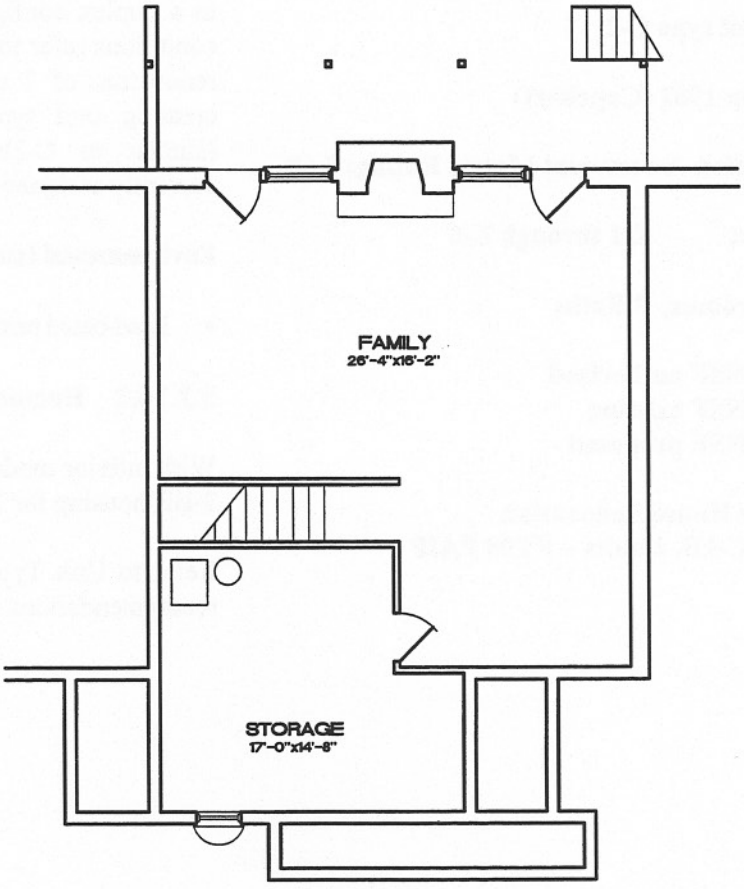


Unit Summary

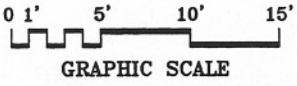
Unit Type:	M-14 G04.1 4 Br.
Grade:	07
Existing Net Area:	2,714 S.F.



EXISTING FLOOR PLAN



BASEMENT PLAN



EXISTING FLOOR PLAN

3.2.16 Unit Type C-1 NCO3.2 Lakeside Neighborhood

Summary

See unit type C-2

Built in 1962 (Capehart)

Condition Assessment Matrix Rating: 3.68

Grades E-1 through E-6

3 Bedrooms, 2 Baths

1,200 NSF authorized
1,064 NSF existing
1,200 NSF proposed

Whole House Renovation
C-1B, 2 units – FY98 PAIP

3.2.16.1 Analysis of Existing Conditions

This single-family unit has 3 bedrooms and 2 baths with an area of 1,064 NSF. These 6 units have the same floor plan as Unit Type C-2, except the C-2 is in a duplex configuration. For analysis of existing conditions refer to Section 3.2.17.1. A Whole House renovation of 2 units was part of an FY98 PAIP creating unit type C-1B. These C-1 and C-1B (similar to C-2B in Section 3.2.18) units are currently assigned to Junior NCOs.

Environmental Issues

- Lead-based paint and asbestos were detected.

3.2.16.2 Recommendations

With interior modifications, this unit will be suitable 3-BR housing for Junior NCOs.

Refer to Unit Type NCO3.2 in Section 3.2.17.2 for recommendations and cost estimates.

3.2.17 Unit Type C-2 NCO3.2 & SNCO3.1 Lakeside Neighborhood

Summary

815 Marshall Drive Inspected

Built in 1962 (Capehart)

Condition Assessment Matrix Rating: 3.68

Grades **E-1 through E-6**
E-7 through E-9

3 Bedrooms, 2 Baths

1,200 NSF authorized
1,064 NSF existing
1,200 NSF proposed **(C-2B, NCO3.2)**

1,350 NSF authorized
1,064 NSF existing
1,350 NSF proposed **(C-2C, SNCO3.1)**

Whole House Renovation
C-2B, 20 units – FY98 PAIP

3.2.17.1 Analysis of Existing Conditions

This duplex unit has 3 bedrooms and 2 bathrooms with an area of 1,064 NSF. Construction is standard wood framing on CMU foundation wall with a full basement. All 236 of these units (118 duplex buildings) are currently assigned to Junior NCOs. A Whole House renovation of 20 units was part of an FY98 PAIP creating unit type C-2B.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- The flat front of this unit is stark and requires a greater definition of the entry.
- A new parking pad has been provided.
- A new carport and storage structure will be added at a future date.
- Off-street parking is inadequate.

Architectural Interior

- The vinyl floor is in good condition.
- The walls and ceiling have heavy paint build-up.
- Both of the two bathrooms have new sinks, vanity, tub/shower, and fixtures.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor runs of the air-conditioner condensation drain may become a stumble hazard.
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

- The panel-board and breakers are outdated and in need of replacement.
- Ungrounded and/or outdated wiring conditions and devices apply throughout the facility.
- Lack of GFCI receptacles in proper locations along kitchen counter spaces.

- Lack of GFCI receptacles in proper locations throughout unit. No GFCI receptacles in bathrooms and outside.

3.2.17.2 Recommendations

Unit Type NCO3.2 (C-2B)

With interior modifications and an addition, this unit will be suitable as 3-BR housing of 1,200 NSF for Junior NCOs. The maximum authorized area is 1,200 NSF.

Architectural Exterior

- Construct a new garage with storage and trash enclosure.
- Construct a new gabled roof entry element over the front door to add visual relief and define the front entry of the unit.
- Provide a new concrete entrance stoop, sidewalks, and patio.
- Provide off-street parking for 2.5 cars per unit.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

- Install new sheet vinyl flooring in kitchen and bathrooms.
- Install vinyl tiles at entry, and install carpeting elsewhere.
- Construct an addition to the rear of this unit extending the living room and bedroom #2.
- Relocate kitchen providing for a family room.
- Remove existing kitchen cabinets, and provide new cabinets and plastic laminated countertops and breakfast bar.
- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.
- Provide new deep sink, dishwasher, fixtures, and range with hood.

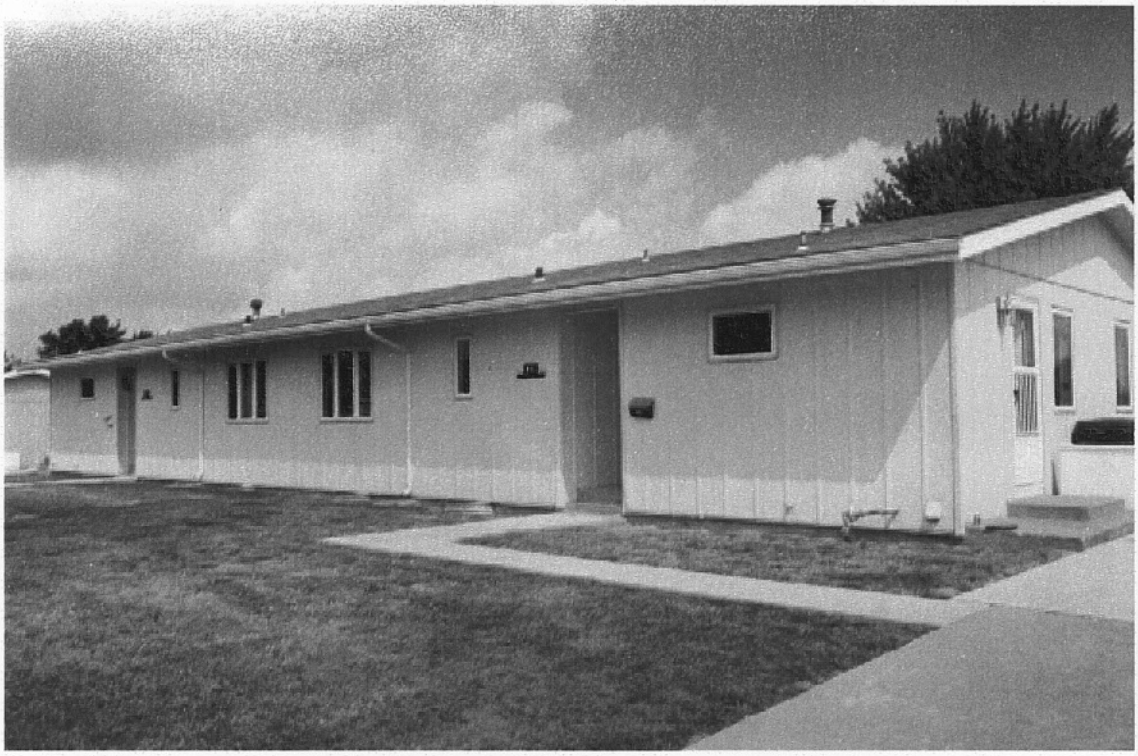
Mechanical

- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.
- Install proper water-saving plumbing fixtures and flow restrictors.
- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve)..
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

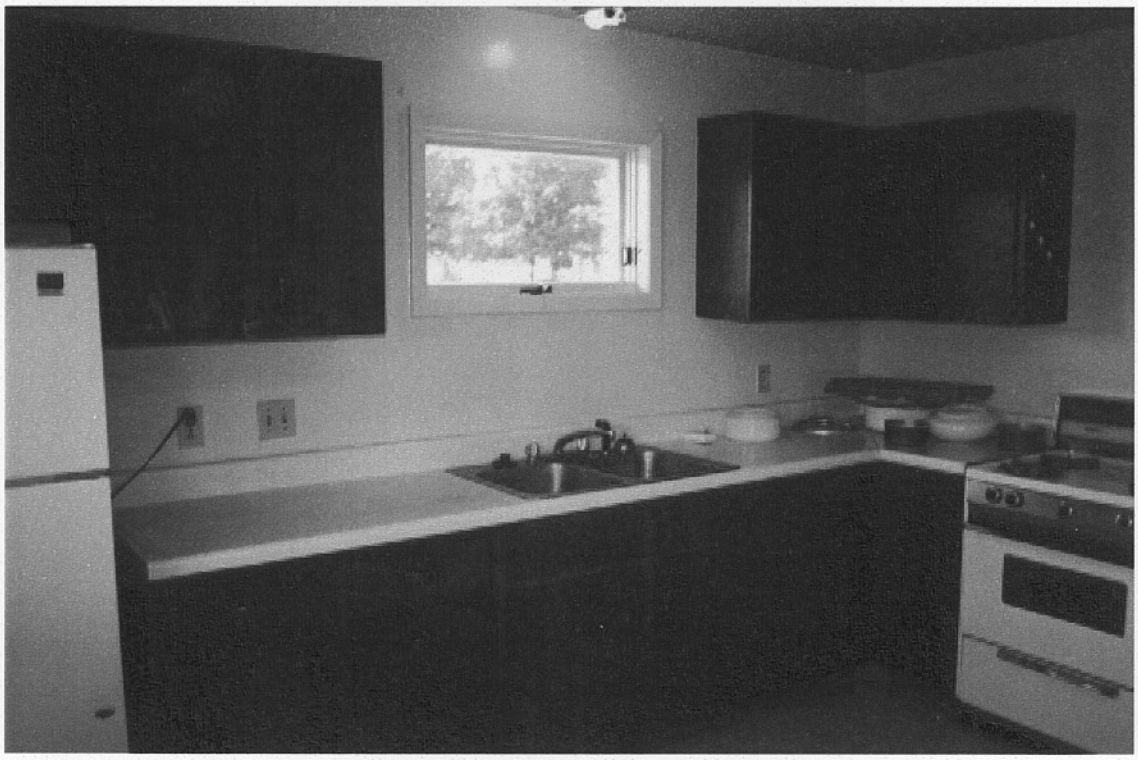
- Provide new panel-board and circuit breakers.
- Rewire entire unit to provide properly grounded system.
- Provide GFCI receptacles in bathrooms and for outside receptacles per the current NEC.
- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles as per the current NEC.
- Provide two small appliance circuits for kitchen counter receptacles per the current NEC.

Recommendations for Unit Type SNCO3.1 (C-2C) are continued on page 3-114.

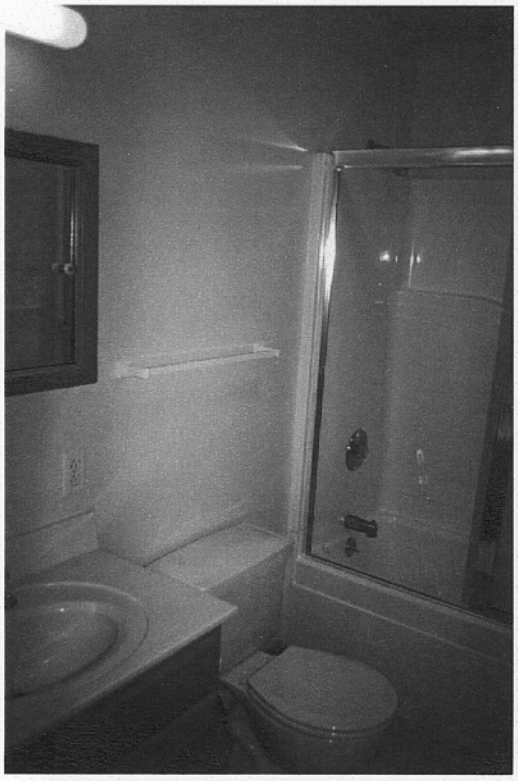


3.37 Unit Type C-2 - Front Elevation

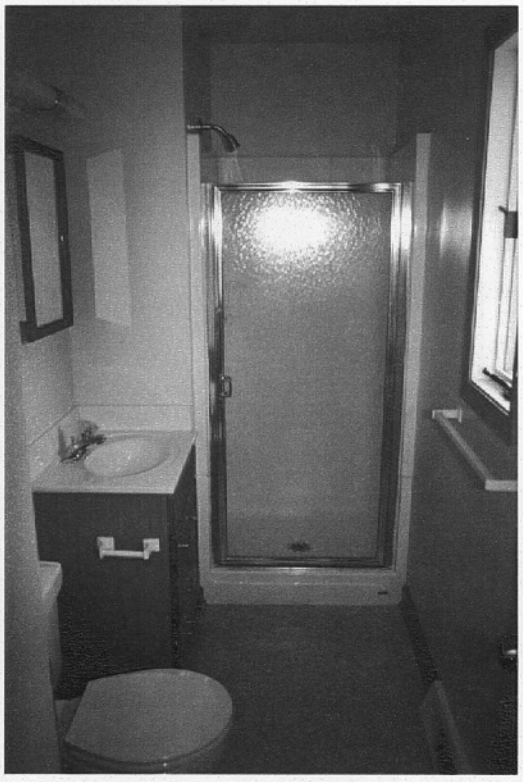
3.38 Unit Type C-2 - Rear and Side Elevation



3.39 Unit Type C-2 - Kitchen



3.40 Unit Type C-2 - Bathroom 1



3.41 Unit Type C-2 - Bathroom 2

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Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-2B NCO 3.2 - Summary Cost Estimate **

Work Item	Total
House Sitework	$3,453
Interior - Electrical	$9,317
Interior - Mechanical	$1,544
Interiors - Bathroom #1	$2,326
Interiors - Bathroom #2	$1,885
Interiors - Kitchen	$12,529
Interiors, General - All but Kitchen, Baths & Laundry	$9,866
Roof	$2,064
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$10,751
Structural - Other Building Elements	$16,767
Sub-Total:	$74,622
Sub-Total adjusted to ACF of: 104.00%	$77,607
Contingency @ 5.00 %	$3,880
SIOH @ 5.50 %	$4,482
Total - Unit Type C-2B NCO 3.2	$85,969

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	20
	C	6
	J	124
Total Quantity: UNIT TYPE C-2B NCO		**150**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type C-2B NCO 3.2 - Summary Cost Estimate **

Work Item	Total
House Sitework	$3,646
Interior - Electrical	$9,882
Interior - Mechanical	$1,667
Interiors - Bathroom #1	$2,511
Interiors - Bathroom #2	$2,034
Interiors - Kitchen	$13,528
Interiors, General - All but Kitchen, Baths & Laundry	$9,358
Roof	$88
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$1,545
Structural - Other Building Elements	$1,039
Sub-Total:	$49,419
Sub-Total adjusted to ACF of: 104.00%	$51,396
Contingency @ 5.00 %	$2,570
SIOH @ 5.50 %	$2,968
Total - Unit Type C-2B NCO 3.2	$56,934

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	20
	C	6
	J	124
Total Quantity: UNIT TYPE C-2B NCO		**150**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-2B NCO 3.2 - Summary Cost Estimate **

Work Item	Total
House Sitework	$72
Interior - Electrical	$181
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$1,286
Roof	$2,141
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$10,059
Structural - Other Building Elements	$17,068
Sub-Total:	$30,806
Sub-Total adjusted to ACF of: 104.00%	$32,039
Contingency @ 5.00 %	$1,602
SIOH @ 5.50 %	$1,850
Total - Unit Type C-2B NCO 3.2	$35,491

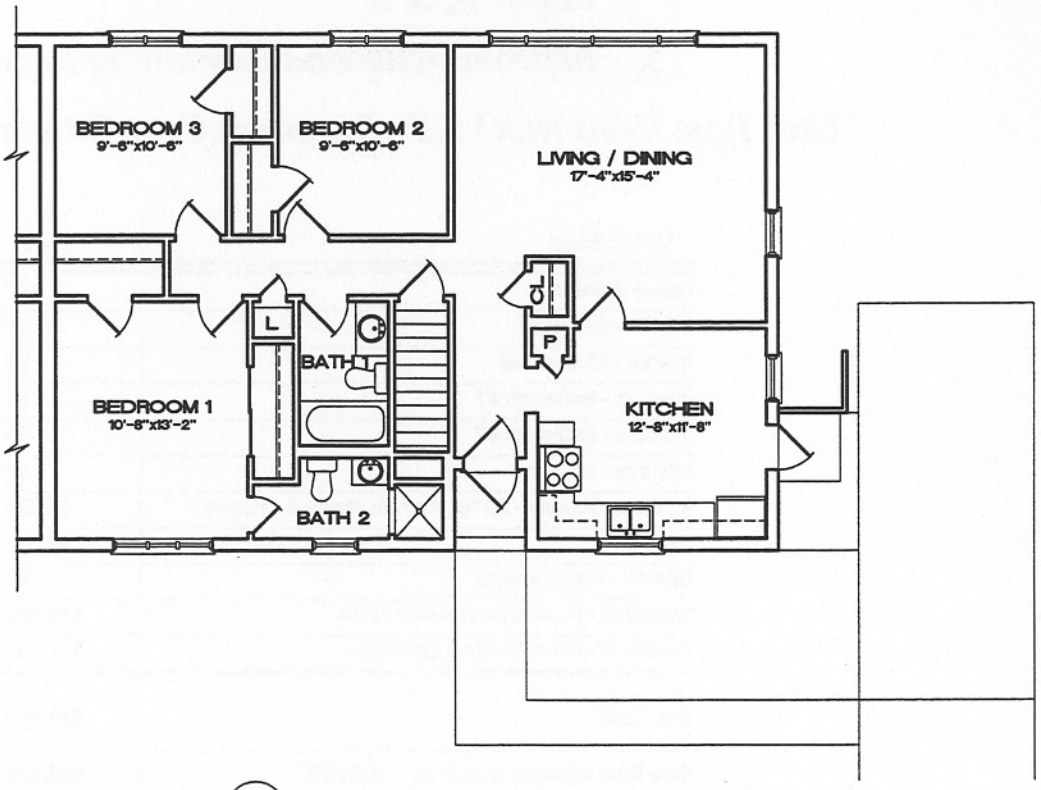
2001 Dollars

Distribution ...	HCP Phase	Number of Units
	A	20
	C	6
	J	124
Total Quantity: UNIT TYPE C-2B NCO		**150**

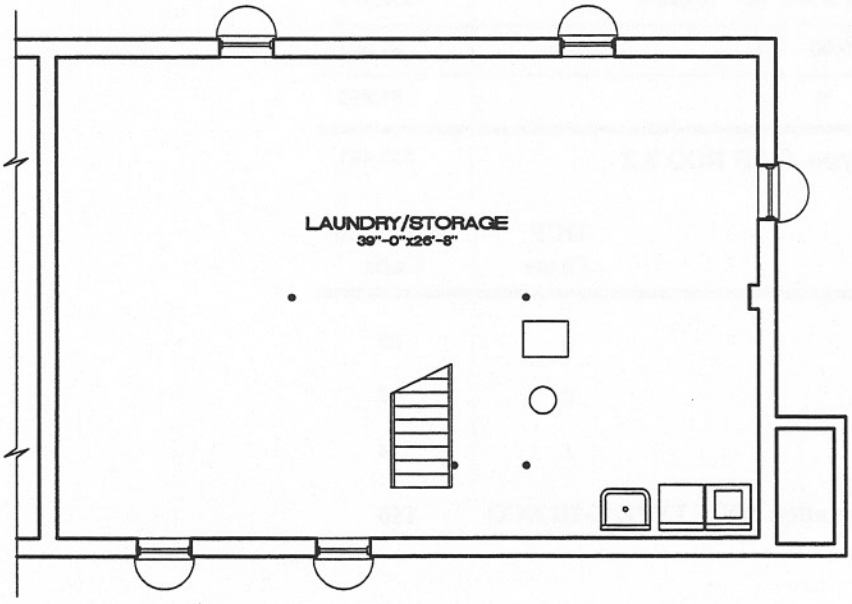
** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.17 Unit Type C-2



FIRST FLOOR PLAN



BASEMENT PLAN

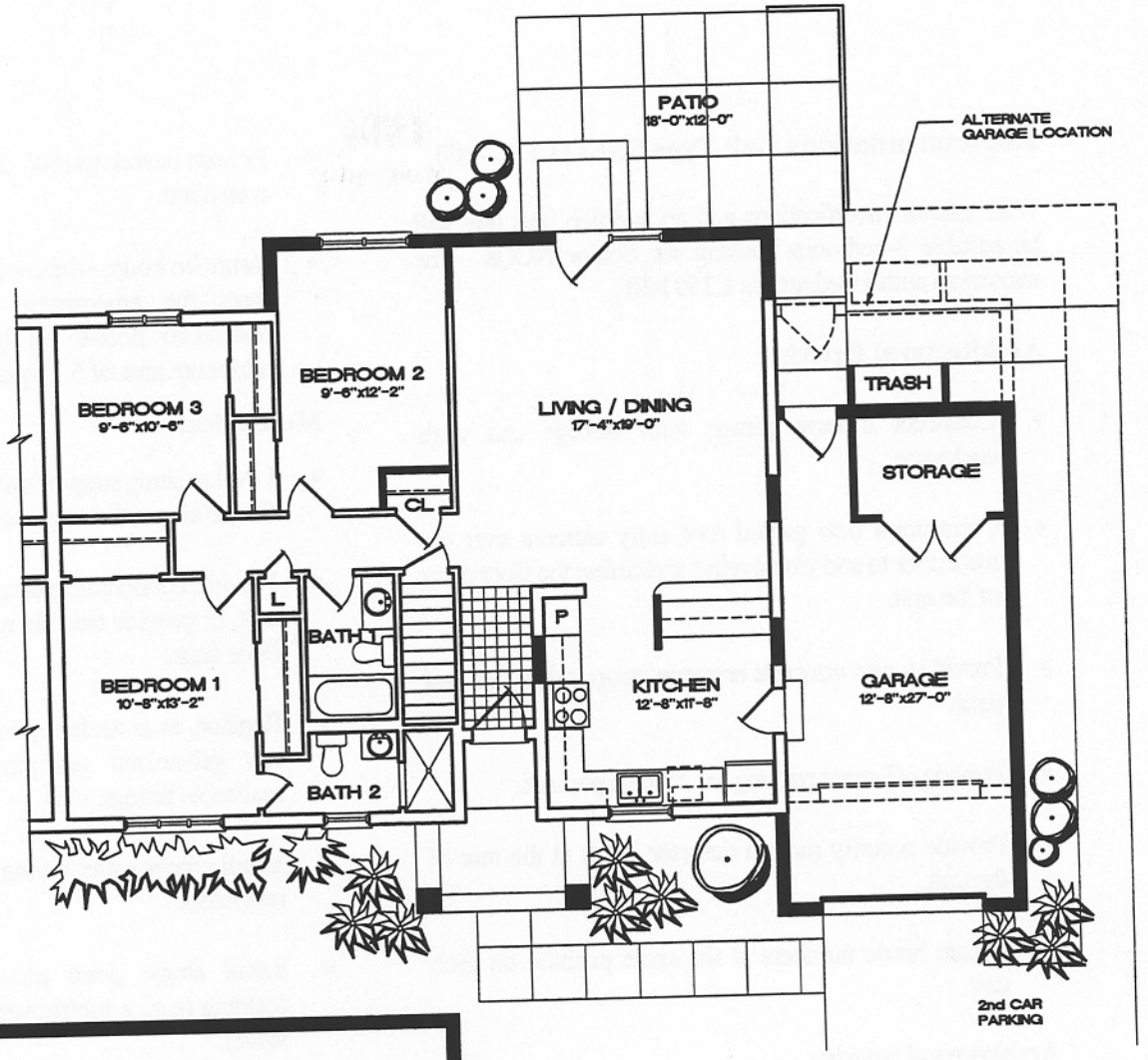
Unit Summary

Unit Type:	C-2 3 Br.
Grade:	E1-E6
Existing Net Area:	1,064 S.F.

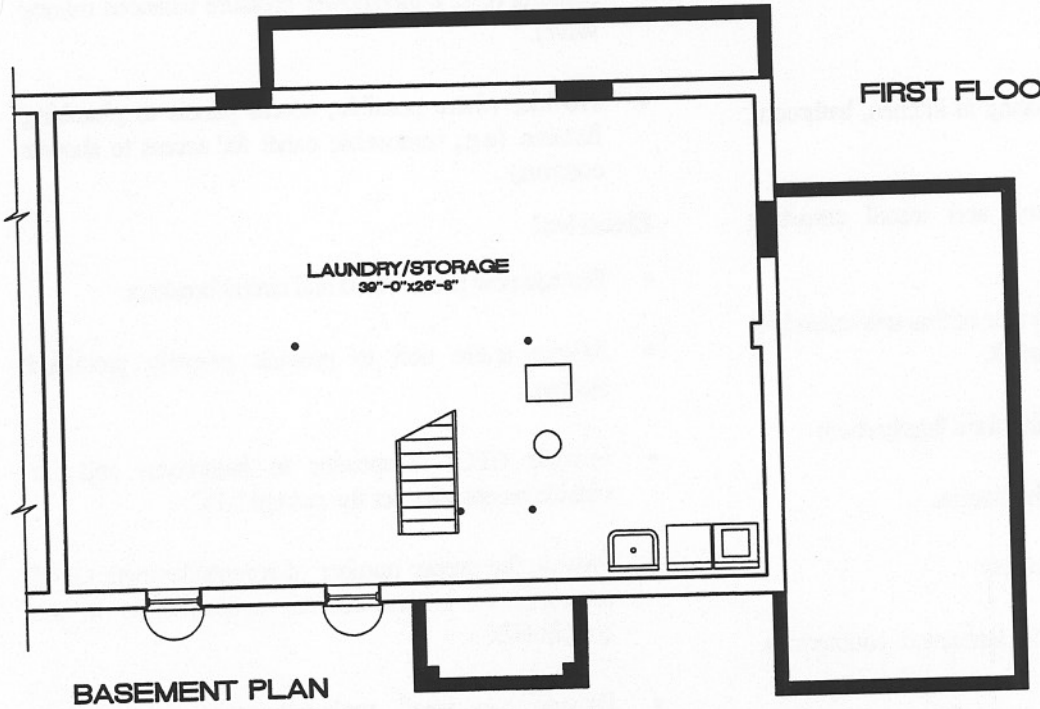
0 1' 5' 10' 15'

GRAPHIC SCALE

EXISTING FLOOR PLANS



FIRST FLOOR PLAN



BASEMENT PLAN

Unit Summary

Unit Type:	C-2B NC03.2 3 Br.
Grade:	E1-E6
Proposed Net Area:	1,200 S.F.
Authorized Net Area:	1,200 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

PROPOSED FLOOR PLANS

(FY 98 PAIP PLAN DESIGNED BY OTHERS)

Recommendations Unit Type SNCO3.1 (C-2C)

With interior modifications and an addition, this unit will be suitable 3-bedroom housing for Senior NCOs. The maximum authorized area is 1,350 NSF.

Architectural Exterior

- Construct a new garage with storage and trash enclosure.
- Construct a new gabled roof entry element over the front door to add visual relief and define the front entry of the unit.
- Provide a new concrete entrance stoop, sidewalks, and patio.
- Provide off-street parking for 2.5 cars per unit.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

- Install new sheet vinyl flooring in kitchen, bathroom, and utility room.
- Install vinyl tiles at entry, and install carpeting elsewhere.
- Construct an addition to the rear of this unit extending the living room and bedroom #2.
- Relocate the kitchen providing for a family room
- Revise closet layouts in the bedrooms.
- Remove existing kitchen cabinets.
- Provide new cabinet, plastic laminated countertops, and breakfast bar.
- Provide new deep sink, dishwasher, fixtures, and range with hood.
- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.
- Install proper water-saving plumbing fixtures and flow restrictors.
- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

- Provide new panel-board and circuit breakers.
- Rewire entire unit to provide properly grounded system.
- Provide GFCI receptacles in bathrooms and for outside receptacles per the current NEC.
- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles as per the current NEC.
- Provide two small appliance circuits for kitchen counter receptacles per the current NEC.

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Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-2C SNCO 3.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$3,453
Interior - Electrical	$9,317
Interior - Mechanical	$1,544
Interiors - Bathroom #1	$2,326
Interiors - Bathroom #2	$1,885
Interiors - Kitchen	$12,529
Interiors, General - All but Kitchen, Baths & Laundry	$10,007
Roof	$2,733
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$12,451
Structural - Other Building Elements	$16,767
Sub-Total:	$77,132
Sub-Total adjusted to ACF of: 104.00%	$80,217
Contingency @ 5.00 %	$4,011
SIOH @ 5.50 %	$4,633
Total - Unit Type C-2C SNCO 3.1	$88,860

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	36
	C	40
	J	10
Total Quantity: UNIT TYPE C-2C SNC		**86**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [ ] *Whole House Improvement*
- [x] *Major M & R*
- [ ] *Improvements and Remaining Repairs*

*Unit Type C-2C SNCO 3.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$3,646
Interior - Electrical	$9,882
Interior - Mechanical	$1,667
Interiors - Bathroom #1	$2,511
Interiors - Bathroom #2	$2,034
Interiors - Kitchen	$13,528
Interiors, General - All but Kitchen, Baths & Laundry	$9,031
Roof	$88
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$1,545
Structural - Other Building Elements	$1,039
Sub-Total:	$49,092
Sub-Total adjusted to ACF of: 104.00%	$51,056
Contingency @ 5.00 %	$2,553
SIOH @ 5.50 %	$2,948
Total - Unit Type C-2C SNCO 3.1	$56,557

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	36
	C	40
	J	10
Total Quantity: UNIT TYPE C-2C SNC		**86**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-2C SNCO 3.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$72
Interior - Electrical	$181
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$1,765
Roof	$2,864
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$11,894
Structural - Other Building Elements	$17,068
Sub-Total:	$33,843
Sub-Total adjusted to ACF of: 104.00%	$35,197
Contingency @ 5.00 %	$1,760
SIOH @ 5.50 %	$2,033
Total - Unit Type C-2C SNCO 3.1	$38,989

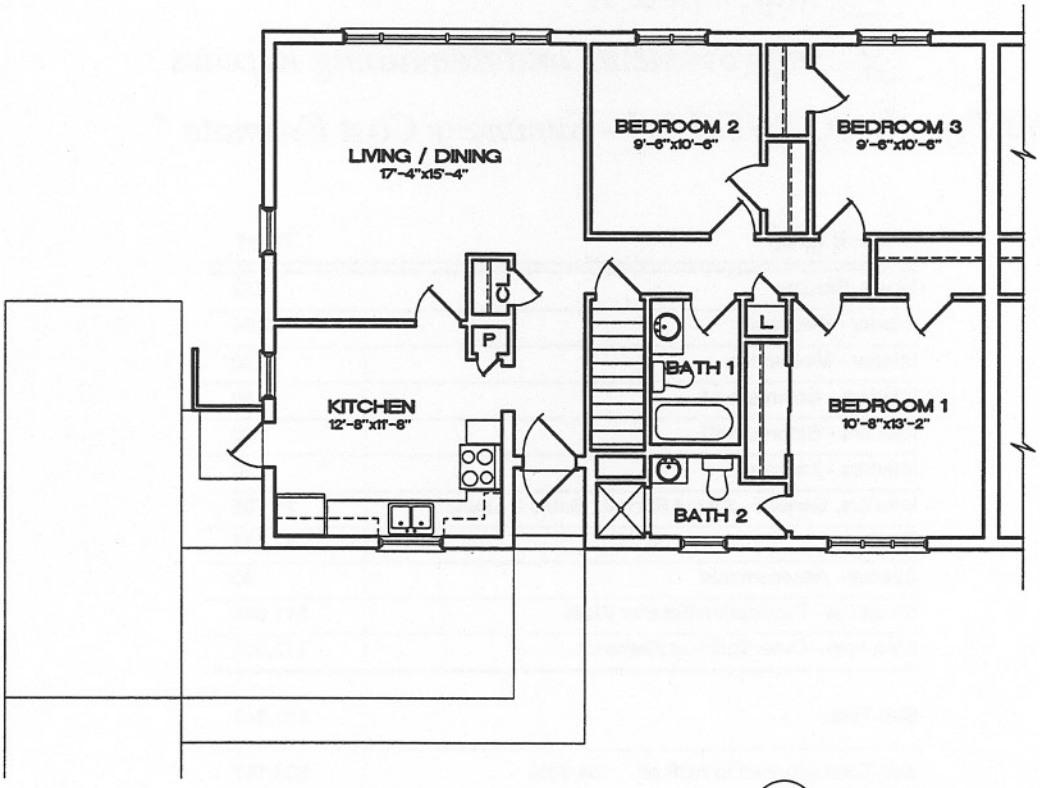
2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	36
	C	40
	J	10
Total Quantity: UNIT TYPE C-2C SNC		**86**

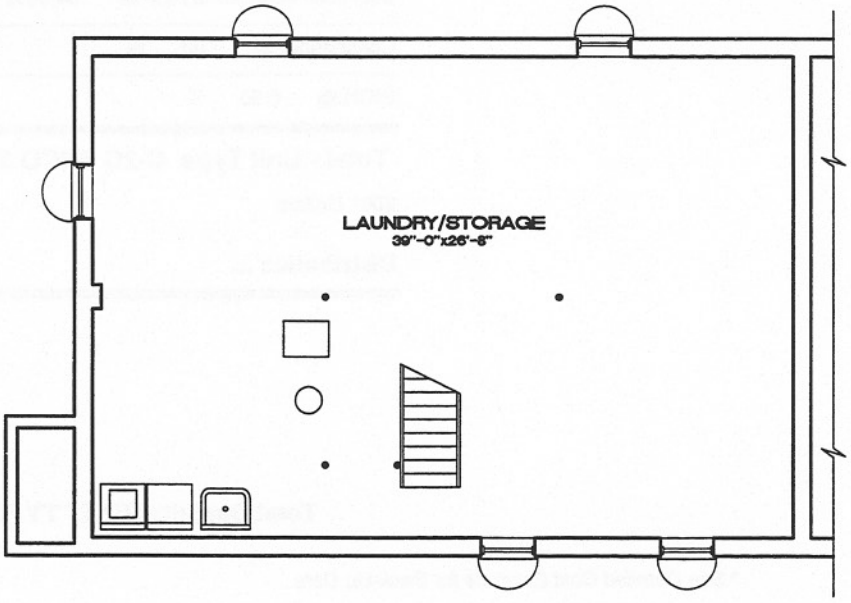
** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.17 Unit Type C-2



FIRST FLOOR PLAN



BASEMENT PLAN

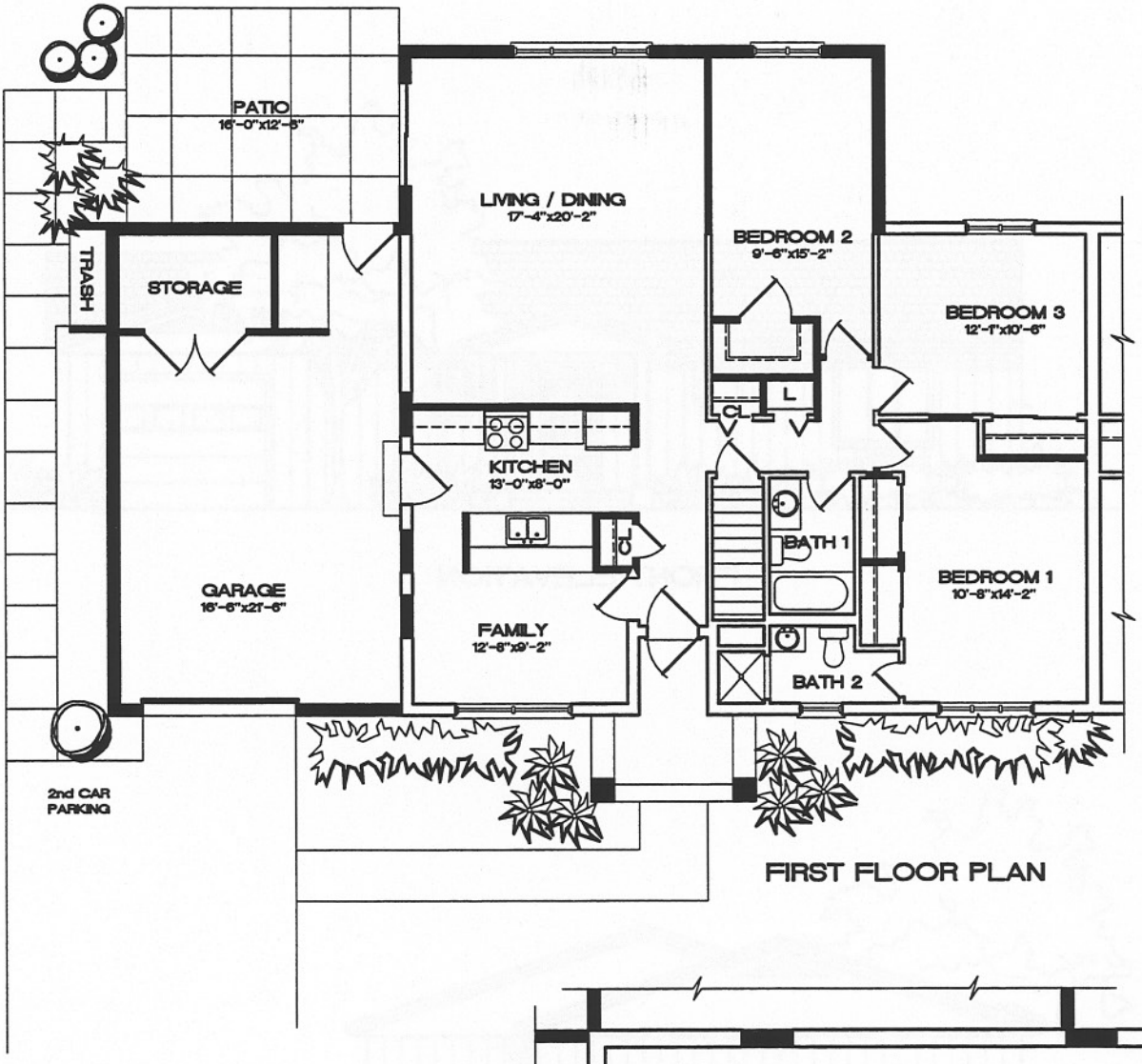
0 1' 5' 10' 15'

GRAPHIC SCALE

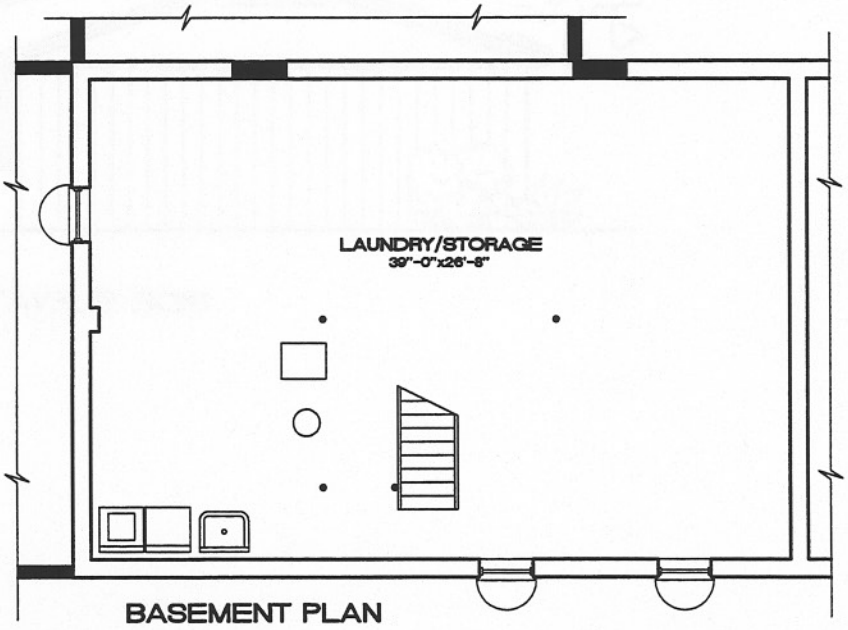
Unit Summary

Unit Type:	C-2 3 Br.
Grade:	E1-E6
Existing Net Area:	1,064 S.F.

EXISTING FLOOR PLANS



FIRST FLOOR PLAN



BASEMENT PLAN

0 1' 5' 10' 15'

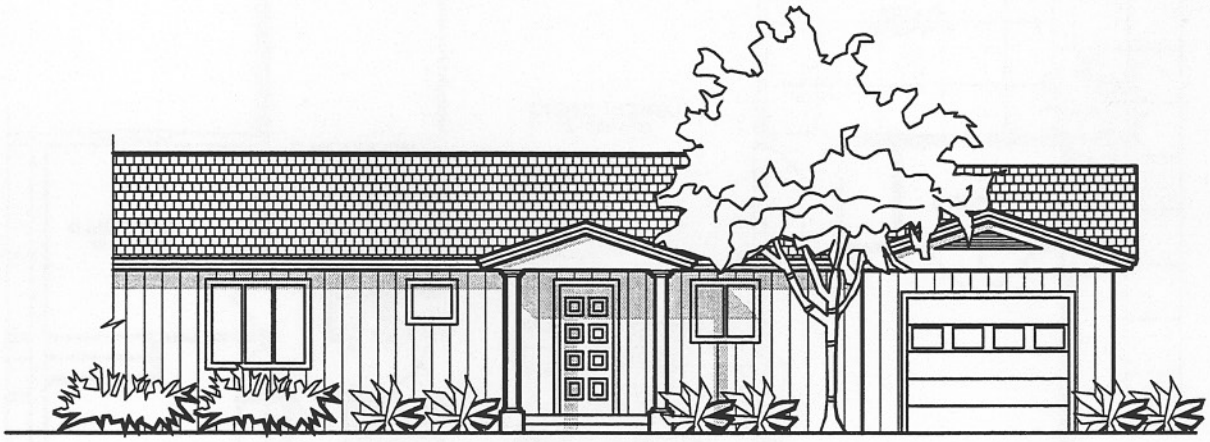
GRAPHIC SCALE

Unit Summary

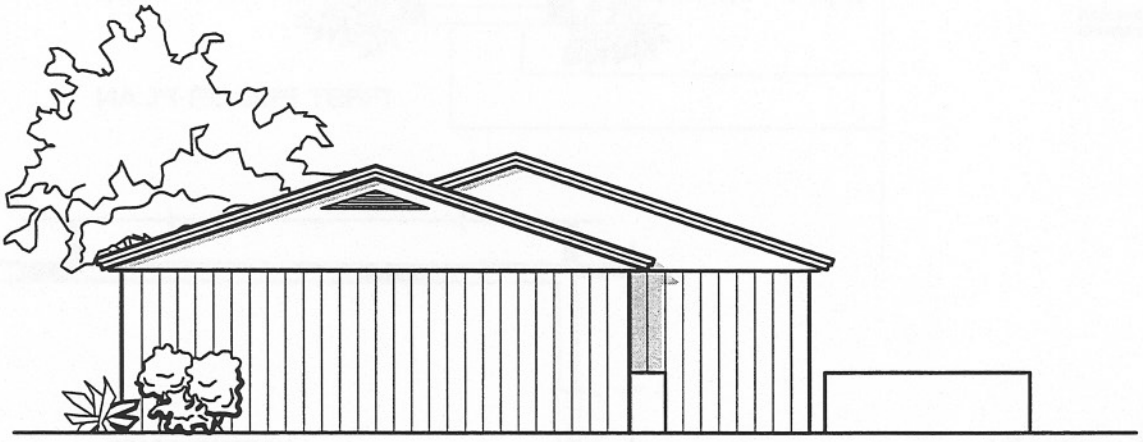
Unit Type:	C-2C SNC03.1 3 Br.
Grade:	E7-E9
Proposed Net Area:	1,350 S.F.
Authorized Net Area:	1,350 S.F.

PROPOSED FLOOR PLANS

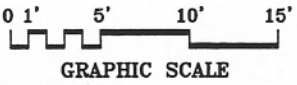
(DESIGNED BY OTHERS)



FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE NCO3.2 ELEVATIONS

(DESIGNED BY OTHERS)

3.2.18 Unit Type C-3 NCO4.1 & SNCO4.1 Woodview/Lakeside Neighborhood

Summary

811 Marshall Drive Inspected

Built in 1962 (Capehart)

Condition Assessment Matrix Rating: 3.78

Grades **E-1 through E-6**
E-7 through E-8

4 Bedrooms, 2 Baths

1,350 NSF authorized
1,227 NSF existing
1,350 NSF proposed **(C-3C, NCO4.1)**

1,450 NSF authorized
1,227 NSF existing
1,450 NSF proposed **(C-3D, SNCO4.1)**

Whole House Renovation
C-3A, 6 units – FY90 PAIP
C-3B, 10 units – FY98 PAIP

3.2.18.1 Analysis of Existing Conditions

Each unit in this duplex building has 4 bedrooms and 2 bathrooms with an area of 1,227 NSF. Construction is standard wood framing on CMU foundation walls with a full basement. All 42 of these units are currently assigned to Junior NCOs and Senior NCOs.

Six units were renovated in an FY90 PAIP, and are designated as type C-3A (refer to Section 3.2.19). Ten units were renovated in an FY98 PAIP, and are designated C-3B (refer to Section 3.2.20).

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- New concrete carport pads are in place.
- The roof structure and exterior storage have not been constructed.
- The flat front of this unit is stark and requires a greater definition of the entry.
- Off-street parking is inadequate.

Architectural Interior

- Some bedroom windows do not meet fire egress code requirements for a maximum floor-to-sill height of 44 inches.
- Bedrooms #1 & #2 are undersized.
- The vinyl floor is dated and needs replacing.
- Kitchen cabinets are marginally adequate.
- The ceiling mounted exhaust fan is not adequate.
- The task lighting is poor.
- The two bathrooms unit have been recently refurbished.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor runs of the air-conditioner condensation drain may become a stumble hazard.
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in the plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

- The panel-board and breakers are outdated and in need of replacement.
- Ungrounded and/or outdated wiring conditions and devices apply throughout the unit.
- Lack of GFCI receptacles in proper locations throughout unit, note particularly the kitchen counter spaces, bathrooms, and outside.

3.2.18.2 Recommendations

Unit Type NCO4.1 (C-3C)

With an addition to the living room, this unit will be suitable 4-bedroom housing for Junior NCOs. The maximum authorized area is 1,350 NSF. The cost estimates follow on the next three pages. However, refer to Section 3.2.21.2 and Unit Type NCO4.3 (C-4) for the recommendations. This C-4 unit is identical to C-3 except it is not offset at the party wall.

Unit Type SNCO4.1 (C-3D)

With an addition to the living room, this unit will be suitable 4-bedroom housing for Senior NCOs. The maximum authorized area is 1,450 NSF.

Architectural Exterior

- Construct a new garage with storage and trash enclosure.
- Construct a new gabled roof entry element over the front door to add visual relief and define the front entry of the unit.
- Provide new concrete rear entrance stoop, sidewalks, and patio.
- Provide off-street parking for 2.5 cars per unit.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

In this plan "designed by others," bedrooms #1 & #2 remain undersized.

- Provide all bedroom windows with a maximum floor-to-sill height of 44 inches to satisfy fire egress codes.
- Install new sheet vinyl flooring in kitchen and bathrooms.
- Install vinyl tiles at entry, and install carpeting elsewhere.
- Construct an addition on the rear of this unit.
- Relocate kitchen to provide a family room adjacent to the new kitchen.
- Remove existing kitchen cabinets, and provide new cabinets and plastic laminated countertops.
- Provide new deep sink, dishwasher, fixtures, and range with.
- Insure Bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

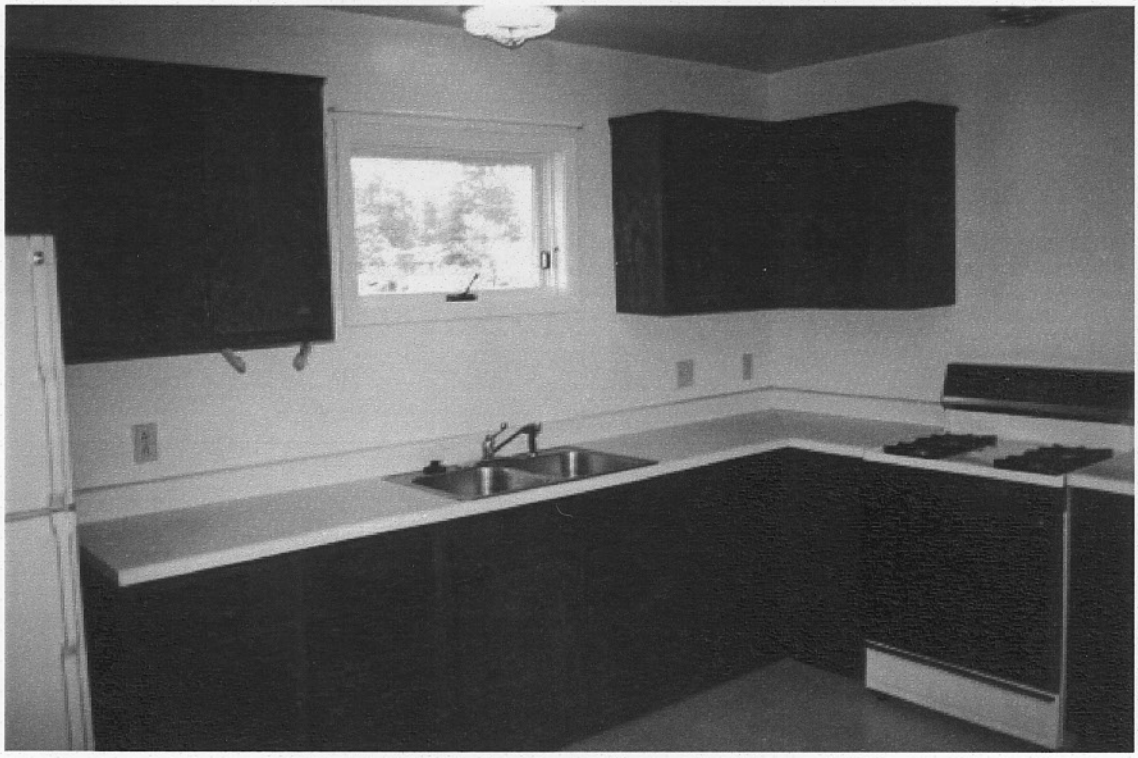
Mechanical

- Level existing support slab, or provide a new level one for the air-conditioning condenser unit
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.
- Install proper water-saving plumbing fixtures and flow restrictors.

Recommendations are continued on page 3-125.

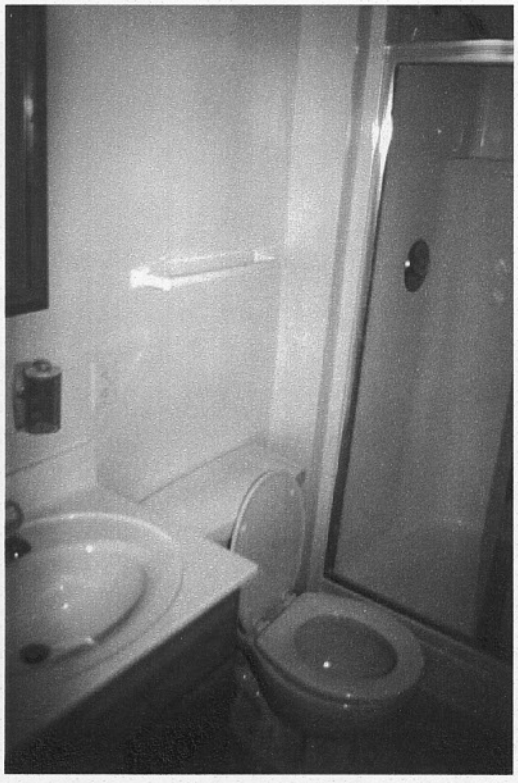
3.42 Unit Type C-3 - Front Elevation

3.43 Unit Type C-3 - Rear and Side Elevation



3.44 Unit Type C-3 - Kitchen

3.45 Unit Type C-3 - Bathroom 1



3.46 Unit Type C-3 - Bathroom 2

- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).

- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

- Provide new panel-board and circuit breakers.

- Rewire entire unit to provide properly grounded system.

- Provide GFCI receptacles in bathrooms and outside as per the current NEC.

- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles including two small appliance circuits as per the current NEC.

