

DOCUMENTATION OF DESIGN PROCESS AND THE DESIGN OF A
SENIOR CITIZEN'S CENTER IN MARION COUNTY, KANSAS

by

BARBARA JEAN CANNON

B.S., Kansas State University, 1971

A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Clothing, Textiles and Interior Design

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1981

Approved by:



Major Professor

SPEC
COLL
LD
2668
.R4
1981
C36
c.2

ACKNOWLEDGMENTS

I express my sincere gratitude and appreciation to the following persons, without whom this report would not have been possible:

Dr. Jane H. Stolper, my major professor, for her guidance and interest in my graduate work.

Mr. Ludwig Villasi and Dr. Richard Owens, my committee members, for their expressed interest and helpful suggestions for this study.

Dr. Mary Don Peterson, Department Head, for her continual support and encouragement.

The Area Office on Aging, Manhattan, Kansas and the Marion County Senior Citizen's Planning Group for the opportunity to assist them in the design and development of their center, thus making this report possible.

My family, Eric Shoults, Charles and Helen Cannon, Velda Wymore, Beverly Cannon, Marsha Kee, Cindy Ball, Paula Mays, and my friends, for their consistent and indispensable encouragement, faith, and support in my abilities and achievements.

B.J.C.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	ii
LIST OF TABLES	v
LIST OF FIGURES	vi
 Chapter	
1. INTRODUCTION.	1
PROBLEM STATEMENT	2
2. REVIEW OF LITERATURE.	5
OLDER AMERICAN'S ACT OF 1979.	5
REHABILITATION ACT OF 1973.	7
THEORETICAL FRAMEWORK	8
3. DESIGN METHODS AND PROCEDURES	11
THE PROGRAM PROBLEM STATEMENT	12
THE SITE.	12
THE BUILDING.	14
PROFILE OF SENIOR CITIZENS.	13
PROGRAMS TO BE ACCOMMODATED	14
CONSTRAINTS	16
Funding	16
Barrier-Free Requirements	16
Program Accessibility	17
Building Codes.	19
4. CONCLUSIONS	34
REFERENCES CITED	36

TABLE OF CONTENTS (Continued)

	Page
APPENDIXES	39
A. RESOURCE PERSONS	50

LIST OF TABLES

Table	Page
1. Project Schedules and Critical Path Flow Chart	49

LIST OF FIGURES

Figure	Page
1. Floor Plan	40
2. Furniture Schedule	41
3. Room Finish Schedule	42
4. Reflected Ceiling Plan	43
5. Electrical Plan.	44
6. Product Design	45
7. Sample Board	48

Chapter 1

INTRODUCTION

A Senior Citizen's Center is a facility, which brings together older citizens in a community setting. It furnishes the users with the opportunity to continue to develop their human qualities by having physical and visual contact with friends and acquaintances. It can promote individual and group prestige, recognition and dignity, and it can provide for the opportunity of each to make use of his or her talents and abilities. The center offers the older citizen the opportunity to be productive, useful, independent, and self-fulfilled both for themselves and for the welfare of the community.

The Kansas Area Office on Aging in Manhattan, Kansas contacted the designer responsible for the report, to inquire if she would be interested in providing guidance to the Marion County senior citizens group for the development of their center. This design opportunity offers a public service to the older citizens while providing a learning experience for a student designer interested in design for the elderly.

It is hoped that this report will provide answers to the questions the senior citizens of Marion County, Kansas have concerning the designing of their center. This report is intended to create an awareness for the problems of designing senior citizen's centers thus creating an atmosphere that will have a positive influence to the users.

Many Senior Citizen Centers across the country provide space for Government subsidized nutrition programs which is in response to the elderly's desire to have this program included in conjunction with various other government and community programs. By incorporating the nutrition programs in the center, the facilities can provide the opportunity for the satisfaction of many of the basic human needs.

The purpose of the Marion County Center is to provide social, recreational, educational, and nutritional opportunities for the citizens. By providing these opportunities in the community, the citizens may be able to maintain their identity and sense of usefulness to a greater extent than in the past.