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-3C NCO 4.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,417
Interior - Electrical	$9,495
Interior - Mechanical	$2,804
Interiors - Bathroom #1	$2,358
Interiors - Bathroom #2	$2,668
Interiors - Kitchen	$10,215
Interiors, General - All but Kitchen, Baths & Laundry	$9,673
Roof	$1,824
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$12,235
Structural - Other Building Elements	$22,605
Sub-Total:	$80,415
Sub-Total adjusted to ACF of: 104.00%	$83,632
Contingency @ 5.00 %	$4,182
SIOH @ 5.50 %	$4,830
Total - Unit Type C-3C NCO 4.1	$92,643

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	4
	C	2
	J	16
Total Quantity: UNIT TYPE C-3C NC		**22**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type C-3C NCO 4.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,602
Interior - Electrical	$10,074
Interior - Mechanical	$3,029
Interiors - Bathroom #1	$2,546
Interiors - Bathroom #2	$2,880
Interiors - Kitchen	$11,032
Interiors, General - All but Kitchen, Baths & Laundry	$9,340
Roof	$88
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$3,232
Structural - Other Building Elements	$1,548
Sub-Total:	$50,491
Sub-Total adjusted to ACF of: 104.00%	$52,511
Contingency @ 5.00 %	$2,626
SIOH @ 5.50 %	$3,033
Total - Unit Type C-3C NCO 4.1	$58,169

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	4
	C	2
	J	16
Total Quantity: UNIT TYPE C-3C NC		**22**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-3C NCO 4.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$0
Interior - Electrical	$181
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$1,105
Roof	$1,882
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$9,976
Structural - Other Building Elements	$22,853
Sub-Total:	$35,997
Sub-Total adjusted to ACF of: 104.00%	$37,437
Contingency @ 5.00 %	$1,872
SIOH @ 5.50 %	$2,162
Total - Unit Type C-3C NCO 4.1	$41,471

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	4
	C	2
	J	16
Total Quantity: UNIT TYPE C-3C NC		**22**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-3D SNCO 4.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$1,901
Interior - Electrical	$9,604
Interior - Mechanical	$1,544
Interiors - Bathroom #1	$2,372
Interiors - Bathroom #2	$1,878
Interiors - Kitchen	$12,739
Interiors, General - All but Kitchen, Baths & Laundry	$9,965
Roof	$1,704
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$8,780
Structural - Other Building Elements	$17,084
Sub-Total:	$71,690
Sub-Total adjusted to ACF of: 104.00%	$74,557
Contingency @ 5.00 %	$3,728
SIOH @ 5.50 %	$4,306
Total - Unit Type C-3D SNCO 4.1	$82,591

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	14
	C	4
	J	2
Total Quantity: UNIT TYPE C-3D SNC		**20**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type C-3D SNCO 4.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$1,972
Interior - Electrical	$10,191
Interior - Mechanical	$1,667
Interiors - Bathroom #1	$2,560
Interiors - Bathroom #2	$2,026
Interiors - Kitchen	$13,755
Interiors, General - All but Kitchen, Baths & Laundry	$9,728
Roof	$88
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$1,866
Structural - Other Building Elements	$1,039
Sub-Total:	$49,013
Sub-Total adjusted to ACF of: 104.00%	$50,973
Contingency @ 5.00 %	$2,549
SIOH @ 5.50 %	$2,944
Total - Unit Type C-3D SNCO 4.1	$56,466

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	14
	C	4
	J	2
Total Quantity: UNIT TYPE C-3D SNC		**20**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-3D SNCO 4.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$75
Interior - Electrical	$181
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$1,023
Roof	$1,753
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$7,610
Structural - Other Building Elements	$17,410
Sub-Total:	$28,053
Sub-Total adjusted to ACF of: 104.00%	$29,175
Contingency @ 5.00 %	$1,459
SIOH @ 5.50 %	$1,685
Total - Unit Type C-3D SNCO 4.1	$32,318

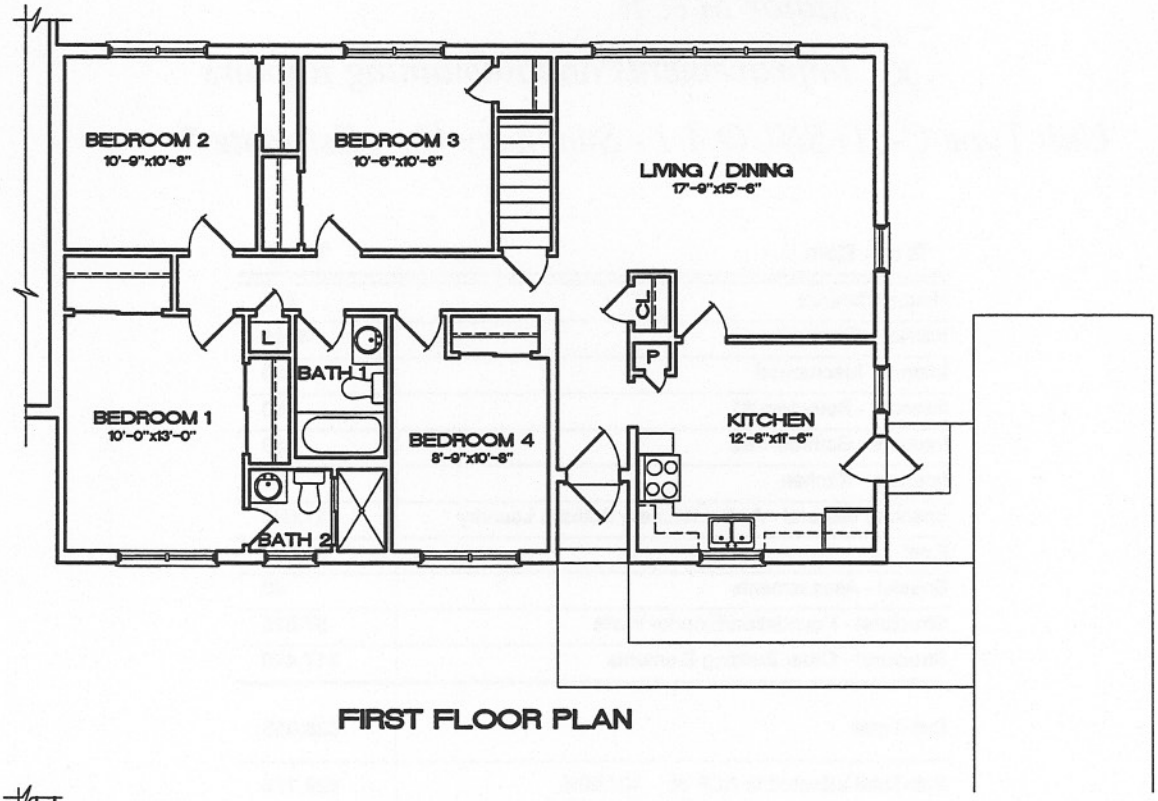
2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	14
	C	4
	J	2
Total Quantity: UNIT TYPE C-3D SNC		**20**

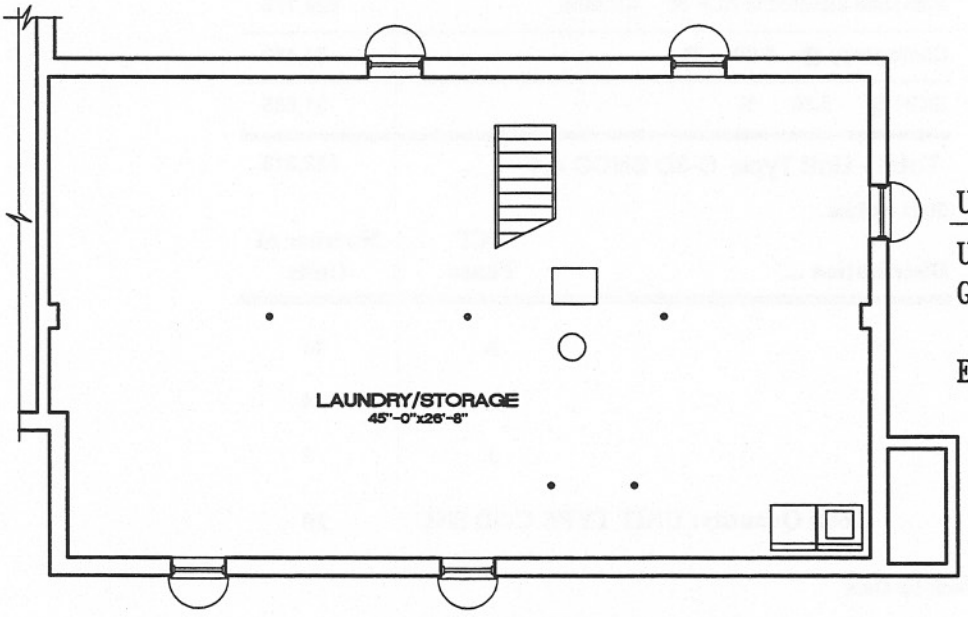
** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.18 Unit Type C-3



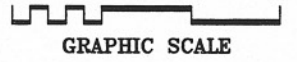
FIRST FLOOR PLAN



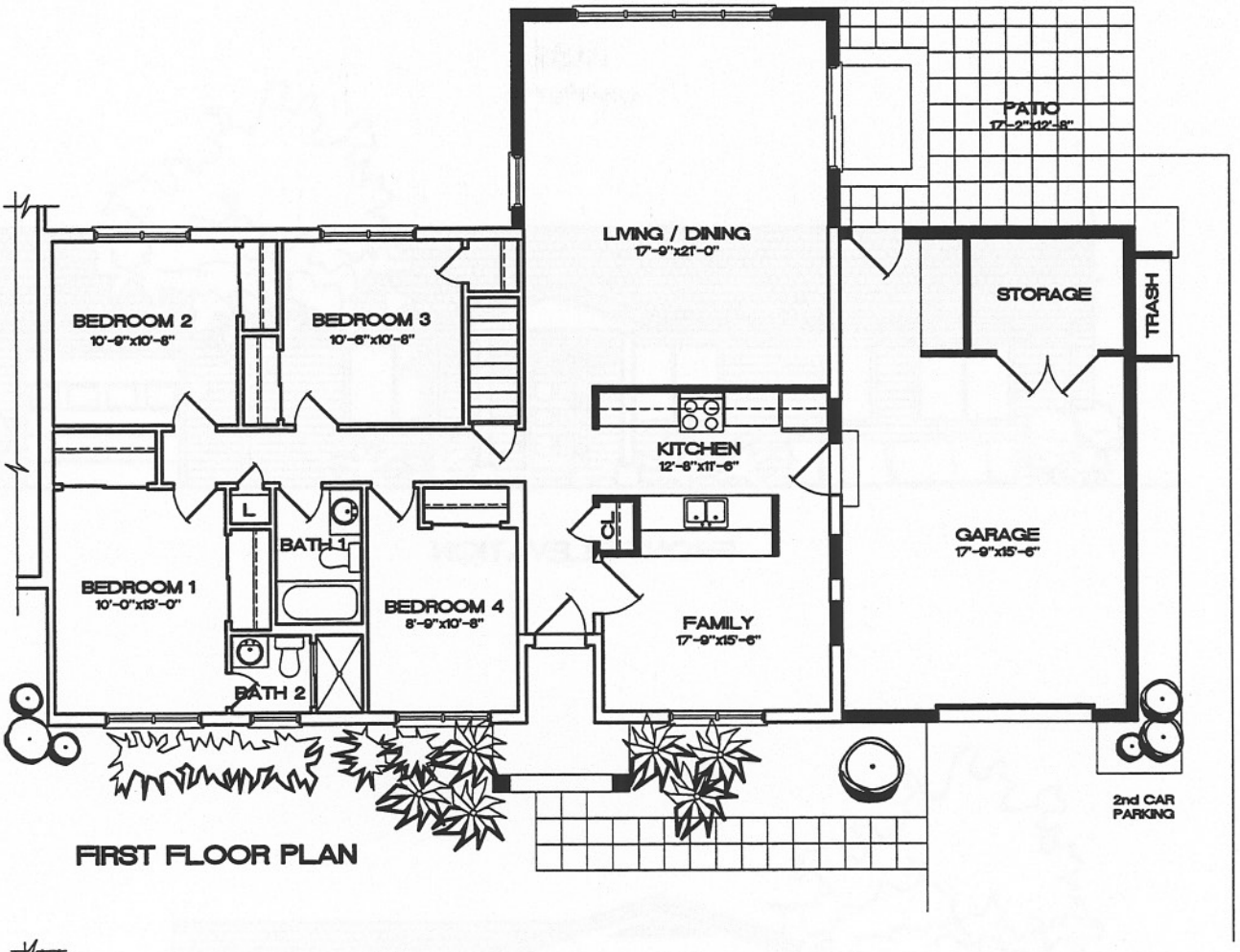
BASEMENT PLAN

Unit Summary

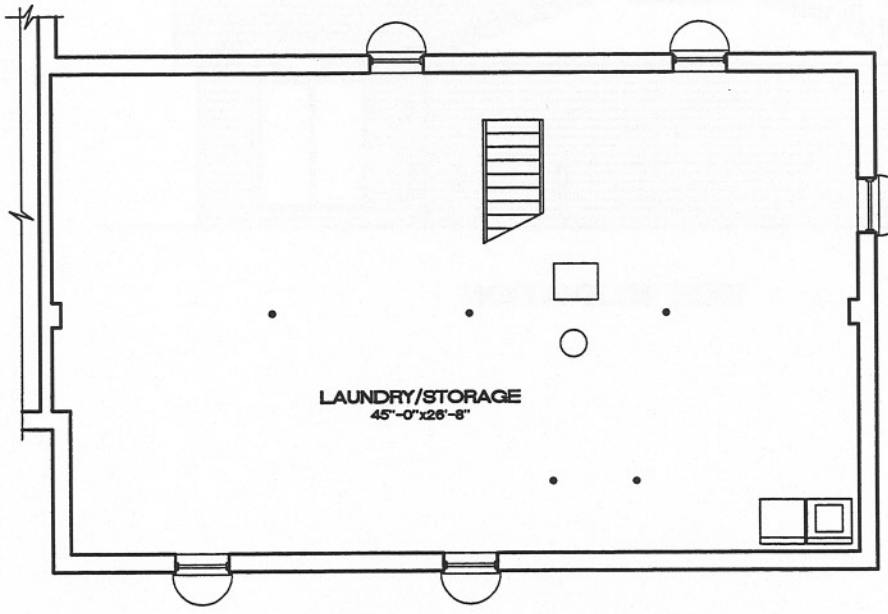
Unit Type:	C-3 4 Br.
Grade:	E1-E6
	E7-E8
Existing Net Area:	1,227 S.F.



EXISTING FLOOR PLANS



FIRST FLOOR PLAN



BASEMENT PLAN

Unit Summary

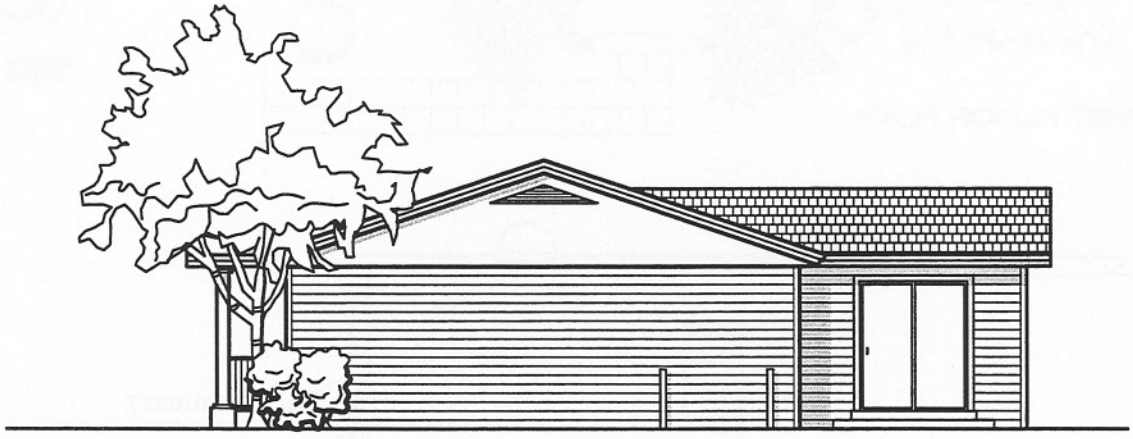
Unit Type:	C-3D SNC04.1 4 Br.
Grade:	E7-E9
Proposed Net Area:	1,450 S.F.
Authorized Net Area:	1,450 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

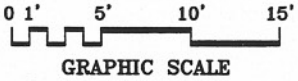
PROPOSED FLOOR PLANS

(DESIGNED BY OTHERS)

FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE SNCO4.1 ELEVATIONS

(DESIGNED BY OTHERS)

3.2.19 Unit Type C-3A SNCO4.2 Lakeside Neighborhood

Summary

836 Earhart Inspected

Built in 1962 (Capehart)

Condition Assessment Matrix Rating: 3.92

Grades E-7 through E-9

4 Bedrooms, 2 Baths

1,450 NSF authorized
1,460 NSF existing
1,460 NSF proposed

Whole House Renovation
6 units – FY90 PAIP

3.2.19.1 Analysis of Existing Conditions

Each unit in this duplex building has 4 bedrooms and 2 bathrooms with an area of 1,460 NSF. Construction is standard wood framing on CMU foundation walls with a full basement. All 6 of these units are currently assigned to Senior NCOs. These units were originally C-3 units and were modified in an FY90 PAIP. The Unit Improvement Plan C-3 (Mod) designed by others and illustrated in the May 1992 HCP was followed.

This unit meets Whole House Planning Standards except for the following:

- Bedrooms #1 & #2 remain undersized;
- Family room area combined with living room
- There is no exterior storage;
- Off-street parking is inadequate.

3.2.19.2 Recommendations

The unit is in good condition and there are no renovation recommendations.

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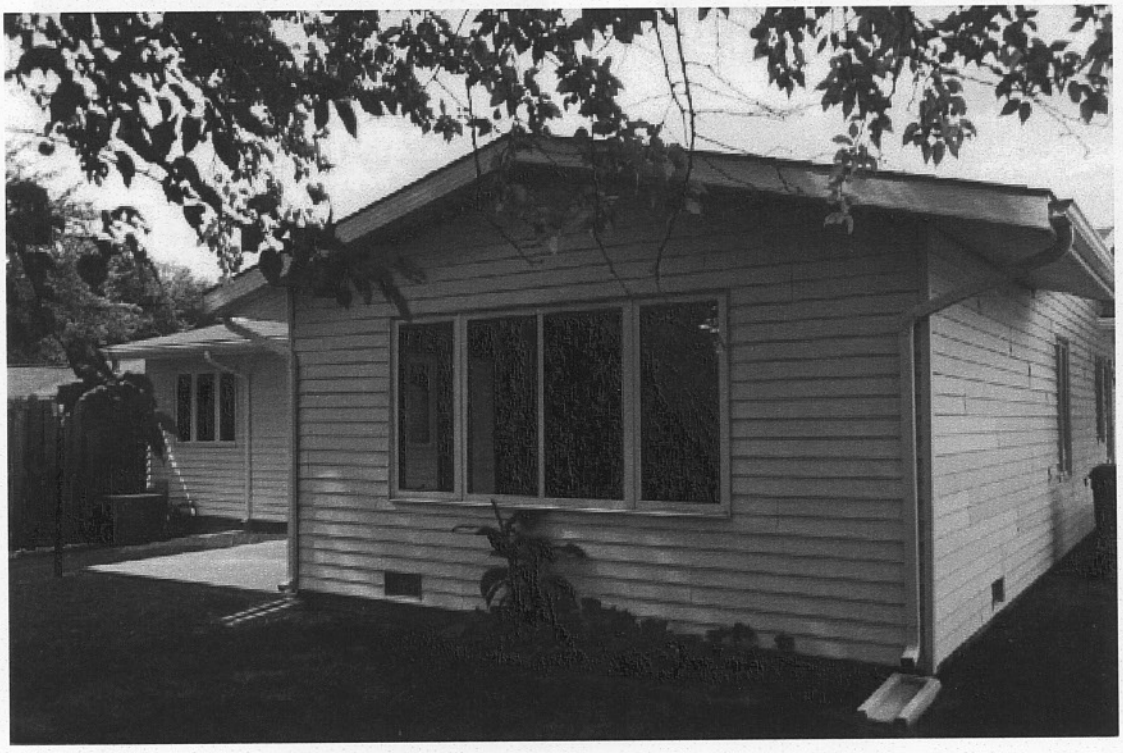
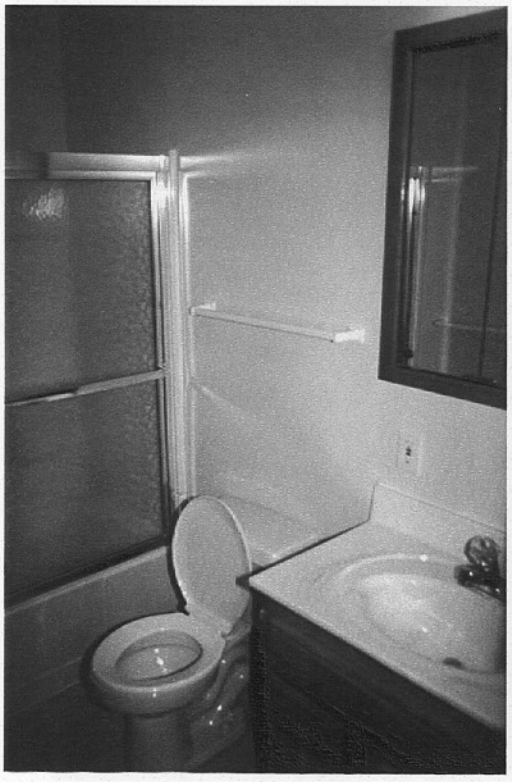
3.47 Unit Type C-3A - Front Elevation



3.48 Unit Type C-3A – Rear Elevation

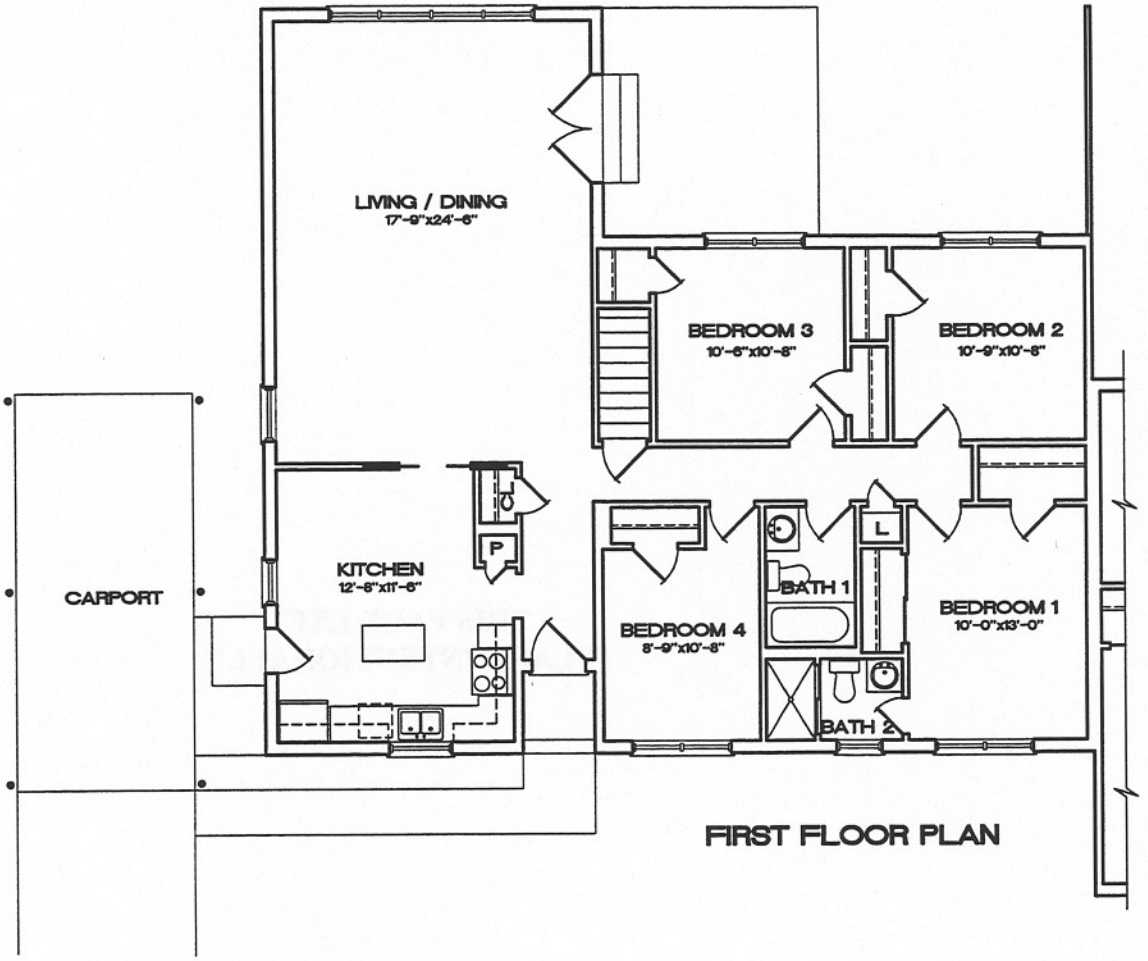
3.49 Unit Type C-3A - Kitchen

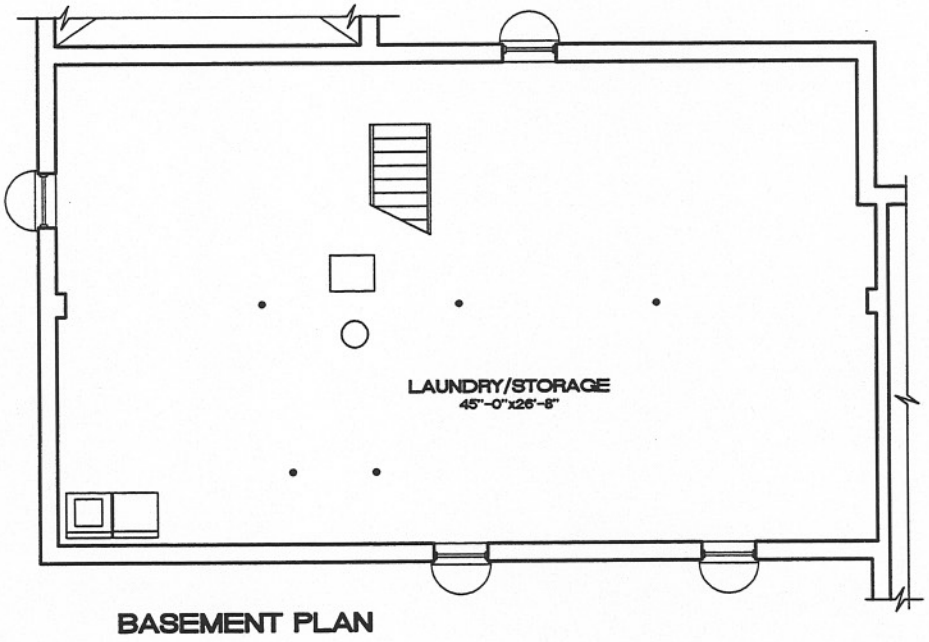


3.50 Unit Type C-3A - Bathroom 1

3.51 Unit Type C-3A - Bathroom 2

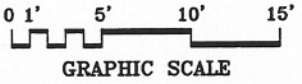
3.2.19 Unit Type C-3A (FY90PAIP)





Unit Summary

Unit Type:	C-3A SNC04.2 4 Br.
Grade:	E7-E9
Existing Net Area:	1,460 S.F.



EXISTING FLOOR PLAN

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3.2.20 Unit Type C-3B NCO4.2 Woodview Neighborhood

Summary

Under Construction, Not Inspected

Built in 1962 (Capehart)

Grades E-1 through E-6

4 Bedrooms, 2 Baths

Condition Assessment Matrix Rating: null

1,350 NSF authorized
1,350 NSF existing
1,350 NSF proposed

Whole House Renovation
10 units – FY98 PAIP

3.2.20.1 Analysis of Existing Conditions

Each unit in this duplex building has 4 bedrooms and 2 bathrooms with an area of 1,350 NSF. Construction is standard wood framing on CMU foundation walls with a full basement. All 10 of these units are currently assigned to Senior NCOs. These units were originally C-3 units and were modified in an FY98 PAIP. The Unit Improvement Plan developed in the May 1992 HCP for the C-4 JNCO unit type was not followed.

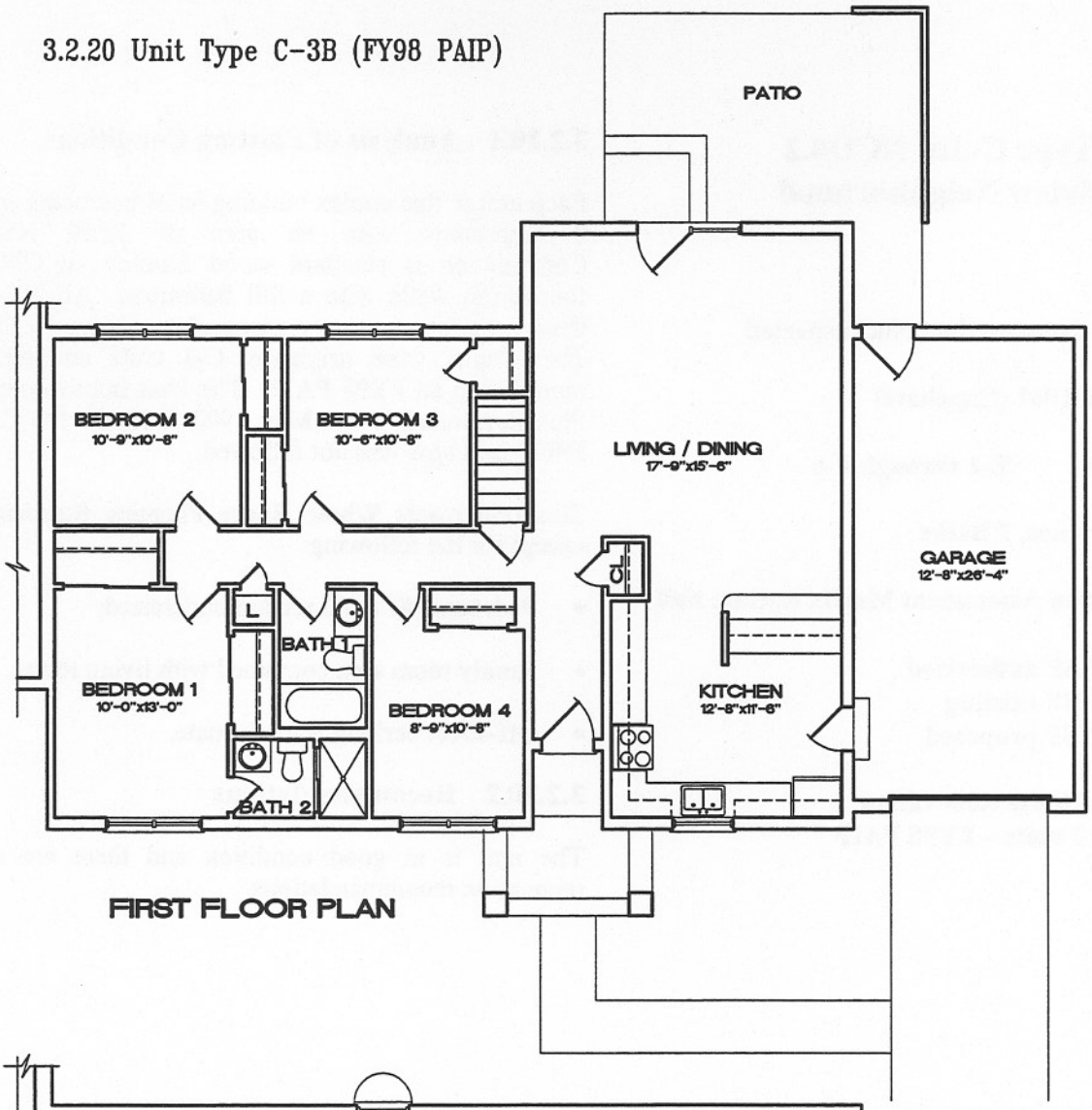
This unit meets Whole House Planning Standards except for the following:

- Bedrooms #1 & #2 remain undersized;
- Family room area combined with living room
- Off-street parking is inadequate.

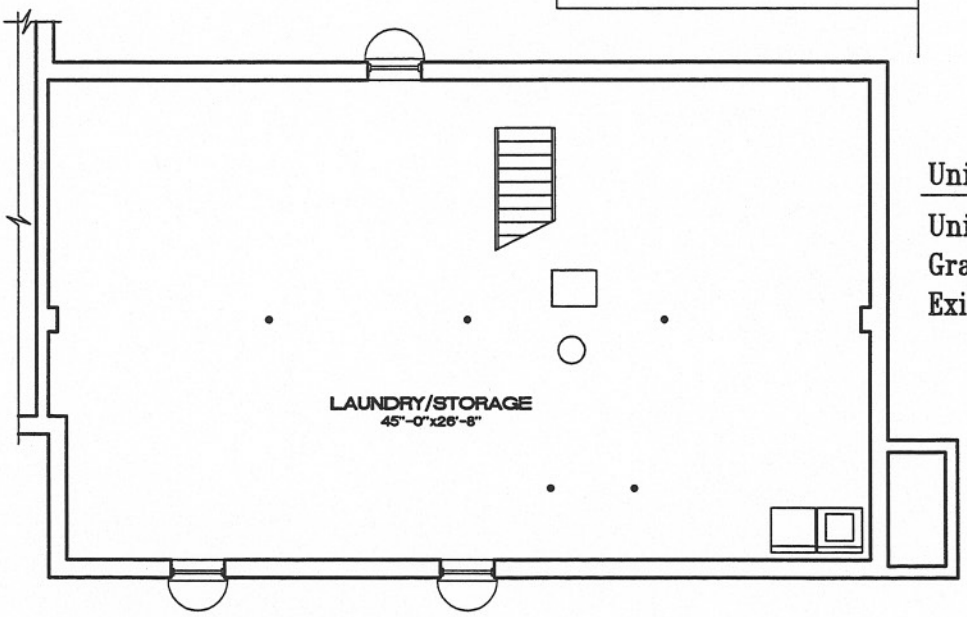
3.2.20.2 Recommendations

The unit is in good condition and there are no renovation recommendations.

3.2.20 Unit Type C-3B (FY98 PAIP)



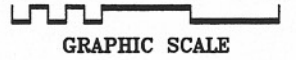
FIRST FLOOR PLAN



BASEMENT PLAN

Unit Summary

Unit Type:	C-3B NC04.2 4 Br.
Grade:	E1-E6
Existing Net Area:	1,350 S.F.



EXISTING FLOOR PLANS

3.2.21 Unit Type C-4 NCO4.3 Lakeside Neighborhood

Summary

837 Summit Drive Inspected

Built in 1962 (Capehart)

Condition Assessment Matrix Rating: 3.66

Grades E-1 through E-6

4 Bedrooms, 2 Baths

1,350 NSF authorized
1,227 NSF existing
1,350 NSF proposed

3.2.21.1 Analysis of Existing Conditions

Each unit in this duplex building has 4 bedrooms and 2 bathrooms with an area of 1,227 NSF. Construction is standard wood framing on CMU foundation walls with a full basement. All 34 of these units are currently assigned to Junior NCOs.

The plans for these units are the same as the C-3 unit except for the duplex format. For analysis of existing conditions, refer to Section 3.2.18.1

New carport and exterior storage additions were completed in 1992.

Environmental Issues

- Lead-based paint and asbestos were detected.

3.2.21.2 Recommendations

With an addition to the living room, this unit will be suitable 4-BR housing for Junior NCOs. The maximum authorized area is 1,350 NSF.

Architectural Exterior

- Construct a new garage enclosure.
- Provide off-street parking for 2.5 cars per unit.
- Construct a new gabled roof entry element over the front door to add visual relief and define the front entry of the unit.
- Provide new concrete entrance stoop, sidewalks, and patio.
- Provide a new roof section to cover the path between the garage and kitchen entrance.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

In this plan "designed by others," bedrooms #1 and #2 remain undersized.

- Provide bedroom windows in all bedrooms with a maximum floor-to-sill height of 44 inches for emergency egress.
- Install new sheet vinyl flooring in kitchen, bathrooms, and utility room.
- Install vinyl tiles at entry, and install carpeting elsewhere.
- Construct an addition on the rear of this unit, and relocate kitchen to provide a family room adjacent to the new kitchen.
- Remove existing kitchen cabinets (the photo shows contact paper on old cabinets).
- Provide new cabinets and plastic laminated countertops.
- Provide new deep sink, dishwasher, fixtures, and range with hood.
- Provide each bathroom with a new sink, vanity, tub/shower, and plumbing fixtures.

- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.
- Install proper water-saving plumbing fixtures and flow restrictors.
- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

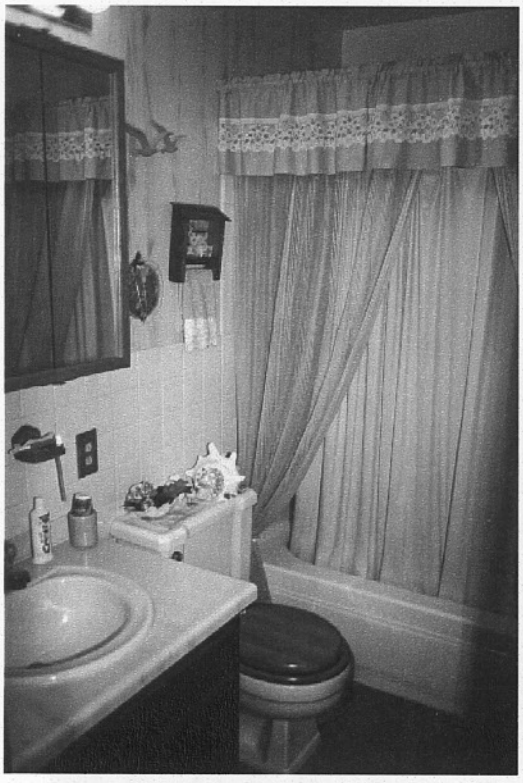
Electrical

- Provide new panel-board and circuit breakers.
- Rewire entire unit to provide properly grounded system.
- Provide GFCI receptacles in bathrooms as per the current NEC.
- Provide GFCI receptacles for outside receptacles per the current NEC.
- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles as per the current NEC.
- Provide two small appliance circuits for kitchen counter receptacles per the current NEC.

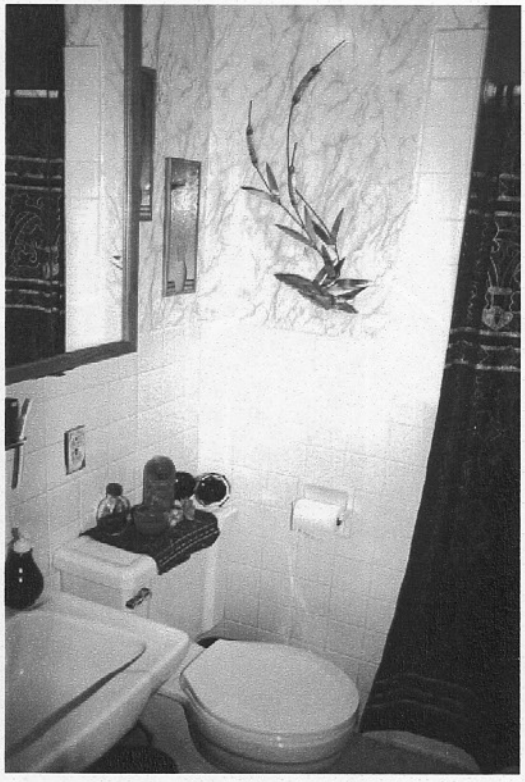
3.52 Unit Type C-4 - Front Elevation

3.53 Unit Type C-4 - Rear and Side Elevation

3.54 Unit Type C-4 - Kitchen



3.55 Unit Type C-4 - Bathroom 1



3.56 Unit Type C-4 - Bathroom 2

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-4 NCO 4.3 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,417
Interior - Electrical	$9,495
Interior - Mechanical	$2,804
Interiors - Bathroom #1	$2,358
Interiors - Bathroom #2	$2,668
Interiors - Kitchen	$10,215
Interiors, General - All but Kitchen, Baths & Laundry	$9,673
Roof	$1,824
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$12,235
Structural - Other Building Elements	$22,605
Sub-Total:	$80,415
Sub-Total adjusted to ACF of: 104.00%	$83,632
Contingency @ 5.00 %	$4,182
SIOH @ 5.50 %	$4,830
Total - Unit Type C-4 NCO 4.3	$92,643

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	C	34

Total Quantity: UNIT TYPE C-4 NCO **34**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [ ] *Whole House Improvement*
- [x] *Major M & R*
- [ ] *Improvements and Remaining Repairs*

*Unit Type C-4 NCO 4.3 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,602
Interior - Electrical	$10,074
Interior - Mechanical	$3,029
Interiors - Bathroom #1	$2,546
Interiors - Bathroom #2	$2,880
Interiors - Kitchen	$11,032
Interiors, General - All but Kitchen, Baths & Laundry	$9,340
Roof	$88
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$3,232
Structural - Other Building Elements	$1,548
Sub-Total:	$50,491
Sub-Total adjusted to ACF of: 104.00%	$52,511
Contingency @ 5.00 %	$2,626
SIOH @ 5.50 %	$3,033
Total - Unit Type C-4 NCO 4.3	$58,169

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	C	34
Total Quantity: UNIT TYPE C-4 NCO		**34**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-4 NCO 4.3 - Summary Cost Estimate **

Work Item	Total
House Sitework	$0
Interior - Electrical	$181
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$1,105
Roof	$1,882
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$9,976
Structural - Other Building Elements	$22,853
Sub-Total:	$35,997
Sub-Total adjusted to ACF of: 104.00%	$37,437
Contingency @ 5.00 %	$1,872
SIOH @ 5.50 %	$2,162
Total - Unit Type C-4 NCO 4.3	$41,471

2001 Dollars

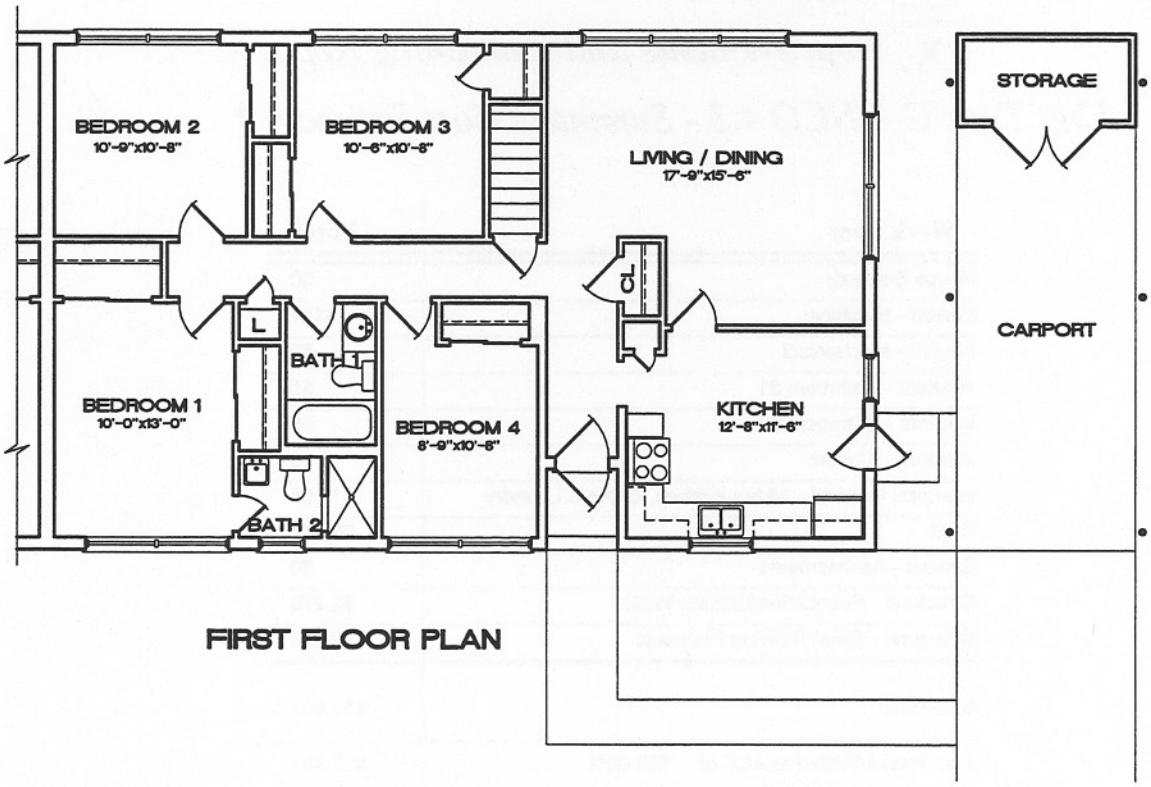
Distribution ...	HCP Phase	Number of Units
	C	34

Total Quantity: UNIT TYPE C-4 NCO **34**

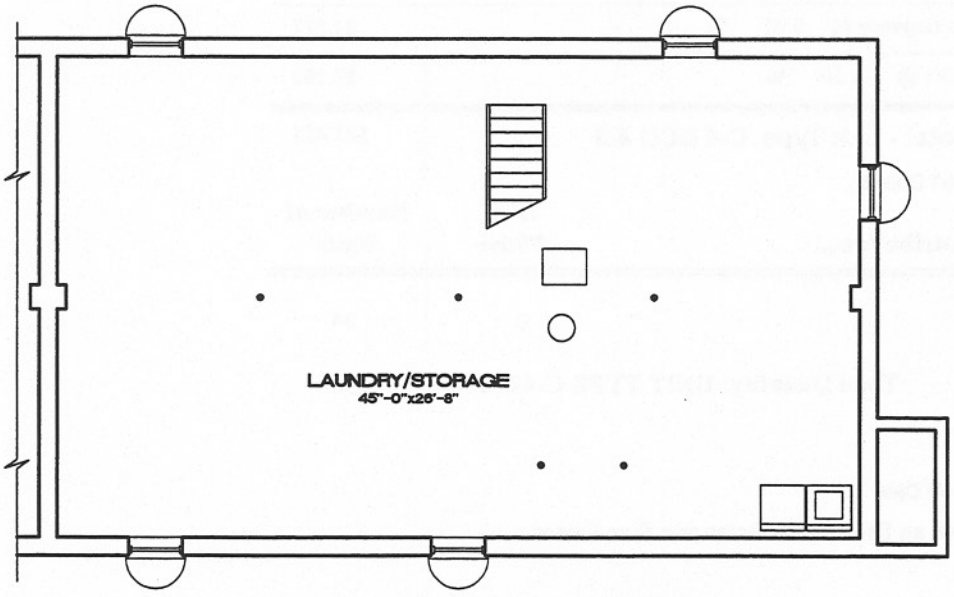
** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.21 Unit Type C-4



FIRST FLOOR PLAN



BASEMENT PLAN

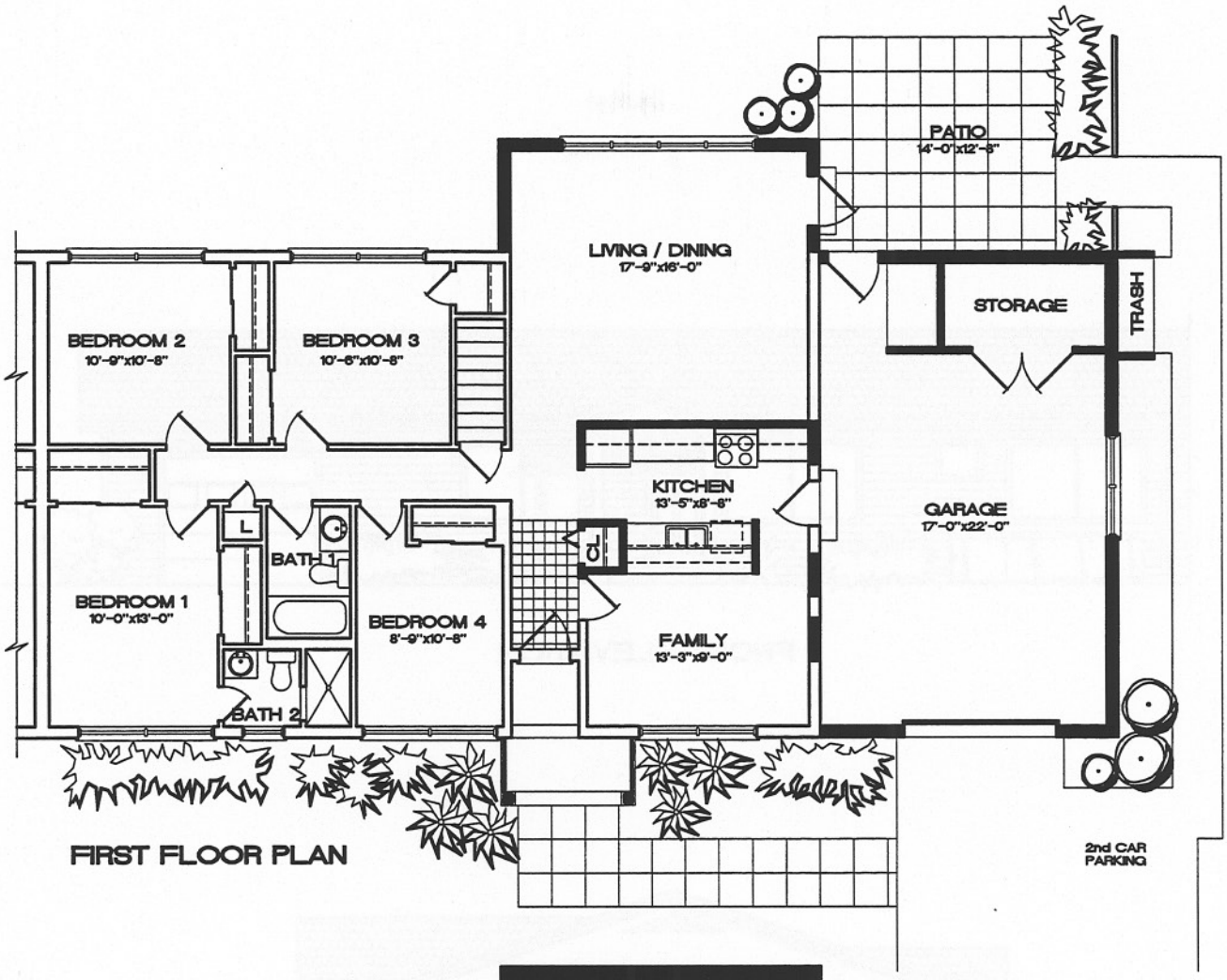
Unit Summary

Unit Type:	C-4 4 Br.
Grade:	E1-E6
Existing Net Area:	1,227 S.F.

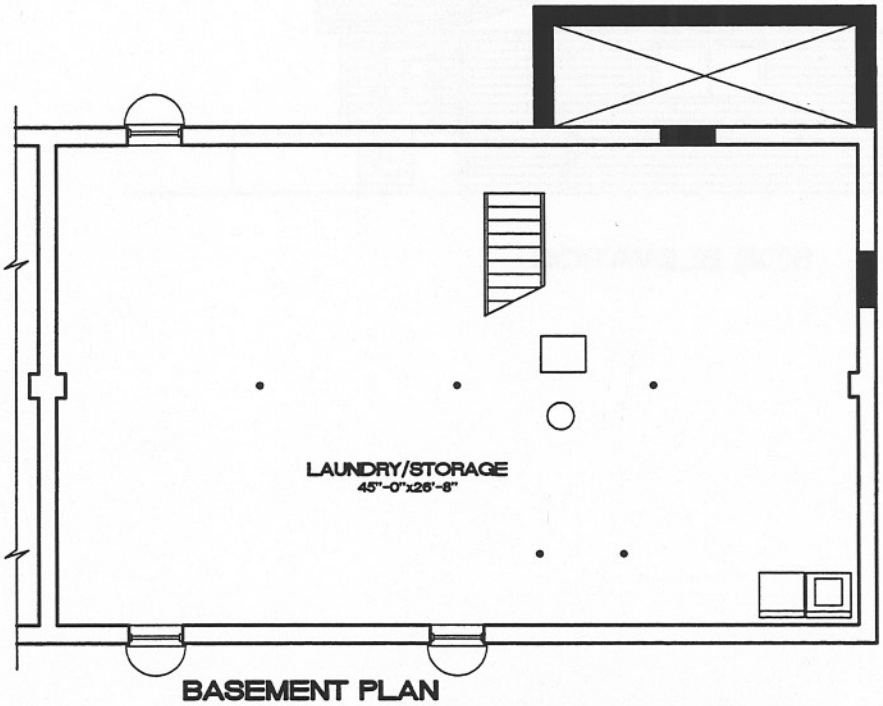
0 1' 5' 10' 15'

GRAPHIC SCALE

EXISTING FLOOR PLANS



FIRST FLOOR PLAN



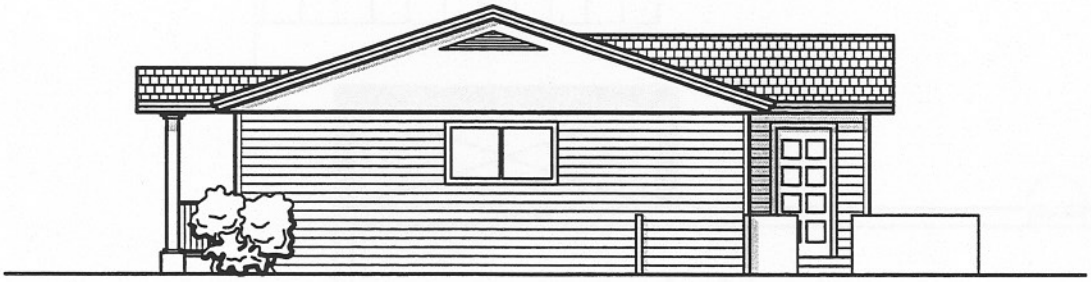
BASEMENT PLAN

Unit Summary

Unit Type:	C-4 NC04.3 4 Br.
Grade:	E1-E6
Proposed Net Area:	1,350 S.F.
Authorized Net Area:	1,350 S.F.

PROPOSED FLOOR PLANS
(DESIGNED BY OTHERS)

FRONT ELEVATION



SIDE ELEVATION

PROPOSED UNIT TYPE NCO4.3 ELEVATIONS

(DESIGNED BY OTHERS)

3.2.22 Unit Type C-5 NCO3.3 Woodview Neighborhood

Summary

See unit type C-6

Built in 1962 (Capehart)

Condition Assessment Matrix Rating: 3.65

Grades E-1 through E-6

3 Bedrooms, 2 Baths

1,200 NSF authorized
1,050 NSF existing
1,200 NSF proposed

3.2.22.1 Analysis of Existing Conditions

Each unit in this duplex has 3 bedrooms and 2 bathrooms with an area of 1,050 NSF. Construction is standard wood framing on CMU foundation walls with a full basement. All 20 of these units are currently assigned to Junior NCOs and CGOs.

These units are identical to the C-6 Unit Type except that C-6 is not offset at the duplex party wall. For photographs see Unit Type C-6, Section 3.2.24.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has new fiberglass shingle roof with aluminum gutters and downspouts, and metal siding.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- New exterior storage and concrete patio were recently added.
- Off-street parking is inadequate

Architectural Interior

- The vinyl flooring is dated and needs replacing.
- The bedroom windows do not meet fire egress codes for the maximum floor-to-sill height of 44 inches.
- Moisture problems in the basement have caused the slab to crack.
- Kitchen cabinets are marginally adequate.
- The ceiling-mounted exhaust fan is not adequate.
- The task lighting is poor.
- The two bathrooms are outdated and require remodeling.
- The resilient tile floor is in poor condition.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor runs for the air-conditioner condensation drain may become a stumble hazard.
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in the plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

- The panel-board and breakers are outdated and in need of replacement.
- Ungrounded and/or outdated wiring conditions and devices apply throughout the facility.
- Lack of GFCI receptacles in proper locations throughout unit, particularly kitchen counter spaces, bathrooms, and outside.

3.2.22.2 Recommendations

With interior modifications and an addition, this unit will be suitable as 3-bedroom housing with an area of 1,200 NSF for Junior NCOs. The maximum authorized area for this unit is 1,200 NSF.

Architectural Exterior

- Construct a new garage enclosure.
- Construct a new gabled roof entry element over the front door to add visual relief and define the front entry.
- Provide a new concrete entrance stoop, sidewalks, and patio.
- Provide off-street parking for 2.5 cars per unit.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

In this plan "designed by others," bedroom #1 remains undersized.

- Install new sheet vinyl flooring in kitchen, bathrooms, and utility room.
- Install vinyl tiles at entry, and install carpeting elsewhere.
- Construct an addition on the rear of this unit extending the living room, and move wall in bedroom #3.
- Remove existing kitchen cabinets, and provide new cabinets and plastic laminated countertops.
- Provide all bedroom windows with a maximum floor-to-sill height of 44 inches for emergency egress.
- Provide new deep sink, dishwasher, fixtures, and range with hood.
- Provide each bathroom with a new sink, vanity, tub/shower, and plumbing fixtures.
- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.
- Install proper water-saving plumbing fixtures and flow restrictors.
- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

- Provide new panel-board and circuit breakers.
- Rewire entire unit to provide properly grounded system.
- Provide GFCI receptacles in bathrooms and outside as per the current NEC.
- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles, including two small appliance circuits, as per the current NEC.

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-5 NCO 3.3 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,413
Interior - Electrical	$9,339
Interior - Mechanical	$2,804
Interiors - Bathroom #1	$2,380
Interiors - Bathroom #2	$2,673
Interiors - Kitchen	$9,321
Interiors, General - All but Kitchen, Baths & Laundry	$9,704
Roof	$2,073
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$14,924
Structural - Other Building Elements	$21,835
Sub-Total:	$81,586
Sub-Total adjusted to ACF of: 104.00%	$84,850
Contingency @ 5.00 %	$4,242
SIOH @ 5.50 %	$4,900
Total - Unit Type C-5 NCO 3.3	$93,992

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	2
	D	18
Total Quantity: UNIT TYPE C-5 NCO		**20**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type C-5 NCO 3.3 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,599
Interior - Electrical	$9,905
Interior - Mechanical	$3,029
Interiors - Bathroom #1	$2,569
Interiors - Bathroom #2	$2,885
Interiors - Kitchen	$10,066
Interiors, General - All but Kitchen, Baths & Laundry	$8,921
Roof	$88
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$1,696
Structural - Other Building Elements	$1,039
Sub-Total:	$46,917
Sub-Total adjusted to ACF of: 104.00%	$48,793
Contingency @ 5.00 %	$2,440
SIOH @ 5.50 %	$2,818
Total - Unit Type C-5 NCO 3.3	$54,051

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	2
	D	18
Total Quantity: UNIT TYPE C-5 NCO		**20**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-5 NCO 3.3 - Summary Cost Estimate **

Work Item	Total
House Sitework	$0
Interior - Electrical	$181
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$1,549
Roof	$2,151
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$14,415
Structural - Other Building Elements	$22,542
Sub-Total:	$40,837
Sub-Total adjusted to ACF of: 104.00%	$42,470
Contingency @ 5.00 %	$2,124
SIOH @ 5.50 %	$2,453
Total - Unit Type C-5 NCO 3.3	$47,047

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	2
	D	18
Total Quantity: UNIT TYPE C-5 NCO		**20**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

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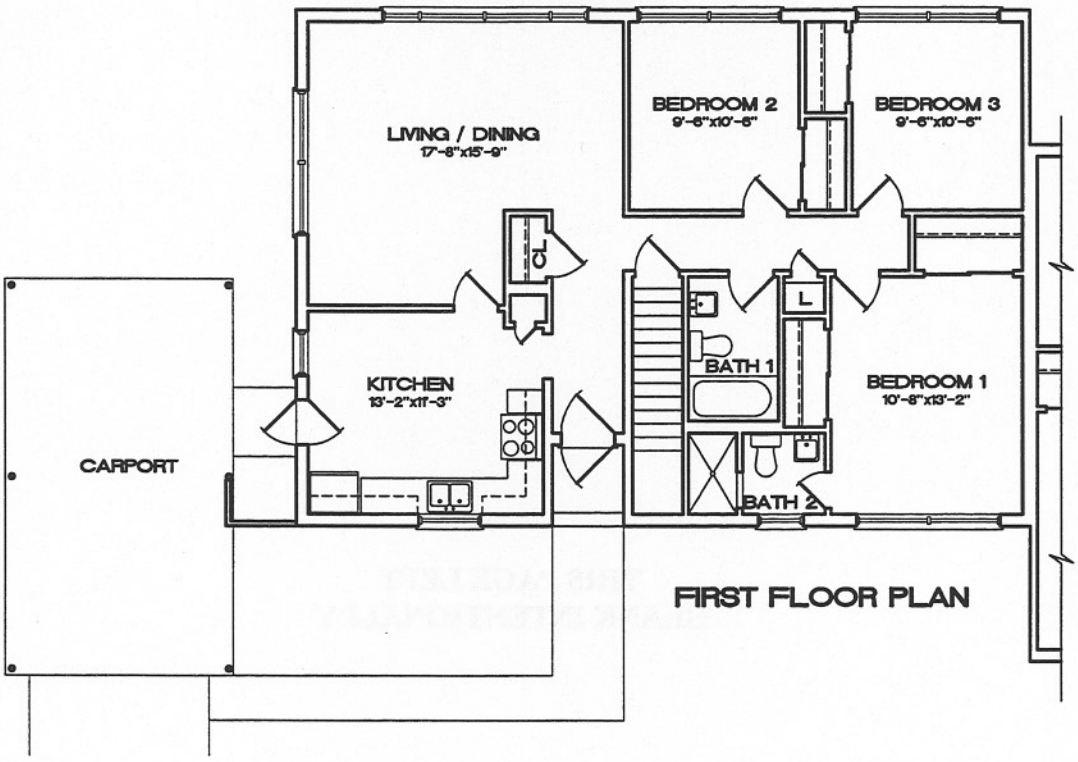
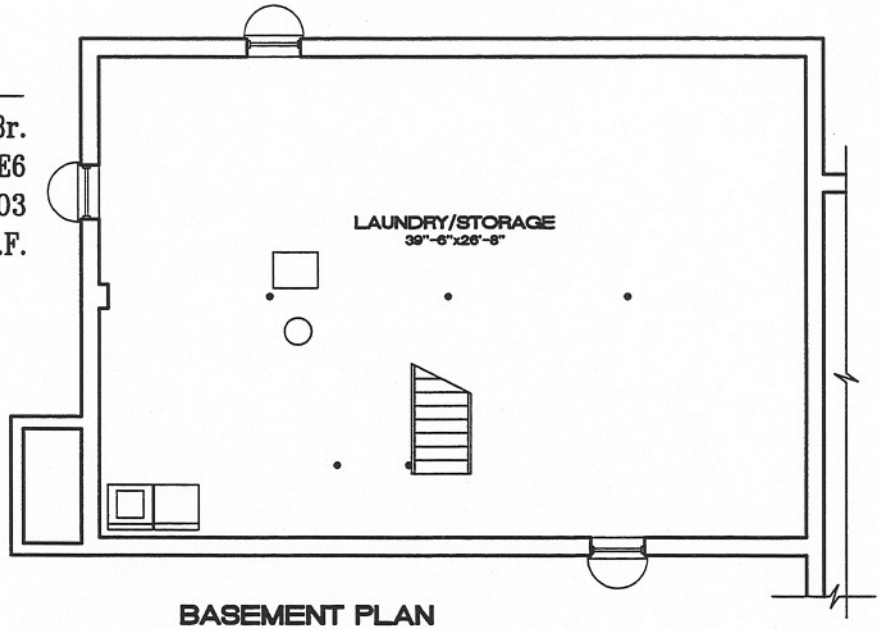
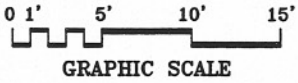
3.2.22 Unit Type C-5



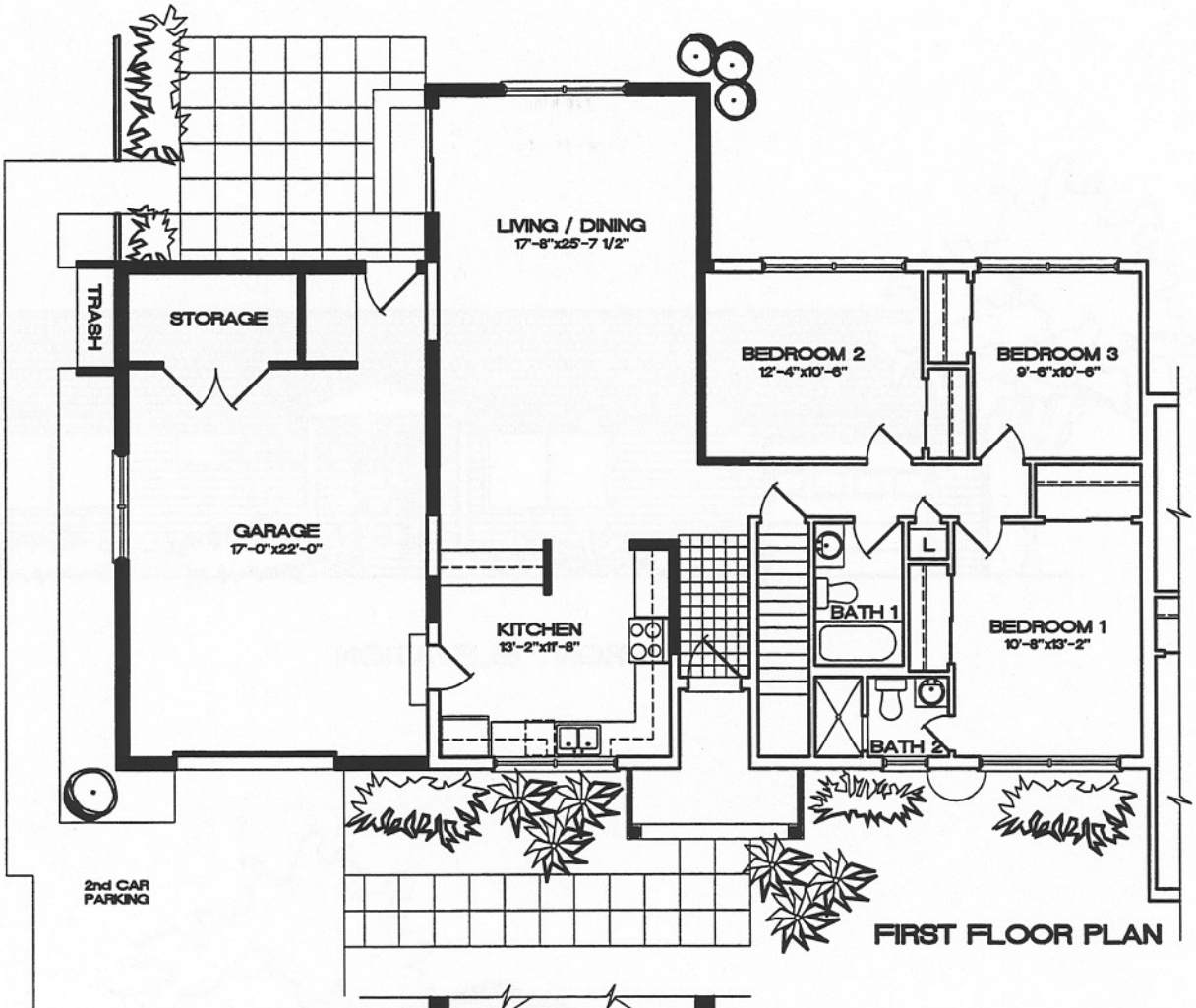
Unit Summary

Unit Type:	C-5 3 Br.
Grade:	E1-E6
	01-03
Existing Net Area:	1,050 S.F.

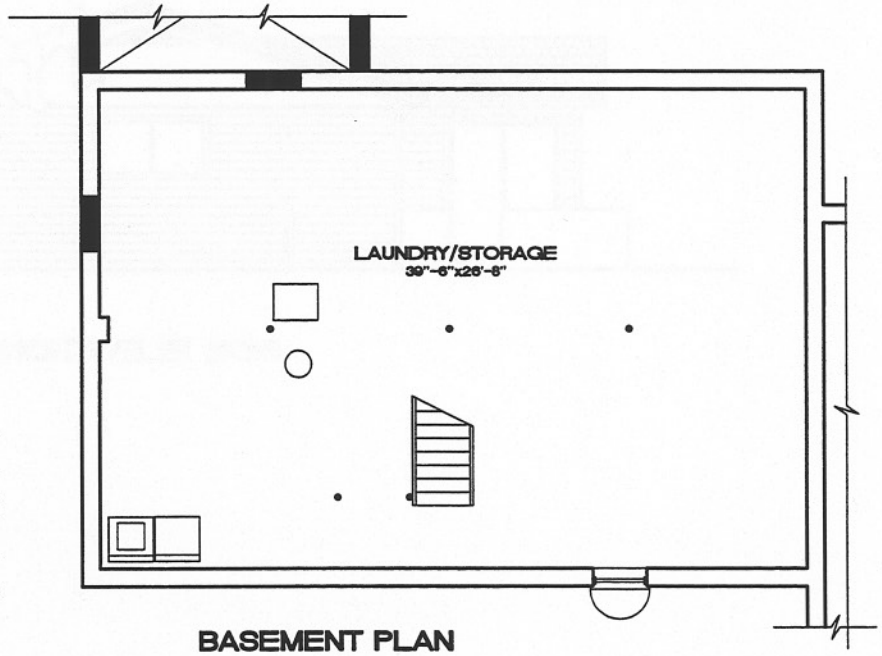




EXISTING FLOOR PLANS



FIRST FLOOR PLAN



BASEMENT PLAN

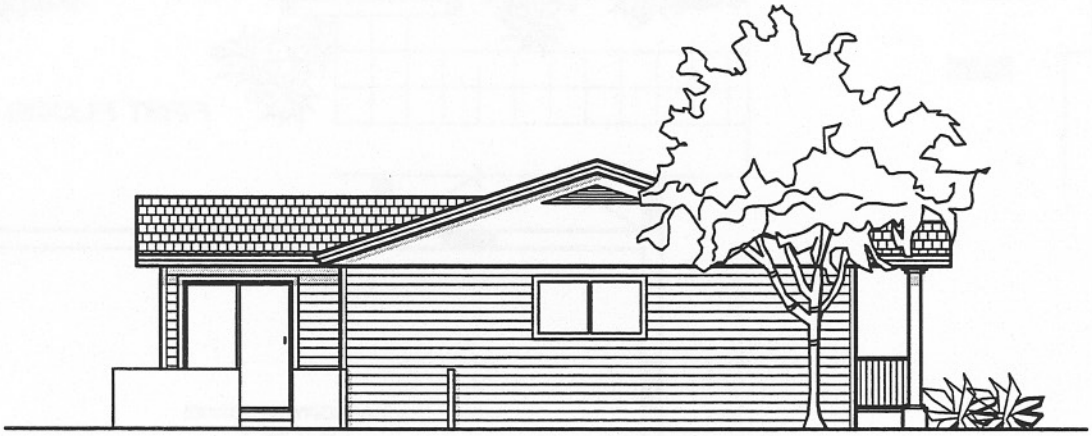
Unit Summary

Unit Type:	C-5 NC03.3 3 Br.
Grade:	E1-E6
Authorized Net Area:	1,200 S.F.
Proposed Net Area:	1,200 S.F.

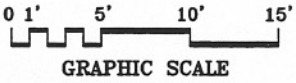
0 1' 5' 10' 15'
GRAPHIC SCALE

PROPOSED FLOOR PLANS
(DESIGNED BY OTHERS)

FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE NCO3.3 ELEVATIONS (DESIGNED BY OTHERS)

3.2.23 Unit Type C-6 NCO2.4 & SNCO2.4 Woodview Neighborhood

Summary

729 McConnell Lane Inspected

Built in 1962 (Capehart)

Condition Assessment Matrix Rating: 3.65

Grades	**E-1 through E-6**	**(52 units)**
	E-7 through E-9	**(10 units)**

3 Bedrooms, 2 Baths converted to
2 Bedrooms, 2 Baths

998 NSF authorized
1,050 NSF existing
990 NSF proposed

3.2.23.1 Analysis of Existing Conditions

Each unit in this duplex has 3 bedrooms and 2 bathrooms with an area of 1,050 NSF. Construction is standard wood framing on CMU foundation walls with a full basement. All 62 of these units are currently assigned to Junior NCOs and CGOs.

The plans for these units are the same as the C-5 unit except that C-5 is offset at the duplex party wall. For an analysis of existing conditions, refer to unit C-5 in Section 3.2.22.1

Environmental Issues

- Lead-based paint and asbestos were detected.

3.2.23.2 Recommendations

With interior modifications and an addition, this unit will be suitable as 2-BR housing with an area of 990 NSF for NCOs and SNCOs. The maximum authorized area for this unit is 950 NSF, plus 5% for conversion from another unit type.

Architectural Exterior

- Construct a new garage enclosure.
- Provide off-street parking for 2.5 cars per unit.
- Construct a new gabled roof entry element over the front door to add visual relief and define the front entry.
- Provide new concrete entrance stoop, sidewalks, and patio.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

In this unit type as "designed by others," bedrooms #1 and #2 are undersized.

- Provide all bedroom windows with a maximum floor-to-sill height of 44 inches for emergency egress.
- Install new sheet vinyl flooring in kitchen, bathrooms, and utility room.
- Install vinyl tiles at entry, and install carpeting elsewhere.
- Remove existing kitchen cabinets, and provide new cabinets and plastic laminated countertops.
- Provide new deep sink, dishwasher, fixtures, and range with hood.
- Provide each bathroom with a new sink, vanity, and plumbing fixtures.
- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.

- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.

- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.

- Install proper water-saving plumbing fixtures and flow restrictors.

- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).

- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

- Provide new panel-board and circuit breakers.

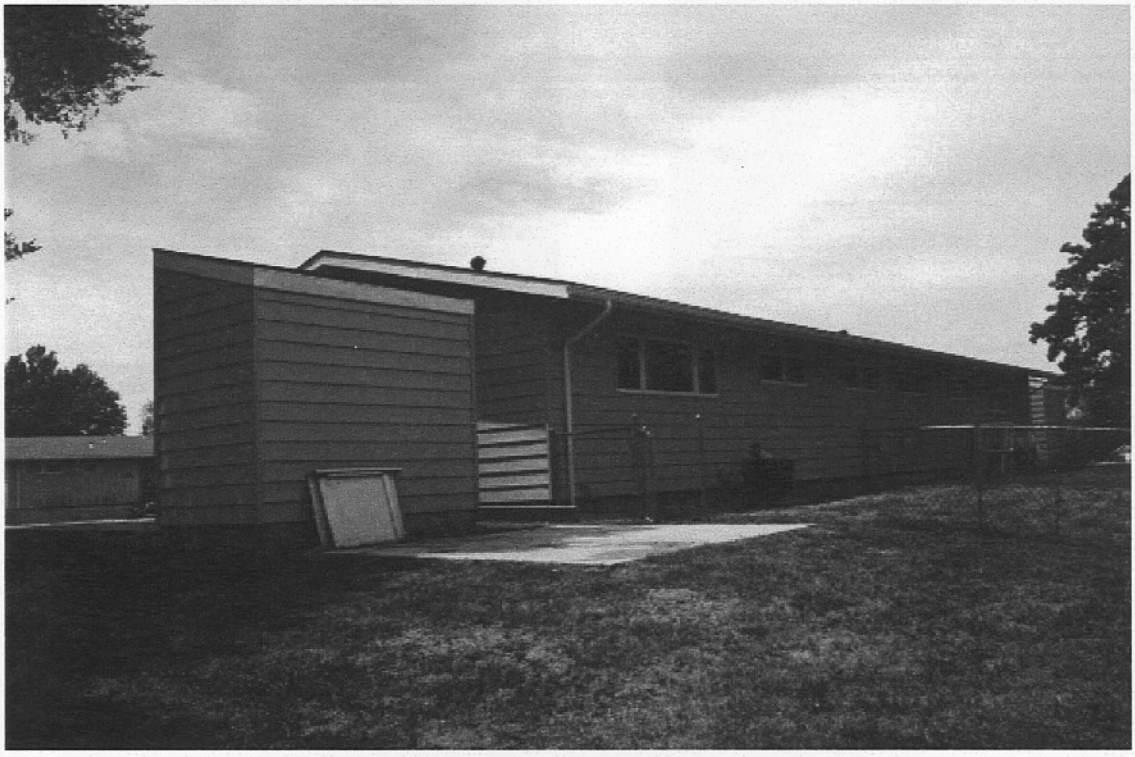
- Rewire entire unit to provide properly grounded system.

- Provide GFCI receptacles in bathrooms as per the current NEC. Provide GFCI receptacles for outside receptacles per the current NEC.

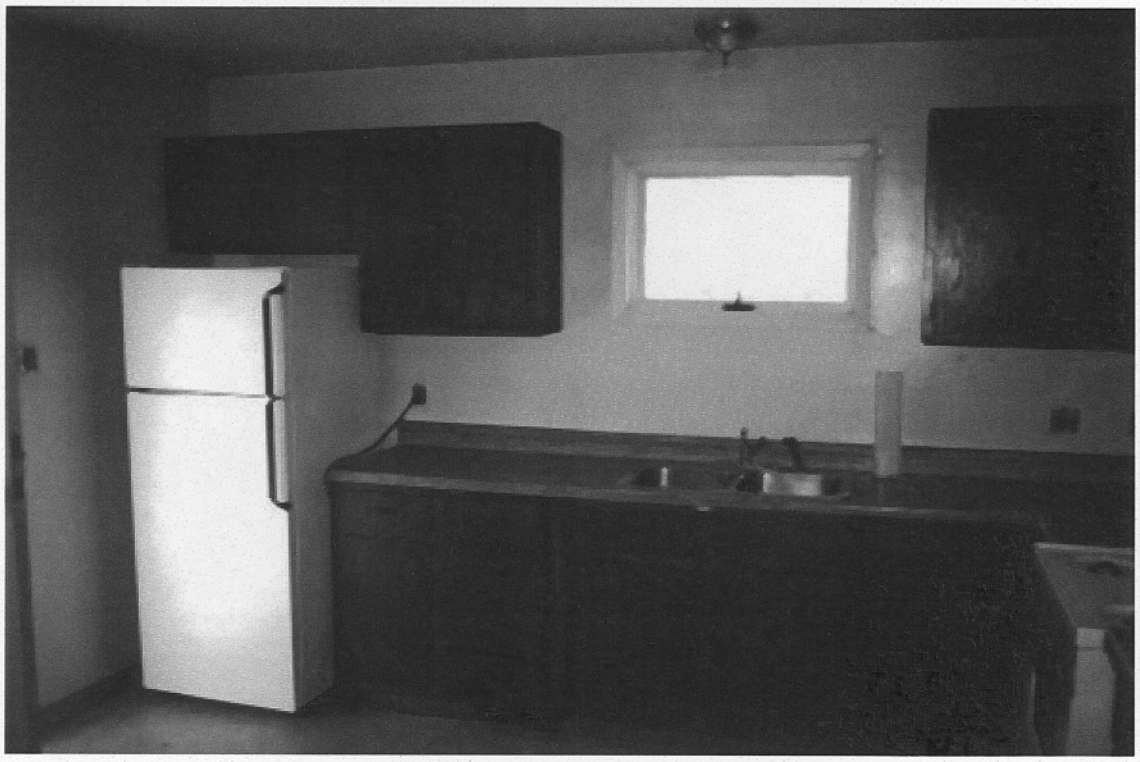
- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles as per the current NEC.

- Provide two small appliance circuits for kitchen counter receptacles per the current NEC.

3.57 Unit Type C-6 - Front and Side Elevation

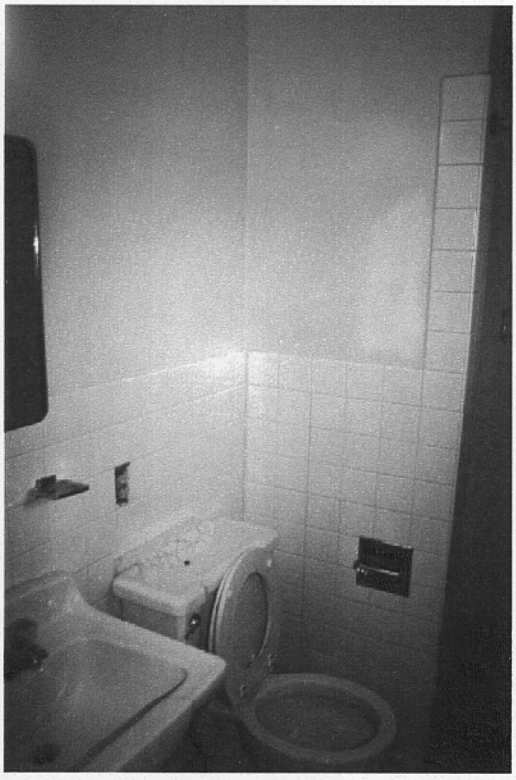


3.58 Unit Type C-6 - Rear Elevation



3.59 Unit Type C-6 - Kitchen

3.60 Unit Type C-6 - Bathroom 1



3.61 Unit Type C-6 - Bathroom 2

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-6 NCO 2.4 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,609
Interior - Electrical	$9,102
Interior - Mechanical	$1,659
Interiors - Bathroom #1	$2,380
Interiors - Bathroom #2	$2,673
Interiors - Kitchen	$10,845
Interiors, General - All but Kitchen, Baths & Laundry	$8,584
Roof	$186
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$3,161
Structural - Other Building Elements	$19,171
Sub-Total:	$64,489
Sub-Total adjusted to ACF of: 104.00%	$67,069
Contingency @ 5.00 %	$3,353
SIOH @ 5.50 %	$3,873
Total - Unit Type C-6 NCO 2.4	$74,296

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	10
	D	42
Total Quantity: UNIT TYPE C-6 NCO		**52**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type C-6 NCO 2.4 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,658
Interior - Electrical	$9,649
Interior - Mechanical	$1,791
Interiors - Bathroom #1	$2,569
Interiors - Bathroom #2	$2,885
Interiors - Kitchen	$11,710
Interiors, General - All but Kitchen, Baths & Laundry	$9,261
Roof	$59
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$1,965
Structural - Other Building Elements	$1,039
Sub-Total:	$47,705
Sub-Total adjusted to ACF of: 104.00%	$49,613
Contingency @ 5.00 %	$2,481
SIOH @ 5.50 %	$2,865
Total - Unit Type C-6 NCO 2.4	$54,959

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	10
	D	42
Total Quantity: UNIT TYPE C-6 NCO		**52**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-6 NCO 2.4 - Summary Cost Estimate **

Work Item	Total
House Sitework	$152
Interior - Electrical	$181
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$0
Roof	$142
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$1,448
Structural - Other Building Elements	$19,663
Sub-Total:	$21,587
Sub-Total adjusted to ACF of: 104.00%	$22,450
Contingency @ 5.00 %	$1,123
SIOH @ 5.50 %	$1,296
Total - Unit Type C-6 NCO 2.4	$24,869

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	10
	D	42
Total Quantity: UNIT TYPE C-6 NCO		**52**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-6 SNCO 2.4 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,609
Interior - Electrical	$9,102
Interior - Mechanical	$1,617
Interiors - Bathroom #1	$2,380
Interiors - Bathroom #2	$2,673
Interiors - Kitchen	$10,713
Interiors, General - All but Kitchen, Baths & Laundry	$8,405
Roof	$186
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$2,992
Structural - Other Building Elements	$23,558
Sub-Total:	$68,355
Sub-Total adjusted to ACF of: 104.00%	$71,089
Contingency @ 5.00 %	$3,554
SIOH @ 5.50 %	$4,105
Total - Unit Type C-6 SNCO 2.4	$78,748

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	10

Total Quantity: UNIT TYPE C-6 SNCO 10

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type C-6 SNCO 2.4 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,658
Interior - Electrical	$9,649
Interior - Mechanical	$1,746
Interiors - Bathroom #1	$2,569
Interiors - Bathroom #2	$2,885
Interiors - Kitchen	$11,710
Interiors, General - All but Kitchen, Baths & Laundry	$9,067
Roof	$59
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$1,965
Structural - Other Building Elements	$1,039
Sub-Total:	$47,466
Sub-Total adjusted to ACF of: 104.00%	$49,365
Contingency @ 5.00 %	$2,468
SIOH @ 5.50 %	$2,851
Total - Unit Type C-6 SNCO 2.4	$54,684

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	10

Total Quantity: UNIT TYPE C-6 SNCO 10

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-6 SNCO 2.4 - Summary Cost Estimate **

Work Item	Total
House Sitework	$152
Interior - Electrical	$181
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$0
Roof	$142
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$1,448
Structural - Other Building Elements	$20,726
Sub-Total:	$22,649
Sub-Total adjusted to ACF of: 104.00%	$23,555
Contingency @ 5.00 %	$1,178
SIOH @ 5.50 %	$1,360
Total - Unit Type C-6 SNCO 2.4	$26,094

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	10

Total Quantity: UNIT TYPE C-6 SNCO 10

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

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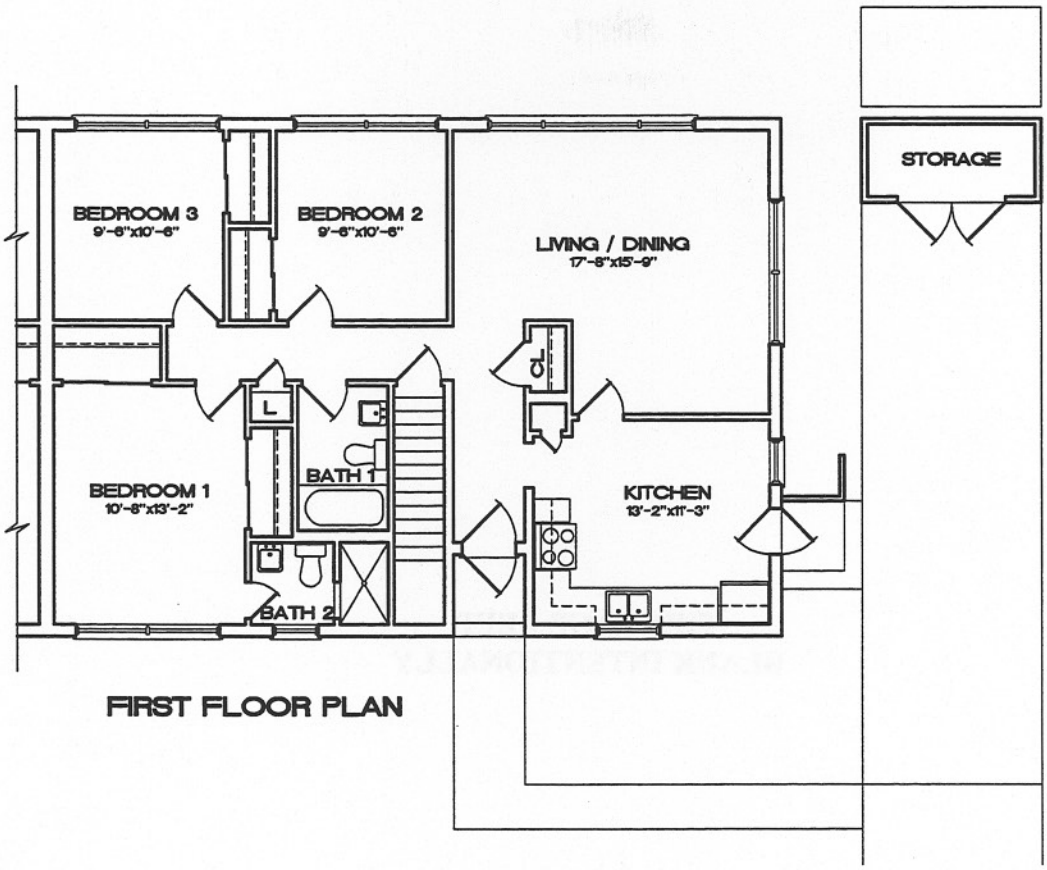
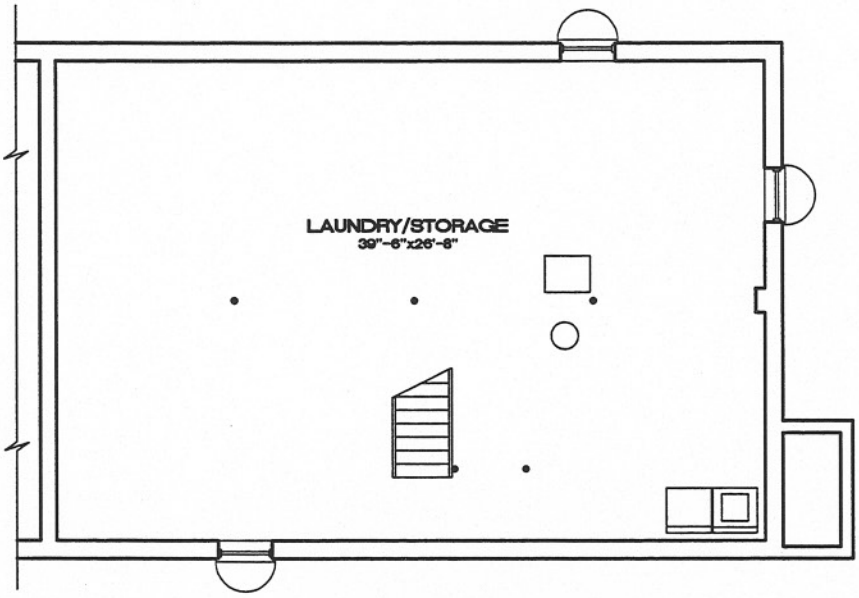
3.2.23 Unit Type C-6



FIRST FLOOR PLAN



BASEMENT PLAN

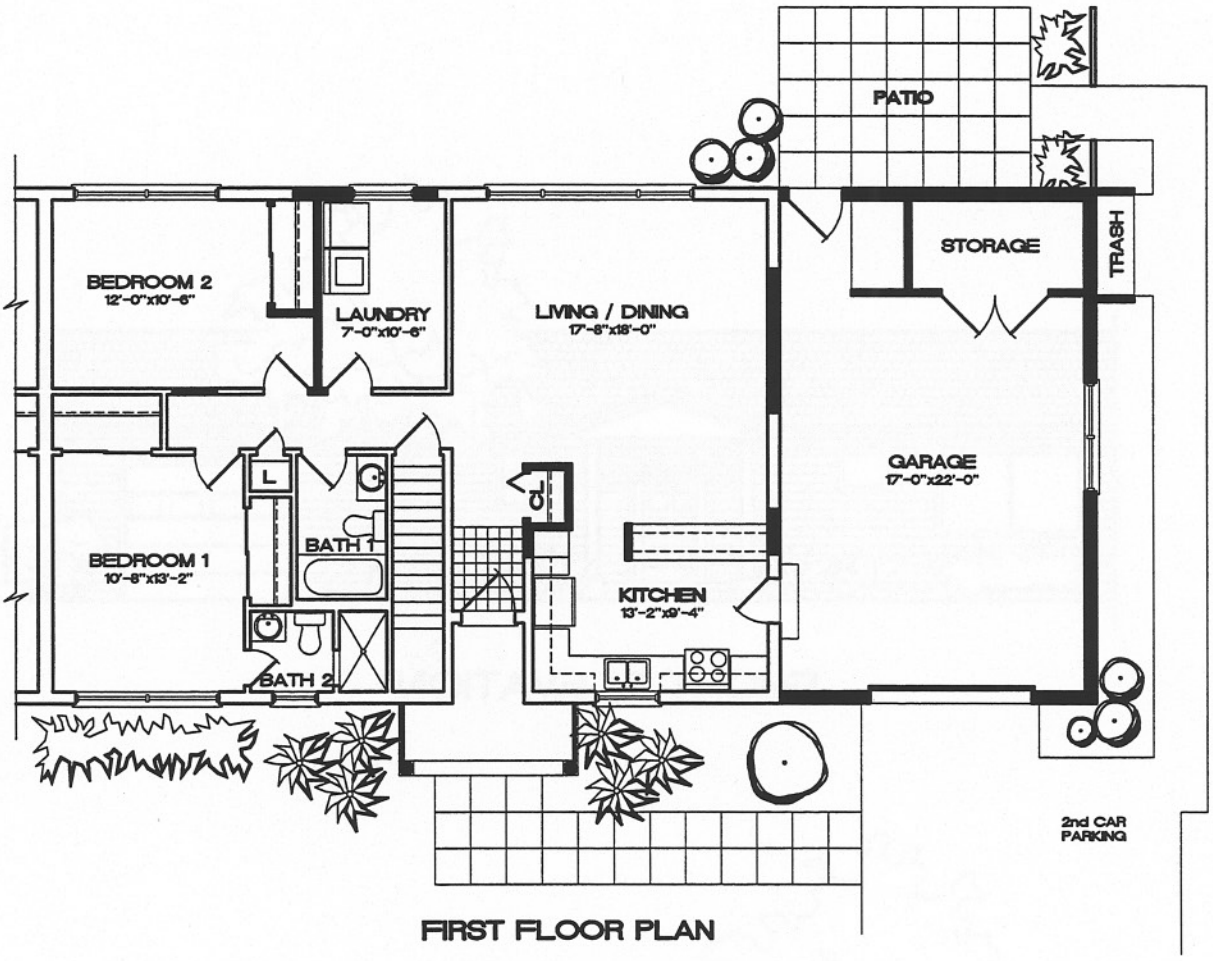
Unit Summary

Unit Type:	C-6 3 Br.
Grade:	E1-E6
	01-03
Existing Net Area:	1,050 S.F.

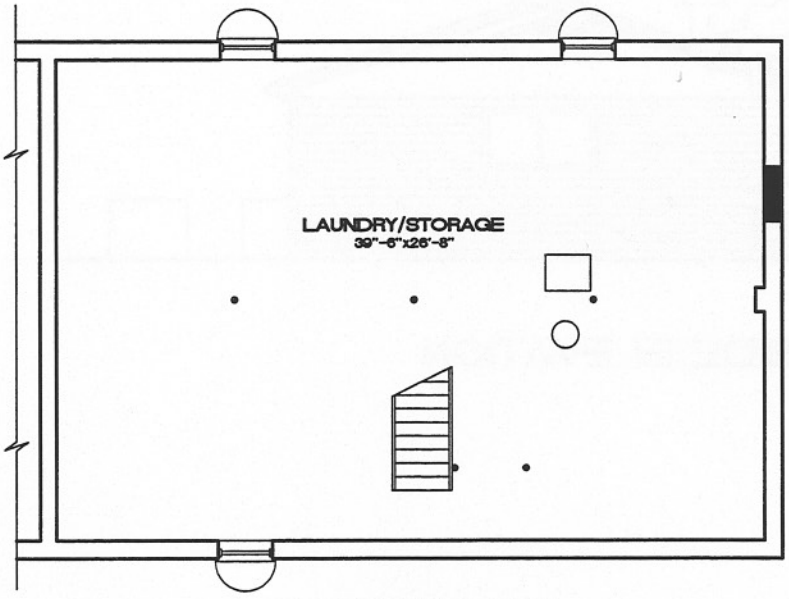
0 1' 5' 10' 15'

GRAPHIC SCALE

EXISTING FLOOR PLANS



FIRST FLOOR PLAN



BASEMENT PLAN

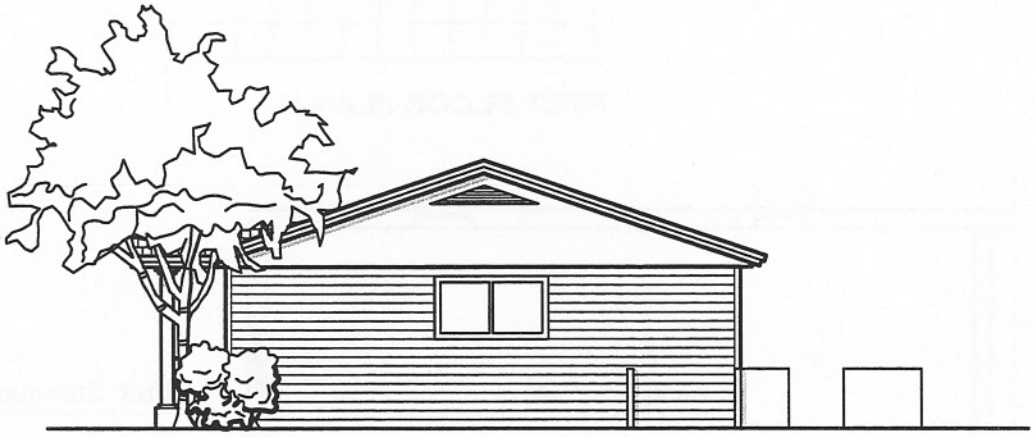
Unit Summary

Unit Type:	C-6 NC02.4 2 Br.
Grade:	E1-E6
Authorized Net Area:	998 S.F.
Proposed Net Area:	990 S.F.

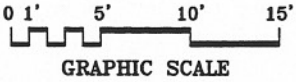
0 1' 5' 10' 15'
GRAPHIC SCALE

PROPOSED FLOOR PLANS
(DESIGNED BY OTHERS)

FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE NCO2.4 ELEVATIONS

(DESIGNED BY OTHERS)

3.2.24 Unit Type C-7 FGO3.1, CGO3.1 Woodview Neighborhood

Summary

851 Westover Road Inspected

Built in 1962 (Capehart)

Condition Assessment Matrix Rating: 3.68

Grades	**O-1 through O-3** **O-4 and O-5**

3 Bedrooms, 2 Baths

1,350 NSF authorized
1,302 NSF existing
1,302 NSF proposed (CGO3.1)

1,400 NSF authorized
1,302 NSF existing
1,302 NSF proposed (FGO3.1)

3.2.24.1 Analysis of Existing Conditions

This single-family unit has 3 bedrooms and 2 baths with an area of 1,302 NSF. Construction is standard wood framing on CMU and concrete foundation wall with a full basement. All 59, of these units are currently assigned to CGOs and FGOs.

There are two site orientations for this unit type. Some have the long axis parallel to the street, and some have the long axis perpendicular to the street. This results in a variation in the carport/garage locations.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- This unit has a detached carport and exterior storage.
- A rear patio is not provided.
- The flat façade on this unit is stark and requires entry definition.
- Off-street parking is inadequate.

Architectural Interior

- The resilient tile flooring needs replacing; it is dated and in poor condition.
- Kitchen cabinets are marginally adequate.
- The ceiling-mounted exhaust fan is not adequate.
- The task lighting is poor.
- The countertops are in poor condition, and the breakfast bar is poorly designed.
- The cabinets, counter tops, and fixtures, in some units, have recently been replaced.
- The two bathrooms in each unit are outdated and require remodeling.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor runs of the air-conditioner condensation drain may become a stumble hazard.
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

- The panel-board and breakers are outdated and in need of replacement.
- Ungrounded and/or outdated wiring conditions and devices apply throughout the facility.
- Lack of GFCI receptacles in proper locations particularly kitchen counter spaces, bathrooms, and outside.

3.2.24.2 Recommendations
Unit Types CGO3.1 and FGO3.1

This "designed by others" unit is being assigned to meet the two-bedroom deficit for CGOs and provides adequate housing for this grade. Although this unit is 98 NSF below the area authorized for 2 bedroom FGO units, it is also being assigned to this grade.

Architectural Exterior

- Construct a new garage enclosure.
- Construct new gabled roof entry elements over the front door to add visual relief and define the front entry of the unit.
- Enclose exterior basement stairs and provide new interior door from dining room.
- Provide new concrete entrance stoop, sidewalks, and patio.
- Provide off-street parking for 2.5 cars per unit.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

In this "designed by others" unit bedrooms #1 and #2 remain undersized.

- Install new sheet vinyl flooring in kitchen, bathrooms, and utility room; Install vinyl tiles at entry, and install carpet elsewhere.
- Modify kitchen area such that a family room can be added to this unit.
- Remove existing kitchen cabinets, and provide new cabinets and plastic laminate countertops.
- Provide new deep sink, dishwasher, fixtures, and range with hood.
- Provide each bathroom with a new sink, vanity, tub/shower, and plumbing fixtures.
- Remove interior basement stairs and convert to laundry room. Move laundry equipment from the basement.
- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

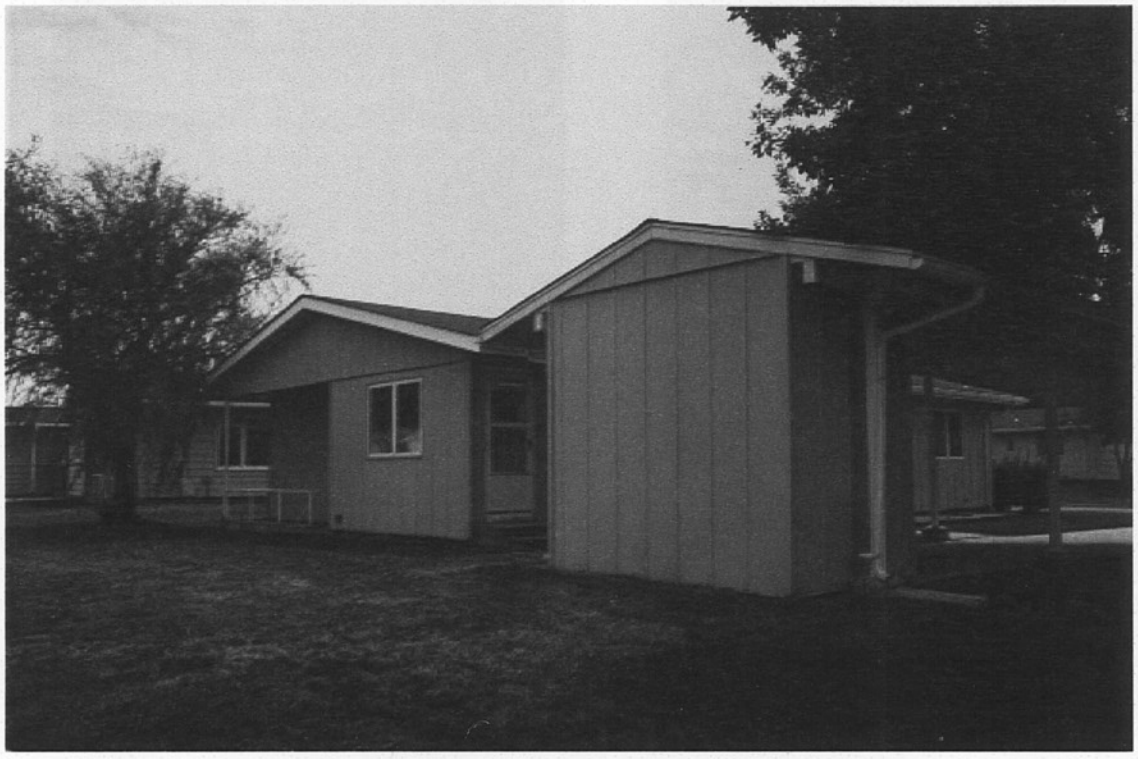
Mechanical

- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.
- Install proper water-saving plumbing fixtures and flow restrictors.
- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

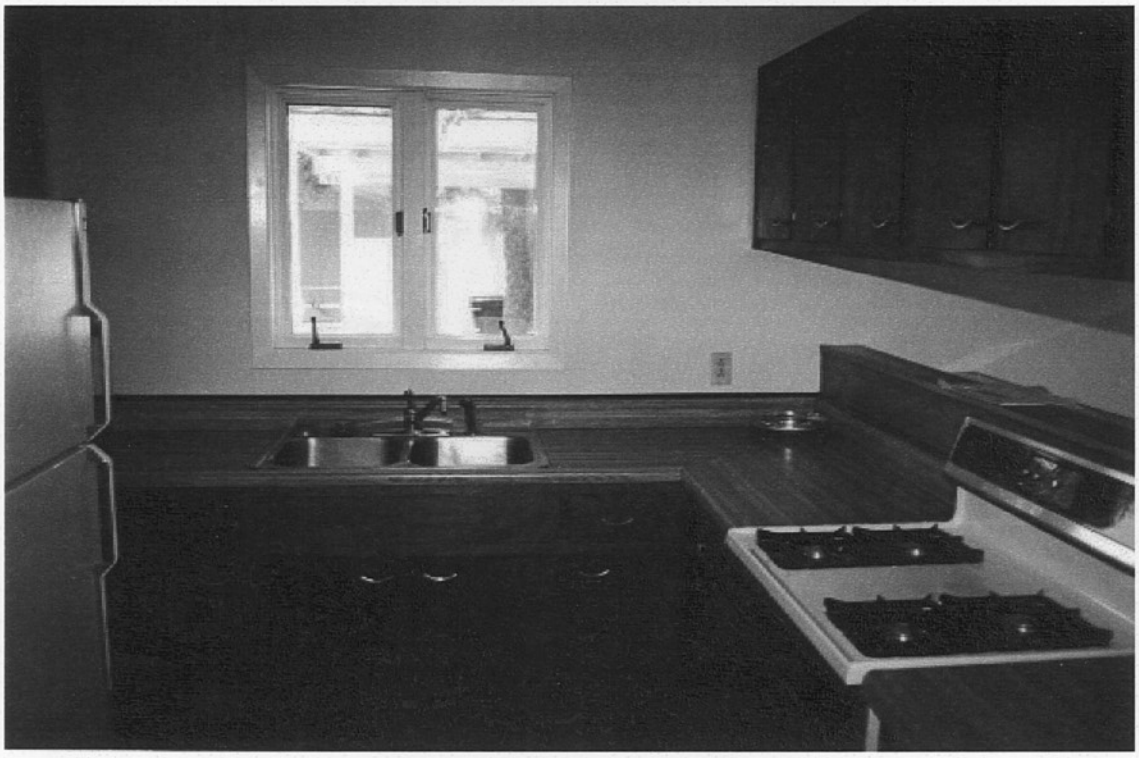
Electrical

- Provide new panel-board and circuit breakers.
- Rewire entire unit to provide properly grounded system.
- Provide, as per the current NEC, GFCI receptacles for bathrooms, outside, and kitchen counters including the addition of two small appliance circuits.