The purpose of this report is to document the design process and to execute the designs by which the interior space of a new building becomes a community center for the senior citizen of Marion County, Kansas. The intention of the report is to provide design guidance for the senior citizens to plan their center. The newly designed space will become a facility that will furnish the users with a nutrition site, a Federal, state, and community subsidized place for fellowship and recreational activities, and offices for the Area Office on Aging.

PROBLEM STATEMENT OF REPORT

The study is divided into two phases; documentation of the design process and the graphic and pictorial representation of the actual recommended design.

William M. Pena's book "Problem Seeking" (Pena, 1977) provides the designer with a rational method by which one can interpret and apply research information into a decision making process.

The process consists of five steps:

Step I- Establish goals which indicates what the client wants to achieve and why.

Step II- Collect and analyze facts which are used to describe conditions which include the physical, legal, climatic, and aesthetic aspects of the site and the user group.

Step III- Uncover and test concepts which will help determine how the client wants to achieve his goals. These are based on concrete ideas which are intended as physical solutions to the client's architectural problems.

Step IV- Determine money, space, and quality and needs to see if a budget can be determined, or a fixed budget balanced that will satisfy the client.

Step V- The problem statement determines the significant conditions and the general directions the design of the interior space should take. This step serves as a premise for the design and a design criteria which the designer will follow in determining the best solution to meet the client's needs.

The second phase of this project, the graphic and pictorial representation of the actual recommended designs appears in the appendixes of this report, and is the result of following the Problem Seeking Approach.

OBJECTIVES

The specific objectives of this report are:

1. To document the design goals of the project:
 - a. Document the design process
 - b. Execute the design

2. To describe the users in terms of their life style.
3. To identify the characteristics of a senior citizen's center from a literature search.
4. To incorporate the recommendations found in the literature search into the development of a design program.
5. To generate various design solutions in response to the program.
6. To prepare a design solution for a workable senior citizen's center.
7. To select and develop a final design solution from identified alternatives.

ASSUMPTIONS

1. The designed center will have a positive effect on the users.
2. The designer has the responsibility to develop a design solution that will satisfy the needs of the users.

Chapter 11

REVIEW OF LITERATURE

The literature review is divided into two parts. First, the documentation of the Older American's Act of 1979 and the Rehabilitation Act of 1973 which provided the impetus for the Senior Citizen's Center movement is presented. The second part deals with the theoretical framework developed to explain the relationship between human behavior and the environment. The purported meaning or goal of the Senior Citizen's Center is to change or modify human behavior. Therefore, an attempt is made in the literature review to establish a connection between human behavior and the environment in order to provide validity for the design of the Senior Citizen's Center presented in this report.

Older American's Act of 1979

Senior Citizen's Centers are increasing in the state of Kansas as a result of the Older American's Act (AoA, 1979; Cohen, 1979) which provides funding for multipurpose senior centers under Title III of the Comprehensive Older American's Act Amendments, 1978.

The principle agency for carrying out the Older American's Act is the Administration on Aging (AoA). The AoA is responsible for creating and coordinating programs designed to serve the needs and interests of Older Americans, particularly those who are disabled, very old, poor, isolated, and uneducated. (Cohen, 1979)

Area Agencies on Aging have been established at the local or county level to develop an area plan which is designed to lead to

comprehensive and coordinated programs which support older Americans. (Cohen, 1979) The agencies are required to carry out the following functions: provide leadership, determine needs, inventory resources, establish measurable program objectives, plan with existing planning agencies, and, through contract or grant, coordinate delivery of existing services and pool untrapped resources of public and private agencies. The agencies emphasize the full Constitutional rights of all older Americans by opposing those negative stereotypes that are based upon age. They strive to open up opportunities which are educational, social, and cultural as well as financially rewarding for the older American. (DHEW, 1979)

A Senior Citizen's Center is a facility, which may offer the following social services: health, continuing education, welfare, informational, recreational, homemaker, counseling or referral services, transportation, residential repair and renovation projects, special assistance for the disabled elderly, legal and ombudsman services, and other senior citizen's programs. (Cohen, 1979) In addition to the afore mentioned social service programs, many Senior Citizen's Centers across the country provided space for the Government subsidized nutritional programs. (DHEW, 1979)

The purpose of the nutritional program is to improve the life style of the senior citizens by offering them the opportunity to partake of well balanced meals and help them become physically and socially active. Under the program, congregate meals and home-delivered meals are provided to persons 60 years and older, and their spouses. (Cohen, 1979) In addition to the actual food service program, educational and recreational programs which provide

informational and referral services are offered to help the citizens learn about themselves, their health, and their nutritional needs.