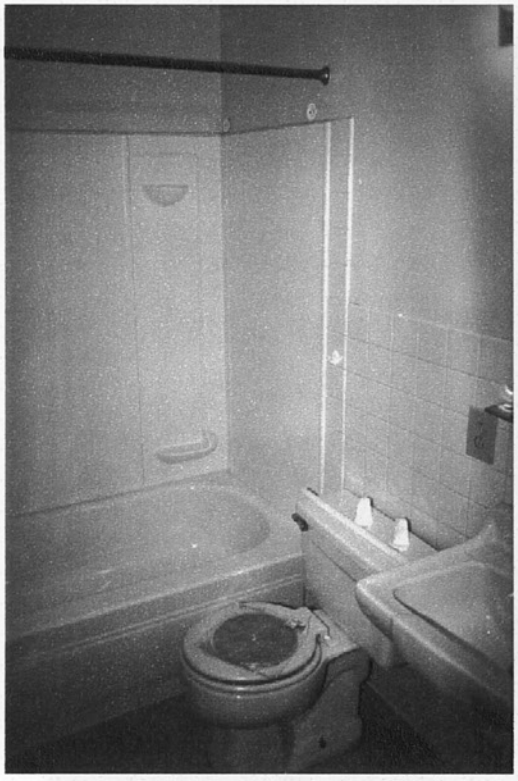
3.62 Unit Type C-7 - Front and Side Elevation



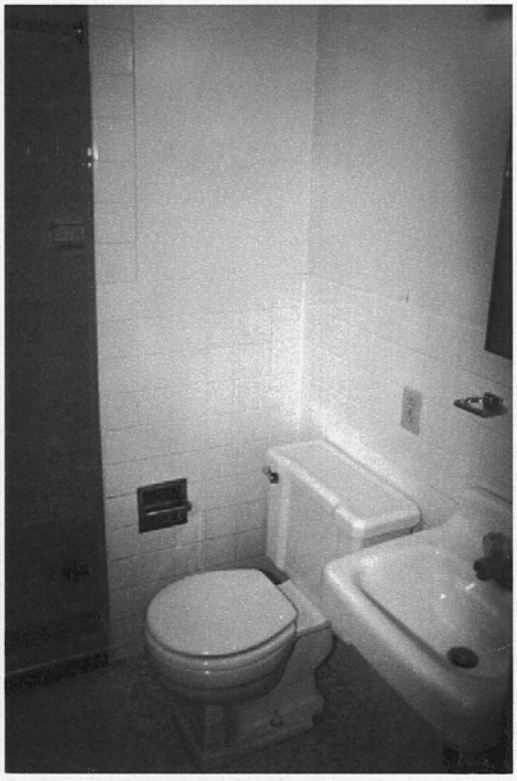
3.63 Unit Type C-7 - Rear and Side Elevation



3.64 Unit Type C-7 - Kitchen



3.65 Unit Type C-7 - Bathroom 1



3.66 Unit Type C-7 - Bathroom 2

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-7 CGO 3.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$3,359
Interior - Electrical	$9,542
Interior - Mechanical	$1,659
Interiors - Bathroom #1	$2,395
Interiors - Bathroom #2	$2,635
Interiors - Kitchen	$9,432
Interiors, General - All but Kitchen, Baths & Laundry	$8,875
Roof	$59
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$8,056
Structural - Other Building Elements	$21,292
Sub-Total:	$71,424
Sub-Total adjusted to ACF of: 104.00%	$74,281
Contingency @ 5.00 %	$3,714
SIOH @ 5.50 %	$4,290
Total - Unit Type C-7 CGO 3.1	$82,285

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	8
	H	10
Total Quantity: UNIT TYPE C-7 CGO		**18**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type C-7 CGO 3.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$3,615
Interior - Electrical	$10,124
Interior - Mechanical	$1,791
Interiors - Bathroom #1	$2,585
Interiors - Bathroom #2	$2,845
Interiors - Kitchen	$10,185
Interiors, General - All but Kitchen, Baths & Laundry	$9,575
Roof	$63
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$8,377
Structural - Other Building Elements	$1,039
Sub-Total:	$54,320
Sub-Total adjusted to ACF of: 104.00%	$56,493
Contingency @ 5.00 %	$2,825
SIOH @ 5.50 %	$3,262
Total - Unit Type C-7 CGO 3.1	$62,580

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	8
	H	10
Total Quantity: UNIT TYPE C-7 CGO		**18**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-7 CGO 3.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$0
Interior - Electrical	$181
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$0
Roof	$0
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$319
Structural - Other Building Elements	$21,955
Sub-Total:	$22,455
Sub-Total adjusted to ACF of: 104.00%	$23,353
Contingency @ 5.00 %	$1,168
SIOH @ 5.50 %	$1,349
Total - Unit Type C-7 CGO 3.1	$25,870

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	8
	H	10
Total Quantity: UNIT TYPE C-7 CGO		**18**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-7 FGO 3.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$3,359
Interior - Electrical	$9,542
Interior - Mechanical	$1,659
Interiors - Bathroom #1	$2,395
Interiors - Bathroom #2	$2,635
Interiors - Kitchen	$9,432
Interiors, General - All but Kitchen, Baths & Laundry	$8,875
Roof	$59
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$8,056
Structural - Other Building Elements	$21,292
Sub-Total:	$71,424
Sub-Total adjusted to ACF of: 104.00%	$74,281
Contingency @ 5.00 %	$3,714
SIOH @ 5.50 %	$4,290
Total - Unit Type C-7 FGO 3.1	$82,285

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	G	1
	H	40
Total Quantity: UNIT TYPE C-7 FGO		**41**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type C-7 FGO 3.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$3,615
Interior - Electrical	$10,124
Interior - Mechanical	$1,791
Interiors - Bathroom #1	$2,585
Interiors - Bathroom #2	$2,845
Interiors - Kitchen	$10,185
Interiors, General - All but Kitchen, Baths & Laundry	$9,575
Roof	$63
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$8,377
Structural - Other Building Elements	$1,039
Sub-Total:	$54,320
Sub-Total adjusted to ACF of: 104.00%	$56,493
Contingency @ 5.00 %	$2,825
SIOH @ 5.50 %	$3,262
Total - Unit Type C-7 FGO 3.1	$62,580

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	G	1
	H	40
Total Quantity: UNIT TYPE C-7 FGO		**41**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-7 FGO 3.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$0
Interior - Electrical	$181
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$0
Roof	$0
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$319
Structural - Other Building Elements	$21,955
Sub-Total:	$22,455
Sub-Total adjusted to ACF of: 104.00%	$23,353
Contingency @ 5.00 %	$1,168
SIOH @ 5.50 %	$1,349
Total - Unit Type C-7 FGO 3.1	$25,870

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	G	1
	H	40
Total Quantity: UNIT TYPE C-7 FGO		**41**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

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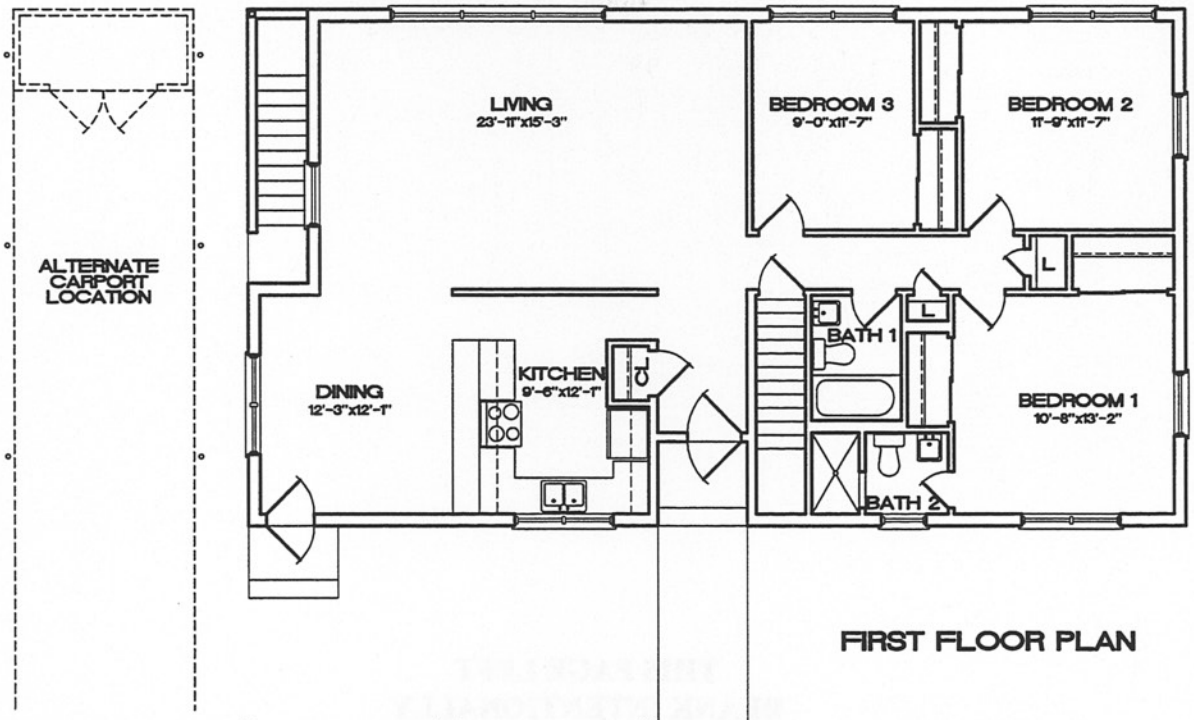
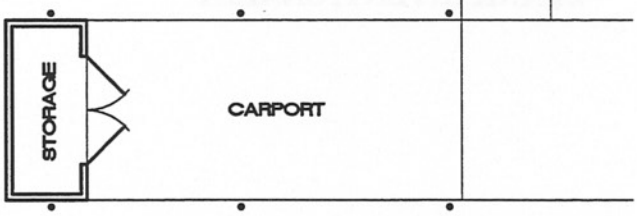
3.2.24 Unit Type C-7

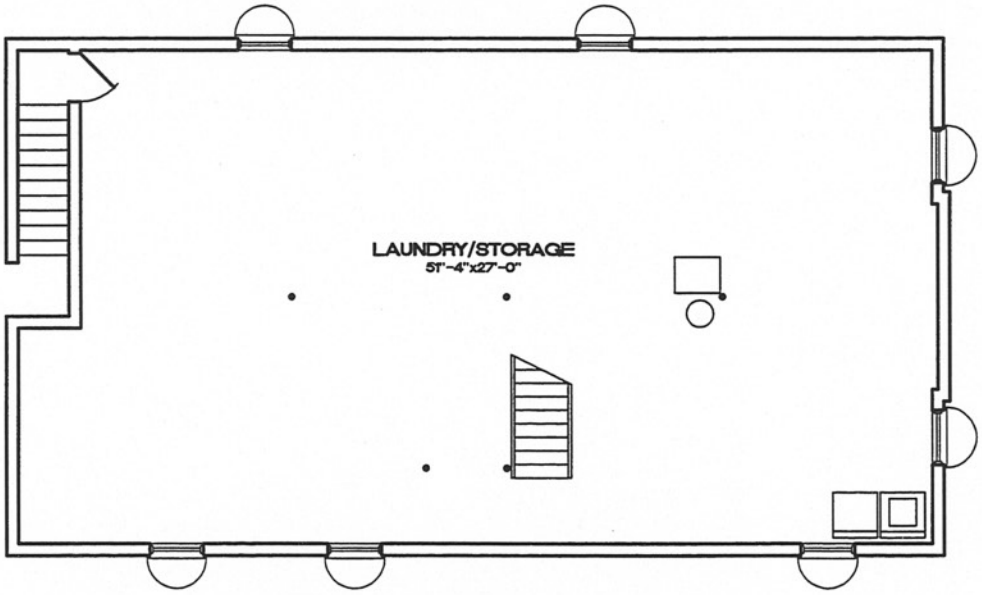


FIRST FLOOR PLAN



Unit Summary

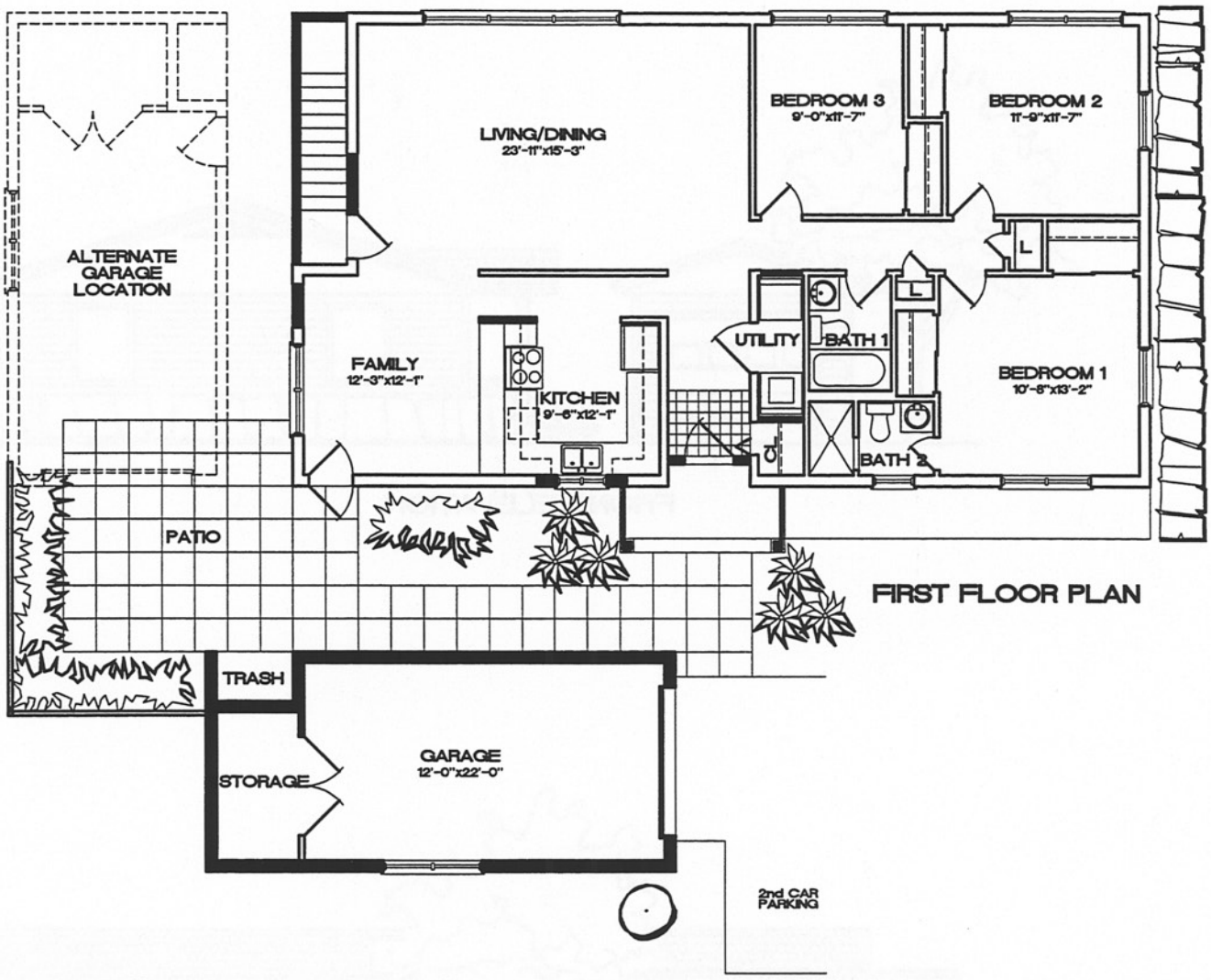
Unit Type:	C-7 3 Br.
Grade:	01-03
	04-05
Existing Net Area:	1,302 S.F.



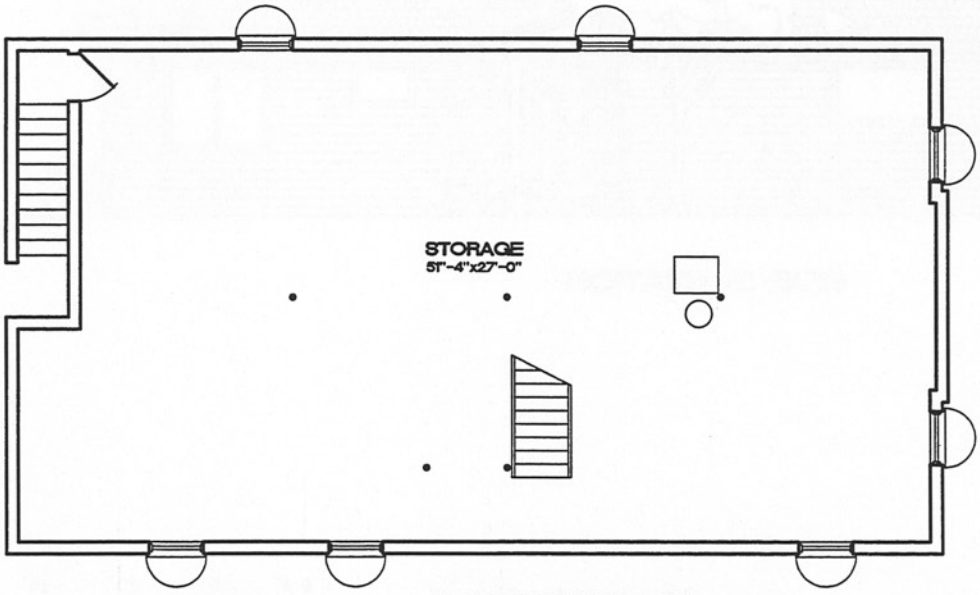
BASEMENT PLAN

GRAPHIC SCALE

EXISTING FLOOR PLANS



FIRST FLOOR PLAN



BASEMENT PLAN

Unit Summary

Unit Type:	C-7 CG03.1 3 Br.
Grade:	01-03
Authorized Net Area:	1,350 S.F.
Proposed Net Area:	1,302 S.F.

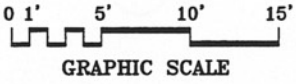
Unit Type:	C-7 FG03.1 3 Br.
Grade:	04-05
Authorized Net Area:	1,400 S.F.
Proposed Net Area:	1,302 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

PROPOSED FLOOR PLANS
(DESIGNED BY OTHERS)

FRONT ELEVATION

SIDE ELEVATION



PROPOSED UNIT TYPE CG03.1 ELEVATIONS

(DESIGNED BY OTHERS)

3.2.25 Unit Type C-8 FGO4.2 & CGO4.1 Woodview Neighborhood

Summary

765 Westover Road Inspected

Built in 1962 (Capehart)

Condition Assessment Matrix Rating: 3.68

Grades O-4 and O-5
O-1 through O-3

4 Bedrooms, 2 Baths

1,550 NSF authorized
1,369 NSF existing
1,550 NSF proposed (C-8C, FGO4.2)

1,450 NSF authorized
1,369 NSF existing
1,450 NSF proposed (C-8D, CGO4.1)

Whole House renovation,
C-8A, 9 units FY90 PAIP

3.2.25.1 Analysis of Existing Conditions

This single-family unit has 4 bedrooms and 2 baths and area of 1,369 NSF. Construction is standard wood framing on CMU foundation walls with a full basement. All 16 of these units are currently assigned to CGOs and FGOs. Nine units have been renovated to Whole House standards as part of an FY90 PAIP and are designated as unit type C-8A (refer to Section 3.2.26).

There are two site orientations for this unit type. Some have the long axis parallel to the street and some have the long axis perpendicular to the street. This results in the a variation in the carport/garage locations.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts.
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- This unit has a new carport, but off-street parking remains inadequate.
- This unit has an exterior storage addition completed in 1992.
- The flat façade of this unit is stark and requires entry definition.

Architectural Interior

- The resilient tile flooring is dated and needs replacing.
- Moisture problems in the basement have caused the slab to crack.
- Kitchen cabinets are marginally adequate.
- The ceiling-mounted exhaust fan is not adequate.
- The task lighting is poor.
- The two bathrooms in each unit are out dated and require remodeling. The resilient tile floor is in poor condition
- The wallboard nails in the living room ceiling are popping out and need replacing or resetting.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor of the air-conditioner condensation drain and may become a stumble hazard.
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in the plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

- The panel-board and breakers are outdated and in need of replacement.

- Ungrounded and/or outdated wiring conditions and devices apply throughout the facility.

- Lack of GFCI receptacles in proper locations, particularly for kitchen counter spaces, bathrooms, and outside.

3.2.25.2 Recommendations Unit Type FGO4.2 (C-8C)

With an addition and interior modifications, this unit will be suitable 4-bedroom housing of 1,550 NSF for Field Grade Officers. The maximum authorized area for FGOs is 1,550 NSF.

Architectural Exterior

- Construct a new garage enclosure.

- Provide off-street parking for 2.5 cars per unit.

- Construct new gabled roof entry elements over the front door to add visual relief and define the front entry of the unit.

- Provide new concrete entrance stoop, sidewalks, and patio.

- Provide security motion detector lights at the rear of the unit.

- Locate house numbers at the same position on each unit.

Architectural Interior

In this "designed by others" unit, bedrooms #1 and #2 remain undersized.

- Install new sheet vinyl flooring in kitchen, bathrooms, and utility room.

- Install vinyl tiles at entry, and install carpet elsewhere.

- Construct an addition to the rear of this unit, and expand the living room.

- Relocate kitchen to provide a family room next to the kitchen.

- Remove existing kitchen cabinets, and provide new cabinets and plastic laminate countertops.

- Provide new deep sink, dishwasher, fixtures, and range with hood.

- Provide each bathroom with a new sink, vanity, tub/shower, and fixtures.

- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.

- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.

- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.

- Install proper water-saving plumbing fixtures and flow restrictors.

- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).

- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

- Provide new panel-board and circuit breakers.

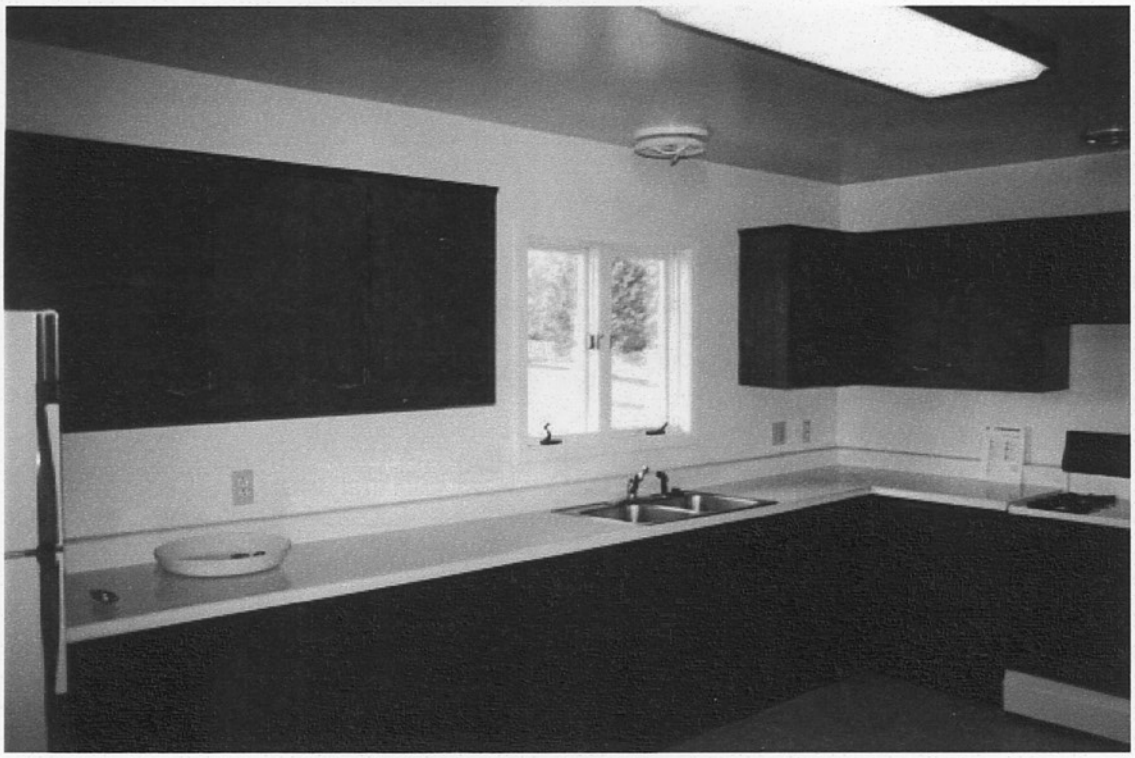
- Rewire entire unit to provide properly grounded system.

- Provide, as per the current NEC, GFCI receptacles for bathrooms, outside, and kitchen counters including the addition of two small appliance circuits.

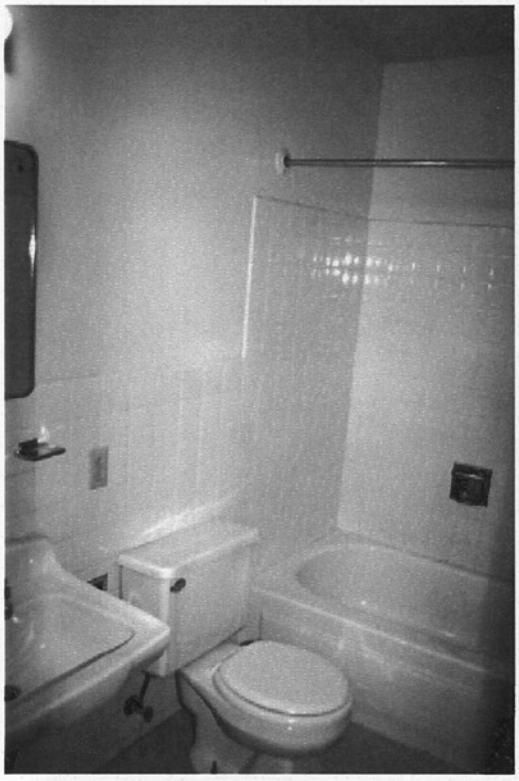
Recommendations for Unit Type CGO4.1 (C-8D) are continued on page 3-200.

3.67 Unit Type C-8 - Front Elevation

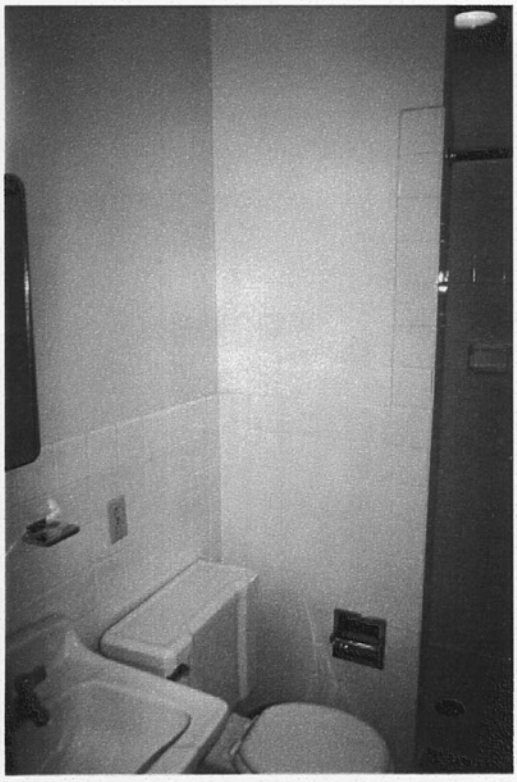
3.68 Unit Type C-8 - Rear and Side Elevation



3.69 Unit Type C-8 - Kitchen



3.70 Unit Type C-8 - Bathroom 1



3.71 Unit Type C-8 - Bathroom 2

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HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-8C FGO 4.2 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,495
Interior - Electrical	$10,927
Interior - Mechanical	$2,887
Interiors - Bathroom #1	$2,410
Interiors - Bathroom #2	$2,673
Interiors - Kitchen	$11,634
Interiors, General - All but Kitchen, Baths & Laundry	$15,078
Roof	$3,289
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$15,167
Structural - Other Building Elements	$22,371
Sub-Total:	$93,050
Sub-Total adjusted to ACF of: 104.00%	$96,772
Contingency @ 5.00 %	$4,839
SIOH @ 5.50 %	$5,589
Total - Unit Type C-8C FGO 4.2	$107,199

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	H	13

Total Quantity: UNIT TYPE C-8C FGO 13

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

- [x] *Whole House Improvement*
- [ ] *Major M & R*
- [ ] *Improvements and Remaining Repairs*

*Unit Type C-8C FGO 4.2 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,495
Interior - Electrical	$10,927
Interior - Mechanical	$2,887
Interiors - Bathroom #1	$2,410
Interiors - Bathroom #2	$2,673
Interiors - Kitchen	$11,634
Interiors, General - All but Kitchen, Baths & Laundry	$15,078
Roof	$3,289
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$15,167
Structural - Other Building Elements	$22,371
Sub-Total:	$93,050
Sub-Total adjusted to ACF of: 104.00%	$96,772
Contingency @ 5.00 %	$4,839
SIOH @ 5.50 %	$5,589
Total - Unit Type C-8C FGO 4.2	$107,199

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	H	7

Total Quantity: UNIT TYPE C-8C FGO 7

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-8C FGO 4.2 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,686
Interior - Electrical	$875
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$6,576
Roof	$3,552
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$13,955
Structural - Other Building Elements	$24,158
Sub-Total:	$51,802
Sub-Total adjusted to ACF of: 104.00%	$53,874
Contingency @ 5.00 %	$2,694
SIOH @ 5.50 %	$3,111
Total - Unit Type C-8C FGO 4.2	$59,679

2001 Dollars

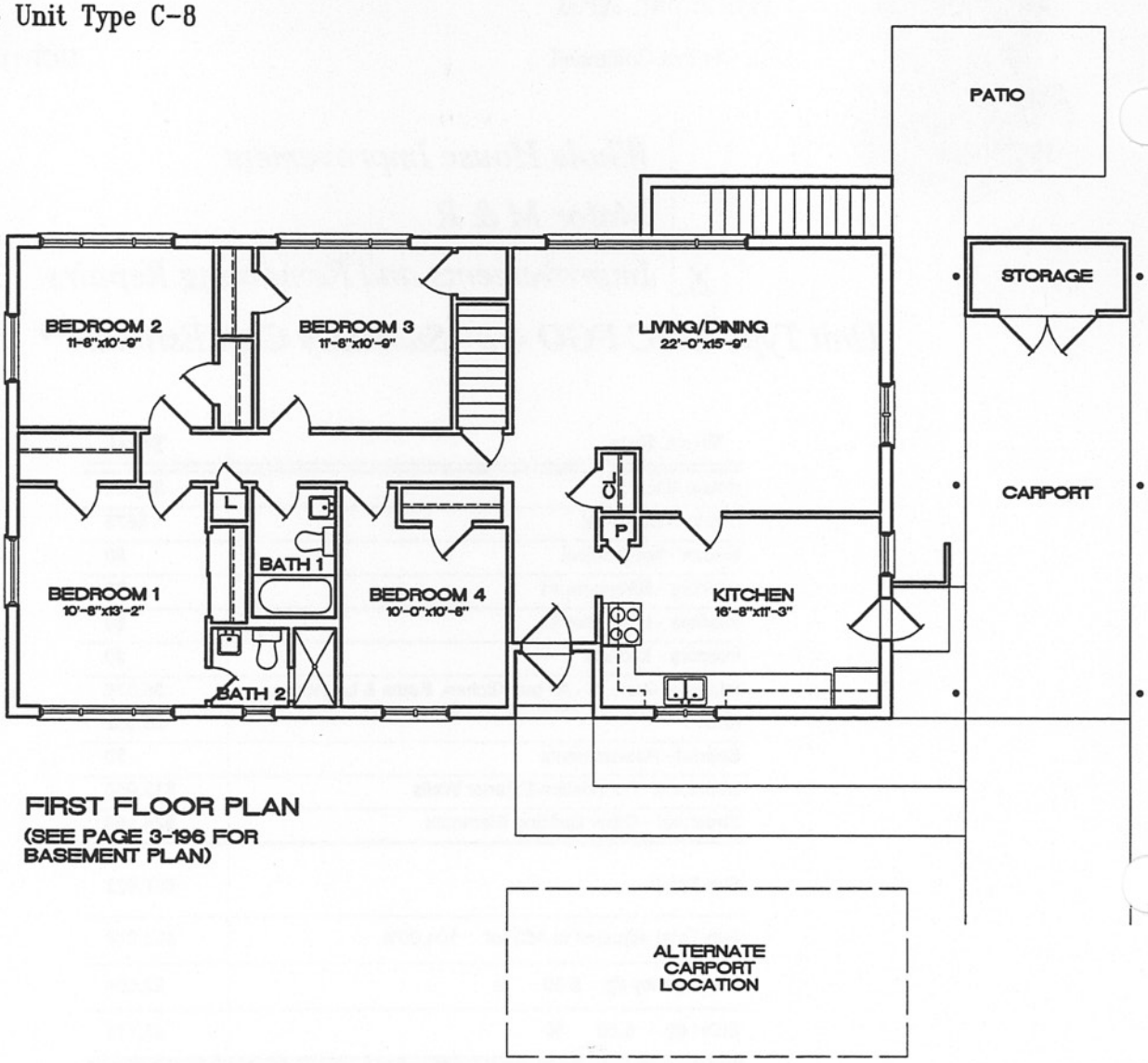
Distribution ...	HCP Phase	Number of Units
	H	13

Total Quantity: UNIT TYPE C-8C FGO 13

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.25 Unit Type C-8

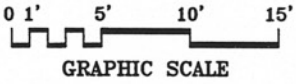


FIRST FLOOR PLAN

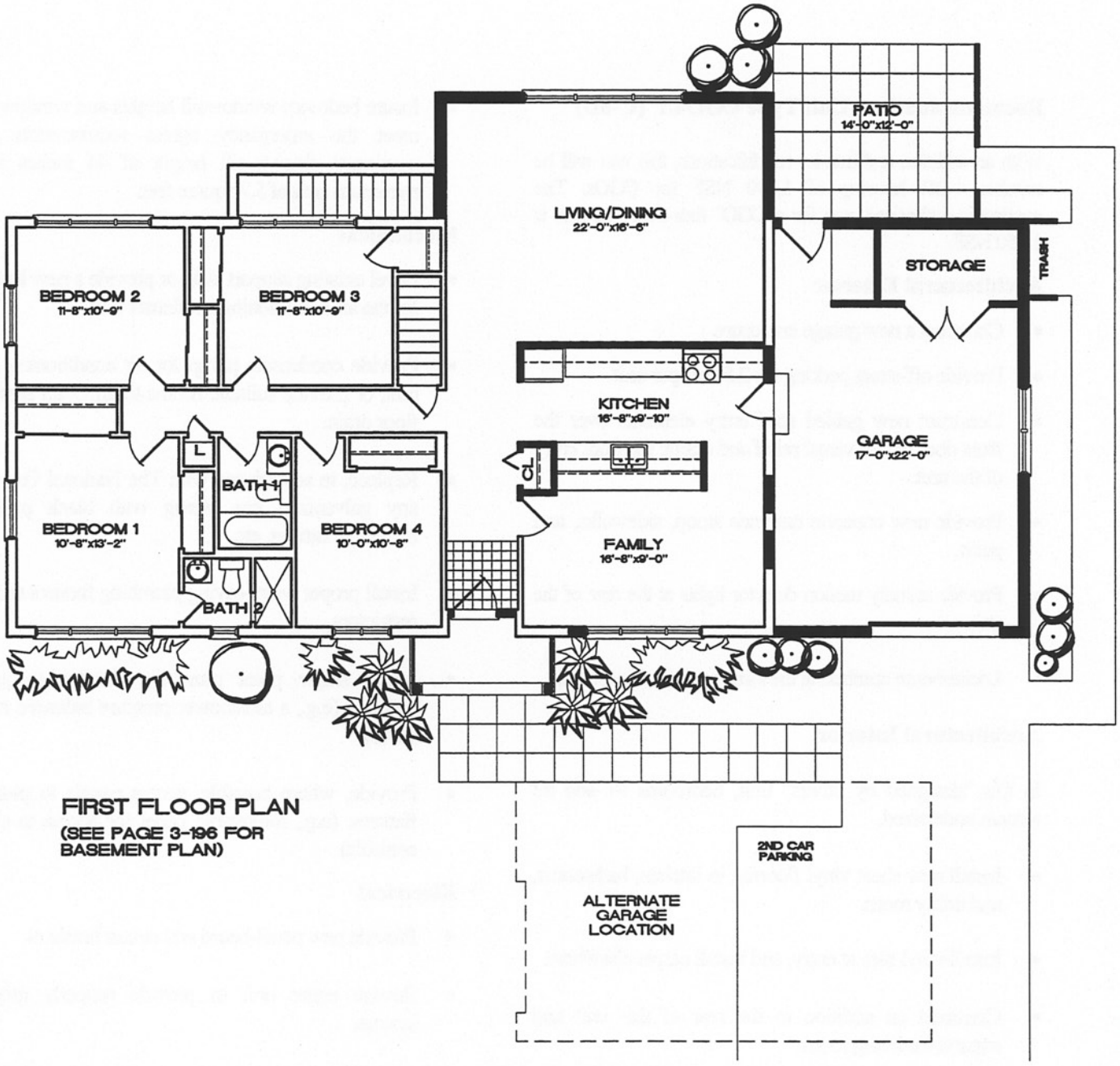
(SEE PAGE 3-196 FOR BASEMENT PLAN)

Unit Summary

Unit Type:	C-8 4 Br.
Grade:	01-03
	04-05
Existing Net Area:	1,369 S.F.



EXISTING FLOOR PLAN



FIRST FLOOR PLAN
(SEE PAGE 3-196 FOR BASEMENT PLAN)

Unit Summary

Unit Type:	C-8C FG04.2 4 Br.
Grade:	04-05
Authorized Net Area:	1,550 S.F.
Proposed Net Area:	1,550 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

PROPOSED FLOOR PLAN
(DESIGNED BY OTHERS)

Recommendations Unit Type CGO4.1 (C-8D)

With an addition and interior modifications, this unit will be suitable 4-BR housing of 1,450 NSF for CGOs. The maximum authorized area for a CGO' four-bedroom unit is 1,450 NSF.

Architectural Exterior

- Construct a new garage enclosure.
- Provide off-street parking for 2.5 cars per unit.
- Construct new gabled roof entry elements over the front door to add visual relief and define the front entry of the unit.
- Provide new concrete entrance stoop, sidewalks, and patio.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

In this "designed by others" unit, bedrooms #1 and #2 remain undersized.

- Install new sheet vinyl flooring in kitchen, bathrooms, and utility room.
- Install vinyl tiles at entry, and install carpet elsewhere.
- Construct an addition to the rear of this unit and expand the living room.
- Relocate kitchen to provide a family room next to the kitchen.
- Remove existing kitchen cabinets, and provide new cabinets and plastic laminate countertops.
- Provide new deep sink, dishwasher, fixtures, and range with hood.
- Provide each bathroom with a new sink, vanity, and plumbing fixtures.
- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

Mechanical

- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.
- Install proper water-saving plumbing fixtures and flow restrictors.
- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

Electrical

- Provide new panel-board and circuit breakers.
- Rewire entire unit to provide properly grounded system.
- Provide GFCI receptacles in bathrooms as per the current NEC. Provide GFCI receptacles for outside receptacles per the current NEC.
- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles as per the current NEC.
- Provide two small appliance circuits for kitchen counter receptacles per the NEC

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Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-8D CGO 4.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,495
Interior - Electrical	$10,840
Interior - Mechanical	$2,887
Interiors - Bathroom #1	$2,410
Interiors - Bathroom #2	$2,673
Interiors - Kitchen	$11,634
Interiors, General - All but Kitchen, Baths & Laundry	$14,597
Roof	$2,518
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$12,733
Structural - Other Building Elements	$22,371
Sub-Total:	$89,278
Sub-Total adjusted to ACF of: 104.00%	$92,849
Contingency @ 5.00 %	$4,642
SIOH @ 5.50 %	$5,362
Total - Unit Type C-8D CGO 4.1	$102,854

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	5
	H	4
Total Quantity: UNIT TYPE C-8D CG		**9**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type C-8D CGO 4.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$0
Interior - Electrical	$10,833
Interior - Mechanical	$3,118
Interiors - Bathroom #1	$2,601
Interiors - Bathroom #2	$2,885
Interiors - Kitchen	$12,562
Interiors, General - All but Kitchen, Baths & Laundry	$9,910
Roof	$0
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$2,418
Structural - Other Building Elements	$0
Sub-Total:	$48,447
Sub-Total adjusted to ACF of: 104.00%	$50,385
Contingency @ 5.00 %	$2,519
SIOH @ 5.50 %	$2,910
Total - Unit Type C-8D CGO 4.1	$55,814

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	5
	H	4
Total Quantity: UNIT TYPE C-8D CG		**9**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-8D CGO 4.1 - Summary Cost Estimate **

Work Item	Total
House Sitework	$2,686
Interior - Electrical	$875
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$5,841
Roof	$2,719
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$11,328
Structural - Other Building Elements	$24,158
Sub-Total:	$47,607
Sub-Total adjusted to ACF of: 104.00%	$49,511
Contingency @ 5.00 %	$2,476
SIOH @ 5.50 %	$2,859
Total - Unit Type C-8D CGO 4.1	$54,846

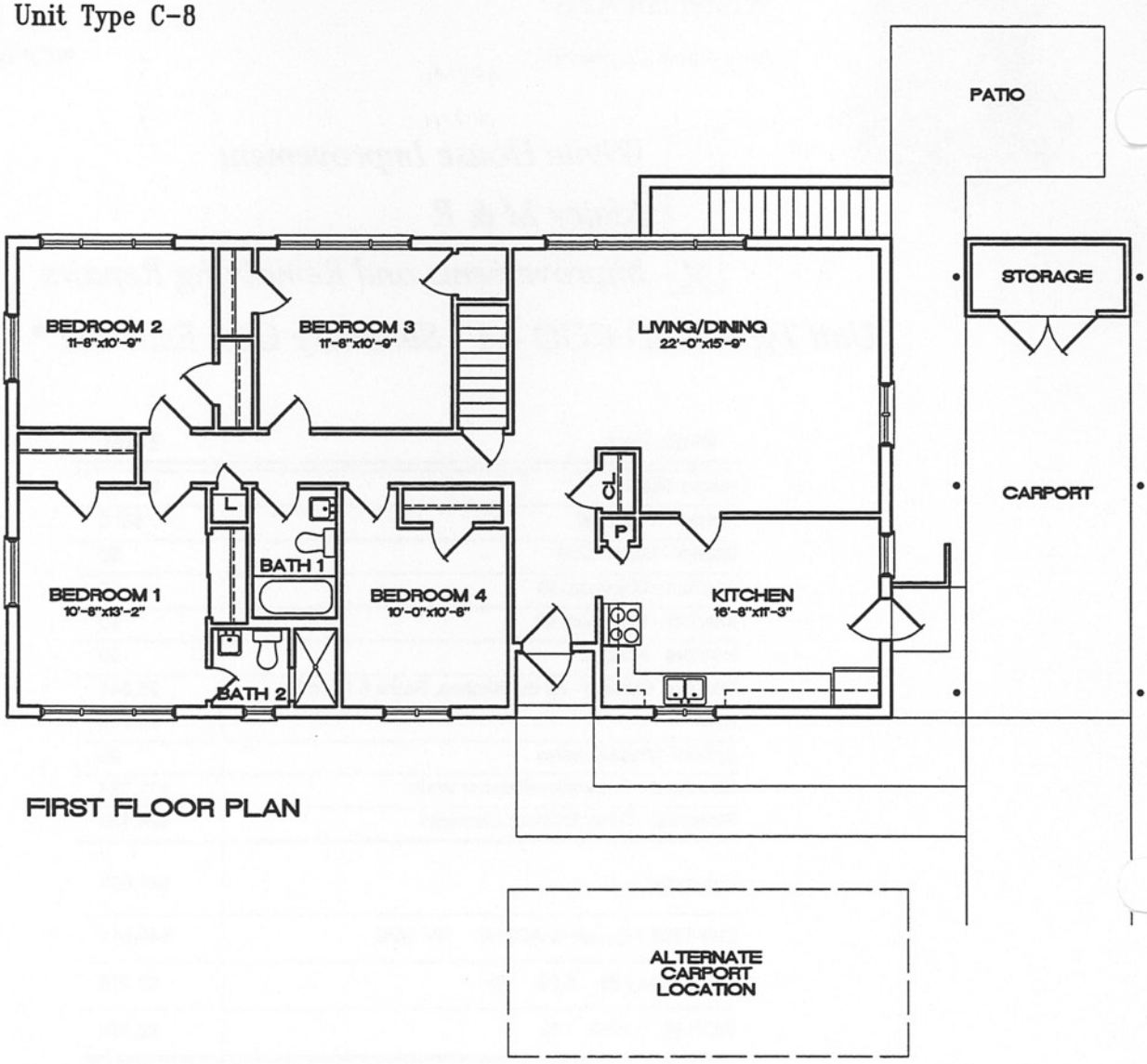
2001 Dollars

Distribution ...	HCP Phase	Number of Units
	B	5
	H	4
Total Quantity: UNIT TYPE C-8D CG		**9**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.25 Unit Type C-8

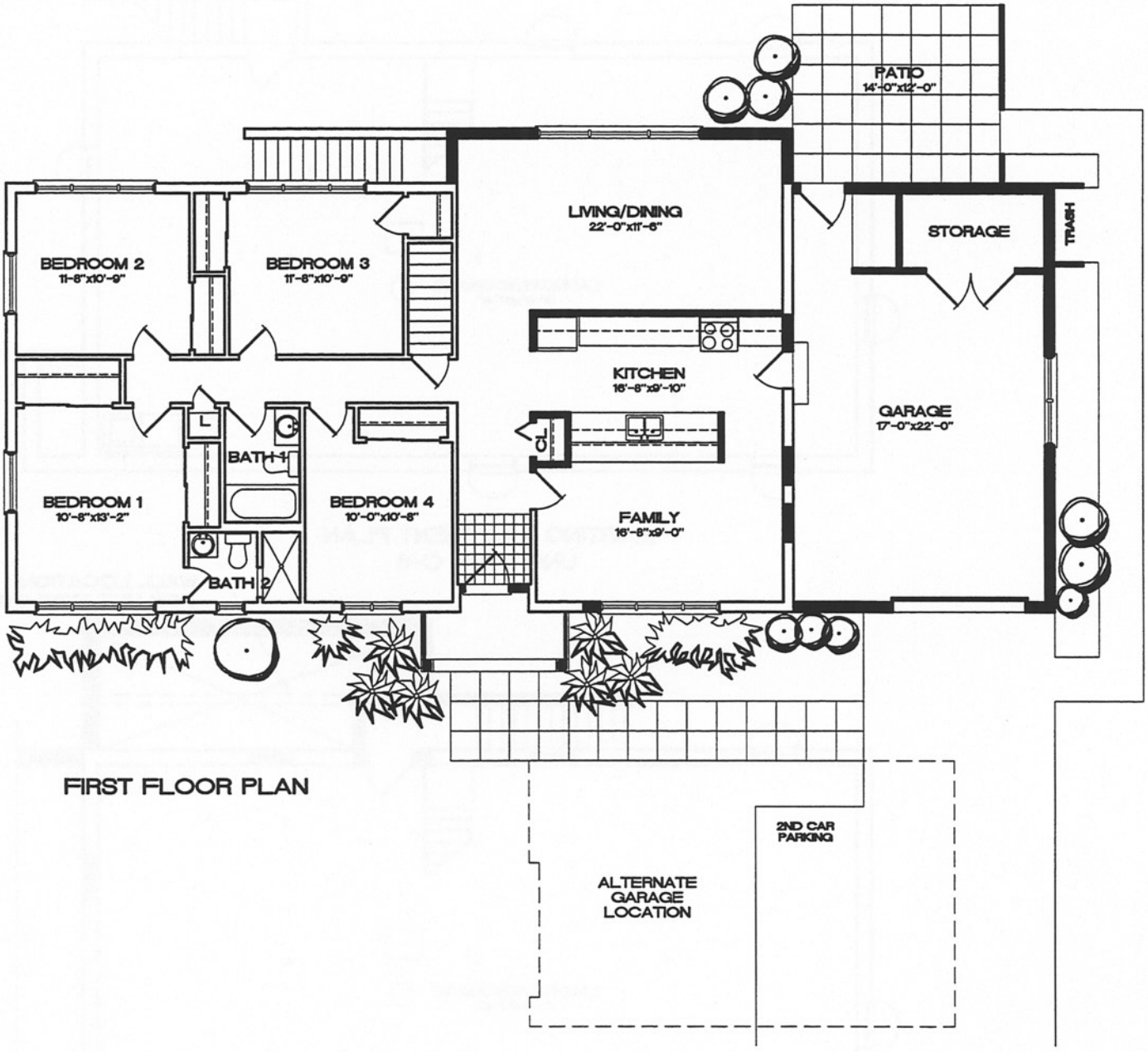


FIRST FLOOR PLAN

Unit Summary	
Unit Type:	C-8 4 Br.
Grade:	01-03
Existing Net Area:	1,369 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

EXISTING FLOOR PLAN



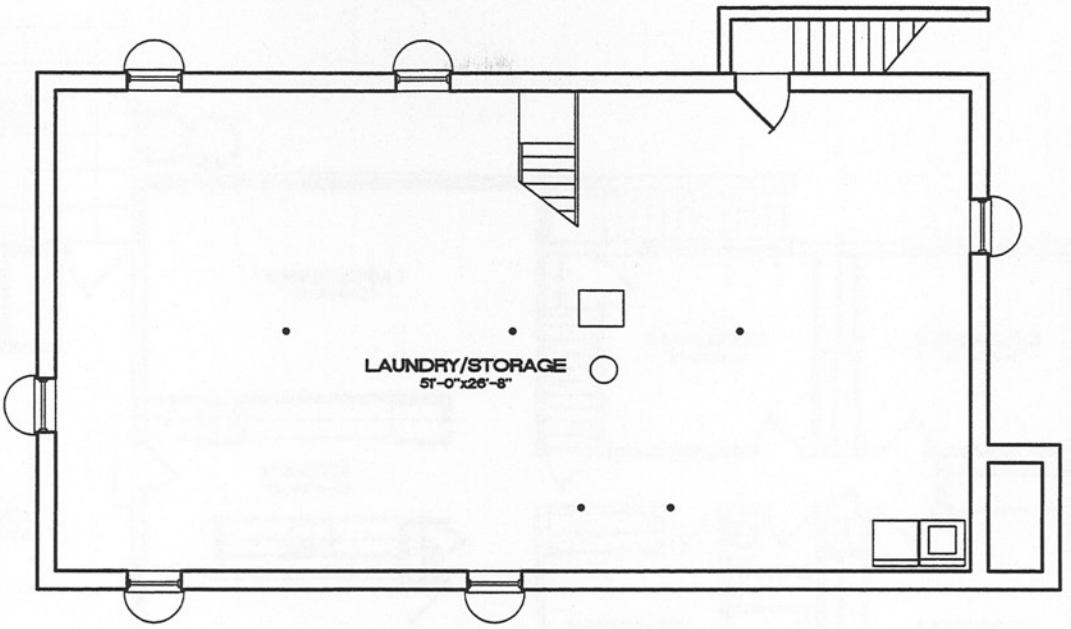
FIRST FLOOR PLAN

Unit Summary

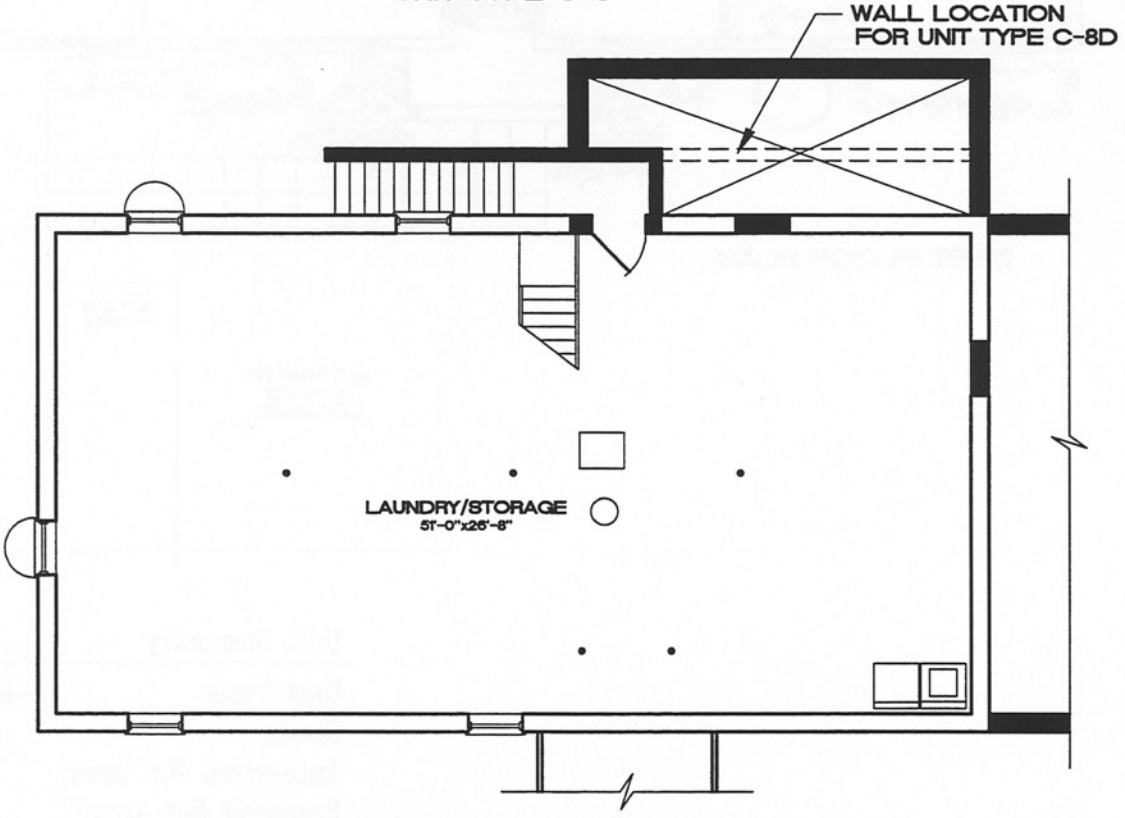
Unit Type:	C-8D CG04.1 4 Br.
Grade:	01-03
Authorized Net Area:	1,450 S.F.
Proposed Net Area:	1,450 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

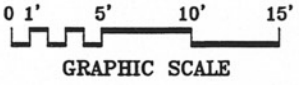
PROPOSED FLOOR PLAN
(DESIGNED BY OTHERS)



EXISTING BASEMENT PLAN
UNIT TYPE C-8

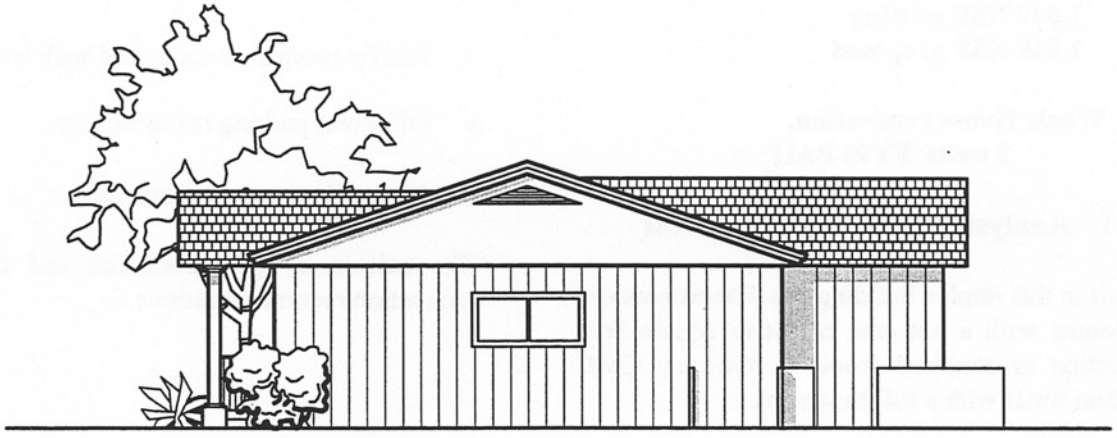


PROPOSED BASEMENT PLAN
UNIT TYPE C-8C AND C-8D

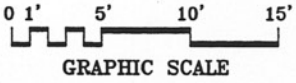


EXISTING AND PROPOSED FLOOR PLANS

FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE FGO4.3 ELEVATIONS
(DESIGNED BY OTHERS)

3.2.26 Unit Type C-8A CGO4.2 & FGO4.5 Woodview Neighborhood

Summary

770 Westover Road Inspected

Built in 1962 (Capehart)

Condition Assessment Matrix Rating: 3.69

Grades **O-1 through O-3**
O-4 and O-5

4 Bedrooms, 2 Baths

1,450 NSF authorized **O-1 through O-3**
1,550 NSF authorized **O-4 and O-5**
1,649 NSF existing
1,649 NSF proposed

Whole House renovation,
9 units FY90 PAIP

3.2.26.1 Analysis of Existing Conditions

Each unit in this duplex building has 4 bedrooms and 2 bathrooms with a net area of 1,649 square feet. Construction is standard wood framing on CMU foundation walls with a full basement.

All 9 of these units are currently assigned to SNCOs. These units were originally C-8 units and were modified as part of an FY90 PAIP. These modifications did not follow the Unit Improvement Plan developed in the May 1992 HCP.

This unit type being oversized is suitable for both CGO and FGO assignments. Therefore 3 (CGO4.2) have been assigned to CGOs and 6 units (FGO4.5) have been assigned to FGOs.

There are two site orientations for this unit type. Some have the long axis parallel to the street, and some have the long axis perpendicular to the street. This results in a variation in the carport locations.

This unit meets Whole House planning standards except for the following:

- Bedrooms #1 and #2 remain undersized.
- Family room area combined with living room
- Off-street parking is inadequate.

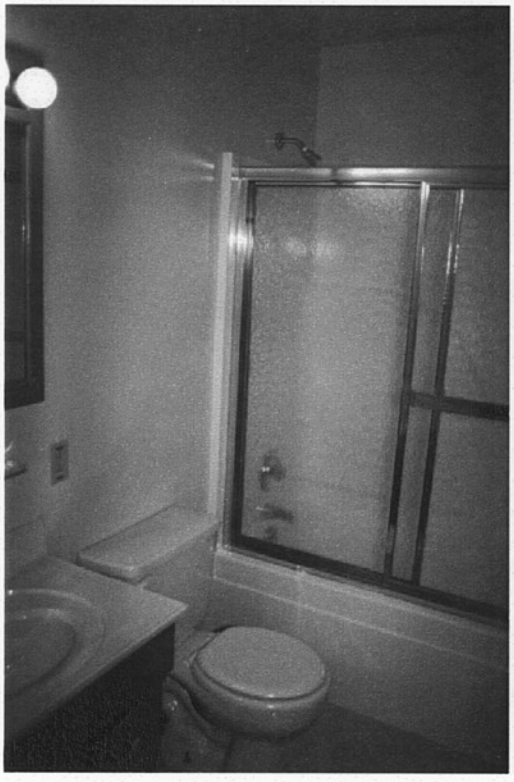
3.2.26.2 Recommendations

The unit is in good condition and there are no renovation recommendations.

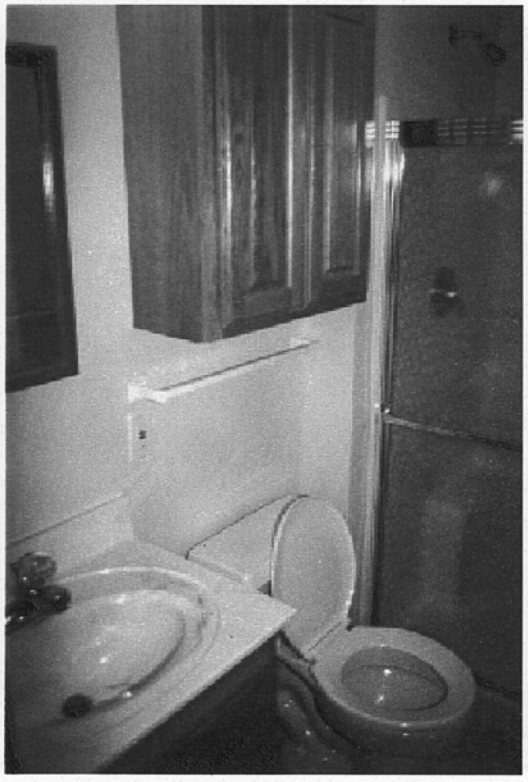
3.72 Unit Type C-8A - Front Elevation

3.73 Unit Type C-8A - Rear and Side Elevation

3.74 Unit Type C-8A - Kitchen



3.75 Unit Type C-8A – Bathroom 1

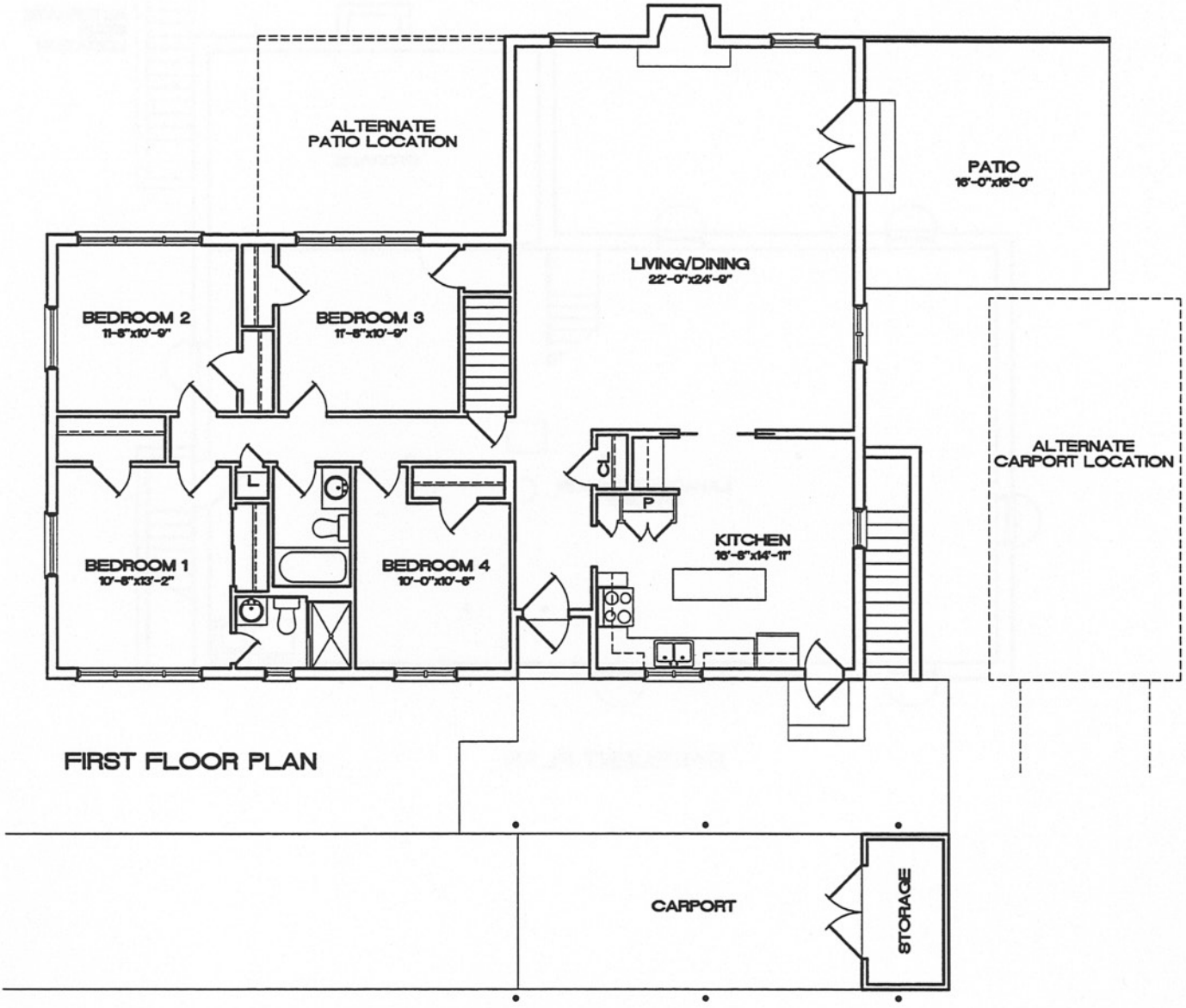


3.76 Unit Type C-8A – Bathroom 2

3.2.26 Unit Type C-8A

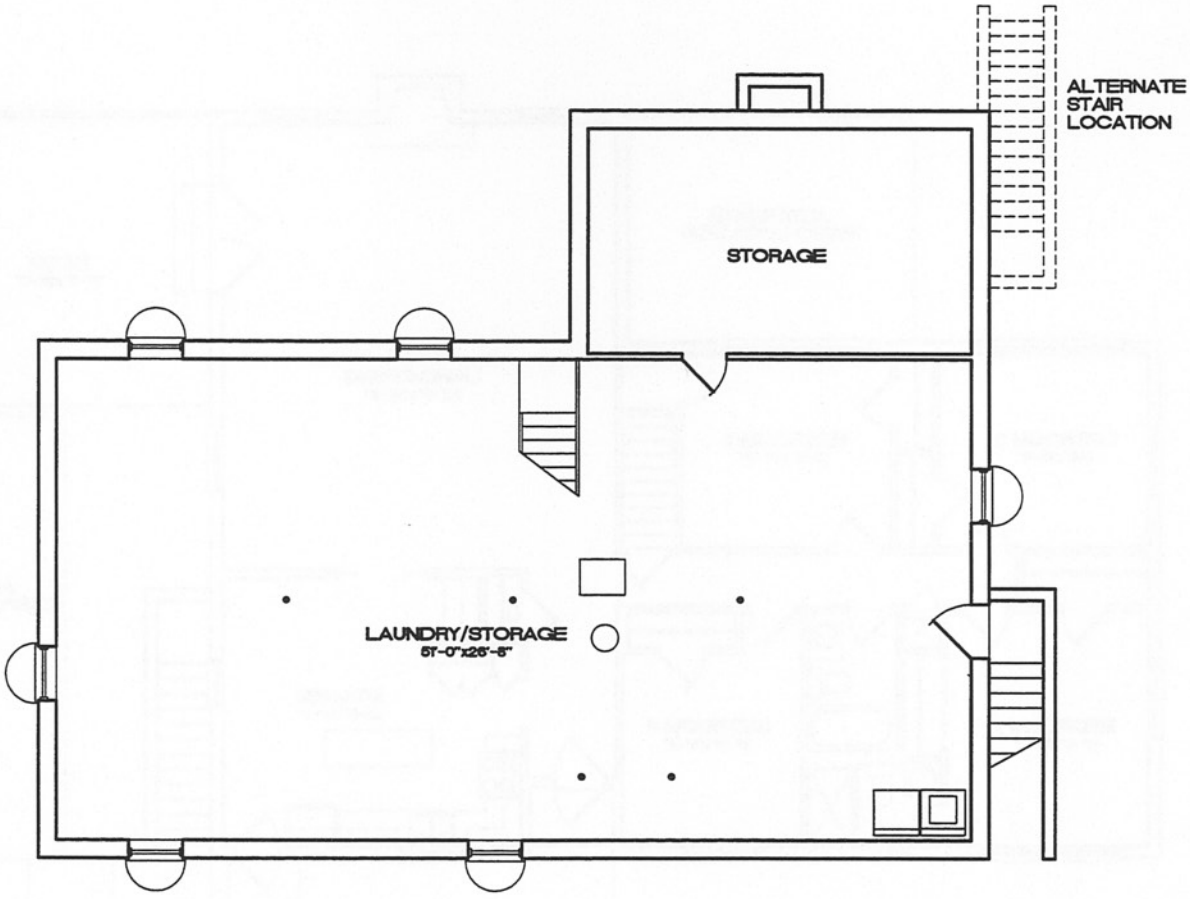
Unit Summary

Unit Type:	C-8A CG04.2 4 Br.
Grade:	01-03 & 04-05
Existing Net Area:	1,649 S.F.



0 1' 5' 10' 15'
GRAPHIC SCALE

EXISTING FLOOR PLAN



BASEMENT PLAN

GRAPHIC SCALE

EXISTING FLOOR PLAN

3.2.27 Unit Type C-9 FGO4.3 Woodview Neighborhood

Summary

839 Westover Road Inspected

Built in 1962 (Capehart)

Grades O-4 and O-5

4 Bedrooms, 2 Baths

Condition Assessment Matrix Rating: 3.76

1,550 NSF authorized
1,616 NSF existing
1,616 NSF proposed

3.2.27.1 Analysis of Existing Conditions

This single-family, 4 bedrooms, 2 bath unit has an area of 1,616 NSF. Construction is standard wood framing on CMU foundation walls with a full basement. All 4 of these units are currently assigned to SGOs.

Environmental Issues

- Lead-based paint and asbestos were detected.

Architectural Exterior

- The exterior of this unit has metal siding, brick veneer, and a new fiberglass shingle roof with aluminum gutters and downspouts
- The windows have been replaced with aluminum-clad insulated windows.
- Exterior doors have been replaced with insulated metal doors.
- This unit does not have a patio or trash enclosure.
- The flat façade of this unit is stark and requires entry definition.
- Off-street parking is inadequate.

Architectural Interior

- Kitchen cabinets are adequate.
- The ceiling-mounted exhaust fan is not adequate.
- The task lighting is poor.
- The two bathrooms are in satisfactory condition.

Mechanical

- It is common for the condensing unit support slab to be uneven in these units.
- The across the floor runs of the air-conditioner condensation drain may become a stumble hazard.
- A gas piping mixture of galvanized and black pipe is common within units.
- No flow restrictor controls in plumbing fixtures.
- Lack of single point controls in the plumbing fixtures to prevent scalding.
- Limited access to most plumbing fixtures for replacement or servicing.

Electrical

- The panel-board and breakers are outdated and in need of replacement.
- Ungrounded and/or outdated wiring conditions and devices apply throughout the facility.
- Lack of GFCI receptacles in proper locations along kitchen counter spaces.
- Lack of GFCI receptacles in proper locations throughout unit. No GFCI receptacles in bathrooms and outside.

3.2.27.2 Recommendations

This unit is reassigned to Field Grade Officers based on the deficit in FGO 4-bedroom units as projected by the Housing Market Analysis for the year 2001.

Architectural Exterior

- Construct a new garage enclosure.
- Provide off-street parking for 2.5 cars per unit.
- Construct new gabled roof entry elements over the front door to add visual relief and define the front entry of the unit.
- Provide new concrete entrance stoop, sidewalks, and patio.
- Provide security motion detector lights at the rear of the unit.
- Locate house numbers at the same position on each unit.

Architectural Interior

- Install new sheet vinyl flooring in kitchen, bathrooms, and utility room.
- Install vinyl tiles at entry, and install carpet elsewhere.
- Relocate kitchen to provide a family room adjacent to the kitchen.
- Remove existing kitchen cabinets, and provide new cabinets and plastic laminate countertops.
- Provide new deep sink, dishwasher, fixtures, and range with hood.
- Provide the bathrooms with a new sink, vanity, tub/shower, and fixtures.
- Insure bedroom windowsill heights and window areas meet the emergency egress requirements of a maximum floor-to-sill height of 44 inches and a minimum area of 5.7 square feet.

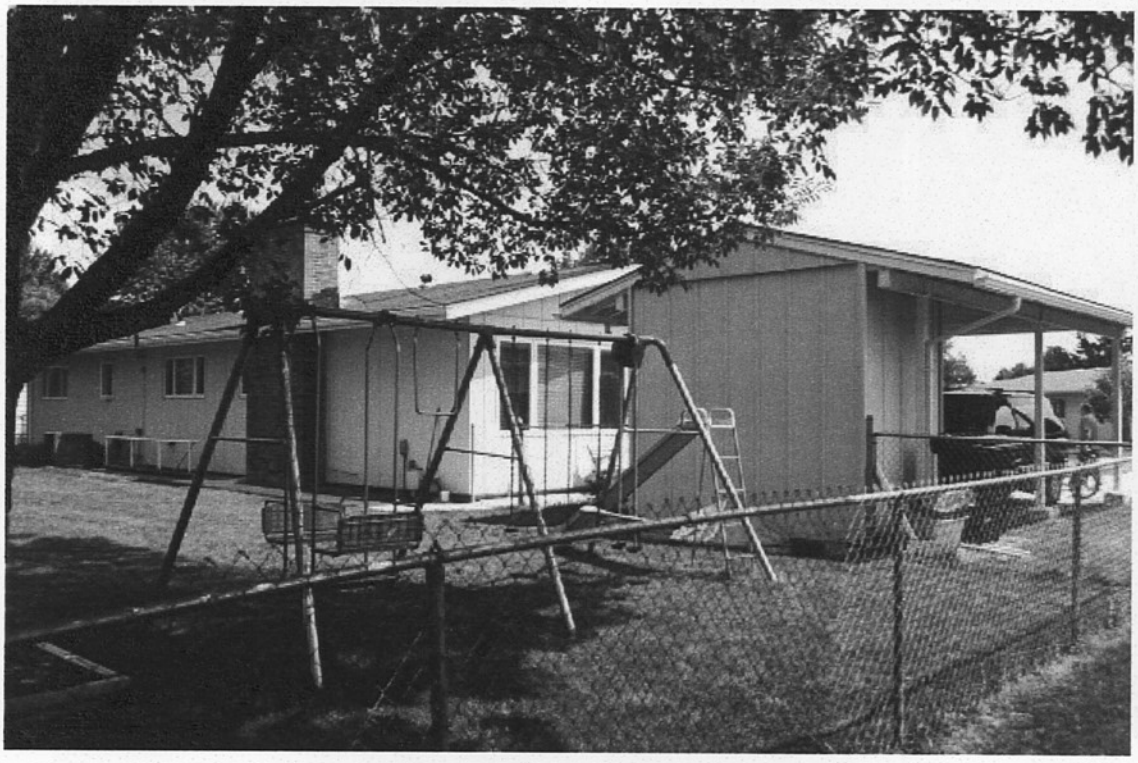
Mechanical

- Level existing support slab, or provide a new level one for the air-conditioning condenser unit.
- Provide condensate pump for air conditioning inside unit, or provide suitable means to effect an across the floor drain.
- Replace, in accordance with The National Gas Code, any galvanized gas piping with black pipe and malleable fittings, etc.
- Install proper water-saving plumbing fixtures and flow restrictors.
- Install single point plumbing fixtures to prevent scalding (e.g., a tub/shower pressure balanced mixing valve).
- Provide, where possible, access panels to plumbing fixtures. (e.g., removable panel for access to shower controls)

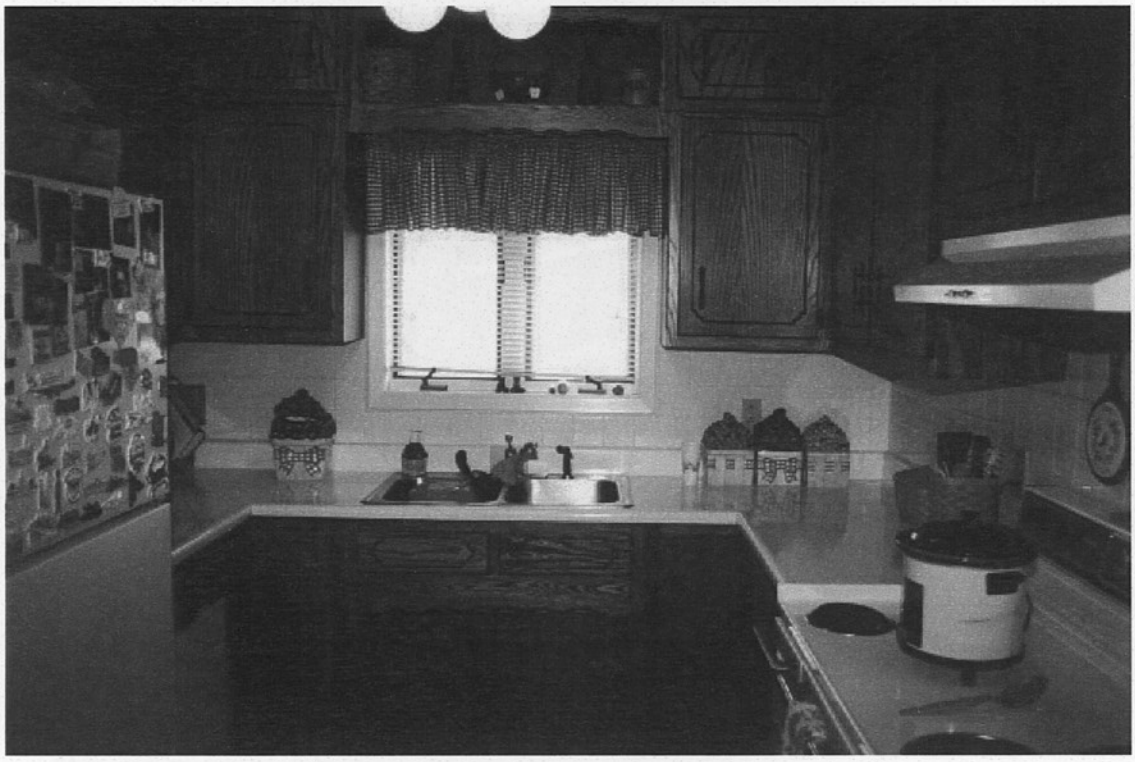
Electrical

- Provide new panel-board and circuit breakers.
- Rewire entire unit to provide properly grounded system.
- Provide GFCI receptacles in bathrooms as per the current NEC.
- Provide GFCI receptacles for outside receptacles per the current NEC.
- Provide the proper number of receptacles with GFCI protection for kitchen counter receptacles as per the current NEC.
- Provide two small appliance circuits for kitchen counter receptacles per the current NEC.

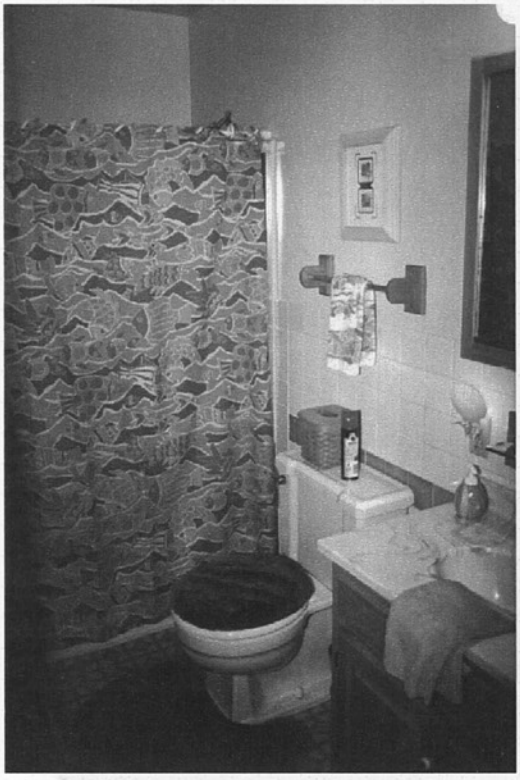
3. 77 Unit Type C-9 - Front and Side Elevation



3.78 Unit Type C-9 - Rear and Side Elevation



3.79 Unit Type C-9 - Kitchen



3.80 Unit Type C-9 - Bathroom 1

3.81 Unit Type C-9 - Bathroom 2

Whiteman AFB

Air Combat Command

HCP Date: 1998

[X] *Whole House Improvement*

[ ] *Major M & R*

[ ] *Improvements and Remaining Repairs*

*Unit Type C-9 FGO 4.3 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$10,900
Interior - Mechanical	$3,569
Interiors - Bathroom #1	$2,299
Interiors - Bathroom #2	$2,797
Interiors - Kitchen	$10,880
Interiors, General - All but Kitchen, Baths & Laundry	$14,398
Roof	$972
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$5,442
Structural - Other Building Elements	$21,473
Sub-Total:	$76,850
Sub-Total adjusted to ACF of: 104.00%	$79,924
Contingency @ 5.00 %	$3,996
SIOH @ 5.50 %	$4,616
Total - Unit Type C-9 FGO 4.3	$88,536

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	H	4

Total Quantity: UNIT TYPE C-9 FGO 4

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☒ *Major M & R*

☐ *Improvements and Remaining Repairs*

*Unit Type C-9 FGO 4.3 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$11,178
Interior - Mechanical	$3,854
Interiors - Bathroom #1	$2,484
Interiors - Bathroom #2	$3,021
Interiors - Kitchen	$11,750
Interiors, General - All but Kitchen, Baths & Laundry	$15,557
Roof	$0
Special - Assessments	$4,120
Structural - Foundation/Exterior Walls	$5,874
Structural - Other Building Elements	$3,113
Sub-Total:	$60,951
Sub-Total adjusted to ACF of: 104.00%	$63,389
Contingency @ 5.00 %	$3,169
SIOH @ 5.50 %	$3,661
Total - Unit Type C-9 FGO 4.3	$70,219

2001 Dollars

Distribution ...	HCP Phase	Number of Units
	H	4

Total Quantity: UNIT TYPE C-9 FGO **4**

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

☐ *Whole House Improvement*

☐ *Major M & R*

☒ *Improvements and Remaining Repairs*

*Unit Type C-9 FGO 4.3 - Summary Cost Estimate **

Work Item	Total
Interior - Electrical	$595
Interior - Mechanical	$0
Interiors - Bathroom #1	$0
Interiors - Bathroom #2	$0
Interiors - Kitchen	$0
Interiors, General - All but Kitchen, Baths & Laundry	$0
Roof	$1,050
Special - Assessments	$0
Structural - Foundation/Exterior Walls	$0
Structural - Other Building Elements	$20,061
Sub-Total:	$21,706
Sub-Total adjusted to ACF of: 104.00%	$22,574
Contingency @ 5.00 %	$1,129
SIOH @ 5.50 %	$1,304
Total - Unit Type C-9 FGO 4.3	$25,006

2001 Dollars

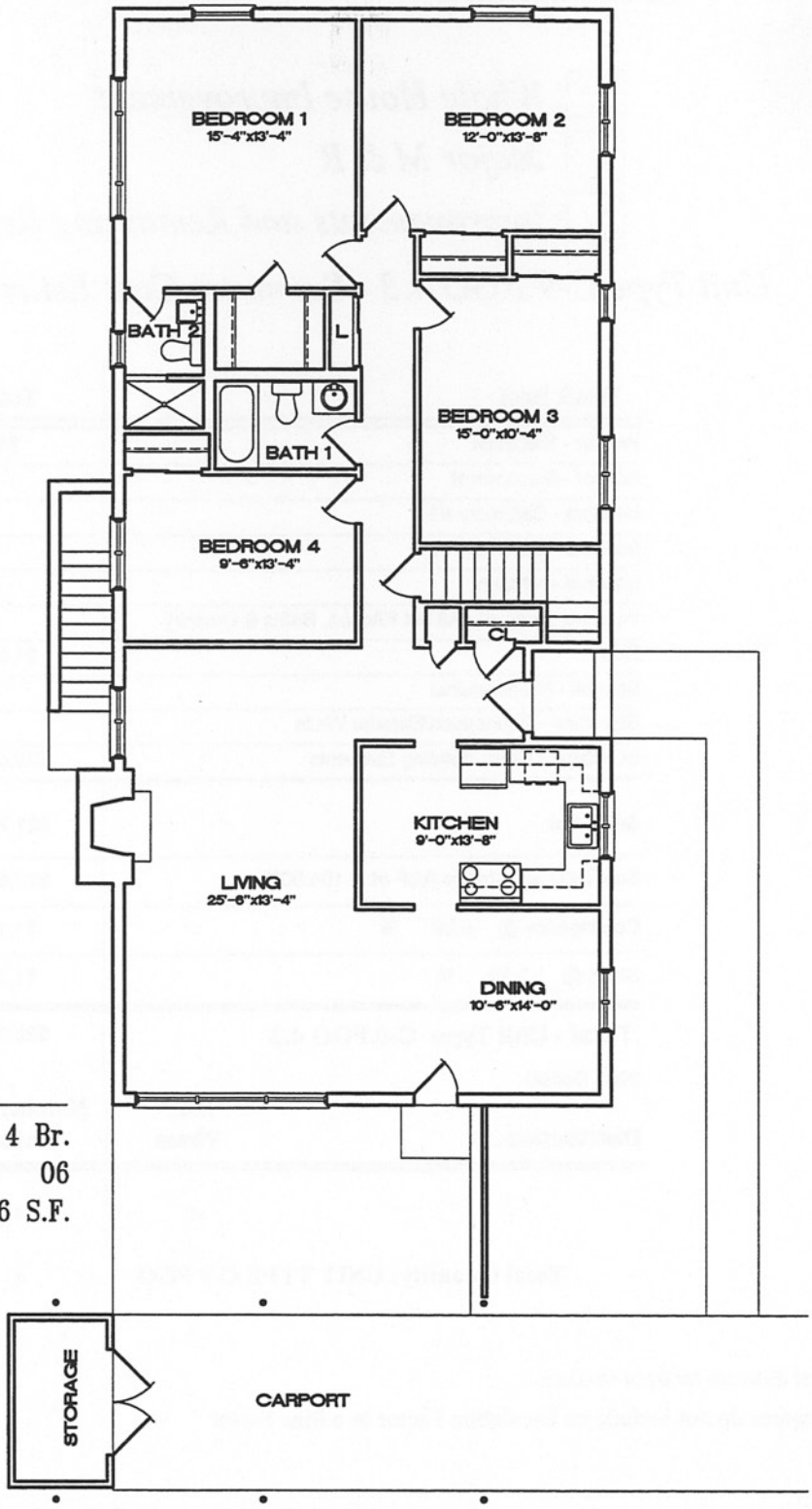
Distribution ...	HCP Phase	Number of Units
	H	4

Total Quantity: UNIT TYPE C-9 FGO 4

** See Detailed Cost Estimate for Back-Up Data*

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

3.2.27 Unit Type C-9



FIRST FLOOR PLAN

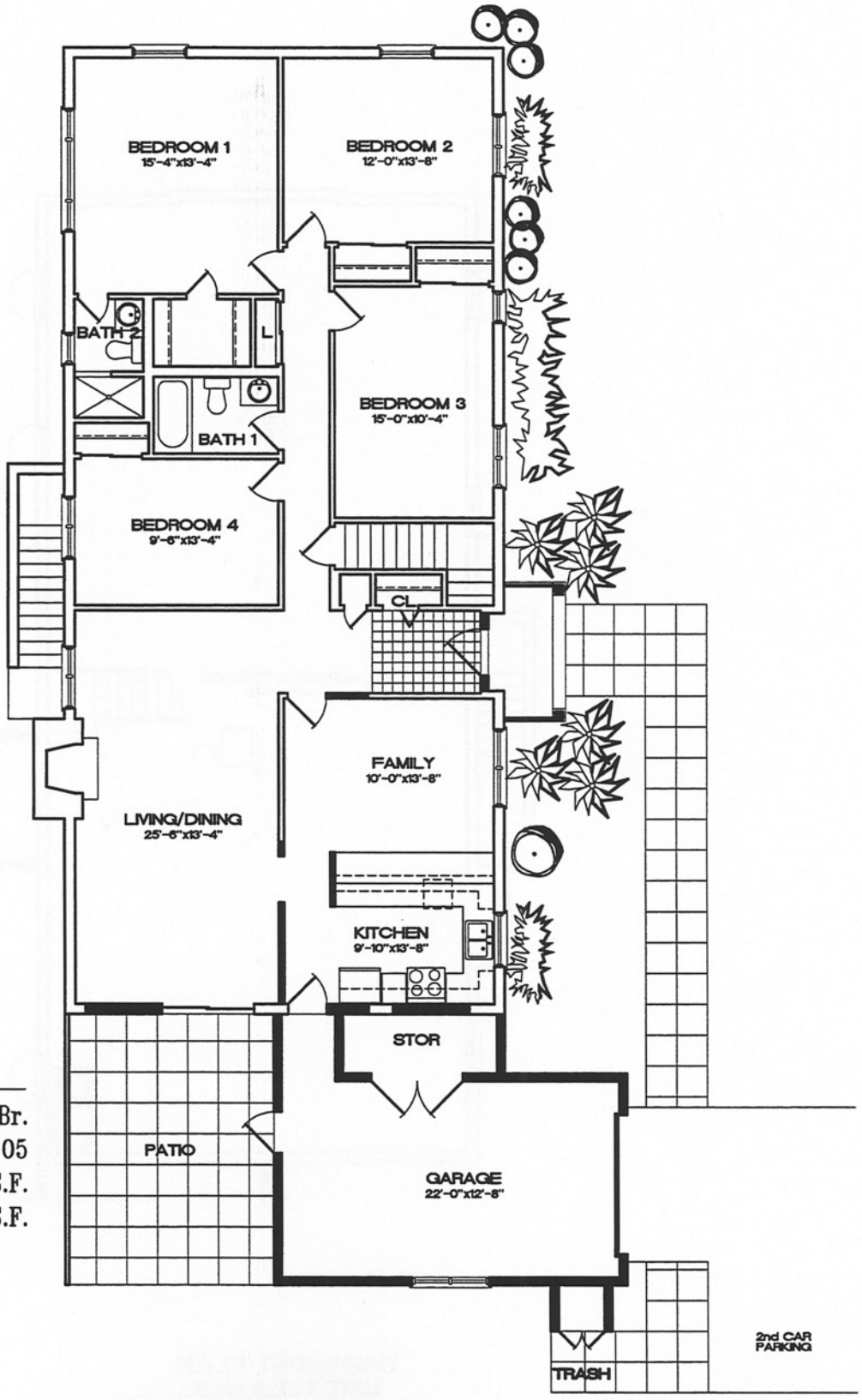
0 1' 5' 10' 15'

GRAPHIC SCALE

Unit Summary

Unit Type:	C-9 4 Br.
Grade:	06
Existing Net Area:	1,616 S.F.

EXISTING FLOOR PLAN



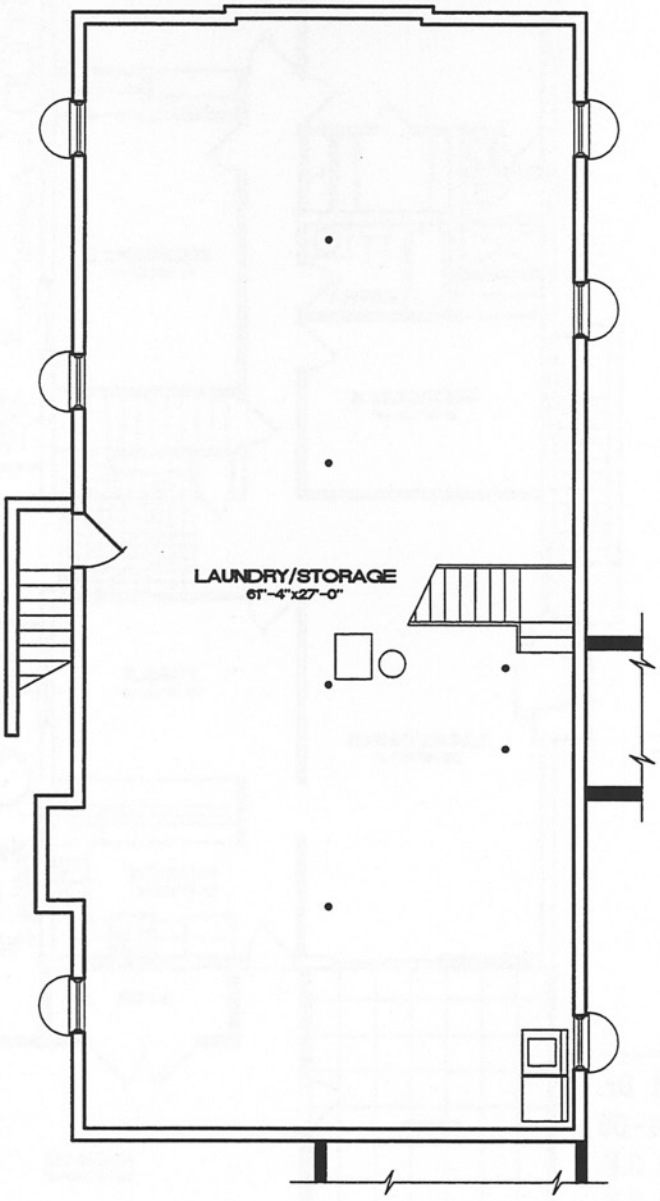
Unit Summary

Unit Type: C-9 FG04.3 4 Br.
Grade: 04-05
Authorized Net Area: 1,550 S.F.
Proposed Net Area: 1,616 S.F.

FIRST FLOOR PLAN

0 1' 5' 10' 15'
GRAPHIC SCALE

PROPOSED FLOOR PLAN
(DESIGNED BY OTHERS)

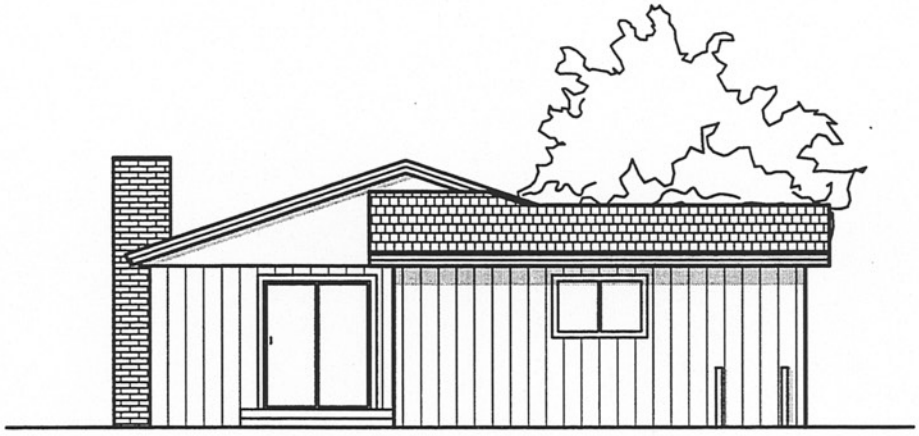


BASEMENT PLAN
UNIT TYPE C-9

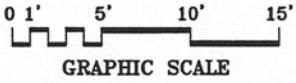
0 1' 5' 10' 15'
GRAPHIC SCALE

EXISTING / PROPOSED FLOOR PLAN

FRONT ELEVATION



SIDE ELEVATION



PROPOSED UNIT TYPE FGO4.4 ELEVATIONS

(DESIGNED BY OTHERS)

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Section 3.3
New Housing Units: Previously Constructed by Others

3.3 New Housing Previously Constructed by Others

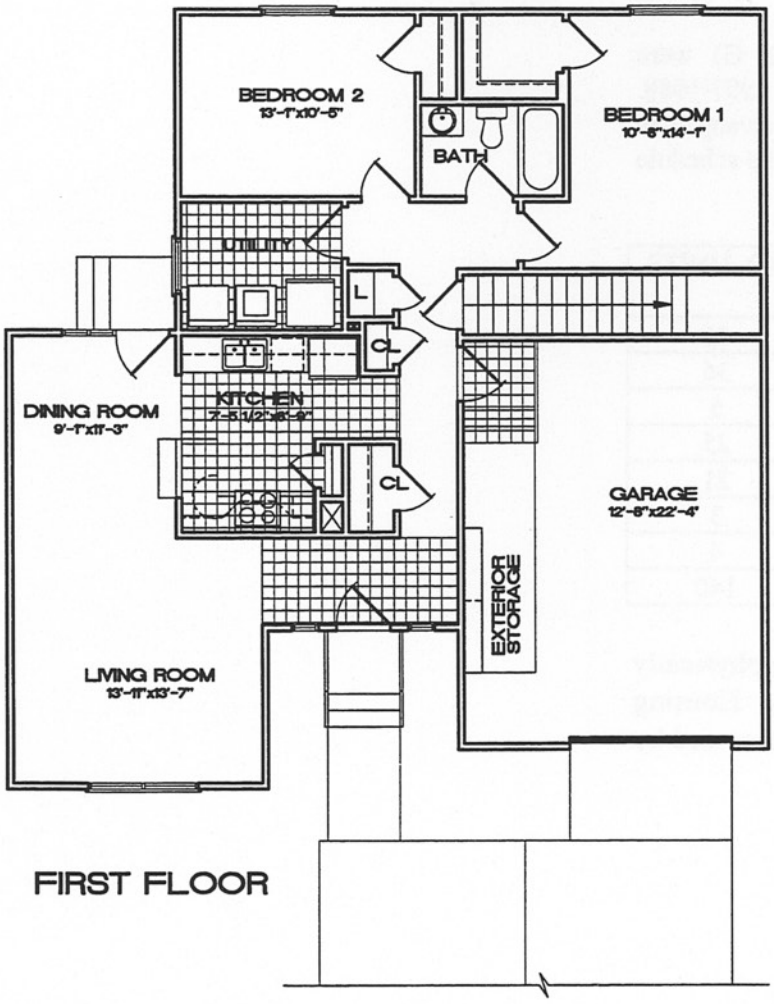
3.3.1 Introduction

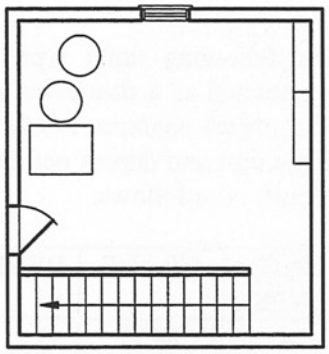
The following units types (A through G) were constructed as a design/build project in 1997-1998. The project contains 140 housing units arranged in single unit and duplex configurations. The schedule of units is as follows:

UNIT TYPE	GRADE	BEDROOMS	NO. UNITS
A	NCO	2	46
B	NCO	2	36
C-HC	NCO	2	5
D	NCO	3	25
E	NCO	3	21
F-HC	NCO	3	3
G-HC	NCO	4	4
TOTAL UNIT			140

'HC' indicates units designed for the physically handicapped. "Air Force Family Housing Guide" allowed for these units to be increased by 75 square feet in net area.

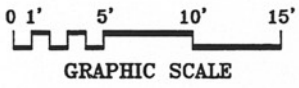
3.3.2 Unit Type A





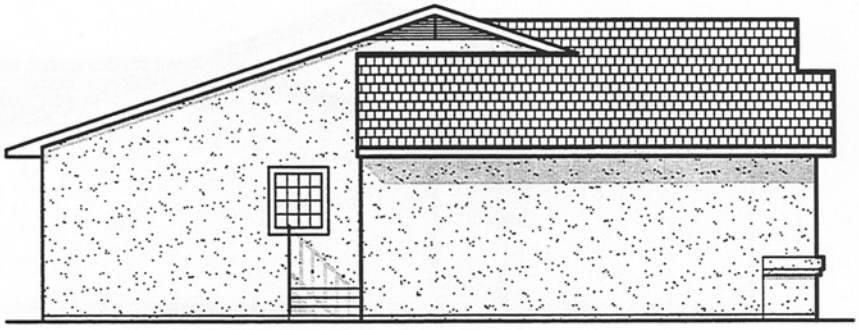
Unit Summary

Unit Type:	A (NC02.5) 2 Br.
Grade:	E1-E6
Existing Net Area:	963 S.F.
Authorized Net Area:	950 S.F.

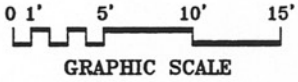


EXISTING FLOOR PLANS

FRONT ELEVATION



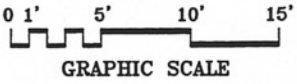
LEFT SIDE ELEVATION



EXISTING UNIT TYPE A - ELEVATION 1

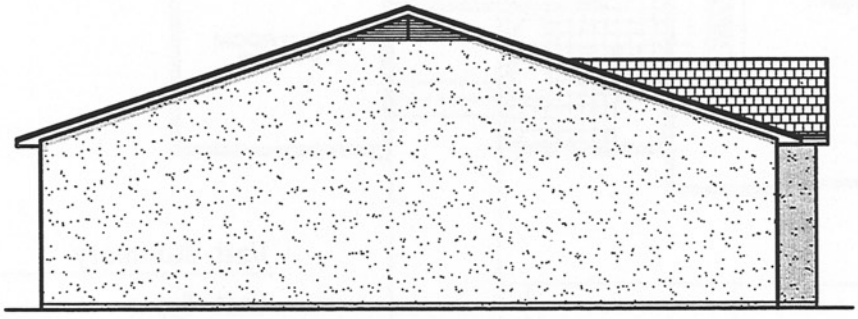
FRONT ELEVATION

LEFT SIDE ELEVATION

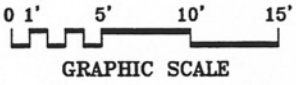


EXISTING UNIT TYPE A - ELEVATION 2

FRONT ELEVATION

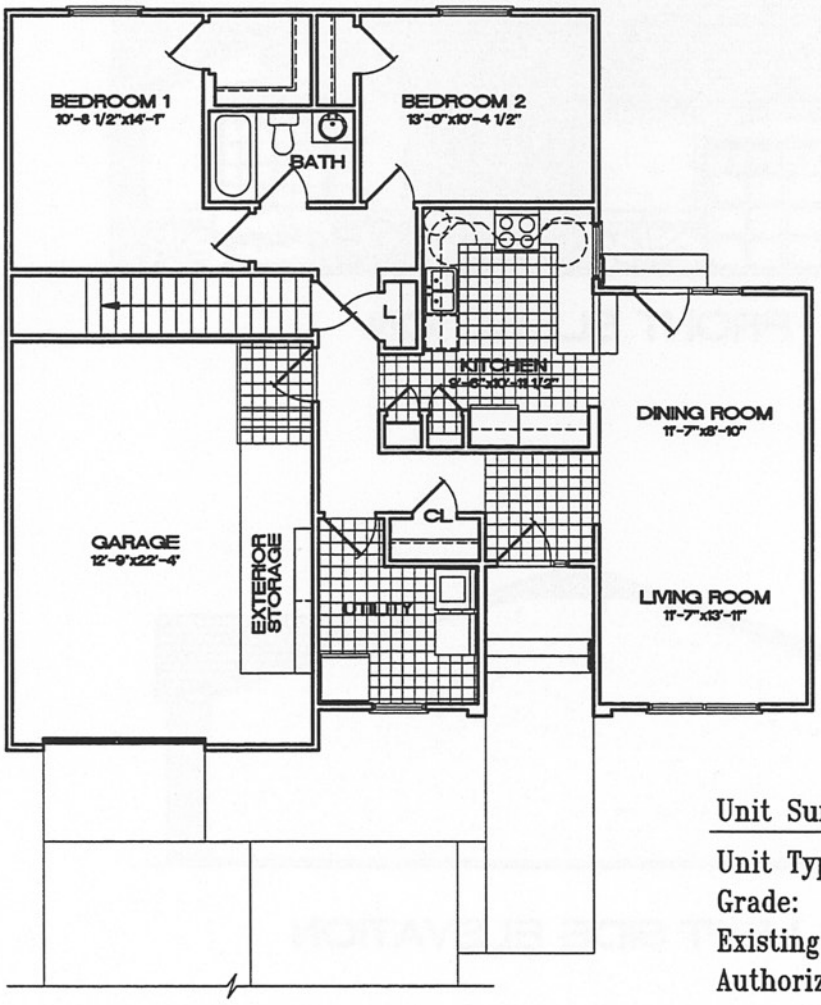


LEFT SIDE ELEVATION

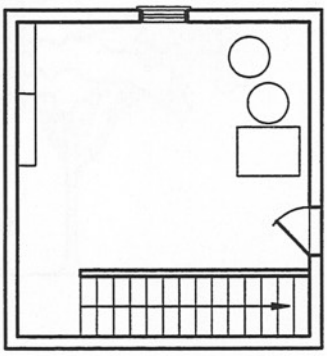


EXISTING UNIT TYPE A - ELEVATION 3

3.3.3 Unit Type B



FIRST FLOOR



BASEMENT

Unit Summary

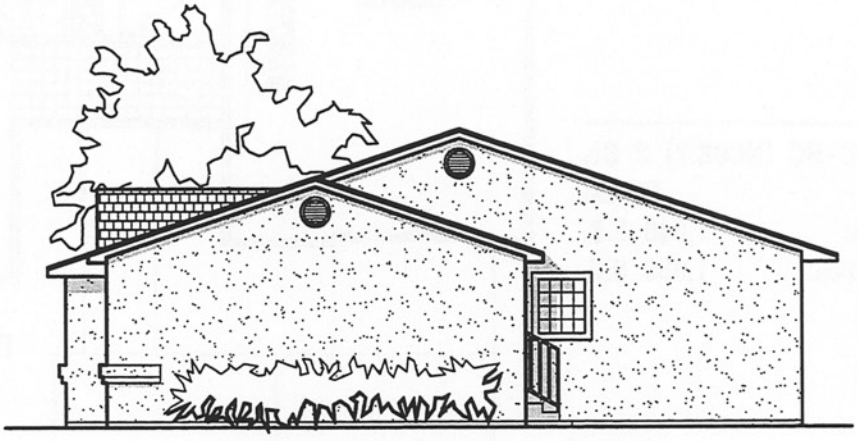
Unit Type:	B (NC02.6) 2 Br.
Grade:	E1-E6
Existing Net Area:	962 S.F.
Authorized Net Area:	950 S.F.

0 1' 5' 10' 15'

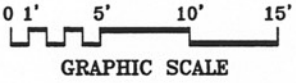
GRAPHIC SCALE

EXISTING FLOOR PLANS

FRONT ELEVATION

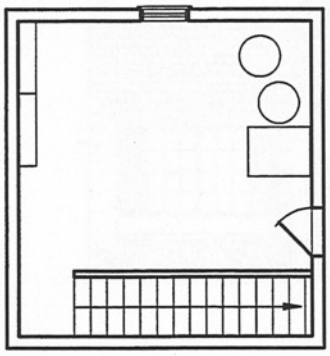


RIGHT SIDE ELEVATION

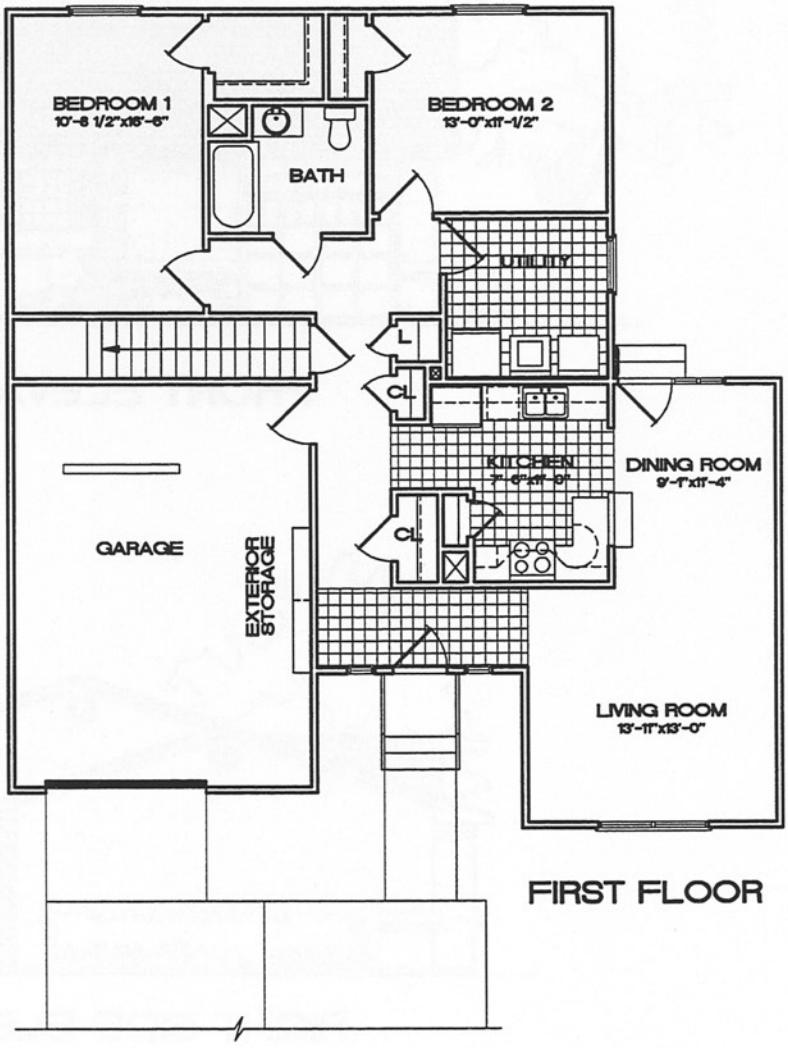


EXISTING UNIT TYPE B ELEVATIONS

3.3.4 Unit Type C-HC



BASEMENT



FIRST FLOOR

Unit Summary

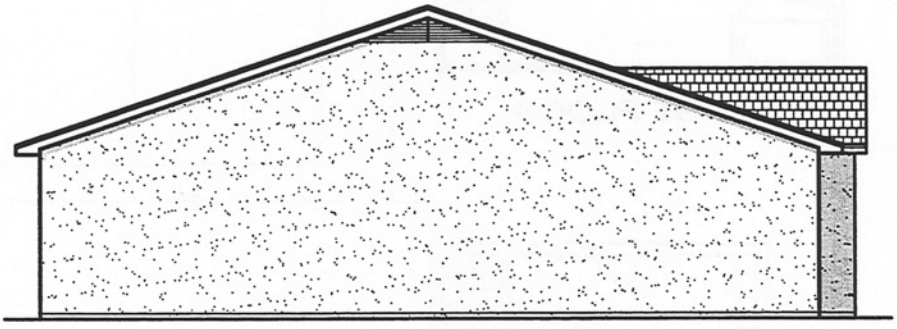
Unit Type:	C-HC (NC02.7) 2 Br.
Grade:	E1-E6
Existing Net Area:	1,046 S.F.
Authorized Net Area:	1,025 S.F.