Rehabilitation

The Rehabilitation Act of 1973 under Section 504 provides the older Americans with specific rights under the law. The civil rights law offers protection for the citizen by not allowing persons to be excluded from participating in, be denied the benefits of, or be subjected to discrimination under any program or activity which received Federal financial assistance. (DHEW, 1979)

In order to provide barrier-free environments for the senior citizens, building codes have been developed by the Federal, state, and local municipalities. The codes and requirements apply to both the interior and exterior of any public building.

Based on the programs and services set forth in the AoA and the Rehabilitation Act, the development of a physical facility in which to administer and implement the programs and services is a natural out come. The question which must be raised in designing the physical facility is, will it meet the needs of an elderly population who will be the primary users of the space? The second part of the literature review addresses this question.

Man-Environment Relations

The research in this report is based on the assumption that the physical environment can be a constraint directly or indirectly effecting the opportunity for an individual or group to satisfy their basic human needs. According to Abraham Maslow (1954) who has done extensive research in motivation and personality, there are basic

human needs which every human strives to satisfy. These basic needs include the following: physiological, safety, affiliation, esteem, and self-actualization. His theory places these needs in an heirarchial order beginning with physiological needs and ending with self-actualization. He theorizes that much of human motivation (and consequently human behavior) is in response to need satisfaction activity. Man-environment relations theory concedes the influence of many determinates of human behavior both human and non-human (the physical surroundings). The impact of the environment to determine human behavior becomes critical when the group using the environment is elderly.

Competence/Environmental Press

L. A. Pastalan (1970) and M. Powell Lawton (1970) have done research in the area of environmental competency. Their research suggests that the greater the degree of competence of the individual the less his/her behavior will need to be modified to negotiate the phenomena? environments (Porteous, 1977)

Environmental competence is defined as the ability of an individual to function within any environmental setting depending upon his/her capabilities and the characteristics of the particular setting. (Gelwicks, 1974) If people are brought together in favorable environmental settings, their abilities to perform and develop independence will be enhanced. The elderly generally have the ability to choose their own environments which satisfies their needs provided they are given adequate information and economic resources. (Gelwicks, 1974)

The two major variables in the theory are the competence of

the individual and the complexity of the environment. The greater the person's competence, the less effect the environment will have upon his behavior; and the less competent the person the greater the influence of the environment. (Nahemow and Lawton, 1976)

The competence of the individual is affected by health, sensory capacity, cognitive ability, motor skills, and ego strength. The theory is useful in designing for the elderly because it can be shown that older people tend to be less competent in some or all of the areas included in the definition of competence. If the environment is too complexed for an older person to master, then it is said that the environment is exerting a strong environment press. A strong press on a person with low competences may lead to maladaptive behavior.

Further research in the area of design for the elderly has been conducted which documents the decreases in competence mentioned earlier. (Bednar, 1976) The findings from this research should be implemented into new or renovated building designs. Some examples of research which the designer must be concerned with are the physiological, psychological, and sociological changes which occur as one ages.

Physiological changes may occur to sensory organs. The degree of severity varies with each individual, however, such disabilities can be compensated for and aided by the selection of equipment, finishes, furnishings, and color that will not restrict or hinder the older person as they function within the environment. (Koncelik, 1976)

Stimulating the senses of older citizens is important to

compensate for losses related to visual, auditory, tactile, motor, and thermal factors. Since spatial awareness and orientation are acutely affected by these losses, design features should be introduced into the environment that will increase the elderly's perceptions and comprehension of the environment. (McRae, 1976; Pastalan, 1970)

Cultural, social, and psychological changes commonly occur as the person ages. Because of this, the elderly's environment should be one that offers positive reinforcements to these changes. The learning capacity, retention of self-image, self-esteem, self-actualization, and the need to belong, of the senior citizen also should be reinforced.