0 1' 5' 10' 15'

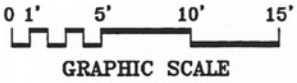
GRAPHIC SCALE

EXISTING FLOOR PLANS

FRONT ELEVATION

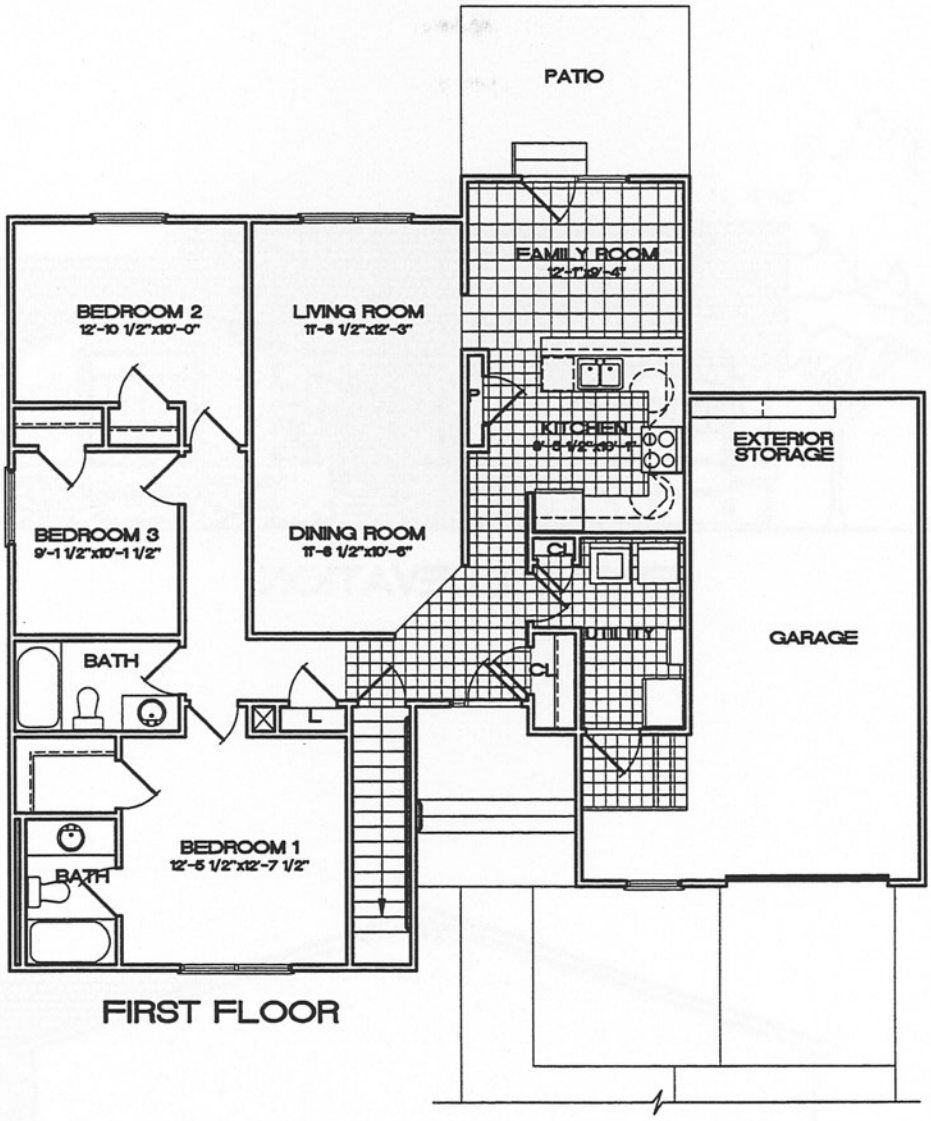


LEFT SIDE ELEVATION

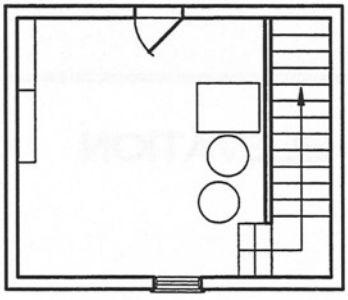


EXISTING UNIT TYPE C-HC ELEVATIONS

3.3.5 Unit Type D



FIRST FLOOR



BASEMENT

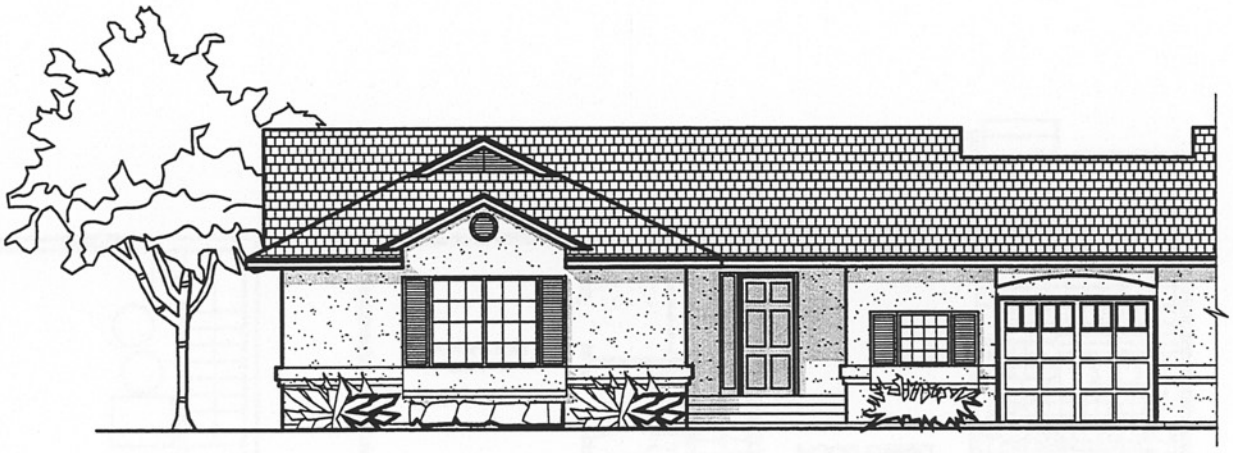
Unit Summary

Unit Type:	D (NC03.4) 3 Br.
Grade:	E1-E6
Existing Net Area:	1,198 S.F.
Proposed Net Area:	1,200 S.F.

0 1' 5' 10' 15'

GRAPHIC SCALE

EXISTING FLOOR PLANS

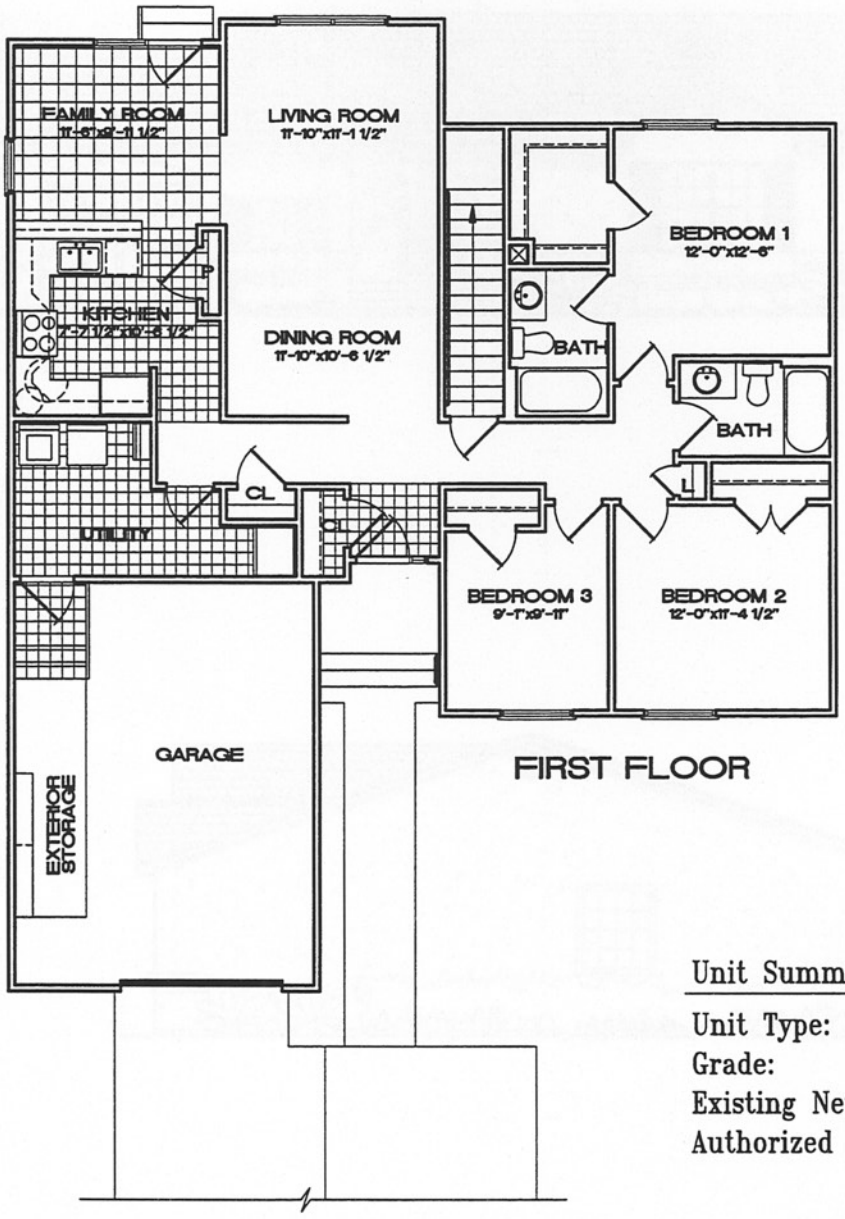


0 1' 5' 10' 15'

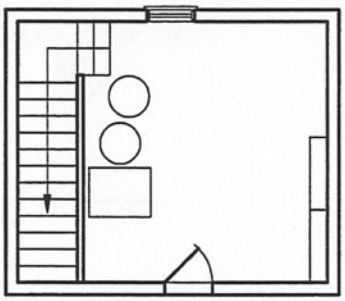
GRAPHIC SCALE

PROPOSED UNIT TYPE D ELEVATIONS

3.3.6 Unit Type E



FIRST FLOOR



BASEMENT

Unit Summary

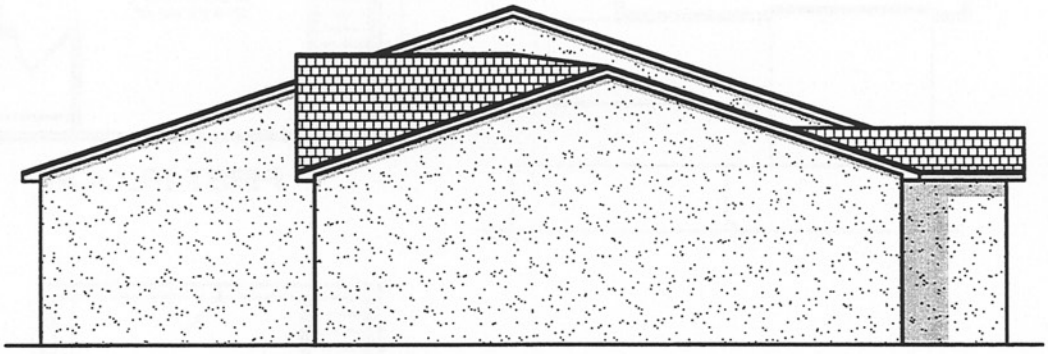
Unit Type:	E (NC03.5) 3 Br.
Grade:	E1-E6
Existing Net Area:	1,235 S.F.
Authorized Net Area:	1,200 S.F.

0 1' 5' 10' 15'

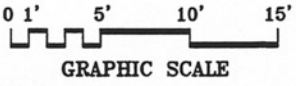
GRAPHIC SCALE

EXISTING FLOOR PLANS

FRONT ELEVATION

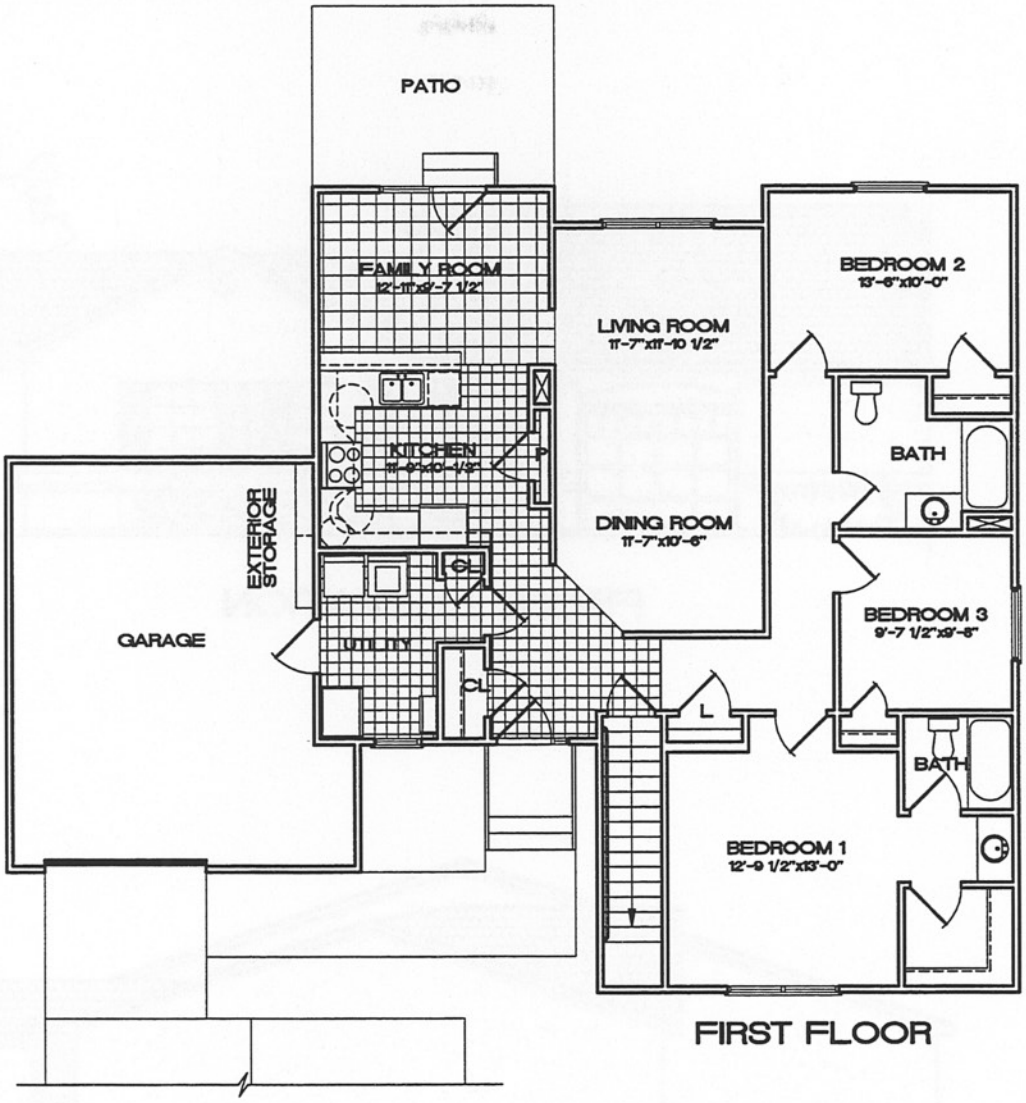


RIGHT SIDE ELEVATION

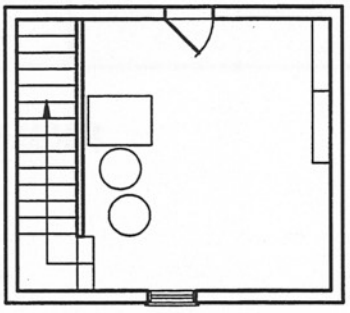


PROPOSED UNIT TYPE E ELEVATIONS

3.3.7 Unit Type F-HC



FIRST FLOOR



BASEMENT

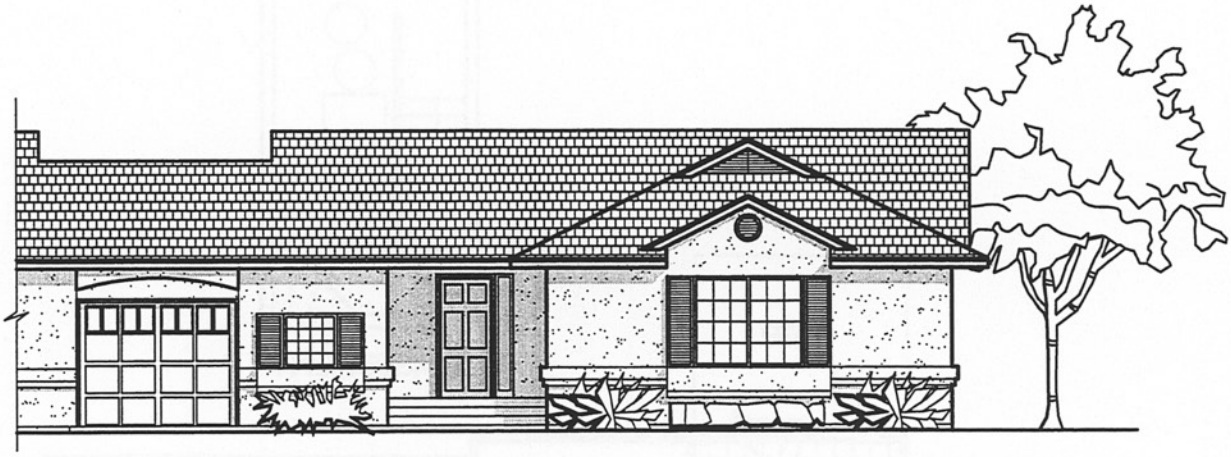
Unit Summary

Unit Type:	F-HC (NC03.6) 3 Br.
Grade:	E1-E6
Existing Net Area:	1,317 S.F.
Authorized Net Area:	1,275 S.F.

0 1' 5' 10' 15'

GRAPHIC SCALE

EXISTING FLOOR PLANS



FRONT ELEVATION

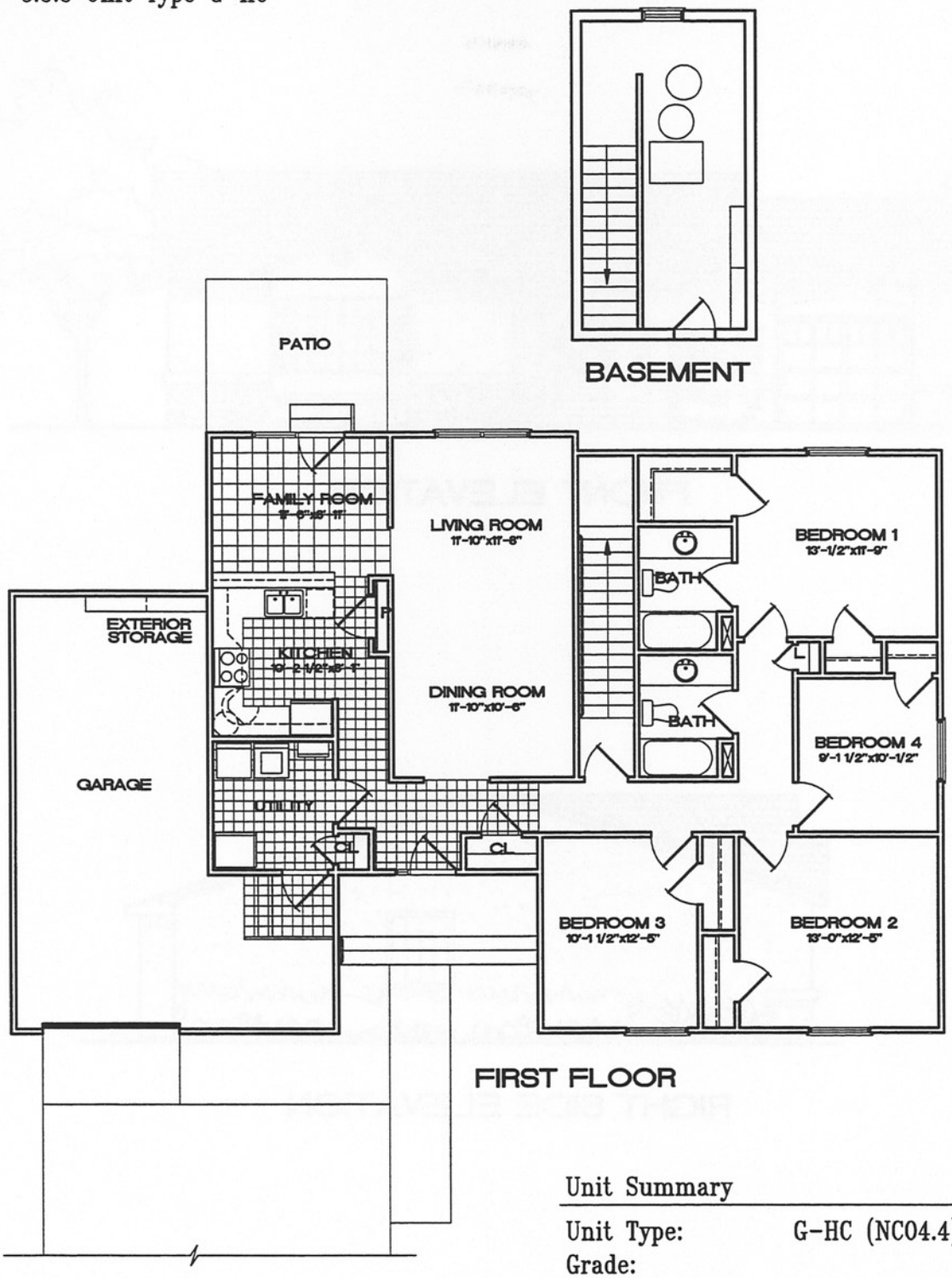
RIGHT SIDE ELEVATION

0 1' 5' 10' 15'

GRAPHIC SCALE

PROPOSED UNIT TYPE F-HC ELEVATIONS

3.3.8 Unit Type G-HC

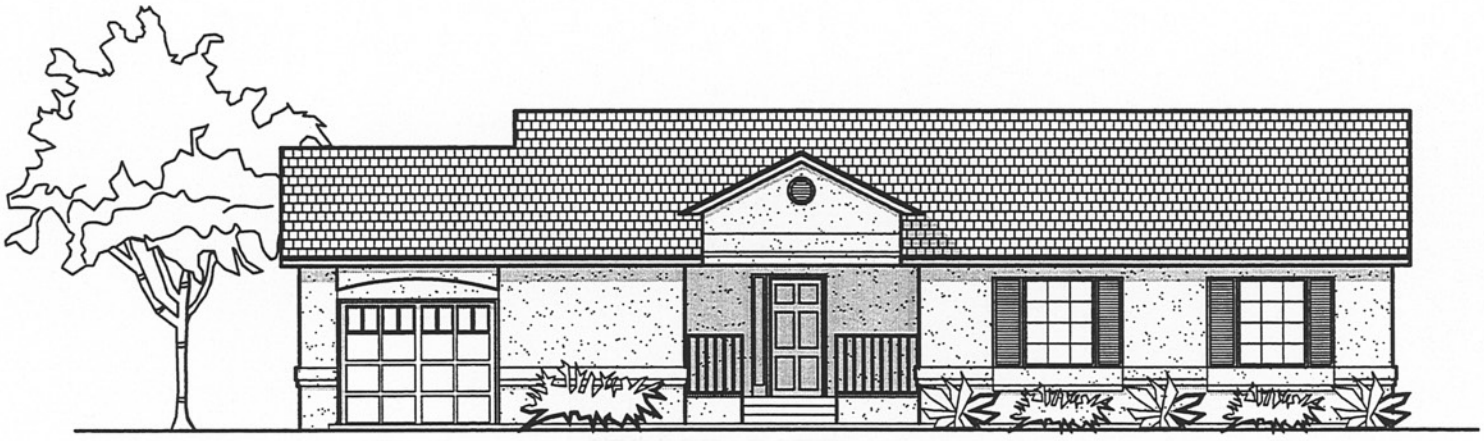


Unit Summary

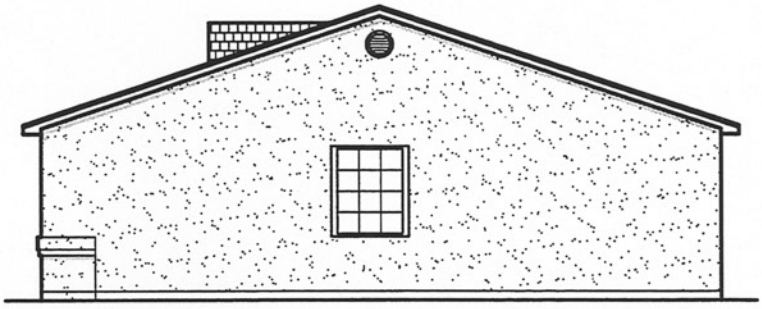
Unit Type:	G-HC (NC04.4) 4 Br.
Grade:	E1-E6
Existing Net Area:	1,414 S.F.
Authorized Net Area:	1,425 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

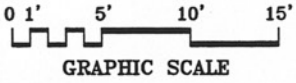
EXISTING FLOOR PLANS



FRONT ELEVATION



RIGHT SIDE ELEVATION



EXISTING UNIT TYPE G-HC ELEVATIONS

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Section 3.4
Replacement / New Housing

3.4 Replacement / New housing

3.4.1 Introduction

The following are replacement plans for units which have been found to exceed both the $50,000 x the area cost factor for Whiteman AFB, Missouri (1.04) and the 70 percent replacement cost analysis. Prior to deciding on a replacement versus renovation strategy for any given unit or unit type, an economic analysis is required.

The replacement units have been designed to meet the Air Force Family Housing Design Guide and other applicable codes.

The design objectives of these units were:

- To blend the architectural design with the mid-western style of the older neighborhoods using similar exterior materials such as horizontal siding and masonry accent panels.
- To incorporate projections to the front and to the rear elevations adding interest to both elevations and to breakup to the existing long monotonous streetscape.
- To create narrower footprints for units so that they can be built on existing sites with wider side-yards.

Inside the units, emphasis was placed on a generous and open family room and well laid out kitchen in an effort to support family activities and allow privacy for adults' leisure activities and play spaces for children.

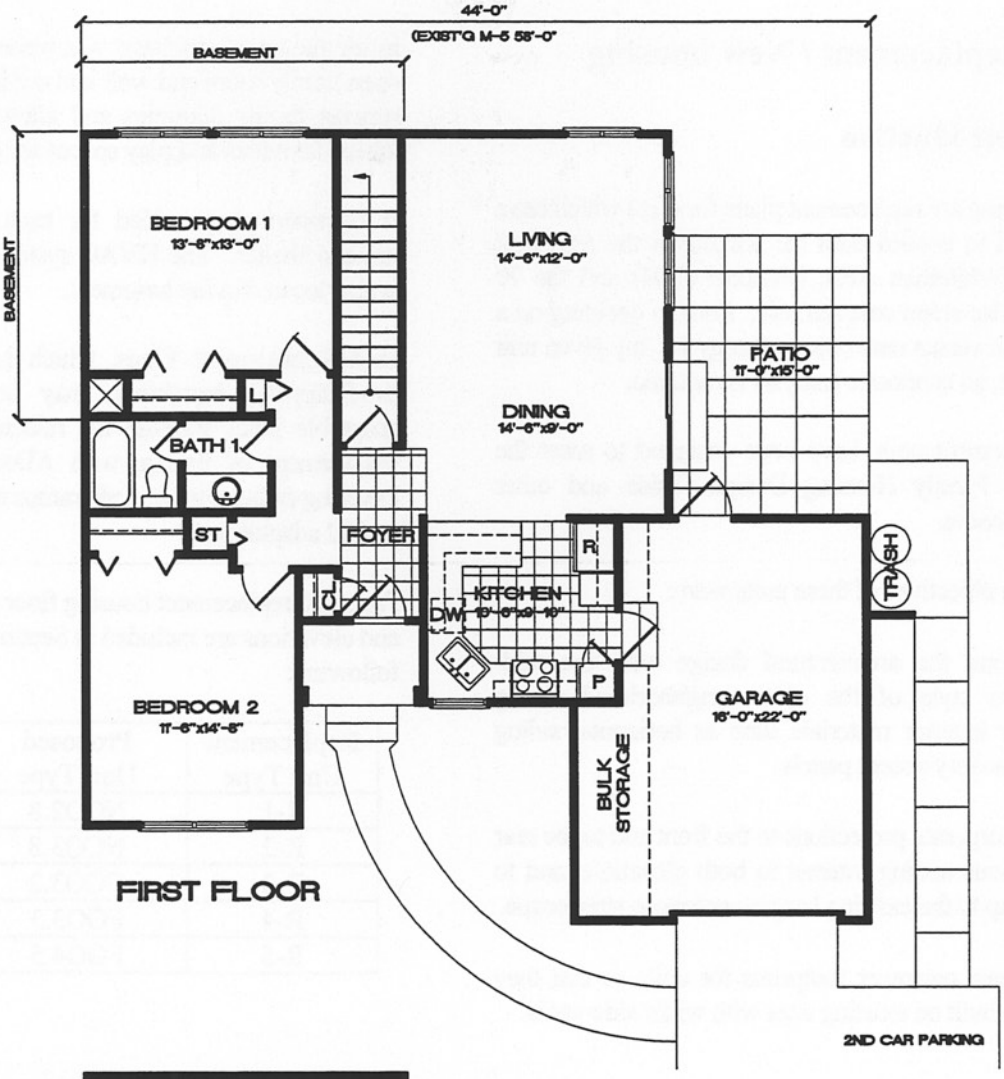
A basement is provided for each unit to serve as a tornado shelter. The HVAC system and interior storage is also located in the basement.

Unit Replacement Plans, which have been noted for handicapped adaptability, may be revised to create adaptable plans through the relocation of fixtures, the replacement of fittings with ADA compliant faucets, lowering of the kitchen sink, ramps at all doors, and other typical adaptations.

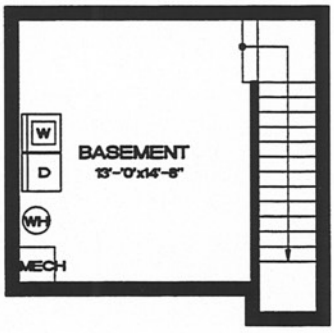
Proposed replacement housing floor plans, cost estimates, and elevations are included in Sections 3.4.2–3.4.6 for the following:

Replacement Unit Type	Proposed Unit Type	Number Bedrooms
R-1	NCO2.8	2
R-2	NCO3.8	3
R-3	CGO3.2	3
R-4	FGO3.3	3
R-5	FGO4.5	4

3.4.2 Replacement Unit Type R-1 NC02.8



FIRST FLOOR



BASEMENT

Unit Summary

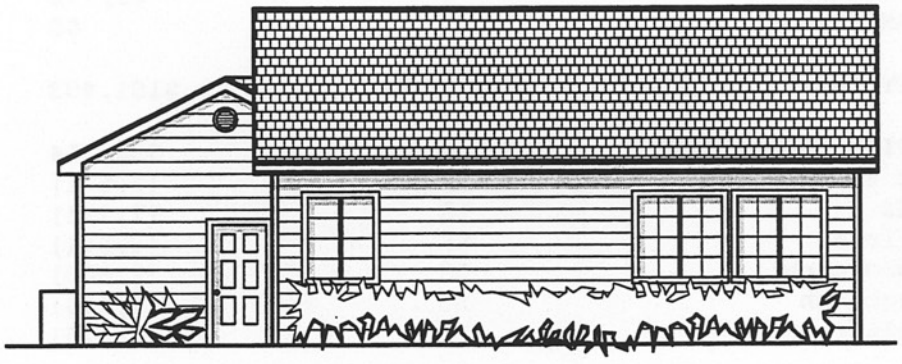
Unit Type:	JNCO 2 Br.
Grade:	E1-E6
Proposed Area:	950 S.F.
Authorized Area:	950 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

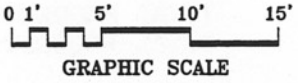
PROPOSED FLOOR PLAN (REPLACES UNIT TYPE M-5)

FRONT ELEVATION

RIGHT SIDE ELEVATION



REAR ELEVATION



PROPOSED UNIT TYPE JNCO/CGO 2BR ELEVATION

R-1 NCO2.8

PARAMETRIC MODELS

DATE: 06/24/1998

PROJECT: WHITM1
PROJECT DESCRIPTION: 14 - M-5, JNCO 2 BR Replacement, Duplex Units
PROJECT COMMENT:

BUILDING TOTAL GROSS FLOOR AREA: 1,332 SF
GEOLOCATION: WHITEMAN AFB (KNOB NOSTER)
ESTIMATED BY: BTG, Delta Research Division
ESTIMATE DATE: 12/08/1997
REPORT FILE: WHITM1PR.TXT
COST DATABASE: NAT95A
ESCALATION MODIFIER: Mid-Point of Construction

REPLACEMENT UNIT TYPE: R-1

SYSTEM DESCRIPTION		PER UNIT COST	TOTAL COST
01 SUBSTRUCTURE		$18,232	$255,248
02 SUPERSTRUCTURE		$6,618	$92,653
03 EXTERIOR CLOSURE		$30,056	$420,789
04 ROOFING		$2,063	$28,880
05 INTERIOR CONSTRUCTION		$13,318	$186,451
06 INTERIOR FINISHES		$8,513	$119,187
08 PLUMBING		$7,903	$110,636
09 H.V.A.C.		$6,492	$90,884
11 ELECTRIC POWER & LIGHTING		$5,430	$76,025
13 EQUIPMENT		$2,778	$38,890
14 FURNISHINGS		$0	$0
FACILITY TOTAL		$101,403	$1,419,643
SUPPORTING FACILITIES		$30,714	$430,000
Site Preparation	LS	(1,571)	(22,000)
Roads	LS	(7,714)	(108,000)
Utilities	LS	(6,571)	(92,000)
Landscaping	LS	(1,000)	(14,000)
Recreation	LS	(1,429)	(20,000)
Demolition	LS	(12,429)	(174,000)
SUBTOTAL		$132,117	$1,849,643
CONTINGENCY (5.00%)		$6,606	$92,482
TOTAL CONTRACT COST		$138,723	$1,942,125
SIOH (5.50%)		$8,323	$106,817
TOTAL REQUEST		$147,047	$2,048,942
TOTAL REQUEST (ROUNDED)			$2,050,000

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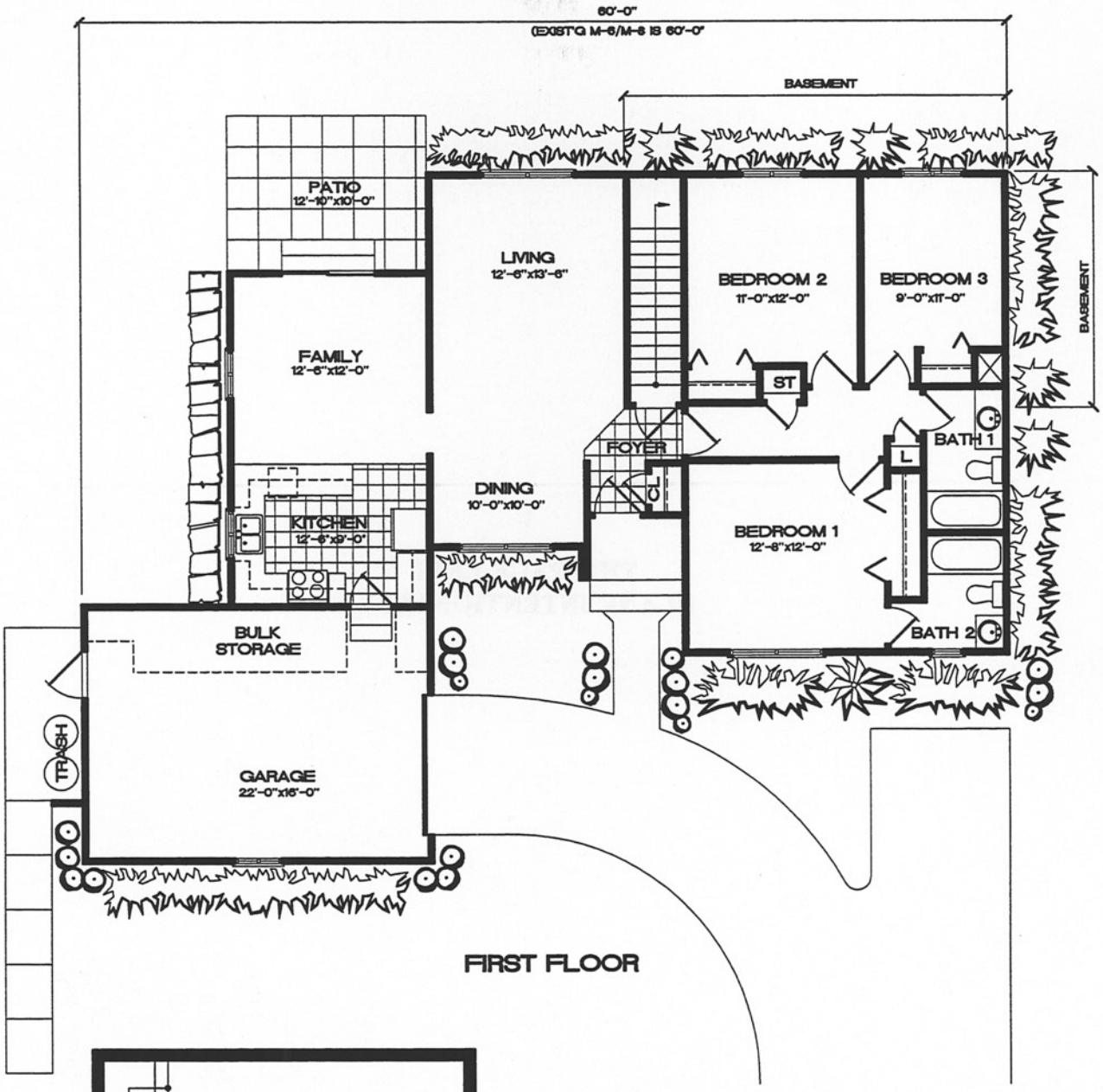
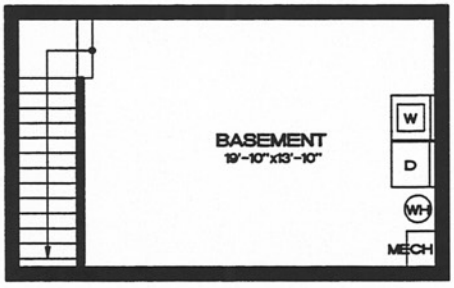
3.4.3 Replacement Unit Type R-2 NC03.8





BASEMENT

Unit Summary

Unit Type:	JNCO 3 Br.
Grade:	E1-E6
Proposed Area:	1200 S.F.
Authorized Area:	1200 S.F.

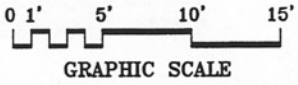
0 1' 5' 10' 15'
GRAPHIC SCALE

PROPOSED FLOOR PLAN (REPLACES UNIT TYPE M6/M8)

FRONT ELEVATION

LEFT SIDE ELEVATION

REAR ELEVATION



PROPOSED UNIT TYPE JNCO 3BR ELEVATIONS

R-2 NCO3.8

PARAMETRIC MODELS

DATE: 06/24/1998

PROJECT: WHITM2
PROJECT DESCRIPTION: 50 - M-6/M-8, JNCO 3 BR Replacement, Duplex Units
PROJECT COMMENT:

BUILDING TOTAL GROSS FLOOR AREA: 1,588 SF
GEOLOCATION: WHITEMAN AFB (KNOB NOSTER)
ESTIMATED BY: BTG, Delta Research Division
ESTIMATE DATE: 12/08/1997
REPORT FILE: whitm2pr.txt
COST DATABASE: NAT95A
ESCALATION MODIFIER: Mid-Point of Construction

REPLACEMENT UNIT TYPE: R-2

SYSTEM DESCRIPTION		PER UNIT COST	TOTAL COST
01 SUBSTRUCTURE		$21,175	$1,058,761
02 SUPERSTRUCTURE		$7,827	$391,353
03 EXTERIOR CLOSURE		$35,974	$1,798,703
04 ROOFING		$2,469	$123,465
05 INTERIOR CONSTRUCTION		$16,273	$813,668
06 INTERIOR FINISHES		$10,575	$528,736
08 PLUMBING		$10,330	$516,502
09 H.V.A.C.		$7,269	$363,463
11 ELECTRIC POWER & LIGHTING		$6,655	$332,774
13 EQUIPMENT		$2,788	$139,381
14 FURNISHINGS		$0	$0
FACILITY TOTAL		$121,336	$6,066,806
SUPPORTING FACILITIES		$39,720	$1,796,000
Site Preparation	LS	(1,720)	(86,000)
Roads	LS	(9,533)	(429,000)
Utilities	LS	(8,156)	(367,000)
Landscaping	LS	(1,222)	(55,000)
Recreation	LS	(1,756)	(79,000)
Demolition	LS	(17,333)	(780,000)
SUBTOTAL		$161,056	$7,862,806
CONTINGENCY (5.00%)		$8,053	$393,140
TOTAL CONTRACT COST		$169,109	$8,255,946
SIOH (5.50%)		$10,147	$454,077
TOTAL REQUEST		$179,255	$8,710,023
TOTAL REQUEST (ROUNDED)			$8,700,000

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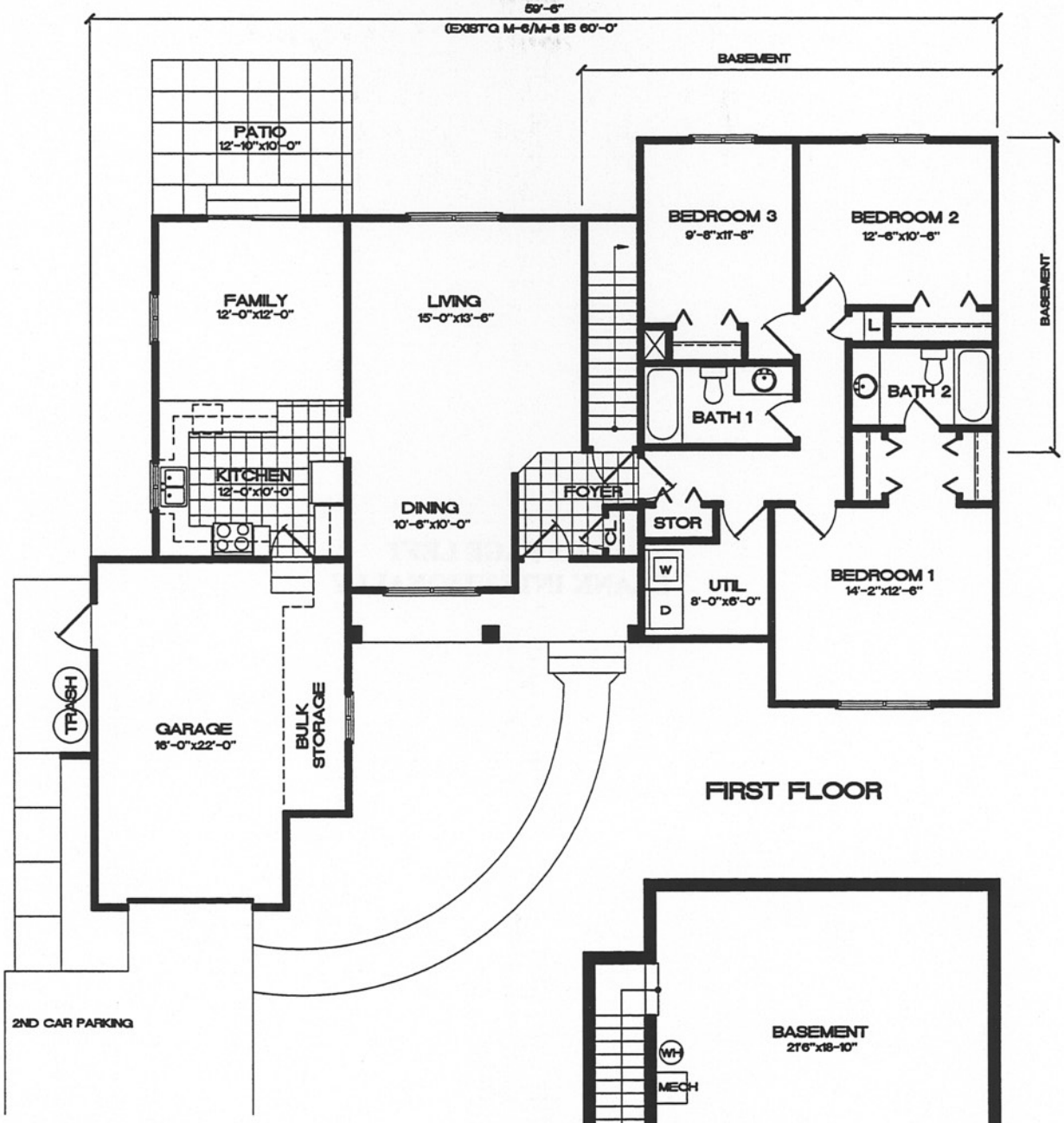
3.4.4 Replacement Unit Type R-3 CG03.2



Unit Summary

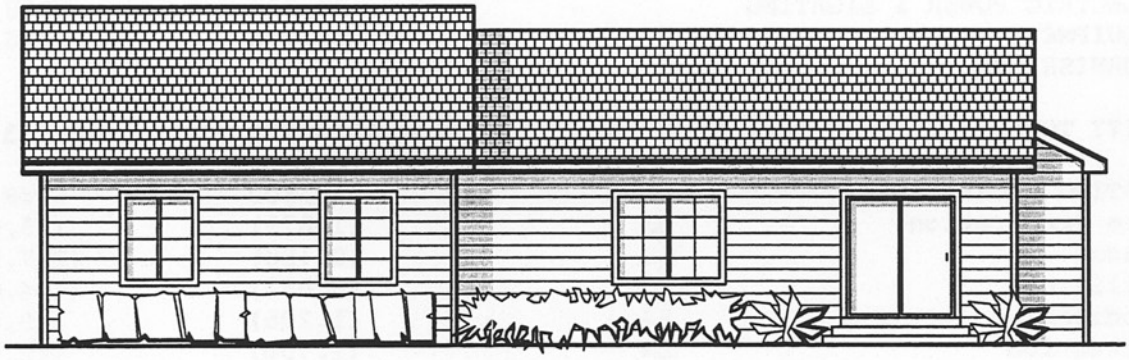
Unit Type:	CG0 3 Br.
Grade:	01-03
Proposed Area:	1350 S.F.
Authorized Area:	1350 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

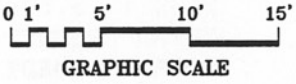
PROPOSED FLOOR PLAN
(REPLACES UNIT TYPE M-6 / M-8)

FRONT ELEVATION

LEFT SIDE ELEVATION



REAR ELEVATION



PROPOSED UNIT TYPE CGO 3BR ELEVATIONS

PARAMETRIC MODELS

DATE: 06/24/1998

PROJECT: WHITM3
PROJECT DESCRIPTION: 24 - M-6/M-8, CGO 3 BR Replacement, Duplex Units
PROJECT COMMENT:

BUILDING TOTAL GROSS FLOOR AREA: 1,791 SF
GEOLOCATION: WHITEMAN AFB (KNOB NOSTER)
ESTIMATED BY: BTG, Delta Research Division
ESTIMATE DATE: 12/08/1997
REPORT FILE: whitm3pr.txt
COST DATABASE: NAT95A
ESCALATION MODIFIER: Mid-Point of Construction

REPLACEMENT UNIT TYPE: R-3

SYSTEM DESCRIPTION		PER UNIT COST	TOTAL COST
01 SUBSTRUCTURE		$23,261	$558,258
02 SUPERSTRUCTURE		$9,300	$223,202
03 EXTERIOR CLOSURE		$37,124	$890,980
04 ROOFING		$2,767	$66,406
05 INTERIOR CONSTRUCTION		$17,635	$423,231
06 INTERIOR FINISHES		$11,897	$285,518
08 PLUMBING		$10,294	$247,058
09 H.V.A.C.		$7,233	$173,600
11 ELECTRIC POWER & LIGHTING		$7,033	$168,795
13 EQUIPMENT		$2,778	$66,670
14 FURNISHINGS		$0	$0
FACILITY TOTAL		$129,322	$3,103,718
SUPPORTING FACILITIES		$39,500	$948,000
Site Preparation	LS	(1,875)	(45,000)
Roads	LS	(9,458)	(227,000)
Utilities	LS	(8,083)	(194,000)
Landscaping	LS	(1,208)	(29,000)
Recreation	LS	(1,750)	(42,000)
Demolition	LS	(17,125)	(411,000)
SUBTOTAL		$168,822	$4,051,718
CONTINGENCY (5.00%)		$8,441	$202,586
TOTAL CONTRACT COST		$177,263	$4,254,304
SIOH (5.50%)		$10,636	$233,987
TOTAL REQUEST		$187,898	$4,488,291
TOTAL REQUEST (ROUNDED)			$4,500,000

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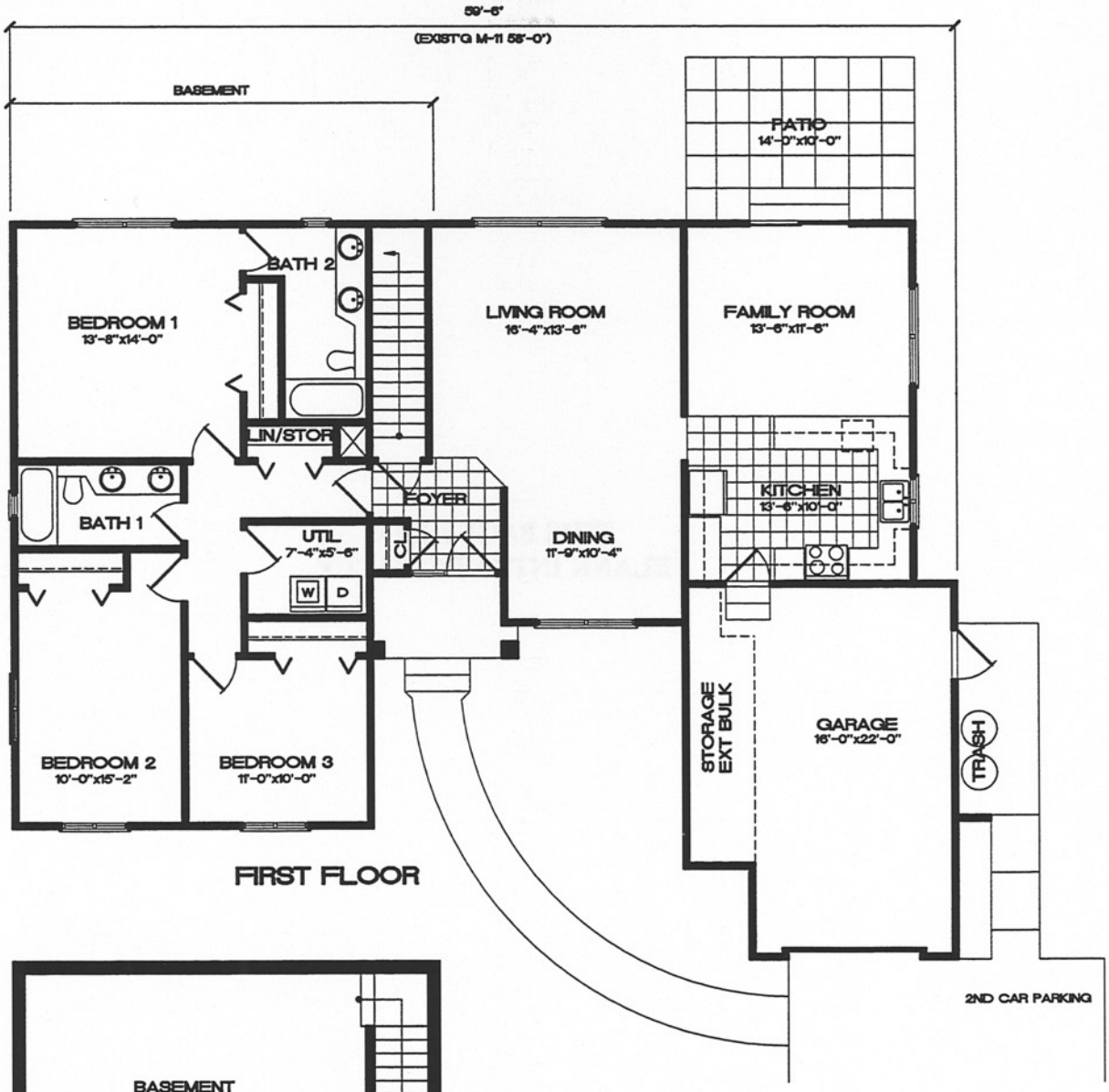
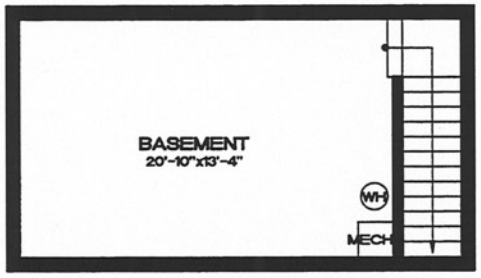
3.4.5 Replacement Unit Type R-4 FG03.3





BASEMENT

Unit Summary

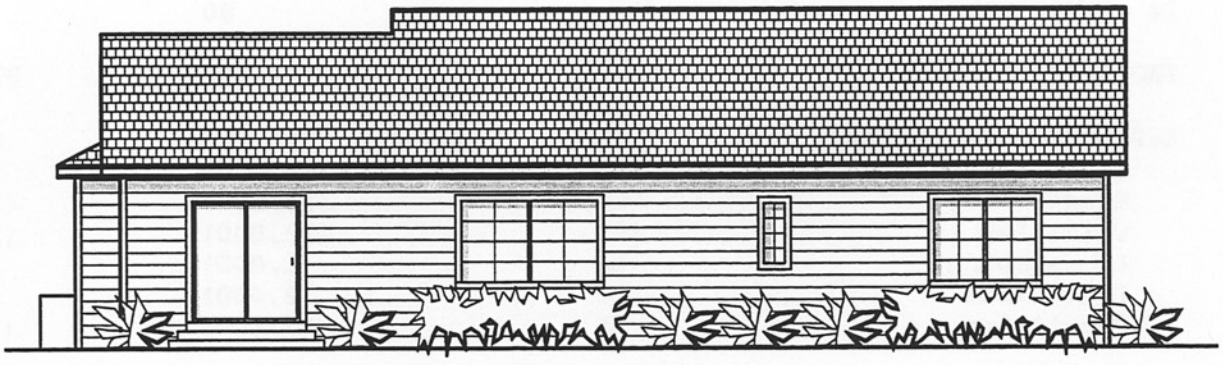
Unit Type:	FGO 3 Br.
Grade:	04-05
Proposed Area:	1400 S.F.
Authorized Area:	1400 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

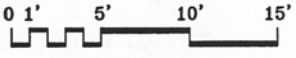
PROPOSED FLOOR PLAN (REPLACES UNIT TYPE M-11)

FRONT ELEVATION

LEFT SIDE ELEVATION



REAR ELEVATION



GRAPHIC SCALE

PROPOSED UNIT TYPE FGO-3BR ELEVATIONS

PARAMETRIC MODELS

DATE: 06/24/1998

PROJECT: WHITM4
PROJECT DESCRIPTION: 1 - M-11, FGO 3 BR Replacement, Single Unit
PROJECT COMMENT:

BUILDING TOTAL GROSS FLOOR AREA: 1,762 SF
GEOLOCATION: WHITEMAN AFB (KNOB NOSTER)
ESTIMATED BY: BTG, Delta Research Division
ESTIMATE DATE: 12/08/1997
REPORT FILE: WHITM4PR.TXT
COST DATABASE: NAT95A
ESCALATION MODIFIER: Mid-Point of Construction

FACILITY: R-4

SYSTEM DESCRIPTION		PER UNIT COST	TOTAL COST
01 SUBSTRUCTURE		$23,899	$23,899
02 SUPERSTRUCTURE		$8,538	$8,538
03 EXTERIOR CLOSURE		$41,117	$41,117
04 ROOFING		$2,865	$2,865
05 INTERIOR CONSTRUCTION		$20,276	$20,276
06 INTERIOR FINISHES		$12,046	$12,046
08 PLUMBING		$10,809	$10,809
09 H.V.A.C.		$4,337	$4,337
11 ELECTRIC POWER & LIGHTING		$7,490	$7,490
13 EQUIPMENT		$3,075	$3,075
14 FURNISHINGS		$0	$0
FACILITY TOTAL		$134,452	$134,452
SUPPORTING FACILITIES		$44,000	$44,000
Site Preparation	LS	(2,000)	(2,000)
Roads	LS	(12,000)	(12,000)
Utilities	LS	(10,000)	(10,000)
Landscaping	LS	(1,000)	(1,000)
Recreation	LS	(2,000)	(2,000)
Demolition	LS	(17,000)	(17,000)
SUBTOTAL		$178,452	$178,452
CONTINGENCY (5.00%)		$8,923	$8,923
TOTAL CONTRACT COST		$187,375	$187,375
SIOH (5.50%)		$10,306	$10,306
TOTAL REQUEST		$197,680	$197,680
TOTAL REQUEST (ROUNDED)			$200,000

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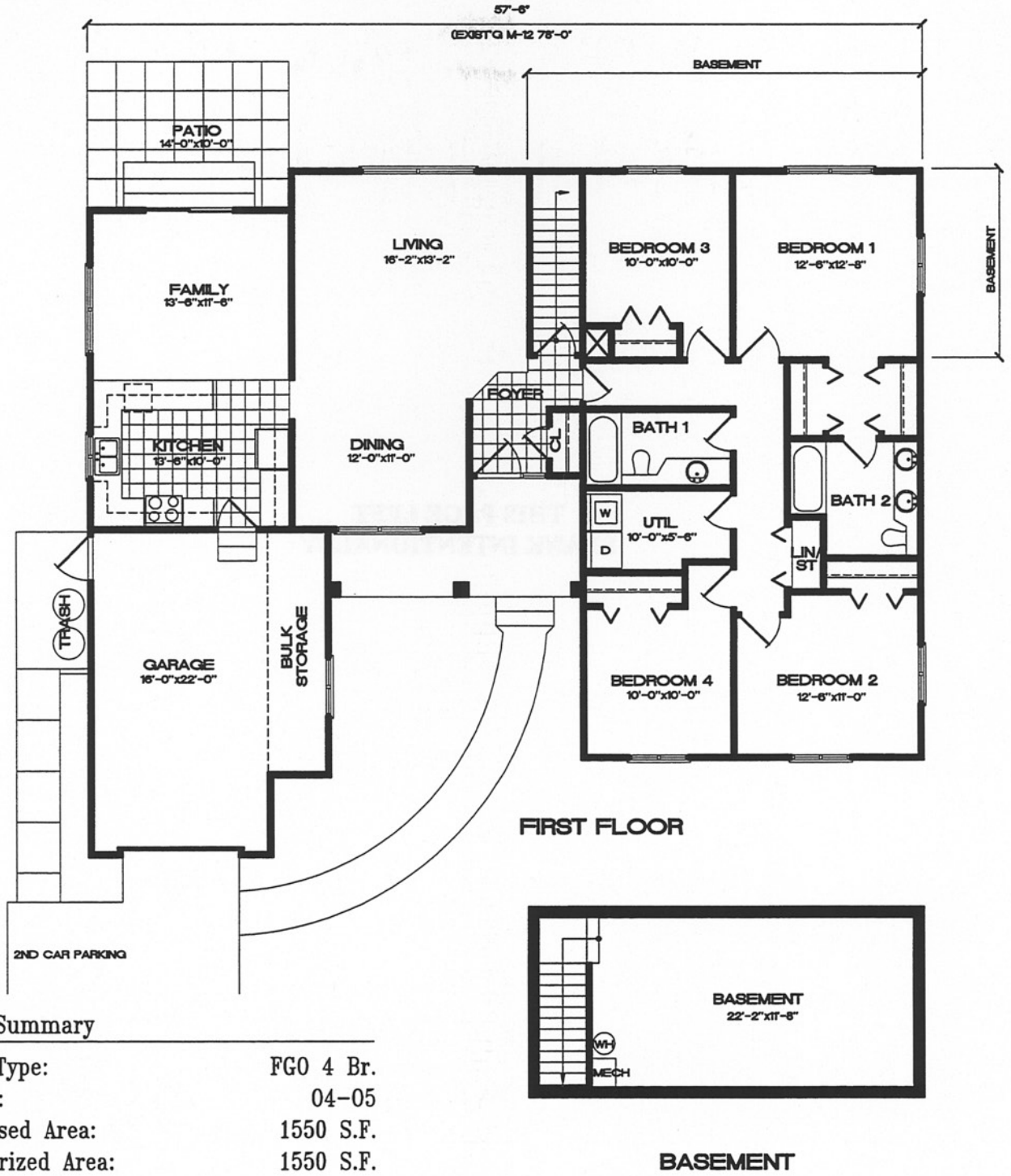
3.4.6 Replacement Unit Type R-5 FG04.4



Unit Summary

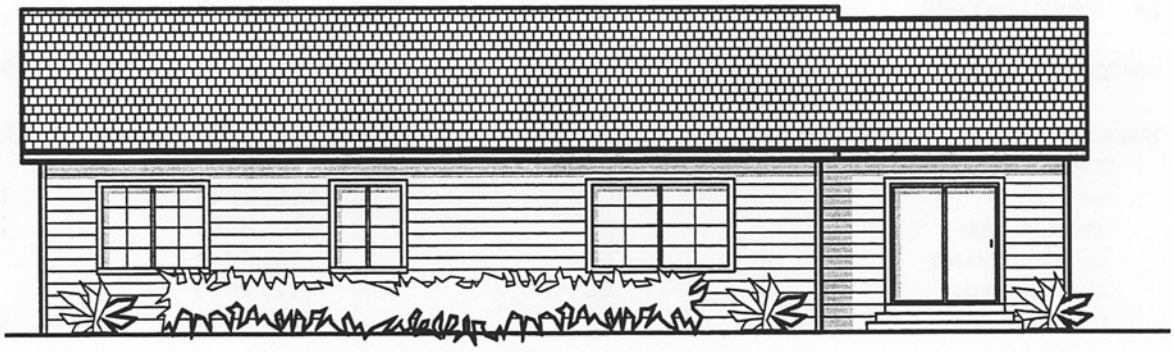
Unit Type:	FG0 4 Br.
Grade:	04-05
Proposed Area:	1550 S.F.
Authorized Area:	1550 S.F.

0 1' 5' 10' 15'
GRAPHIC SCALE

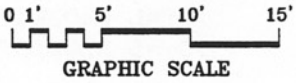
PROPOSED FLOOR PLAN (REPLACES UNIT TYPE M12)

FRONT ELEVATION

LEFT SIDE ELEVATION



REAR ELEVATION



PROPOSED UNIT TYPE FGO 4BR ELEVATIONS

PARAMETRIC MODELS

DATE: 06/24/1998

PROJECT: WHITM5
PROJECT DESCRIPTION: 3 - M-12, FGO 4 BR Replacement, Single Unit
PROJECT COMMENT:

BUILDING TOTAL GROSS FLOOR AREA: 2,026 SF
GEOLOCATION: WHITEMAN AFB (KNOB NOSTER)
ESTIMATED BY: BTG, Delta Research Division
ESTIMATE DATE: 12/08/1997
REPORT FILE: WHITM5PR.TXT
COST DATABASE: NAT95A
ESCALATION MODIFIER: Mid-Point of Construction

REPLACEMENT UNIT TYPE: R-5

SYSTEM DESCRIPTION		PER UNIT COST	TOTAL COST
01 SUBSTRUCTURE		$22,182	$66,547
02 SUPERSTRUCTURE		$8,978	$26,934
03 EXTERIOR CLOSURE		$44,701	$134,102
04 ROOFING		$3,236	$9,708
05 INTERIOR CONSTRUCTION		$19,758	$59,273
06 INTERIOR FINISHES		$13,865	$41,594
08 PLUMBING		$10,809	$32,428
09 H.V.A.C.		$9,106	$27,318
11 ELECTRIC POWER & LIGHTING		$8,735	$26,205
13 EQUIPMENT		$3,076	$9,227
14 FURNISHINGS		$0	$0
FACILITY TOTAL		$144,445	$433,336
SUPPORTING FACILITIES		$45,000	$135,000
Site Preparation	LS	(1,667)	(5,000)
Roads	LS	(11,667)	(35,000)
Utilities	LS	(10,000)	(30,000)
Landscaping	LS	(1,333)	(4,000)
Recreation	LS	(2,000)	(6,000)
Demolition	LS	(18,333)	(55,000)
SUBTOTAL		$189,445	$568,336
CONTINGENCY (5.00%)		$9,472	$28,417
TOTAL CONTRACT COST		$198,918	$596,753
SIOH (5.50%)		$11,935	$32,821
TOTAL REQUEST		$210,853	$629,574
TOTAL REQUEST (ROUNDED)			$630,000

Section 3.5
Inventory Database Reports

3.5 Inventory Database Reports

The following inventory database reports are included

- Existing MFH Inventory by Unit Type, and
- Proposed MFH Inventory by Unit Type,

where MFH refers to Military Family Housing.

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Existing MFH Inventory by Unit Type

Unit Type	Type Construction	No. Stories	Style	Year Built	Original Funding	HCP Reference	Handicap Suitable	No. Bedrooms	No. Bathrooms	Covered Parking	Designation	GSF	NSF	Qty.	Renovation Decision (Plus or Minus): Whole House Improvement	Conversion	Demolition	Replacement	Diversion	Excess	Quantity to Proposed Inventory
C-8 FGO 4.2	WFS	1	SF	1962	C	3.2.25	Yes	4	2	no	O4-O5	0	1369	1	1	0	0	0	0	0	1
C-8A CGO 4.2	WFS	1	SF	1962	C	3.2.26	Yes	4	2	DC	O1-O3	0	1649	9	9	0	0	0	0	0	9
C-9 FGO 4.3	WFS	1	SF	1962	C	3.2.27	Yes	4	2	DC	O4-O5	0	1616	4	4	0	0	0	0	0	4
M-2 NCO 2.2	WFS	1	DUP	1957	A2	3.2.3	Yes	3	1	DC	E4-E6	0	988	102	2	100	0	0	0	0	102
M-3 NCO 2.1	WFS	1	DUP	1957	A2	3.2.4	Yes	2	1	DC	E4-E6	0	890	10	10	0	0	0	0	0	10
M-3 NCO 2.2	WFS	1	DUP	1957	A2	3.2.4	Yes	3	1	DC	E4-E6	0	988	10	0	10	0	0	0	0	10
M-4 NCO 2.2	WFS	1	DUP	1957	A2	3.2.5	Yes	3	1	DC	E4-E6	0	988	97	16	81	0	0	0	0	97
M-5 NCO 2.3	WFS	1	DUP	1957	A2	3.2.6	Yes	2	1	DC	E4-E6	0	946	14	14	0	0	0	0	0	14
M-6 NCO 3.1	WFS	1	DUP	1957	A2	3.2.7	Yes	3	1	DC	E4-E6	0	1068	50	50	0	0	0	0	0	50
M-7 NCO 2.3	WFS	1	DUP	1957	A2	3.2.8	Yes	2	1	DC	E4-E6	0	946	4	4	0	0	0	0	0	4
M-7 NCO 3.1	WFS	1	DUP	1957	A2	3.2.8	Yes	3	1	DC	E4-E6	0	1068	4	4	0	0	0	0	0	4
M-8 NCO 3.1	WFS	1	DUP	1957	A2	3.2.9	Yes	3	1	DC	E4-E6	0	1068	24	24	0	0	0	0	0	24
Total														989	703	286	0	0	0	0	989

Whiteman AFB

Air Combat Command

HCP Date: 1998

Proposed MFH Inventory by Unit Type

Unit Type	Type Const.	No. Stories	Style	HCP Reference	Original Funding	Qty.	No. Bedrooms	No. Bathrooms	Covered Parking	Designation	GSF	NSF	Maximum GSF Allowable	Maximum NSF Allowable	HCP Cost Estimate (2001) New and Replacement	Whole House	Major M & R Repairs	Improvements & Remaining Repairs	Total for Multiple Projects	Premium for Multiple Projects
Previously Existing																				
M-12B FGO 4.1	WFS	1	SF	3.2.13	A2	3	4	2	AG	O4-O5	0	1,593	0	1,550	$0	$252,534	$190,999	$80,250	$271,249	$18,715
M-13 SGO 4.1	WFS	1	SF	3.2.14	A2	1	4	2	AG	O6	0	2,479	0	1,700	$0	$16,268	$17,118	$0	$17,118	$851
M-14 GO 4.1	WFS	1	SF	3.2.15	A2	1	4	2	AG	O7-O10	0	2,714	0	2,100	$0	$45,324	$48,453	$0	$48,453	$3,129
C-1B NCO 3.2	WFS	1	SF	3.2.16	C	6	3	2	AG	E4-E6	0	1,200	0	1,200	$0	$515,816	$341,605	$212,946	$554,551	$38,735
C-2B NCO 3.2	WFS	1	DUP	3.2.17	C	150	3	2	AG	E4-E6	0	1,200	0	1,200	$0	$12,895,392	$8,540,114	$5,323,650	$13,863,764	$968,372
C-2C SNCO 3.1	WFS	1	DUP	3.2.17	C	86	3	2	AG	E7-E9	0	1,350	0	1,350	$0	$7,641,984	$4,863,922	$3,353,054	$8,216,976	$574,992
C-3C NCO 4.1	WFS	1	DUP	3.2.18	C	22	4	2	AG	E4-E6	0	1,350	0	1,350	$0	$2,038,146	$1,279,721	$912,362	$2,192,083	$153,938
C-3D SNCO 4.1	WFS	1	DUP	3.2.18	C	20	4	2	AG	E7-E9	0	1,450	0	1,450	$0	$1,651,820	$1,129,314	$646,360	$1,775,674	$123,854
C-3A SNCO 4.2	WFS	1	DUP	3.2.19	C	6	4	2	AG	E7-E9	0	1,460	0	1,450	$0	$0	$0	$0	$0	$0
M-1B NCO 2.1(incl 10 M-3)	WFS	1	DUP	3.2.2	A2	142	2	1	AG	E4-E6	0	950	0	950	$0	$9,667,765	$4,012,495	$6,360,038	$10,372,533	$704,769
C-3B NCO 4.2	WFS	1	DUP	3.2.20	C	10	4	2	AG	E4-E6	0	1,350	0	1,350	$0	$904,581	$562,284	$410,540	$972,824	$68,244
C-4 NCO 4.3	WFS	1	DUP	3.2.21	C	34	4	2	AG	E4-E6	0	1,350	0	1,350	$0	$3,149,862	$1,977,751	$1,410,014	$3,387,765	$237,904
C-5 NCO 3.3	WFS	1	DUP	3.2.22	C	20	3	2	AG	E4-E6	0	1,200	0	1,200	$0	$1,879,842	$1,081,016	$940,940	$2,021,956	$142,114
C-7 CGO 3.1	WFS	1	SF	3.2.24	C	18	3	2	DG	O1-O3	0	1,302	0	1,350	$0	$1,481,121	$1,126,439	$465,660	$1,592,099	$110,978
C-7 FGO 3.1	WFS	1	SF	3.2.24	C	41	3	2	DG	O4-O5	0	1,302	0	1,400	$0	$3,373,665	$2,565,778	$1,060,670	$3,626,448	$252,783
C-8C FGO 4.2	WFS	1	SF	3.2.25	C	7	4	2	AG	O4-O5	0	1,550	0	1,550	$0	$750,394	$389,709	$417,753	$807,462	$57,069
C-8D CGO 4.1	WFS	1	SF	3.2.25	C	9	4	2	AG	O1-O3	0	1,450	0	1,450	$0	$925,683	$502,326	$493,614	$995,940	$70,257
C-8A CGO 4.2	WFS	1	DUP	3.2.26	C	3	4	2	DC	O1-O3	0	1,649	0	1,450	$0	$0	$0	$0	$0	$0
C-8A FGO 4.5	WFS	1	SF	3.2.26	C	6	4	2	AG	O4-O5	0	1,649	0	1,550	$0	$0	$0	$0	$0	$0
C-9 FGO 4.3	WFS	1	SF	3.2.27	C	4	4	2	AG	O4-O5	0	1,616	0	1,550	$0	$354,145	$280,876	$100,024	$380,900	$26,755
M-2B NCO 2.2(incl 10 M-3)	WFB	1	DUP	3.2.3	A2	2	2	1	AG	E4-E6	0	965	0	950	$0	$115,897	$77,249	$46,954	$124,203	$8,306
M-4B NCO 2.2	WFS	1	DUP	3.2.5	A2	16	2	1	AG	E4-E6	0	965	0	950	$0	$927,178	$617,996	$375,632	$993,628	$66,450

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Proposed MFH Inventory by Unit Type

Unit Type	Type Const.	No. Stories	Style	HCP Reference	Original Funding	Qty.	No. Bedrooms	No. Bathrooms	Covered Parking	Designation	GSF	NSF	Maximum GSF Allowable	Maximum NSF Allowable	HCP Cost Estimate (2001): New and Replacement	Whole House	Major M & R Repairs	Improvements & Remaining Repairs	Total for Multiple Projects	Premium for Multiple Projects
M-5B NCO 2.3(incl 4 M-7)	WFS	1	DUP	3.2.6	A2	18	2	1	AG	E4-E6	0	950	0	950	$0	$1,021,732	$667,088	$427,716	$1,094,804	$73,073
M-6B NCO 3.1(incl 4 M-7)	WFS	1	DUP	3.2.7	A2	54	3	2	AG	E4-E6	0	1,200	0	1,200	$0	$5,099,995	$3,853,310	$1,627,830	$5,481,140	$381,146
M-8B NCO 3.1	WFS	1	DUP	3.2.9	A2	24	3	2	AG	E4-E6	0	1,200	0	1,200	$0	$2,265,880	$1,700,300	$734,928	$2,435,228	$169,348
Converted																				
M-9 CGO 2.1	WFS	1	SF	3.2.10	A2	16	2	2	DG	O1-O3	0	998	0	950	$0	$1,202,499	$827,622	$463,232	$1,290,854	$88,355
M-10 CGO 2.1	WFS	1	SF	3.2.11	A2	17	2	2	AG	O1-O3	0	998	0	950	$0	$1,133,673	$857,343	$358,802	$1,216,145	$82,472
C-6 NCO 2.4	WFS	1	DUP	3.2.23	C	52	2	2	AG	E4-E6	0	990	0	950	$0	$3,863,379	$2,857,873	$1,293,188	$4,151,061	$287,682
C-6 SNCO 2.4	WFB	1	DUP	3.2.23	C	10	2	2	AG	E7-E9	0	990	0	950	$0	$787,485	$546,839	$260,940	$807,779	$20,294
M-2B NCO 2.2(incl 10 M-3)	WFB	1	DUP	3.2.3	A2	110	2	1	AG	E4-E6	0	965	0	950	$0	$6,374,348	$4,248,720	$2,582,470	$6,831,190	$456,842
M-4B NCO 2.2	WFS	1	DUP	3.2.5	A2	81	2	1	AG	E4-E6	0	965	0	950	$0	$4,693,838	$3,128,603	$1,901,637	$5,030,240	$336,402
New																				
A	WFS	1	DUP	3.3.2	NH	46	2	1	AG	E4-E6	0	950	0	950	$3,826,721	$0	$0	$0	$0	$0
B	WFS	1	DUP	3.3.3	NH	36	2	1	AG	E4-E6	0	950	0	950	$2,994,825	$0	$0	$0	$0	$0
C	WFS	1	DUP	3.3.4	NH	5	2	1	AG	E4-E6	0	1,025	0	950	$415,948	$0	$0	$0	$0	$0
D	WFS	1	DUP	3.3.5	NH	25	3	2	AG	E4-E6	0	1,200	0	1,200	$2,084,810	$0	$0	$0	$0	$0
E	WFS	1	DUP	3.3.6	NH	21	3	2	AG	E4-E6	0	1,200	0	1,200	$1,751,240	$0	$0	$0	$0	$0
F	WFS	1	DUP	3.3.7	NH	3	3	2	AG	E4-E6	0	1,275	0	1,200	$250,177	$0	$0	$0	$0	$0
G	WFS	1	SF	3.3.8	NH	4	4	2	AG	E4-E6	0	1,425	0	1,350	$347,356	$0	$0	$0	$0	$0
Total						1129									$11,671,078	$75,030,246	$48,292,869	$32,261,204	$80,554,073	$5,523,829

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

Existing MFH Inventory by Unit Type

Unit Type	Type Construction	No. Stories	Style	Year Built	Original Funding	HCP Reference	Handicap Suitable	No. Bedrooms	No. Bathrooms	Covered Parking	Designation	GSF	NSF	Qty.	Renovation Decision (Plus or Minus): Whole House Improvement	Conversion	Demolition	Replacement	Diversion	Excess	Quantity to Proposed Inventory
M-9 CGO 2.1	WFS	1	SF	1957	A2	3.2.10	Yes	3	1	DC	O1-O3	0	1146	16	0	16	0	0	0	0	16
M-10 CGO 2.1	WFS	1	SF	1957	A2	3.2.11	Yes	3	1	DC	O1-O3	0	1146	17	0	17	0	0	0	0	17
M-12 FGO 4.1	WFS	1	SF	1957	A2	3.2.13	Yes	4	2	DC	O4-O5	0	1593	3	3	0	0	0	0	0	3
M-13 SGO 4.1	WFS	1	SF	1957	A2	3.2.14	Yes	4	2	DG	O6	0	2479	1	1	0	0	0	0	0	1
M-14 GO 4.1	WFS	1	SF	1957	A2	3.2.15	Yes	4	2	DG	O7-O10	0	2714	1	1	0	0	0	0	0	1
C-1 NCO 3.2	WFS	1	SF	1962	C	3.2.16	Yes	3	2	DC	E4-E6	0	1064	6	6	0	0	0	0	0	6
C-2 NCO 3.2	WFS	1	DUP	1962	C	3.2.17	Yes	3	2	DC	E4-E6	0	1064	236	236	0	0	0	0	0	236
C-3 NCO 4.1	WFS	1	DUP	1962	C	3.2.18	Yes	4	2	AC	E4-E6	0	1227	46	46	0	0	0	0	0	46
C-3 SNCO 4.1	WFS	1	DUP	1962	C	3.2.18	Yes	4	2	AC	E7-E9	0	1227	6	6	0	0	0	0	0	6
C-3A SNCO 4.2	WFB	1	DUP	1962	C	3.2.19	Yes	4	2	DC	E7-E9	0	1450	6	6	0	0	0	0	0	6
M-1 NCO 2.1	WFS	1	DUP	1957	A2	3.2.2	No	2	1	DC	E4-E6	0	890	132	132	0	0	0	0	0	132
C-4 NCO 4.3	WFS	1	DUP	1962	C	3.2.21	Yes	4	2	DC	E4-E6	0	1227	34	34	0	0	0	0	0	34
C-5 NCO 3.3	WFS	1	DUP	1962	C	3.2.22	Yes	3	2	DC	E4-E6	0	1050	20	20	0	0	0	0	0	20
C-6 NCO 2.4	WFS	1	DUP	1962	C	3.2.23	Yes	3	2	DC	E4-E6	0	1050	62	0	62	0	0	0	0	62
C-7 CGO 3.1	WFS	1	SF	1962	C	3.2.24	Yes	3	2	DC	O1-O3	0	1302	30	30	0	0	0	0	0	30
C-7 FGO 3.1	WFS	1	SF	1962	C	3.2.24	Yes	3	2	DC	O4-O5	0	1302	29	29	0	0	0	0	0	29
C-8 CGO 4.1	WFS	1	SF	1962	C	3.2.25	Yes	4	2	no	O1-O3	0	1369	15	15	0	0	0	0	0	15

Chapter 4
Phasing Plan

CHAPTER 4 PHASING PLAN

4.1 Introduction

All community and unit improvements are organized into ten phases (A, B, C, D, E, F, G, H, and J). Several proposed PAIP projects have been included in the sequencing of the various phases.

4.2 General Information

Phase A incorporates a FY98 PAIP Whole House renovation project currently in progress. The database assumes that construction is complete. Phases B and C are proposed FY 2001 and FY 20XX PAIP Whole House renovation projects. For each Phase and within each Phase, the renovation project priorities begin with the "worst case" housing first. Phases have been arranged to accomplish the following:

- Keep the number of unit renovations below 200 and to group unit types for economy of scale.
- Provide for minimum disruptions to adjacent residents by closing off entire streets in areas of construction. Only main arterial streets will remain open for accessibility.
- Each phase represents the amount of work that could be accomplished in one year. If full funding is not available in any given year, the phase will have to be divided into subphases to match funding.

4.3 Graphic Phasing Plan

The site drawing, figure 4.1, which follows immediately, shows the location of the proposed phases.

4.4 Project Priorities within Each Phase

Priorities for individual projects within each phase have been established and are listed in Table 4.1 following the graphic phasing plan of figure 4.1.

Each project has been assigned a code that identifies

- the phase by letter;
- the type of improvement project:
  'U' for unit improvement,
  'C' for community improvement, and
- a priority order number.

For example, 'E-U-03' denotes phase E, a unit improvement project, and priority order 3.

4.5 Phasing Plan Database Reports

The Phasing Plan Database Reports that follow Table 4.1 (Project Priorities within Each Phase) are:

- Proposed MFH Inventory by phase
- MFH Whole House Summary
- MFH Whole House Summary B
- MFH Major Maintenance & Repairs Summary
- MFH Improvements and Remaining Repairs Summary
- MFH Comparative Cost Summary

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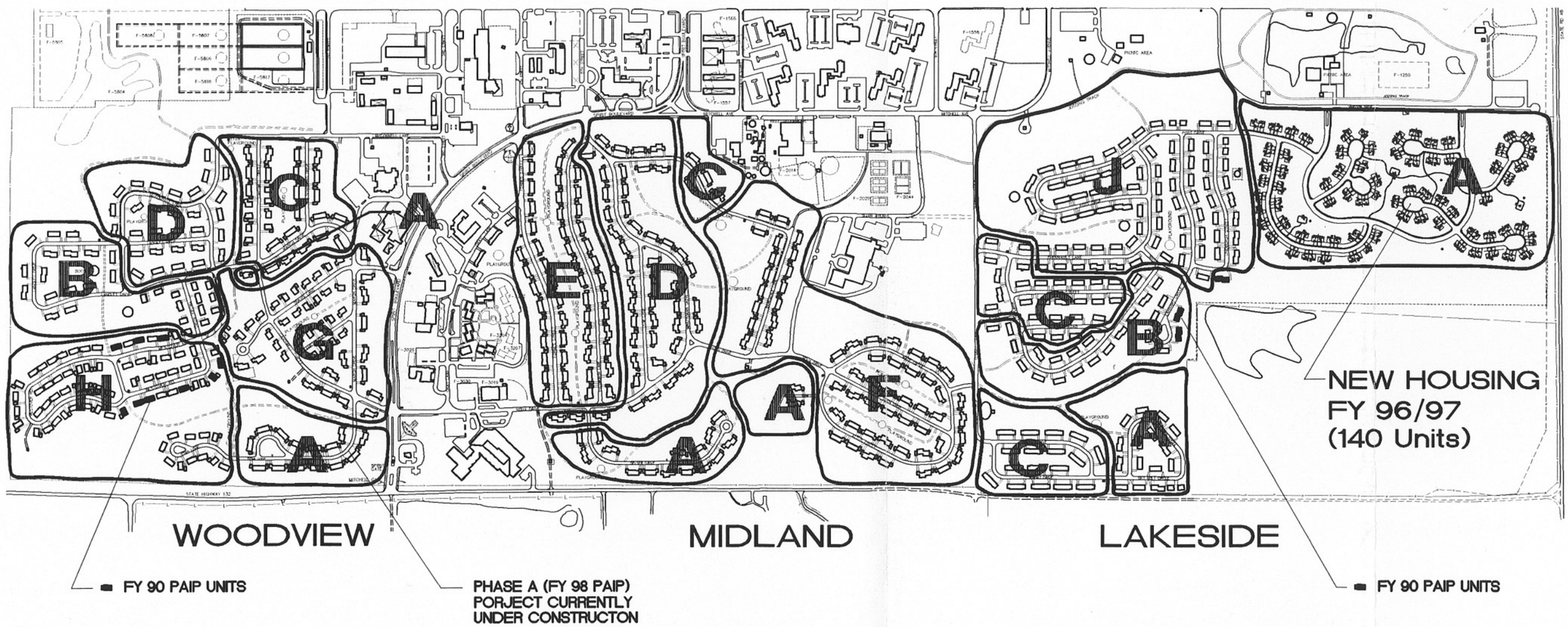

North

0 400' 800' 1200' 1600'

GRAPHIC SCALE

Phasing Plan

Whiteman AFB, Missouri

Fig. 4.1

Table 4.1 Project Priorities Within Each Phase: A-H, & J

Note: Construction costs are Whole House only and include ACF, Contingency, and SIOH.

Phase A

Unit Improvement Projects

Priority	Project Code	Description	Construction Costs
1	A-U-1	Unit Type M-5B (NCO2.3) 2-BR , Ref: 3.2.6 4 units @$56,763	$227,051
2	A-U-2	Unit Type M-6B (NCO3.1) 3-BR , Ref: 3.2.7 20 units @$94,444	$1,888,887
3	A-U-3	Unit Type M-8B (NCO3.1) 3-BR , Ref: 3.2.9 4 units @$94,412	$377,647
4	A-U-4	Unit Type M-4B (NCO2.2) 2-BR , Ref: 3.2.5 16 units @$57,949	$927,178
5	A-U-5	Unit Type M-2B (NCO2.2) 2-BR , Ref: 3.2.3 2 units @$57,949	$115,897
6	A-U-6	Unit Type M-1B (NCO2.1) 2-BR , Ref: 3.2.2 16 units @$68,083	$1,089,326
7	A-U-7	Unit Type C-2B (NCO3.2) 3-BR , Ref: 3.2.17 20 units @$85,969	$1,719,386
8	A-U-8	Unit Type C-1B (NCO3.2) 3-BR , Ref: 3.2.16 2 units @$85,969	$171,939
9	A-U-9	Unit Type C-3 (NCO4.2) 4-BR , Ref: 3.2.20 10 units @$90,458	$904,581
Subtotal		**94 Units**	**$7,421,891**

Community Improvement Projects

Priority	Project Code	Description	Construction Costs
1	A-C-1	Site Development Ref: 2.2	$77,017
2	A-C-2	Site Utilities Ref: 2.2.5	$132,280
3	A-C-3	Pavements Ref: 2.2.3	$247,329
4	A-C-4	Site Improvements Ref: 2.2	$687,019
Subtotal		**Community Improvements**	**$1,143,644**
Total		**Whole House**	**$8,547,110**

Phase B

Unit Improvement Projects

Priority	Project Code	Description	Construction Costs
1	B-U-1	Unit Type C-6 (NCO2.4) 2-BR , Ref: 3.2.23 10 units @$74,296	$742,958
2	B-U-2	Unit Type C-6 (SNCO2.4) 2-BR , Ref: 3.2.23 10 units @$78,748	$787,485
3	B-U-3	Unit Type C-5 (NCO3.3) 3-BR , Ref: 3.2.22 2 units @$93,992	$187,984
4	B-U-4	Unit Type C-2C (SNCO3.1) 3-BR , Ref: 3.2.17 36 units @$88,860	$3,198,970
5	B-U-5	Unit Type C-7 (CGO3.1) 3-BR , Ref: 3.2.24 8 units @$82,285	$658,276
6	B-U-6	Unit Type C-8D (CGO4.1) 4-BR , Ref: 3.2.25 5 units @$102,854	$514,269
7	B-U-7	Unit Type C-3D (SNCO4.1) 4-BR , Ref: 3.2.18 14 units @$82,591	$1,156,274
8	B-U-8	Unit Type C-3C (NCO4.1) 4-BR , Ref: 3.2.18 4 units @$92,643	$370,572
Subtotal		**89 Units**	**$7,616,788** 0

Community Improvement Projects

Priority	Project Code	Description	Construction Costs
1	B-C-1	Site Development Ref: 2.2	$80,148
2	B-C-2	Site Utilities Ref: 2.2.5	$137,359
3	B-C-3	Pavements Ref: 2.2.3	$325,426
4	B-C-4	Site Improvements Ref: 2.2	$507,068
Subtotal		**Community Improvements**	**$1,050,001**
Total		**Whole House**	**$8,647,880**

Whiteman AFB

Air Combat Command

HCP Date: 1998

Proposed MFH Inventory by Phase

Unit Types	Type Construction	Style	No. Stories	No. Bedrooms	NSF	Designation	HCP Reference	Qty.	Quantity by Phase A	B	C	D	E	F	G	H	J		Other	Total Costs Whole House	Major M & R
Existing																					
M-12B FGO 4.1	WFS	SF	1	4	1,593	O4-O5	3.2.13	3	0	0	2	0	0	0	1	0	0	0	0	$252,534	$190,998
M-13 SGO 4.1	WFS	SF	1	4	2,479	O6	3.2.14	1	0	0	0	0	0	0	1	0	0	0	0	$16,268	$17,118
M-14 GO 4.1	WFS	SF	1	4	2,714	O7-O10	3.2.15	1	0	0	0	0	0	0	1	0	0	0	0	$45,324	$48,453
C-1B NCO 3.2	WFS	SF	1	3	1,200	E4-E6	3.2.16	6	2	0	0	0	0	0	0	0	4	0	0	$515,816	$341,604
C-2B NCO 3.2	WFS	DUP	1	3	1,200	E4-E6	3.2.17	150	20	0	6	0	0	0	0	0	124	0	0	$12,895,392	$8,540,100
C-2C SNCO 3.1	WFS	DUP	1	3	1,350	E7-E9	3.2.17	86	0	36	40	0	0	0	0	0	10	0	0	$7,641,984	$4,863,902
C-3C NCO 4.1	WFS	DUP	1	4	1,350	E4-E6	3.2.18	22	0	4	2	0	0	0	0	0	16	0	0	$2,038,146	$1,279,718
C-3D SNCO 4.1	WFS	DUP	1	4	1,450	E7-E9	3.2.18	20	0	14	4	0	0	0	0	0	2	0	0	$1,651,820	$1,129,320
C-3A SNCO 4.2	WFS	DUP	1	4	1,460	E7-E9	3.2.19	6	0	0	0	0	0	0	0	6	0	0	0	$0	$0
M-1B NCO 2.1(incl 10 M-3)	WFS	DUP	1	2	950	E4-E6	3.2.2	142	16	0	2	29	54	41	0	0	0	0	0	$9,667,765	$4,012,494
C-3B NCO 4.2	WFS	DUP	1	4	1,350	E4-E6	3.2.20	10	10	0	0	0	0	0	0	0	0	0	0	$904,581	$562,280
C-4 NCO 4.3	WFS	DUP	1	4	1,350	E4-E6	3.2.21	34	0	0	34	0	0	0	0	0	0	0	0	$3,149,862	$1,977,746
C-5 NCO 3.3	WFS	DUP	1	3	1,200	E4-E6	3.2.22	20	0	2	0	18	0	0	0	0	0	0	0	$1,879,842	$1,081,020
C-7 CGO 3.1	WFS	SF	1	3	1,302	O1-O3	3.2.24	18	0	8	0	0	0	0	0	10	0	0	0	$1,481,121	$1,126,440
C-7 FGO 3.1	WFS	SF	1	3	1,302	O4-O5	3.2.24	41	0	0	0	0	0	0	1	40	0	0	0	$3,373,665	$2,565,780
C-8C FGO 4.2	WFS	SF	1	4	1,550	O4-O5	3.2.25	7	0	0	0	0	0	0	0	7	0	0	0	$750,394	$389,711
C-8D CGO 4.1	WFS	SF	1	4	1,450	O1-O3	3.2.25	9	0	5	0	0	0	0	0	4	0	0	0	$925,683	$502,326
C-8A CGO 4.2	WFS	DUP	1	4	1,649	O1-O3	3.2.26	3	0	0	0	0	0	0	0	3	0	0	0	$0	$0
C-8A FGO 4.5	WFS	SF	1	4	1,649	O4-O5	3.2.26	6	0	0	0	0	0	0	0	6	0	0	0	$0	$0
C-9 FGO 4.3	WFS	SF	1	4	1,616	O4-O5	3.2.27	4	0	0	0	0	0	0	0	4	0	0	0	$354,145	$280,876
M-2B NCO 2.2(incl 10 M-3)	WFB	DUP	1	2	965	E4-E6	3.2.3	2	2	0	0	0	0	0	0	0	0	0	0	$115,897	$77,250
M-4B NCO 2.2	WFS	DUP	1	2	965	E4-E6	3.2.5	16	16	0	0	0	0	0	0	0	0	0	0	$927,178	$618,000
M-5B NCO 2.3(incl 4 M-7)	WFS	DUP	1	2	950	E4-E6	3.2.6	18	4	0	8	0	0	0	6	0	0	0	0	$1,021,732	$667,080
M-6B NCO 3.1(incl 4 M-7)	WFS	DUP	1	3	1,200	E4-E6	3.2.7	54	20	0	24	0	0	0	10	0	0	0	0	$5,099,995	$3,853,332

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Proposed MFH Inventory by Phase

Unit Types	Type Construction	Style	No. Stories	No. Bedrooms	NSF	Designation	HCP Reference	Qty.	Quantity by Phase A	B	C	D	E	F	G	H	J		Other	Total Costs Whole House	Major M & R
M-8B NCO 3.1	WFS	DUP	1	3	1,200	E4-E6	3.2.9	24	4	0	10	0	0	0	10	0	0	0	0	$2,265,880	$1,700,304
Converted																					
M-9 CGO 2.1	WFS	SF	1	2	998	O1-O3	3.2.10	16	0	0	6	0	0	0	10	0	0	0	0	$1,202,499	$827,616
M-10 CGO 2.1	WFS	SF	1	2	998	O1-O3	3.2.11	17	0	0	2	0	0	0	15	0	0	0	0	$1,133,673	$857,344
C-6 NCO 2.4	WFS	DUP	1	2	990	E4-E6	3.2.23	52	0	10	0	42	0	0	0	0	0	0	0	$3,863,379	$2,857,868
C-6 SNCO 2.4	WFB	DUP	1	2	990	E7-E9	3.2.23	10	0	10	0	0	0	0	0	0	0	0	0	$787,485	$546,840
M-2B NCO 2.2(incl 10 M-3)	WFB	DUP	1	2	965	E4-E6	3.2.3	110	0	0	4	25	38	43	0	0	0	0	0	$6,374,348	$4,248,750
M-4B NCO 2.2	WFS	DUP	1	2	965	E4-E6	3.2.5	81	0	0	2	37	10	32	0	0	0	0	0	$4,693,838	$3,128,625
New																					
A	WFS	DUP	1	2	950	E4-E6	3.3.2	46	46	0	0	0	0	0	0	0	0	0	0	$0	$0
B	WFS	DUP	1	2	950	E4-E6	3.3.3	36	36	0	0	0	0	0	0	0	0	0	0	$0	$0
C	WFS	DUP	1	2	1,025	E4-E6	3.3.4	5	5	0	0	0	0	0	0	0	0	0	0	$0	$0
D	WFS	DUP	1	3	1,200	E4-E6	3.3.5	25	25	0	0	0	0	0	0	0	0	0	0	$0	$0
E	WFS	DUP	1	3	1,200	E4-E6	3.3.6	21	21	0	0	0	0	0	0	0	0	0	0	$0	$0
F	WFS	DUP	1	3	1,275	E4-E6	3.3.7	3	3	0	0	0	0	0	0	0	0	0	0	$0	$0
G	WFS	SF	1	4	1,425	E4-E6	3.3.8	4	4	0	0	0	0	0	0	0	0	0	0	$0	$0
Total Units:								1129	234	89	146	151	102	116	55	80	156	0	0	$75,030,246	$48,292,895
Total Community																				$11,921,176	$7,635,193
Whiteman AFB Family Housing Total																				$86,951,422	$55,928,088

Note: Cost Estimates do not include an Escalation Factor or a Size Factor

Whiteman AFB

Air Combat Command

HCP Date: 1998

MFH Whole House Summary

(2001 Dollars)

HCP Phase	Unit Type(s)	Units: Quantity	Units: Cost Each	Units: Sub-Total	Community:				Site Development	Site Utilities	Site Improvements	Pavements	Sub-Total	Total Whole House
A	A	46	$0	$0										
	B	36	$0	$0										
	C	5	$0	$0										
	C-1B NCO 3.2	2	$85,969	$171,939										
	C-2B NCO 3.2	20	$85,969	$1,719,386										
	C-3B NCO 4.2	10	$90,458	$904,581										
	D	25	$0	$0										
	E	21	$0	$0										
	F	3	$0	$0										
	G	4	$0	$0										
	M-1B NCO 2.1(incl 10 M-3)	16	$68,083	$1,089,326										
	M-2B NCO 2.2(incl 10 M-3)	2	$57,949	$115,897										
	M-4B NCO 2.2	16	$57,949	$927,178										
	M-5B NCO 2.3(incl 4 M-7)	4	$56,763	$227,051										
	M-6B NCO 3.1(incl 4 M-7)	20	$94,444	$1,888,887										
	M-8B NCO 3.1	4	$94,412	$377,647										
	Phase A Sub-Total	**234**		**$7,421,891**	$0	$0	$0	$0	$77,017	$132,280	$687,019	$247,329	$1,143,644	$8,547,110
B	C-2C SNCO 3.1	36	$88,860	$3,198,970										
	C-3C NCO 4.1	4	$92,643	$370,572										
	C-3D SNCO 4.1	14	$82,591	$1,156,274										
	C-5 NCO 3.3	2	$93,992	$187,984										
	C-6 NCO 2.4	10	$74,296	$742,958										
	C-6 SNCO 2.4	10	$78,748	$787,485										
	C-7 CGO 3.1	8	$82,285	$658,276										
	C-8D CGO 4.1	5	$102,854	$514,269										

Note: Cost Estimates do not include an Escalation Factor or a Size Factor
* SIOH, Contingency, & ACF are included in Category Costs

MFH Whole House Summary

(2001 Dollars)

CP Phase	Unit Type(s)	Units: Quantity	Units: Cost Each	Units: Sub-Total	Community:	Community:	Community:	Community:	Community: Site Development	Community: Site Utilities	Community: Site Improvements	Community: Pavements	Community: Sub-Total	Total Whole House
	Phase B Sub-Total	**89**		**$7,616,788**	$0	$0	$0	$0	$80,148	$137,359	$507,068	$325,426	$1,050,001	$8,647,880
C	C-2B NCO 3.2	6	$85,969	$515,816										
	C-2C SNCO 3.1	40	$88,860	$3,554,411										
	C-3C NCO 4.1	2	$92,643	$185,286										
	C-3D SNCO 4.1	4	$82,591	$330,364										
	C-4 NCO 4.3	34	$92,643	$3,149,862										
	M-10 CGO 2.1	2	$66,687	$133,373										
	M-12B FGO 4.1	2	$84,178	$168,356										
	M-1B NCO 2.1(incl 10 M-3)	2	$68,083	$136,166										
	M-2B NCO 2.2(incl 10 M-3)	4	$57,949	$231,794										
	M-4B NCO 2.2	2	$57,949	$115,897										
	M-5B NCO 2.3(incl 4 M-7)	8	$56,763	$454,103										
	M-6B NCO 3.1(incl 4 M-7)	24	$94,444	$2,266,664										
	M-8B NCO 3.1	10	$94,412	$944,117										
	M-9 CGO 2.1	6	$75,156	$450,937										
	Phase C Sub-Total	**146**		**$12,637,147**	$0	$0	$0	$0	$124,123	$212,265	$612,528	$450,582	$1,399,499	$14,005,274
D	C-5 NCO 3.3	18	$93,992	$1,691,858										
	C-6 NCO 2.4	42	$74,296	$3,120,422										
	M-1B NCO 2.1(incl 10 M-3)	29	$68,083	$1,974,403										
	M-2B NCO 2.2(incl 10 M-3)	25	$57,949	$1,448,716										
	M-4B NCO 2.2	37	$57,949	$2,144,099										
	Phase D Sub-Total	**151**		**$10,379,498**	$0	$0	$0	$0	$98,087	$153,460	$494,108	$324,958	$1,070,613	$11,424,344
E	M-1B NCO 2.1(incl 10 M-3)	54	$68,083	$3,676,474										
	M-2B NCO 2.2(incl 10 M-3)	38	$57,949	$2,202,048										
	M-4B NCO 2.2	10	$57,949	$579,486										
	Phase E Sub-Total	**102**		**$6,458,008**	$0	$0	$0	$0	$70,568	$123,903	$419,665	$265,528	$879,665	$7,321,641
F	M-1B NCO 2.1(incl 10 M-3)	41	$68,083	$2,791,397										
	M-2B NCO 2.2(incl 10 M-3)	43	$57,949	$2,491,791										
	M-4B NCO 2.2	32	$57,949	$1,854,356										
	Phase F Sub-Total	**116**		**$7,137,544**	$0	$0	$0	$0	$70,564	$265,928	$810,287	$408,273	$1,555,052	$8,674,877
G	C-7 FGO 3.1	1	$82,285	$82,285										
	M-10 CGO 2.1	15	$66,687	$1,000,300										

Note: Cost Estimates do not include an Escalation Factor or a Size Factor
* SIOH, Contingency, & ACF are included in Category Costs

MFH Whole House Summary

(2001 Dollars)

CP Phase	Unit Type(s)	Units: Quantity	Units: Cost Each	Units: Sub-Total					Community: Site Development	Community: Site Utilities	Community: Site Improvements	Community: Pavements	Community: Sub-Total	Total Whole House
G	M-12B FGO 4.1	1	$84,178	$84,178										
	M-13 SGO 4.1	1	$16,268	$16,268										
	M-14 GO 4.1	1	$45,324	$45,324										
	M-5B NCO 2.3(incl 4 M-7)	6	$56,763	$340,577										
	M-6B NCO 3.1(incl 4 M-7)	10	$94,444	$944,443										
	M-8B NCO 3.1	10	$94,412	$944,117										
	M-9 CGO 2.1	10	$75,156	$751,562										
	Phase G Sub-Total	**55**		**$4,209,054**	$0	$0	$0	$0	$84,813	$122,615	$375,062	$312,798	$895,288	$5,093,893
H	C-3A SNCO 4.2	6	$0	$0										
	C-7 CGO 3.1	10	$82,285	$822,845										
	C-7 FGO 3.1	40	$82,285	$3,291,381										
	C-8A CGO 4.2	3	$0	$0										
	C-8A FGO 4.5	6	$0	$0										
	C-8C FGO 4.2	7	$107,199	$750,394										
	C-8D CGO 4.1	4	$102,854	$411,415										
	C-9 FGO 4.3	4	$88,536	$354,145										
	Phase H Sub-Total	**80**		**$5,630,179**	$0	$0	$0	$0	$45,780	$124,651	$508,006	$194,648	$873,085	$6,489,287
J	C-1B NCO 3.2	4	$85,969	$343,877										
	C-2B NCO 3.2	124	$85,969	$10,660,191										
	C-2C SNCO 3.1	10	$88,860	$888,603										
	C-3C NCO 4.1	16	$92,643	$1,482,288										
	C-3D SNCO 4.1	2	$82,591	$165,182										
	Phase J Sub-Total	**156**		**$13,540,141**	$0	$0	$0	$0	$128,787	$225,329	$884,529	$517,042	$1,755,688	$15,262,215
Total All Phases :		**1129**		**$75,030,250**	$0	$0	$0	$0	$779,888	$1,497,790	$5,298,273	$3,046,584	$10,622,535	$85,652,785

Note: Cost Estimates do not include an Escalation Factor or a Size Factor
* SIOH, Contingency, & ACF are included in Category Costs

MFH Whole House Summary B

(2001 Dollars)

HCP Phase	Unit Type(s)	Units Quantity	Cost Each	Sub-Total	House Site Work	Interior Electrical	Interior Mechanical	Interior Bathroom No. 1	Interior Bathroom No. 2	Interior Bathroom No. 3	Interior Kitchen	Laundry Room	Interior General	Roof	Special Assessments	Structural Foundation & Exterior Walls	Structural Other Building Elements	Unit Sub-Total	Unit Qty.	Total All O & M Unit Repairs
A	A	46	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	46	$0
	B	36	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	36	$0
	C	5	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	5	$0
	C-1B NCO 3.2	2	$85,969	$171,939	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,754	$101	$4,735	$1,776	$1,194	$56,791	2	$113,582
	C-2B NCO 3.2	20	$85,969	$1,719,386	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,754	$101	$4,735	$1,776	$1,194	$56,791	20	$1,135,823
	C-3B NCO 4.2	10	$90,458	$904,581	$2,984	$12,048	$3,481	$2,942	$3,334	$0	$12,674	$0	$10,721	$101	$4,735	$1,875	$1,194	$56,089	10	$560,890
	D	25	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	25	$0
	E	21	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	21	$0
	F	3	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	3	$0
	G	4	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	4	$0
	M-1B NCO 2.1(incl 10 M-3)	16	$68,083	$1,089,326	$0	$2,390	$3,802	$3,856	$0	$0	$0	$1,034	$6,863	$0	$5,597	$671	$3,975	$28,186	16	$450,983
	M-2B NCO 2.2(incl 10 M-3)	2	$57,949	$115,897	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	2	$77,054
	M-4B NCO 2.2	16	$57,949	$927,178	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	16	$616,431
	M-5B NCO 2.3(incl 4 M-7)	4	$56,763	$227,051	$0	$1,064	$3,094	$3,863	$0	$0	$10,365	$738	$8,072	$19	$5,597	$111	$4,047	$36,967	4	$147,870
	M-6B NCO 3.1(incl 4 M-7)	20	$94,444	$1,888,887	$0	$9,230	$6,346	$4,340	$4,872	$0	$13,419	$996	$17,902	$10	$5,597	$4,864	$3,605	$71,180	20	$1,423,606
	M-8B NCO 3.1	4	$94,412	$377,647	$0	$9,230	$6,346	$4,340	$4,872	$0	$13,419	$996	$17,902	$10	$5,597	$4,864	$3,094	$70,669	4	$282,676
	Phase A Sub-Total	**234**		**$7,421,891**	**$11,365**	**$62,147**	**$34,325**	**$32,711**	**$17,754**	**$0**	**$100,464**	**$6,603**	**$97,025**	**$342**	**$47,784**	**$16,856**	**$26,362**	**$453,728**	**234**	**$4,808,914**
B	C-2C SNCO 3.1	36	$88,860	$3,198,970	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,378	$101	$4,735	$1,776	$1,194	$56,415	36	$2,030,953
	C-3C NCO 4.1	4	$92,643	$370,572	$2,991	$11,577	$3,481	$2,925	$3,310	$0	$12,678	$0	$10,734	$101	$4,735	$3,714	$1,779	$58,024	4	$232,097
	C-3D SNCO 4.1	14	$82,591	$1,156,274	$2,267	$11,712	$1,916	$2,942	$2,328	$0	$15,807	$0	$11,179	$101	$4,735	$2,145	$1,194	$56,325	14	$788,544
	C-5 NCO 3.3	2	$93,992	$187,984	$2,986	$11,383	$3,481	$2,952	$3,316	$0	$11,568	$0	$10,252	$101	$4,735	$1,949	$1,194	$53,917	2	$107,834
	C-6 NCO 2.4	10	$74,296	$742,958	$3,054	$11,089	$2,059	$2,952	$3,316	$0	$13,457	$0	$10,642	$67	$4,735	$2,258	$1,194	$54,824	10	$548,237
	C-6 SNCO 2.4	10	$78,748	$787,485	$3,054	$11,089	$2,007	$2,952	$3,316	$0	$13,457	$0	$10,420	$67	$4,735	$2,258	$1,194	$54,549	10	$545,491
	C-7 CGO 3.1	8	$82,285	$658,276	$4,155	$11,635	$2,059	$2,971	$3,269	$0	$11,705	$0	$11,004	$73	$4,735	$9,626	$1,194	$62,423	8	$499,387
	C-8D CGO 4.1	5	$102,854	$514,269	$0	$12,449	$3,583	$2,990	$3,316	$0	$14,436	$0	$11,389	$0	$4,735	$2,778	$0	$55,675	5	$278,376

Note: Cost Estimates do not include an Escalation Factor or a Size Factor
* SIOH, Contingency, & ACF are included in Category Costs

MFH Whole House Summary B

(2001 Dollars)

CP Phase	Unit Type(s)	Units Quantity	Cost Each	Sub-Total	House Site Work	Interior Electrical	Interior Mechanical	Interior Bathroom No. 1	Interior Bathroom No. 2	Interior Bathroom No. 3	Interior Kitchen	Laundry Room	Interior General	Roof	Special Assessments	Structural Foundation & Exterior Walls	Structural Other Building Elements	Unit Sub-Total	Unit Qty.	Total All O & M Unit Repairs
	Phase B Sub-Total	**89**		**$7,616,788**	**$22,697**	**$92,290**	**$20,501**	**$23,570**	**$24,508**	**$0**	**$108,654**	**$0**	**$85,997**	**$611**	**$37,878**	**$26,505**	**$8,944**	**$452,153**	**89**	**$5,030,920**
C	C-2B NCO 3.2	6	$85,969	$515,816	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,754	$101	$4,735	$1,776	$1,194	$56,791	6	$340,747
	C-2C SNCO 3.1	40	$88,860	$3,554,411	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,378	$101	$4,735	$1,776	$1,194	$56,415	40	$2,256,615
	C-3C NCO 4.1	2	$92,643	$185,286	$2,991	$11,577	$3,481	$2,925	$3,310	$0	$12,678	$0	$10,734	$101	$4,735	$3,714	$1,779	$58,024	2	$116,049
	C-3D SNCO 4.1	4	$82,591	$330,364	$2,267	$11,712	$1,916	$2,942	$2,328	$0	$15,807	$0	$11,179	$101	$4,735	$2,145	$1,194	$56,325	4	$225,298
	C-4 NCO 4.3	34	$92,643	$3,149,862	$2,991	$11,577	$3,481	$2,925	$3,310	$0	$12,678	$0	$10,734	$101	$4,735	$3,714	$1,779	$58,024	34	$1,972,825
	M-10 CGO 2.1	2	$66,687	$133,373	$0	$3,140	$3,506	$2,629	$3,048	$0	$13,442	$1,463	$10,536	$109	$5,597	$3,899	$2,940	$50,306	2	$100,612
	M-12B FGO 4.1	2	$84,178	$168,356	$0	$11,927	$3,666	$3,699	$3,680	$0	$11,662	$943	$13,465	$0	$5,597	$4,733	$4,138	$63,508	2	$127,016
	M-1B NCO 2.1(incl 10 M-3)	2	$68,083	$136,166	$0	$2,390	$3,802	$3,856	$0	$0	$0	$1,034	$6,863	$0	$5,597	$671	$3,975	$28,186	2	$56,373
	M-2B NCO 2.2(incl 10 M-3)	4	$57,949	$231,794	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	4	$154,108
	M-4B NCO 2.2	2	$57,949	$115,897	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	2	$77,054
	M-5B NCO 2.3(incl 4 M-7)	8	$56,763	$454,103	$0	$1,064	$3,094	$3,863	$0	$0	$10,365	$738	$8,072	$19	$5,597	$111	$4,047	$36,967	8	$295,740
	M-6B NCO 3.1(incl 4 M-7)	24	$94,444	$2,266,664	$0	$9,230	$6,346	$4,340	$4,872	$0	$13,419	$996	$17,902	$10	$5,597	$4,864	$3,605	$71,180	24	$1,708,327
	M-8B NCO 3.1	10	$94,412	$944,117	$0	$9,230	$6,346	$4,340	$4,872	$0	$13,419	$996	$17,902	$10	$5,597	$4,864	$3,094	$70,669	10	$706,689
	M-9 CGO 2.1	6	$75,156	$450,937	$0	$4,916	$3,636	$2,785	$3,749	$0	$13,055	$1,412	$9,513	$69	$5,597	$4,130	$2,738	$51,598	6	$309,588
	Phase C Sub-Total	**146**		**$12,637,147**	**$16,628**	**$104,947**	**$50,530**	**$47,675**	**$33,844**	**$0**	**$167,113**	**$10,420**	**$152,088**	**$722**	**$74,043**	**$37,317**	**$39,734**	**$735,049**	**146**	**$8,447,040**
D	C-5 NCO 3.3	18	$93,992	$1,691,858	$2,986	$11,383	$3,481	$2,952	$3,316	$0	$11,568	$0	$10,252	$101	$4,735	$1,949	$1,194	$53,917	18	$970,506
	C-6 NCO 2.4	42	$74,296	$3,120,422	$3,054	$11,089	$2,059	$2,952	$3,316	$0	$13,457	$0	$10,642	$67	$4,735	$2,258	$1,194	$54,824	42	$2,302,597
	M-1B NCO 2.1(incl 10 M-3)	29	$68,083	$1,974,403	$0	$2,390	$3,802	$3,856	$0	$0	$0	$1,034	$6,863	$0	$5,597	$671	$3,975	$28,186	29	$817,406
	M-2B NCO 2.2(incl 10 M-3)	25	$57,949	$1,448,716	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	25	$963,173
	M-4B NCO 2.2	37	$57,949	$2,144,099	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	37	$1,425,496
	Phase D Sub-Total	**151**		**$10,379,498**	**$6,041**	**$30,335**	**$16,767**	**$17,359**	**$6,631**	**$0**	**$44,518**	**$3,872**	**$41,813**	**$168**	**$26,259**	**$5,798**	**$14,422**	**$213,981**	**151**	**$6,479,179**
E	M-1B NCO 2.1(incl 10 M-3)	54	$68,083	$3,676,474	$0	$2,390	$3,802	$3,856	$0	$0	$0	$1,034	$6,863	$0	$5,597	$671	$3,975	$28,186	54	$1,522,067
	M-2B NCO 2.2(incl 10 M-3)	38	$57,949	$2,202,048	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	38	$1,464,023
	M-4B NCO 2.2	10	$57,949	$579,486	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	10	$385,269
	Phase E Sub-Total	**102**		**$6,458,008**	**$0**	**$7,863**	**$11,227**	**$11,455**	**$0**	**$0**	**$19,493**	**$3,872**	**$20,919**	**$0**	**$16,790**	**$1,592**	**$12,033**	**$105,240**	**102**	**$3,371,360**
F	M-1B NCO 2.1(incl 10 M-3)	41	$68,083	$2,791,397	$0	$2,390	$3,802	$3,856	$0	$0	$0	$1,034	$6,863	$0	$5,597	$671	$3,975	$28,186	41	$1,155,643
	M-2B NCO 2.2(incl 10 M-3)	43	$57,949	$2,491,791	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	43	$1,656,658
	M-4B NCO 2.2	32	$57,949	$1,854,356	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	32	$1,232,862
	Phase F Sub-Total	**116**		**$7,137,544**	**$0**	**$7,863**	**$11,227**	**$11,455**	**$0**	**$0**	**$19,493**	**$3,872**	**$20,919**	**$0**	**$16,790**	**$1,592**	**$12,033**	**$105,240**	**116**	**$4,045,163**
G	C-7 FGO 3.1	1	$82,285	$82,285	$4,155	$11,635	$2,059	$2,971	$3,269	$0	$11,705	$0	$11,004	$73	$4,735	$9,626	$1,194	$62,423	1	$62,423
	M-10 CGO 2.1	15	$66,687	$1,000,300	$0	$3,140	$3,506	$2,629	$3,048	$0	$13,442	$1,463	$10,536	$109	$5,597	$3,899	$2,940	$50,306	15	$754,593