When a person reaches retirement age, he/she should still be able to function as a normal human being. (Koncelik, 1976) Since he/she still may have the desire and physical capabilities to perform all the skills and duties they were doing before they retired from their salaried positions, they should be offered the opportunity to continue these activities.

Since the object of the multi-purpose senior citizen's center is to provide social, recreational, educational, nutritional, and guidance opportunities to the elderly, it is essential that the designer has a working knowledge of the physiological, psychological, social, and cultural changes that occur in older persons and the impact of these changes on the environment. That he/she be able to design support for activities which satisfy basic human needs and to do it in compliance with all Federal, state, and local regulations is necessary for a successful Senior Citizen's Center.

Chapter III

DESIGN METHODS AND PROCEDURES

1. To interview the planning committee and determine the extent of the design project.
2. To conduct a literature search of past studies and to abstract the findings to help identify the characteristics of a senior citizen's center.
3. To analyze the recommendations found in the literature search and incorporate these findings together with information generated from the interviews into a program.
4. To develop a program that will include:
 - a. problem statement.
 - b. site.
 - c. profile of senior citizens using the center based on the life style and other pertinent information.
 - d. Federal, state, and local constraints that need to be incorporated in the design.
 - e. project data that will include information of the needs and requirements of the users.
 - f. activity analysis to include spatial requirements, furniture and equipment, recommendations, and human needs requirements.
5. To create alternative design solutions that satisfy the program.
6. To select the best alternative solution.
7. To develop and present a final design solution in an

8½" X 11" format that will contain:

- a. program.
 - b. floor plan.
 - c. lighting plan.
 - d. sample boards.
 - e. furniture and room finish schedules.
 - f. product design.
8. To develop and present project schedules and work flow chart. (The complete stages of design and execution.)

THE PROGRAM

PROBLEM STATEMENT FOR SENIOR CITIZEN'S CENTER

The goal of the Marion County Center is to provide a support system to help the elderly stay in their own homes as long as possible. Such an approach would be less expensive than a long term care facility for the elderly and hopefully would increase their independence for a longer period of time than without the services and support of a Senior Citizen's Center.

The Site

The Senior Citizen's Planning Board provided the following information concerning Marion, Kansas.

Marion, Kansas, a small rural community of 2,400, is located 60 miles South of Junction City, Kansas on Highway 77. The city, nestled in a valley, is situated between two lakes. The Center is located one block South of the main street of town and thus offers ease of access to the senior citizens of the community.

Transportation is provided to and from the center for the Marion County citizens under the transportation section of the Older American's Act. A van and driver are under contract for the center's use. The number of citizens using the services is recorded. The fee is forty cents per one way trip and is paid for by the Area Office of Aging. The program is administered from the senior citizen's center.

Profile of the Senior Citizens

According to the Area Office of Aging, citizens who are 60 years or older will be using the center. The center is primarily for senior citizens, but others may use the facilities as guests. Through interviews with the Marion County Planning Council, it was determined that of the anticipated 125 using the center, an average of 70 will be using the nutrition site.

The exact life style of the population using the Senior Citizen's Center is not known although some information was gathered in interviews. The researcher is using the following criteria as an average profile:

- males and females
- retired farmers
- small town residents
- lived in one area most of life
- mobil and active
- approximately 1/2 had only elementary education
- were married during World War I
- started families in the 1920's
- entered most productive careers in the 1930's (during the depression)

- most of their children were in World War II
- many of their children were caught in early retirement (age 55-65)
- had to cope with automation and electronic ages
- reside in small rural community
- marital status varied
- varied living arrangements

The Community Center is available to any senior citizen who resides in Marion County, Kansas. The participants are very active both mentally and physically, and are anxious to see the building designed and built to meet their fellowship needs.