Note: Cost Estimates do not include an Escalation Factor or a Size Factor
* SIOH, Contingency, & ACF are included in Category Costs

MFH Whole House Summary B

(2001 Dollars)

CP Phase	Unit Type(s)	Units Quantity	Cost Each	Sub-Total	House Site Work	Interior Electrical	Interior Mechanical	Interior Bathroom No. 1	Interior Bathroom No. 2	Interior Bathroom No. 3	Interior Kitchen	Laundry Room	Interior General	Roof	Special Assessments	Structural Foundation & Exterior Walls	Structural Other Building Elements	Unit Sub-Total	Unit Qty.	Total All O & M Unit Repairs
G	M-12B FGO 4.1	1	$84,178	$84,178	$0	$11,927	$3,666	$3,699	$3,680	$0	$11,662	$943	$13,465	$0	$5,597	$4,733	$4,138	$63,508	1	$63,508
	M-13 SGO 4.1	1	$16,268	$16,268	$0	$256	$2,116	$3,241	$3,530	$0	$697	$0	$1,640	$0	$5,597	$0	$0	$17,076	1	$17,076
	M-14 GO 4.1	1	$45,324	$45,324	$0	$8,041	$6,221	$985	$1,151	$0	$2,661	$892	$15,305	$5,983	$5,597	$12	$1,486	$48,333	1	$48,333
	M-5B NCO 2.3(incl 4 M-7)	6	$56,763	$340,577	$0	$1,064	$3,094	$3,863	$0	$0	$10,365	$738	$8,072	$19	$5,597	$111	$4,047	$36,967	6	$221,805
	M-6B NCO 3.1(incl 4 M-7)	10	$94,444	$944,443	$0	$9,230	$6,346	$4,340	$4,872	$0	$13,419	$996	$17,902	$10	$5,597	$4,864	$3,605	$71,180	10	$711,803
	M-8B NCO 3.1	10	$94,412	$944,117	$0	$9,230	$6,346	$4,340	$4,872	$0	$13,419	$996	$17,902	$10	$5,597	$4,864	$3,094	$70,669	10	$706,689
	M-9 CGO 2.1	10	$75,156	$751,562	$0	$4,916	$3,636	$2,785	$3,749	$0	$13,055	$1,412	$9,513	$69	$5,597	$4,130	$2,738	$51,598	10	$515,979
	Phase G Sub-Total	**55**		**$4,209,054**	**$4,155**	**$59,438**	**$36,988**	**$28,852**	**$28,170**	**$0**	**$90,424**	**$7,440**	**$105,340**	**$6,273**	**$49,508**	**$32,238**	**$23,241**	**$472,061**	**55**	**$3,102,210**
H	C-3A SNCO 4.2	6	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	6	$0
	C-7 CGO 3.1	10	$82,285	$822,845	$4,155	$11,635	$2,059	$2,971	$3,269	$0	$11,705	$0	$11,004	$73	$4,735	$9,626	$1,194	$62,423	10	$624,234
	C-7 FGO 3.1	40	$82,285	$3,291,381	$4,155	$11,635	$2,059	$2,971	$3,269	$0	$11,705	$0	$11,004	$73	$4,735	$9,626	$1,194	$62,423	40	$2,496,936
	C-8A CGO 4.2	3	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	3	$0
	C-8A FGO 4.5	6	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	6	$0
	C-8C FGO 4.2	7	$107,199	$750,394	$0	$12,556	$3,583	$2,990	$3,316	$0	$14,436	$0	$11,141	$0	$4,735	$2,778	$0	$55,534	7	$388,738
	C-8D CGO 4.1	4	$102,854	$411,415	$0	$12,449	$3,583	$2,990	$3,316	$0	$14,436	$0	$11,389	$0	$4,735	$2,778	$0	$55,675	4	$222,701
	C-9 FGO 4.3	4	$88,536	$354,145	$0	$12,845	$4,429	$2,854	$3,472	$0	$13,504	$0	$17,878	$0	$4,735	$6,750	$3,577	$70,045	4	$280,180
	Phase H Sub-Total	**80**		**$5,630,179**	**$8,309**	**$61,120**	**$15,713**	**$14,775**	**$16,641**	**$0**	**$65,785**	**$0**	**$62,416**	**$145**	**$23,674**	**$31,560**	**$5,965**	**$306,101**	**80**	**$4,012,788**
J	C-1B NCO 3.2	4	$85,969	$343,877	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,754	$101	$4,735	$1,776	$1,194	$56,791	4	$227,165
	C-2B NCO 3.2	124	$85,969	$10,660,191	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,754	$101	$4,735	$1,776	$1,194	$56,791	124	$7,042,104
	C-2C SNCO 3.1	10	$88,860	$888,603	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,378	$101	$4,735	$1,776	$1,194	$56,415	10	$564,154
	C-3C NCO 4.1	16	$92,643	$1,482,288	$2,991	$11,577	$3,481	$2,925	$3,310	$0	$12,678	$0	$10,734	$101	$4,735	$3,714	$1,779	$58,024	16	$928,388
	C-3D SNCO 4.1	2	$82,591	$165,182	$2,267	$11,712	$1,916	$2,942	$2,328	$0	$15,807	$0	$11,179	$101	$4,735	$2,145	$1,194	$56,325	2	$112,649
	Phase J Sub-Total	**156**		**$13,540,141**	**$17,828**	**$57,358**	**$11,145**	**$14,525**	**$12,652**	**$0**	**$75,126**	**$0**	**$53,799**	**$504**	**$23,674**	**$11,187**	**$6,555**	**$284,347**	**156**	**$8,874,460**
Total All Phases :		**1129**		**$75,030,250**	**$87,024**	**$483,361**	**$208,422**	**$202,376**	**$140,201**	**$0**	**$691,072**	**$36,080**	**$640,315**	**$8,766**	**$316,398**	**$164,644**	**$149,289**	**$3,127,900**	**1129**	**$48,172,033**

Note: Cost Estimates do not include an Escalation Factor or a Size Factor
* SIOH, Contingency, & ACF are included in Category Costs

Whiteman AFB

Air Combat Command

HCP Date: 1998

MFH Major M & R Summary

(2001 Dollars)

HCP Phase	Unit Type	House Site Work	Interior Electrical	Interior Mechanical	Interior Bathroom No. 1	Interior Bathroom No. 2	Interior Bathroom No. 3	Interior Kitchen	Laundry Room	Interior General	Roof	Special Assessments	Structural Foundation & Exterior Walls	Structural Other Building Elements	**Unit Sub-Total**	**Unit Qty.**	**Total All Unit Repairs**	**Total Community Repairs**	**Total Major M & R**
A																			
	A	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	46	$0	756806.702610	
	B	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	36	$0	0	
	C	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	5	$0	0	
	C-1B NCO 3.2	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,754	$101	$4,735	$1,776	$1,194	$56,791	2	$113,582	0	
	C-2B NCO 3.2	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,754	$101	$4,735	$1,776	$1,194	$56,791	20	$1,135,823	0	
	C-3B NCO 4.2	$2,984	$12,048	$3,481	$2,942	$3,334	$0	$12,674	$0	$10,721	$101	$4,735	$1,875	$1,194	$56,089	10	$560,890	0	
	D	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	25	$0	0	
	E	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	21	$0	0	
	F	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	3	$0	0	
	G	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	4	$0	0	
	M-1B NCO 2.1(incl 10 M-3)	$0	$2,390	$3,802	$3,856	$0	$0	$0	$1,034	$6,863	$0	$5,597	$671	$3,975	$28,186	16	$450,983	0	
	M-2B NCO 2.2(incl 10 M-3)	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	2	$77,054	0	
	M-4B NCO 2.2	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	16	$616,431	0	
	M-5B NCO 2.3(incl 4 M-7)	$0	$1,064	$3,094	$3,863	$0	$0	$10,365	$738	$8,072	$19	$5,597	$111	$4,047	$36,967	4	$147,870	0	
	M-6B NCO 3.1(incl 4 M-7)	$0	$9,230	$6,346	$4,340	$4,872	$0	$13,419	$996	$17,902	$10	$5,597	$4,864	$3,605	$71,180	20	$1,423,606	0	
	M-8B NCO 3.1	$0	$9,230	$6,346	$4,340	$4,872	$0	$13,419	$996	$17,902	$10	$5,597	$4,864	$3,094	$70,669	4	$282,676	0	
	Phase A Sub-Total	**$11,365**	**$62,147**	**$34,325**	**$32,711**	**$17,754**	**$0**	**$100,464**	**$6,603**	**$97,025**	**$342**	**$47,784**	**$16,856**	**$26,362**	**$453,728**	**234**	**$4,808,914**	**$756,807**	**$5,565,721**
B																			
	C-2C SNCO 3.1	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,378	$101	$4,735	$1,776	$1,194	$56,415	36	$2,030,953	629843.912712	
	C-3C NCO 4.1	$2,991	$11,577	$3,481	$2,925	$3,310	$0	$12,678	$0	$10,734	$101	$4,735	$3,714	$1,779	$58,024	4	$232,097	0	
	C-3D SNCO 4.1	$2,267	$11,712	$1,916	$2,942	$2,328	$0	$15,807	$0	$11,179	$101	$4,735	$2,145	$1,194	$56,325	14	$788,544	0	
	C-5 NCO 3.3	$2,986	$11,383	$3,481	$2,952	$3,316	$0	$11,568	$0	$10,252	$101	$4,735	$1,949	$1,194	$53,917	2	$107,834	0	
	C-6 NCO 2.4	$3,054	$11,089	$2,059	$2,952	$3,316	$0	$13,457	$0	$10,642	$67	$4,735	$2,258	$1,194	$54,824	10	$548,237	0	
	C-6 SNCO 2.4	$3,054	$11,089	$2,007	$2,952	$3,316	$0	$13,457	$0	$10,420	$67	$4,735	$2,258	$1,194	$54,549	10	$545,491	0	

* SIOH, Contingency, & ACF are included in Category Costs

MFH Major M & R Summary

(2001 Dollars)

HCP Phase	Unit Type	House Site Work	Interior Electrical	Interior Mechanical	Interior Bathroom No. 1	Interior Bathroom No. 2	Interior Bathroom No. 3	Interior Kitchen	Laundry Room	Interior General	Roof	Special Assessments	Structural Foundation & Exterior Walls	Structural Other Building Elements	Unit Sub-Total	Unit Qty.	Total All Unit Repairs	Total Community Repairs	Total Major M & R
	C-7 CGO 3.1	$4,155	$11,635	$2,059	$2,971	$3,269	$0	$11,705	$0	$11,004	$73	$4,735	$9,626	$1,194	$62,423	8	$499,387	0	
	C-8D CGO 4.1	$0	$12,449	$3,583	$2,990	$3,316	$0	$14,436	$0	$11,389	$0	$4,735	$2,778	$0	$55,675	5	$278,376	0	
	Phase B Sub-Total	**$22,697**	**$92,290**	**$20,501**	**$23,570**	**$24,508**	**$0**	**$108,654**	**$0**	**$85,997**	**$611**	**$37,878**	**$26,505**	**$8,944**	**$452,153**	**89**	**$5,030,920**	**$629,844**	**$5,660,764**
C																			
	C-2B NCO 3.2	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,754	$101	$4,735	$1,776	$1,194	$56,791	6	$340,747	867269.314706	
	C-2C SNCO 3.1	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,378	$101	$4,735	$1,776	$1,194	$56,415	40	$2,256,615	0	
	C-3C NCO 4.1	$2,991	$11,577	$3,481	$2,925	$3,310	$0	$12,678	$0	$10,734	$101	$4,735	$3,714	$1,779	$58,024	2	$116,049	0	
	C-3D SNCO 4.1	$2,267	$11,712	$1,916	$2,942	$2,328	$0	$15,807	$0	$11,179	$101	$4,735	$2,145	$1,194	$56,325	4	$225,298	0	
	C-4 NCO 4.3	$2,991	$11,577	$3,481	$2,925	$3,310	$0	$12,678	$0	$10,734	$101	$4,735	$3,714	$1,779	$58,024	34	$1,972,825	0	
	M-10 CGO 2.1	$0	$3,140	$3,506	$2,629	$3,048	$0	$13,442	$1,463	$10,536	$109	$5,597	$3,899	$2,940	$50,306	2	$100,612	0	
	M-12B FGO 4.1	$0	$11,927	$3,666	$3,699	$3,680	$0	$11,662	$943	$13,465	$0	$5,597	$4,733	$4,138	$63,508	2	$127,016	0	
	M-1B NCO 2.1(incl 10 M-3)	$0	$2,390	$3,802	$3,856	$0	$0	$0	$1,034	$6,863	$0	$5,597	$671	$3,975	$28,186	2	$56,373	0	
	M-2B NCO 2.2(incl 10 M-3)	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	4	$154,108	0	
	M-4B NCO 2.2	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	2	$77,054	0	
	M-5B NCO 2.3(incl 4 M-7)	$0	$1,064	$3,094	$3,863	$0	$0	$10,365	$738	$8,072	$19	$5,597	$111	$4,047	$36,967	8	$295,740	0	
	M-6B NCO 3.1(incl 4 M-7)	$0	$9,230	$6,346	$4,340	$4,872	$0	$13,419	$996	$17,902	$10	$5,597	$4,864	$3,605	$71,180	24	$1,708,327	0	
	M-8B NCO 3.1	$0	$9,230	$6,346	$4,340	$4,872	$0	$13,419	$996	$17,902	$10	$5,597	$4,864	$3,094	$70,669	10	$706,689	0	
	M-9 CGO 2.1	$0	$4,916	$3,636	$2,785	$3,749	$0	$13,055	$1,412	$9,513	$69	$5,597	$4,130	$2,738	$51,598	6	$309,588	0	
	Phase C Sub-Total	**$16,628**	**$104,947**	**$50,530**	**$47,675**	**$33,844**	**$0**	**$167,113**	**$10,420**	**$152,088**	**$722**	**$74,043**	**$37,317**	**$39,734**	**$735,049**	**146**	**$8,447,040**	**$867,269**	**$9,314,309**
D																			
	C-5 NCO 3.3	$2,986	$11,383	$3,481	$2,952	$3,316	$0	$11,568	$0	$10,252	$101	$4,735	$1,949	$1,194	$53,917	18	$970,506	714196.610963	
	C-6 NCO 2.4	$3,054	$11,089	$2,059	$2,952	$3,316	$0	$13,457	$0	$10,642	$67	$4,735	$2,258	$1,194	$54,824	42	$2,302,597	0	
	M-1B NCO 2.1(incl 10 M-3)	$0	$2,390	$3,802	$3,856	$0	$0	$0	$1,034	$6,863	$0	$5,597	$671	$3,975	$28,186	29	$817,406	0	
	M-2B NCO 2.2(incl 10 M-3)	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	25	$963,173	0	
	M-4B NCO 2.2	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	37	$1,425,496	0	
	Phase D Sub-Total	**$6,041**	**$30,335**	**$16,767**	**$17,359**	**$6,631**	**$0**	**$44,518**	**$3,872**	**$41,813**	**$168**	**$26,259**	**$5,798**	**$14,422**	**$213,981**	**151**	**$6,479,179**	**$714,197**	**$7,193,375**
E																			
	M-1B NCO 2.1(incl 10 M-3)	$0	$2,390	$3,802	$3,856	$0	$0	$0	$1,034	$6,863	$0	$5,597	$671	$3,975	$28,186	54	$1,522,067	596983.207880	
	M-2B NCO 2.2(incl 10 M-3)	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	38	$1,464,023	0	
	M-4B NCO 2.2	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	10	$385,269	0	
	Phase E Sub-Total	**$0**	**$7,863**	**$11,227**	**$11,455**	**$0**	**$0**	**$19,493**	**$3,872**	**$20,919**	**$0**	**$16,790**	**$1,592**	**$12,033**	**$105,240**	**102**	**$3,371,360**	**$596,983**	**$3,968,343**
F																			

* SIOH, Contingency, & ACF are included in Category Costs

MFH Major M & R Summary

(2001 Dollars)

HCP Phase	Unit Type	House Site Work	Interior Electrical	Interior Mechanical	Interior Bathroom No. 1	Interior Bathroom No. 2	Interior Bathroom No. 3	Interior Kitchen	Laundry Room	Interior General	Roof	Special Assessments	Structural Foundation & Exterior Walls	Structural Other Building Elements	Unit Sub-Total	Unit Qty.	Total All Unit Repairs	Total Community Repairs	Total Major M & R
	M-1B NCO 2.1(incl 10 M-3)	$0	$2,390	$3,802	$3,856	$0	$0	$0	$1,034	$6,863	$0	$5,597	$671	$3,975	$28,186	41	$1,155,643	1045571.46129	
	M-2B NCO 2.2(incl 10 M-3)	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	43	$1,656,658	0	
	M-4B NCO 2.2	$0	$2,737	$3,712	$3,800	$0	$0	$9,747	$1,419	$7,028	$0	$5,597	$460	$4,029	$38,527	32	$1,232,862	0	
	Phase F Sub-Total	**$0**	**$7,863**	**$11,227**	**$11,455**	**$0**	**$0**	**$19,493**	**$3,872**	**$20,919**	**$0**	**$16,790**	**$1,592**	**$12,033**	**$105,240**	**116**	**$4,045,163**	**$1,045,571**	**$5,090,734**
G																			
	C-7 FGO 3.1	$4,155	$11,635	$2,059	$2,971	$3,269	$0	$11,705	$0	$11,004	$73	$4,735	$9,626	$1,194	$62,423	1	$62,423	524059.555538	
	M-10 CGO 2.1	$0	$3,140	$3,506	$2,629	$3,048	$0	$13,442	$1,463	$10,536	$109	$5,597	$3,899	$2,940	$50,306	15	$754,593	0	
	M-12B FGO 4.1	$0	$11,927	$3,666	$3,699	$3,680	$0	$11,662	$943	$13,465	$0	$5,597	$4,733	$4,138	$63,508	1	$63,508	0	
	M-13 SGO 4.1	$0	$256	$2,116	$3,241	$3,530	$0	$697	$0	$1,640	$0	$5,597	$0	$0	$17,076	1	$17,076	0	
	M-14 GO 4.1	$0	$8,041	$6,221	$985	$1,151	$0	$2,661	$892	$15,305	$5,983	$5,597	$12	$1,486	$48,333	1	$48,333	0	
	M-5B NCO 2.3(incl 4 M-7)	$0	$1,064	$3,094	$3,863	$0	$0	$10,365	$738	$8,072	$19	$5,597	$111	$4,047	$36,967	6	$221,805	0	
	M-6B NCO 3.1(incl 4 M-7)	$0	$9,230	$6,346	$4,340	$4,872	$0	$13,419	$996	$17,902	$10	$5,597	$4,864	$3,605	$71,180	10	$711,803	0	
	M-8B NCO 3.1	$0	$9,230	$6,346	$4,340	$4,872	$0	$13,419	$996	$17,902	$10	$5,597	$4,864	$3,094	$70,669	10	$706,689	0	
	M-9 CGO 2.1	$0	$4,916	$3,636	$2,785	$3,749	$0	$13,055	$1,412	$9,513	$69	$5,597	$4,130	$2,738	$51,598	10	$515,979	0	
	Phase G Sub-Total	**$4,155**	**$59,438**	**$36,988**	**$28,852**	**$28,170**	**$0**	**$90,424**	**$7,440**	**$105,340**	**$6,273**	**$49,508**	**$32,238**	**$23,241**	**$472,061**	**55**	**$3,102,210**	**$524,060**	**$3,626,270**
H																			
	C-3A SNCO 4.2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	6	$0	601572.066541	
	C-7 CGO 3.1	$4,155	$11,635	$2,059	$2,971	$3,269	$0	$11,705	$0	$11,004	$73	$4,735	$9,626	$1,194	$62,423	10	$624,234	0	
	C-7 FGO 3.1	$4,155	$11,635	$2,059	$2,971	$3,269	$0	$11,705	$0	$11,004	$73	$4,735	$9,626	$1,194	$62,423	40	$2,496,936	0	
	C-8A CGO 4.2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	3	$0	0	
	C-8A FGO 4.5	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	6	$0	0	
	C-8C FGO 4.2	$0	$12,556	$3,583	$2,990	$3,316	$0	$14,436	$0	$11,141	$0	$4,735	$2,778	$0	$55,534	7	$388,738	0	
	C-8D CGO 4.1	$0	$12,449	$3,583	$2,990	$3,316	$0	$14,436	$0	$11,389	$0	$4,735	$2,778	$0	$55,675	4	$222,701	0	
	C-9 FGO 4.3	$0	$12,845	$4,429	$2,854	$3,472	$0	$13,504	$0	$17,878	$0	$4,735	$6,750	$3,577	$70,045	4	$280,180	0	
	Phase H Sub-Total	**$8,309**	**$61,120**	**$15,713**	**$14,775**	**$16,641**	**$0**	**$65,785**	**$0**	**$62,416**	**$145**	**$23,674**	**$31,560**	**$5,965**	**$306,101**	**80**	**$4,012,788**	**$601,572**	**$4,614,360**
J																			
	C-1B NCO 3.2	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,754	$101	$4,735	$1,776	$1,194	$56,791	4	$227,165	1105955.52690	
	C-2B NCO 3.2	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,754	$101	$4,735	$1,776	$1,194	$56,791	124	$7,042,104	0	
	C-2C SNCO 3.1	$4,190	$11,356	$1,916	$2,886	$2,338	$0	$15,547	$0	$10,378	$101	$4,735	$1,776	$1,194	$56,415	10	$564,154	0	
	C-3C NCO 4.1	$2,991	$11,577	$3,481	$2,925	$3,310	$0	$12,678	$0	$10,734	$101	$4,735	$3,714	$1,779	$58,024	16	$928,388	0	
	C-3D SNCO 4.1	$2,267	$11,712	$1,916	$2,942	$2,328	$0	$15,807	$0	$11,179	$101	$4,735	$2,145	$1,194	$56,325	2	$112,649	0	
	Phase J Sub-Total	**$17,828**	**$57,358**	**$11,145**	**$14,525**	**$12,652**	**$0**	**$75,126**	**$0**	**$53,799**	**$504**	**$23,674**	**$11,187**	**$6,555**	**$284,347**	**156**	**$8,874,460**	**$1,105,956**	**$9,980,415**

* SIOH, Contingency, & ACF are included in Category Costs

MFH Major M & R Summary

(2001 Dollars)

HCP Phase	Unit Type	House Site Work	Interior Electrical	Interior Mechanical	Interior Bathroom No. 1	Interior Bathroom No. 2	Interior Bathroom No. 3	Interior Kitchen	Laundry Room	Interior General	Roof	Special Assessments	Structural Foundation & Exterior Walls	Structural Other Building Elements	**Unit Sub-Total**	**Unit Qty.**	**Total All Unit Repairs**	**Total Community Repairs**	**Total Major M & R**
		$87,024	**$483,361**	**$208,422**	**$202,376**	**$140,201**	**$0**	**$691,072**	**$36,080**	**$640,315**	**$8,766**	**$316,398**	**$164,644**	**$149,289**	**$3,127,900**	**1129**	**$48,172,033**	**$6,842,258**	**$55,014,291**

* SIOH, Contingency, & ACF are included in Category Costs

Whiteman AFB

Air Combat Command

HCP Date: 1998

MFH Improvements & Remaining Repairs Summary

(2001 Dollars)

HCP Phase	Unit Type	House Site Work	Interior Electrical	Interior Mechanical	Interior Bathroom No. 1	Interior Bathroom No. 2	Interior Bathroom No. 3	Interior Kitchen	Laundry Room	Interior General (all but kitchen, baths & Laundry)	Roof	Special Assessments	Structural Foundation & Exterior Walls	Structural Other Building Elements	Unit Sub-Total	Unit Qty.	Total All Unit Repairs	Total Community Repairs	Total Improvements & Remaining Repairs
A																			
	A	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	46	$0		
	B	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	36	$0		
	C	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	5	$0		
	C-1B NCO 3.2	$83	$208	$0	$0	$0	$0	$0	$0	$1,478	$2,460	$0	$11,560	$19,614	$35,403	2	$70,805		
	C-2B NCO 3.2	$83	$208	$0	$0	$0	$0	$0	$0	$1,478	$2,460	$0	$11,560	$19,614	$35,403	20	$708,054		
	C-3B NCO 4.2	$86	$208	$0	$0	$0	$0	$0	$0	$1,270	$2,163	$0	$13,120	$24,105	$40,952	10	$409,520		
	D	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	25	$0		
	E	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	21	$0		
	F	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	3	$0		
	G	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	4	$0		
	M-1B NCO 2.1(incl 10 M-3)	$0	$1,753	$0	$0	$0	$0	$10,963	$0	$57	$2,958	$0	$7,397	$21,549	$44,677	16	$714,839		
	M-2B NCO 2.2(incl 10 M-3)	$0	$539	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,633	$23,419	2	$46,838		
	M-4B NCO 2.2	$0	$539	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,633	$23,419	16	$374,706		
	M-5B NCO 2.3(incl 4 M-7)	$0	$492	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,964	$23,703	4	$94,813		
	M-6B NCO 3.1(incl 4 M-7)	$0	$523	$0	$0	$0	$0	$0	$0	$467	$3,489	$0	$5,190	$20,401	$30,070	20	$601,394		
	M-8B NCO 3.1	$0	$523	$0	$0	$0	$0	$0	$0	$467	$3,489	$0	$5,190	$20,878	$30,546	4	$122,184		
	Phase A Sub-Total	$251	$4,994	$0	$0	$0	$0	$10,963	$0	$5,217	$20,760	$0	$54,017	$191,391	**$287,592**	234	**$3,143,153**	**$478,343**	**$3,621,495**
B																			
	C-2C SNCO 3.1	$83	$208	$0	$0	$0	$0	$0	$0	$2,028	$3,291	$0	$13,668	$19,614	$38,892	36	$1,400,124		
	C-3C NCO 4.1	$0	$208	$0	$0	$0	$0	$0	$0	$1,270	$2,163	$0	$11,465	$26,262	$41,368	4	$165,470		
	C-3D SNCO 4.1	$86	$208	$0	$0	$0	$0	$0	$0	$1,176	$2,015	$0	$8,746	$20,008	$32,238	14	$451,334		
	C-5 NCO 3.3	$0	$208	$0	$0	$0	$0	$0	$0	$1,780	$2,472	$0	$16,566	$25,905	$46,930	2	$93,860		
	C-6 NCO 2.4	$175	$208	$0	$0	$0	$0	$0	$0	$0	$163	$0	$1,664	$22,597	$24,807	10	$248,073		
	C-6 SNCO 2.4	$175	$208	$0	$0	$0	$0	$0	$0	$0	$163	$0	$1,664	$23,818	$26,029	10	$260,288		

* SIOH, Contingency, & ACF are included in Category Costs

MFH Improvements & Remaining Repairs Summary

(2001 Dollars)

HCP Phase	Unit Type	House Site Work	Interior Electrical	Interior Mechanical	Interior Bathroom No. 1	Interior Bathroom No. 2	Interior Bathroom No. 3	Interior Kitchen	Laundry Room	Interior General (all but kitchen, baths & Laundry)	Roof	Special Assessments	Structural Foundation & Exterior Walls	Structural Other Building Elements	Unit Sub-Total	Unit Qty.	Total All Unit Repairs	Total Community Repairs	Total Improvements & Remaining Repairs
	C-7 CGO 3.1	$0	$208	$0	$0	$0	$0	$0	$0	$0	$0	$0	$367	$25,231	$25,805	8	$206,442		
	C-8D CGO 4.1	$3,086	$1,006	$0	$0	$0	$0	$0	$0	$6,713	$3,125	$0	$13,018	$27,762	$54,710	5	$273,549		
	Phase B Sub-Total	$3,604	$2,462	$0	$0	$0	$0	$0	$0	$12,966	$13,392	$0	$67,157	$191,197	**$290,779**	89	**$3,099,140**	**$504,140**	**$3,603,280**
C																			
	C-2B NCO 3.2	$83	$208	$0	$0	$0	$0	$0	$0	$1,478	$2,460	$0	$11,560	$19,614	$35,403	6	$212,416		
	C-2C SNCO 3.1	$83	$208	$0	$0	$0	$0	$0	$0	$2,028	$3,291	$0	$13,668	$19,614	$38,892	40	$1,555,693		
	C-3C NCO 4.1	$0	$208	$0	$0	$0	$0	$0	$0	$1,270	$2,163	$0	$11,465	$26,262	$41,368	2	$82,735		
	C-3D SNCO 4.1	$86	$208	$0	$0	$0	$0	$0	$0	$1,176	$2,015	$0	$8,746	$20,008	$32,238	4	$128,952		
	C-4 NCO 4.3	$0	$208	$0	$0	$0	$0	$0	$0	$1,270	$2,163	$0	$11,465	$26,262	$41,368	34	$1,406,499		
	M-10 CGO 2.1	$0	$603	$0	$0	$0	$0	$0	$0	$0	$1,606	$0	$1,216	$17,628	$21,054	2	$42,108		
	M-12B FGO 4.1	$0	$577	$0	$0	$0	$0	$0	$0	$0	$173	$0	$0	$25,935	$26,684	2	$53,368		
	M-1B NCO 2.1(incl 10 M-3)	$0	$1,753	$0	$0	$0	$0	$10,963	$0	$57	$2,958	$0	$7,397	$21,549	$44,677	2	$89,355		
	M-2B NCO 2.2(incl 10 M-3)	$0	$539	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,633	$23,419	4	$93,676		
	M-4B NCO 2.2	$0	$539	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,633	$23,419	2	$46,838		
	M-5B NCO 2.3(incl 4 M-7)	$0	$492	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,964	$23,703	8	$189,626		
	M-6B NCO 3.1(incl 4 M-7)	$0	$523	$0	$0	$0	$0	$0	$0	$467	$3,489	$0	$5,190	$20,401	$30,070	24	$721,672		
	M-8B NCO 3.1	$0	$523	$0	$0	$0	$0	$0	$0	$467	$3,489	$0	$5,190	$20,878	$30,546	10	$305,461		
	M-9 CGO 2.1	$0	$550	$0	$0	$0	$0	$0	$0	$795	$1,557	$0	$5,709	$20,268	$28,880	6	$173,279		
	Phase C Sub-Total	$251	$7,140	$0	$0	$0	$0	$10,963	$0	$9,008	$29,104	$0	$81,606	$303,649	**$441,721**	146	**$5,101,680**	**$614,657**	**$5,716,337**
D																			
	C-5 NCO 3.3	$0	$208	$0	$0	$0	$0	$0	$0	$1,780	$2,472	$0	$16,566	$25,905	$46,930	18	$844,738		
	C-6 NCO 2.4	$175	$208	$0	$0	$0	$0	$0	$0	$0	$163	$0	$1,664	$22,597	$24,807	42	$1,041,908		
	M-1B NCO 2.1(incl 10 M-3)	$0	$1,753	$0	$0	$0	$0	$10,963	$0	$57	$2,958	$0	$7,397	$21,549	$44,677	29	$1,295,646		
	M-2B NCO 2.2(incl 10 M-3)	$0	$539	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,633	$23,419	25	$585,477		
	M-4B NCO 2.2	$0	$539	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,633	$23,419	37	$866,507		
	Phase D Sub-Total	$175	$3,248	$0	$0	$0	$0	$10,963	$0	$1,837	$8,088	$0	$25,627	$113,316	**$163,253**	151	**$4,634,275**	**$442,074**	**$5,076,350**
E																			
	M-1B NCO 2.1(incl 10 M-3)	$0	$1,753	$0	$0	$0	$0	$10,963	$0	$57	$2,958	$0	$7,397	$21,549	$44,677	54	$2,412,582		
	M-2B NCO 2.2(incl 10 M-3)	$0	$539	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,633	$23,419	38	$889,926		
	M-4B NCO 2.2	$0	$539	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,633	$23,419	10	$234,191		
	Phase E Sub-Total	$0	$2,832	$0	$0	$0	$0	$10,963	$0	$57	$5,453	$0	$7,397	$64,814	**$91,516**	102	**$3,536,699**	**$353,041**	**$3,889,740**
F																			

* SIOH, Contingency, & ACF are included in Category Costs

MFH Improvements & Remaining Repairs Summary

(2001 Dollars)

HCP Phase	Unit Type	House Site Work	Interior Electrical	Interior Mechanical	Interior Bathroom No. 1	Interior Bathroom No. 2	Interior Bathroom No. 3	Interior Kitchen	Laundry Room	Interior General (all but kitchen, baths & Laundry)	Roof	Special Assessments	Structural Foundation & Exterior Walls	Structural Other Building Elements	Unit Sub-Total	Unit Qty.	Total All Unit Repairs	Total Community Repairs	Total Improvements & Remaining Repairs
	M-1B NCO 2.1(incl 10 M-3)	$0	$1,753	$0	$0	$0	$0	$10,963	$0	$57	$2,958	$0	$7,397	$21,549	$44,677	41	$1,831,776		
	M-2B NCO 2.2(incl 10 M-3)	$0	$539	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,633	$23,419	43	$1,007,021		
	M-4B NCO 2.2	$0	$539	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,633	$23,419	32	$749,411		
	Phase F Sub-Total	$0	$2,832	$0	$0	$0	$0	$10,963	$0	$57	$5,453	$0	$7,397	$64,814	**$91,516**	116	**$3,588,208**	**$633,870**	**$4,222,078**
G																			
	C-7 FGO 3.1	$0	$208	$0	$0	$0	$0	$0	$0	$0	$0	$0	$367	$25,231	$25,805	1	$25,805		
	M-10 CGO 2.1	$0	$603	$0	$0	$0	$0	$0	$0	$0	$1,606	$0	$1,216	$17,628	$21,054	15	$315,807		
	M-12B FGO 4.1	$0	$577	$0	$0	$0	$0	$0	$0	$0	$173	$0	$0	$25,935	$26,684	1	$26,684		
	M-13 SGO 4.1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1	$0		
	M-14 GO 4.1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	1	$0		
	M-5B NCO 2.3(incl 4 M-7)	$0	$492	$0	$0	$0	$0	$0	$0	$0	$1,247	$0	$0	$21,964	$23,703	6	$142,220		
	M-6B NCO 3.1(incl 4 M-7)	$0	$523	$0	$0	$0	$0	$0	$0	$467	$3,489	$0	$5,190	$20,401	$30,070	10	$300,697		
	M-8B NCO 3.1	$0	$523	$0	$0	$0	$0	$0	$0	$467	$3,489	$0	$5,190	$20,878	$30,546	10	$305,461		
	M-9 CGO 2.1	$0	$550	$0	$0	$0	$0	$0	$0	$795	$1,557	$0	$5,709	$20,268	$28,880	10	$288,799		
	Phase G Sub-Total	$0	$3,476	$0	$0	$0	$0	$0	$0	$1,729	$11,559	$0	$17,673	$152,305	**$186,742**	55	**$1,405,472**	**$442,792**	**$1,848,264**
H																			
	C-3A SNCO 4.2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	6	$0		
	C-7 CGO 3.1	$0	$208	$0	$0	$0	$0	$0	$0	$0	$0	$0	$367	$25,231	$25,805	10	$258,053		
	C-7 FGO 3.1	$0	$208	$0	$0	$0	$0	$0	$0	$0	$0	$0	$367	$25,231	$25,805	40	$1,032,212		
	C-8A CGO 4.2	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	3	$0		
	C-8A FGO 4.5	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	6	$0		
	C-8C FGO 4.2	$3,086	$1,006	$0	$0	$0	$0	$0	$0	$7,557	$4,082	$0	$16,037	$27,762	$59,531	7	$416,714		
	C-8D CGO 4.1	$3,086	$1,006	$0	$0	$0	$0	$0	$0	$6,713	$3,125	$0	$13,018	$27,762	$54,710	4	$218,839		
	C-9 FGO 4.3	$0	$683	$0	$0	$0	$0	$0	$0	$0	$1,207	$0	$0	$23,054	$24,944	4	$99,776		
	Phase H Sub-Total	$6,173	$3,111	$0	$0	$0	$0	$0	$0	$14,270	$8,413	$0	$29,788	$129,040	**$190,795**	80	**$2,025,595**	**$397,356**	**$2,422,951**
J																			
	C-1B NCO 3.2	$83	$208	$0	$0	$0	$0	$0	$0	$1,478	$2,460	$0	$11,560	$19,614	$35,403	4	$141,611		
	C-2B NCO 3.2	$83	$208	$0	$0	$0	$0	$0	$0	$1,478	$2,460	$0	$11,560	$19,614	$35,403	124	$4,389,933		
	C-2C SNCO 3.1	$83	$208	$0	$0	$0	$0	$0	$0	$2,028	$3,291	$0	$13,668	$19,614	$38,892	10	$388,923		
	C-3C NCO 4.1	$0	$208	$0	$0	$0	$0	$0	$0	$1,270	$2,163	$0	$11,465	$26,262	$41,368	16	$661,882		
	C-3D SNCO 4.1	$86	$208	$0	$0	$0	$0	$0	$0	$1,176	$2,015	$0	$8,746	$20,008	$32,238	2	$64,476		
	Phase J Sub-Total	$334	$1,040	$0	$0	$0	$0	$0	$0	$7,430	$12,389	$0	$56,998	$105,113	**$183,303**	156	**$5,646,825**	**$790,151**	**$6,436,976**

* SIOH, Contingency, & ACF are included in Category Costs

MFH Improvements & Remaining Repairs Summary

(2001 Dollars)

HCP Phase	Unit Type	House Site Work	Interior Electrical	Interior Mechanical	Interior Bathroom No. 1	Interior Bathroom No. 2	Interior Bathroom No. 3	Interior Kitchen	Laundry Room	Interior General (all but kitchen, baths & Laundry)	Roof	Special Assessments	Structural Foundation & Exterior Walls	Structural Other Building Elements	**Unit Sub-Total**	**Unit Qty.**	**Total All Unit Repairs**	**Total Community Repairs**	**Total Improvements & Remaining Repairs**
		$10,789	**$31,134**	**$0**	**$0**	**$0**	**$0**	**$54,815**	**$0**	**$52,571**	**$114,610**	**$0**	**$347,658**	**1,315,640**	**$1,927,217**	**1129**	**$32,181,048**	**$4,656,425**	**$36,837,472**

* SIOH, Contingency, & ACF are included in Category Costs

Whiteman AFB

Air Combat Command

HCP Date: 1998

MFH Comparative Costs Summary

(2001 Dollars)

HCP Phase	Unit Type	Quantity	Whole House Improvement			Repairs (O&M)			Improvements & Remaining Repairs			Total Repairs & Improvments Executed in Multiple Projects			Estimated Premium for Separate Improvements & Repairs vs. Investment			
			Units	Community	Total	Units	Community	Total	Units	Community	Total	Units	Community	Total	Units	Community	Total	% Increase
A																		
	A	46	$0			$0			$0			$0			$0			
	B	36	$0			$0			$0			$0			$0			
	C	5	$0			$0			$0			$0			$0			
	C-1B NCO 3.2	2	$171,939			$113,868			$70,982			$184,850			$12,911			
	C-2B NCO 3.2	20	$1,719,386			$1,138,682			$709,816			$1,848,498			$129,112			
	C-3B NCO 4.2	10	$904,581			$562,284			$410,539			$972,823			$68,243			
	D	25	$0			$0			$0			$0			$0			
	E	21	$0			$0			$0			$0			$0			
	F	3	$0			$0			$0			$0			$0			
	G	4	$0			$0			$0			$0			$0			
	M-1B NCO 2.1(incl 10 M-3)	16	$1,089,326			$452,112			$716,618			$1,168,730			$79,405			
	M-2B NCO 2.2(incl 10 M-3)	2	$115,897			$77,249			$46,955			$124,204			$8,307			
	M-4B NCO 2.2	16	$927,178			$617,996			$375,638			$993,634			$66,456			
	M-5B NCO 2.3(incl 4 M-7)	4	$227,051			$148,242			$95,049			$243,291			$16,239			
	M-6B NCO 3.1(incl 4 M-7)	20	$1,888,887			$1,427,152			$602,890			$2,030,042			$141,155			
	M-8B NCO 3.1	4	$377,647			$283,383			$122,489			$405,872			$28,225			
	Phase A Sub-Total	234	**$7,421,891**	**$1,146,490**	**$8,568,381**	**$4,820,969**	**$758,690**	**$5,579,659**	**$3,150,975**	**$479,533**	**$3,630,508**	**$7,971,944**	**$1,238,223**	**$9,210,168**	**$550,054**	**$91,733**	**$641,786**	**8%**
B																		
	C-2C SNCO 3.1	36	$3,198,970			$2,036,061			$1,403,608			$3,439,669			$240,699			
	C-3C NCO 4.1	4	$370,572			$232,677			$165,882			$398,559			$27,987			
	C-3D SNCO 4.1	14	$1,156,274			$790,520			$452,457			$1,242,977			$86,702			
	C-5 NCO 3.3	2	$187,984			$108,102			$94,093			$202,195			$14,211			

Note: Cost Estimates do not include an Escalation Factor or a Size Factor
* SIOH, Contingency, & ACF are included in Costs

MFH Comparative Costs Summary

(2001 Dollars)

HCP Phase	Unit Type	Quantity	Whole House Improvement			Repairs (O&M)			Improvements & Remaining Repairs			Total Repairs & Improvments Executed in Multiple Projects			Estimated Premium for Separate Improvements & Repairs vs. Investment			
			Units	Community	Total	Units	Community	Total	Units	Community	Total	Units	Community	Total	Units	Community	Total	% Increase
	C-6 NCO 2.4	10	$742,958			$549,591			$248,691			$798,282			$55,324			
	C-6 SNCO 2.4	10	$787,485			$546,839			$260,936			$807,775			$20,290			
	C-7 CGO 3.1	8	$658,276			$500,640			$206,956			$707,596			$49,320			
	C-8D CGO 4.1	5	$514,269			$279,070			$274,230			$553,299			$39,031			
	Phase B Sub-Total	89	**$7,616,788**	**$1,052,614**	**$8,669,402**	**$5,043,499**	**$631,411**	**$5,674,910**	**$3,106,853**	**$505,395**	**$3,612,248**	**$8,150,352**	**$1,136,806**	**$9,287,158**	**$533,564**	**$84,192**	**$617,756**	**7%**
C																		
	C-2B NCO 3.2	6	$515,816			$341,605			$212,945			$554,549			$38,734			
	C-2C SNCO 3.1	40	$3,554,411			$2,262,290			$1,559,565			$3,821,854			$267,443			
	C-3C NCO 4.1	2	$185,286			$116,338			$82,941			$199,279			$13,993			
	C-3D SNCO 4.1	4	$330,364			$225,863			$129,273			$355,136			$24,772			
	C-4 NCO 4.3	34	$3,149,862			$1,977,751			$1,409,999			$3,387,751			$237,889			
	M-10 CGO 2.1	2	$133,373			$100,864			$42,212			$143,076			$9,703			
	M-12B FGO 4.1	2	$168,356			$127,333			$53,501			$180,834			$12,478			
	M-1B NCO 2.1(incl 10 M-3)	2	$136,166			$56,514			$89,577			$146,091			$9,926			
	M-2B NCO 2.2(incl 10 M-3)	4	$231,794			$154,499			$93,910			$248,408			$16,614			
	M-4B NCO 2.2	2	$115,897			$77,249			$46,955			$124,204			$8,307			
	M-5B NCO 2.3(incl 4 M-7)	8	$454,103			$296,484			$190,098			$486,582			$32,479			
	M-6B NCO 3.1(incl 4 M-7)	24	$2,266,664			$1,712,582			$723,468			$2,436,051			$169,386			
	M-8B NCO 3.1	10	$944,117			$708,459			$306,221			$1,014,680			$70,563			
	M-9 CGO 2.1	6	$450,937			$310,358			$173,710			$484,069			$33,132			
	Phase C Sub-Total	146	**$12,637,147**	**$1,402,982**	**$14,040,129**	**$8,468,189**	**$869,428**	**$9,337,617**	**$5,114,376**	**$616,187**	**$5,730,564**	**$13,582,565**	**$1,485,615**	**$15,068,180**	**$945,418**	**$82,633**	**$1,028,051**	**7%**
D																		
	C-5 NCO 3.3	18	$1,691,858			$972,915			$846,840			$1,819,754			$127,896			
	C-6 NCO 2.4	42	$3,120,422			$2,308,282			$1,044,501			$3,352,783			$232,361			
	M-1B NCO 2.1(incl 10 M-3)	29	$1,974,403			$819,453			$1,298,871			$2,118,324			$143,921			
	M-2B NCO 2.2(incl 10 M-3)	25	$1,448,716			$965,618			$586,934			$1,552,553			$103,837			
	M-4B NCO 2.2	37	$2,144,099			$1,429,115			$868,663			$2,297,778			$153,679			
	Phase D Sub-Total	151	**$10,379,498**	**$1,073,278**	**$11,452,775**	**$6,495,384**	**$715,974**	**$7,211,358**	**$4,645,809**	**$443,175**	**$5,088,983**	**$11,141,192**	**$1,159,149**	**$12,300,341**	**$761,695**	**$85,871**	**$847,566**	**7%**
E																		
	M-1B NCO 2.1(incl 10 M-3)	54	$3,676,474			$1,525,879			$2,418,587			$3,944,465			$267,991			

Note: Cost Estimates do not include an Escalation Factor or a Size Factor
* SIOH, Contingency, & ACF are included in Costs

MFH Comparative Costs Summary

(2001 Dollars)

HCP Phase	Unit Type	Quantity	Whole House Improvement			Repairs (O&M)			Improvements & Remaining Repairs			Total Repairs & Improvments Executed in Multiple Projects			Estimated Premium for Separate Improvements & Repairs vs. Investment			
			Units	Community	Total	Units	Community	Total	Units	Community	Total	Units	Community	Total	Units	Community	Total	% Increase
	M-2B NCO 2.2(incl 10 M-3)	38	$2,202,048			$1,467,740			$892,140			$2,359,880			$157,833			
	M-4B NCO 2.2	10	$579,486			$386,247			$234,774			$621,021			$41,535			
	Phase E Sub-Total	102	**$6,458,008**	**$881,854**	**$7,339,862**	**$3,379,866**	**$598,469**	**$3,978,335**	**$3,545,501**	**$353,919**	**$3,899,420**	**$6,925,367**	**$952,388**	**$7,877,755**	**$467,359**	**$70,534**	**$537,893**	**7%**
F																		
	M-1B NCO 2.1(incl 10 M-3)	41	$2,791,397			$1,158,537			$1,836,334			$2,994,872			$203,475			
	M-2B NCO 2.2(incl 10 M-3)	43	$2,491,791			$1,660,864			$1,009,527			$2,670,391			$178,600			
	M-4B NCO 2.2	32	$1,854,356			$1,235,991			$751,276			$1,987,268			$132,912			
	Phase F Sub-Total	116	**$7,137,544**	**$1,558,922**	**$8,696,466**	**$4,055,392**	**$1,048,174**	**$5,103,566**	**$3,597,138**	**$635,448**	**$4,232,586**	**$7,652,530**	**$1,683,622**	**$9,336,152**	**$514,986**	**$124,699**	**$639,686**	**7%**
G																		
	C-7 FGO 3.1	1	$82,285			$62,580			$25,870			$88,449			$6,165			
	M-10 CGO 2.1	15	$1,000,300			$756,479			$316,593			$1,073,072			$72,772			
	M-12B FGO 4.1	1	$84,178			$63,666			$26,750			$90,417			$6,239			
	M-13 SGO 4.1	1	$16,268			$17,118			$0			$17,118			$851			
	M-14 GO 4.1	1	$45,324			$48,453			$0			$48,453			$3,129			
	M-5B NCO 2.3(incl 4 M-7)	6	$340,577			$222,363			$142,574			$364,936			$24,359			
	M-6B NCO 3.1(incl 4 M-7)	10	$944,443			$713,576			$301,445			$1,015,021			$70,578			
	M-8B NCO 3.1	10	$944,117			$708,459			$306,221			$1,014,680			$70,563			
	M-9 CGO 2.1	10	$751,562			$517,264			$289,517			$806,781			$55,219			
	Phase G Sub-Total	55	**$4,209,054**	**$897,516**	**$5,106,570**	**$3,109,959**	**$525,364**	**$3,635,322**	**$1,408,970**	**$443,894**	**$1,852,864**	**$4,518,929**	**$969,258**	**$5,488,187**	**$309,875**	**$71,742**	**$381,617**	**7%**
H																		
	C-3A SNCO 4.2	6	$0			$0			$0			$0			$0			
	C-7 CGO 3.1	10	$822,845			$625,800			$258,695			$884,495			$61,650			
	C-7 FGO 3.1	40	$3,291,381			$2,503,198			$1,034,781			$3,537,980			$246,599			
	C-8A CGO 4.2	3	$0			$0			$0			$0			$0			
	C-8A FGO 4.5	6	$0			$0			$0			$0			$0			
	C-8C FGO 4.2	7	$750,394			$389,709			$417,751			$807,460			$57,067			
	C-8D CGO 4.1	4	$411,415			$223,256			$219,384			$442,640			$31,225			
	C-9 FGO 4.3	4	$354,145			$280,876			$100,025			$380,901			$26,756			
	Phase H Sub-Total	80	**$5,630,179**	**$875,257**	**$6,505,437**	**$4,022,839**	**$603,069**	**$4,625,908**	**$2,030,636**	**$398,345**	**$2,428,981**	**$6,053,475**	**$1,001,414**	**$7,054,889**	**$423,296**	**$126,156**	**$549,452**	**8%**
J																		

Note: Cost Estimates do not include an Escalation Factor or a Size Factor
* SIOH, Contingency, & ACF are included in Costs

MFH Comparative Costs Summary

(2001 Dollars)

HCP Phase	Unit Type	Quantity	Whole House Improvement			Repairs (O&M)			Improvements & Remaining Repairs			Total Repairs & Improvments Executed in Multiple Projects			Estimated Premium for Separate Improvements & Repairs vs. Investment			
			Units	Community	Total	Units	Community	Total	Units	Community	Total	Units	Community	Total	Units	Community	Total	% Increase
	C-1B NCO 3.2	4	$343,877			$227,736			$141,963			$369,700			$25,822			
	C-2B NCO 3.2	124	$10,660,191			$7,059,828			$4,400,858			$11,460,686			$800,495			
	C-2C SNCO 3.1	10	$888,603			$565,572			$389,891			$955,464			$66,861			
	C-3C NCO 4.1	16	$1,482,288			$930,707			$663,529			$1,594,236			$111,948			
	C-3D SNCO 4.1	2	$165,182			$112,931			$64,637			$177,568			$12,386			
	Phase J Sub-Total	156	**$13,540,141**	**$1,760,057**	**$15,300,198**	**$8,896,775**	**$1,108,708**	**$10,005,483**	**$5,660,878**	**$792,118**	**$6,452,996**	**$14,557,653**	**$1,900,826**	**$16,458,478**	**$1,017,512**	**$140,769**	**$1,158,280**	**8%**
Total All Phases:		1129	**$75,030,250**	**$10,648,971**	**$85,679,221**	**$48,292,872**	**$6,859,287**	**$55,152,158**	**$32,261,136**	**$4,668,013**	**$36,929,149**	**$80,554,008**	**$11,527,300**	**$92,081,307**	**$5,523,758**	**$878,329**	**$6,402,087**	**7%**

Note: Cost Estimates do not include an Escalation Factor or a Size Factor
* SIOH, Contingency, & ACF are included in Costs