The Building

The building, purchased by the Marion County Planning Board, is a 50' X 100' rectangular shaped metal structure with an attached 12' X 20' vestibule. The building is a single floor structure offering the users easy enter and egress as well as a barrier-free interior.

Included in the initial base price of the structure are two exterior 3' X 7' doors. All other openings (windows, other doors) are in addition to the base price.

Programs to be Accommodated

The new facility must contain the following:

1. Nutrition program; to include enough table seating to meet the average number of anticipated users and a kitchen which must include: commercial range, convection oven, commercial refrigerator, dishwasher, three compartment sink, vegetable sink, and two mobile worktables.

2. two offices; 1 private, 1 semi-private both to be used by the Area Office on Aging.

3. a 15' X 15' enclosed conference room located just inside the main entrance. It will be used as conference or rental space that will bring in added income for the center.

4. two restrooms; 1 men's with two waterclosets (one handicapped), one urinal, two sinks, and 1 women's with four water-closets (one handicapped), two sinks.

5. a workshop.

6. a janitor's room to contain a faucet and drain.

7. a storage area containing a desk, handwashing sink, freezer, and storage for canned and dried food stuffs.

8. a large multi-purpose meeting area to be used for meetings, programs, conversational and recreational activities. Screens must be provided for space division when needed.

9. a semi-quiet meeting area to be open to the multi-purpose area used for reading, conversation, extra eating space, and other activities deemed necessary.

10. ample closed storage for the entire center.

11. Transportation program.

12. Any program under 504 regulations which deal with discrimination of handicapped persons.

The primary constraints involved in designing this center are:

1. meeting Federal, state, and local codes that apply to a senior citizen's center.

2. working within the existing budget.

3. meeting the needs of the Marion County Senior Citizens

and staff.

4. confining the designed area to the boundaries of the 50' X 100' structure.

5. limiting the design to center activities for the elderly of Marion County, Kansas.

Constraints

The building is a newly designed structure and must meet the necessary codes and regulations of the Federal, state, and local government as well as stay within the funds available to the citizens.

Funding

The majority of the funding for the newly constructed center was obtained through a federally funded grant. The remainder of the budget is supplied by fund-raising drives, which will be sponsored by the center's citizens, and outside contributions. The amount of funds available at the onset of the project is \$51,500.00. The funds are divided as follows:

\$ 49,000.00-Federal grant monies

\$ 14,000.00-committed to kitchen and anything related to the nutrition site such as: dining tables and chairs, beverage counters and service, and plumbing.

5,000.00-committed to restrooms.

2,000.00-matching funds.

Barrier-free Requirements

The center must meet the requirements of the Rehabilitation Act of 1973, Title V, Section 504 which reads as follows:

Section 504 of the Rehabilitation Act of 1973 provides that:

No otherwise qualified handicapped individual in

the United States... shall, solely by reason of his handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

Section 504 represents the first civil rights law protecting the rights of handicapped persons and reflects a national commitment to end discrimination of the care or social services that receives federal financial assistance.

A handicapped person has been defined as anyone with a physical or mental disability that substantially limits one or more of such major life activities as walking, seeing, hearing, working, or learning. Handicapped conditions include, but are not limited to: alcoholism and drug addiction (if they limit one or more of life's major activities), cancer, cerebral palsy, deafness or hearing impairment, diabetes, epilepsy, heart disease, mental or emotional illness, mental retardation, multiple sclerosis, muscular dystrophy, orthopedic, speech, or visual impairment, and perceptual handicaps (dyslexia, minimal brain dysfunction, developmental aphasia).

Program Accessibility:

Rules and regulations

Title 45- Public Welfare

Subtitle A- Department of Health, Education, and Welfare, General Administration

Part 84- Nondiscrimination of the basis of handicap in programs and activities receiving or benefiting from federal financial assistance

Subpart C- Program Accessibility

84.21- Discrimination prohibited- No qualified handicapped person shall, because a recipient's facilities are inaccessible to or unusable by handicapped persons, be denied the benefits

of, be excluded from participation in or, otherwise be subjected to discrimination under any program or activity to which this part applies.

Program accessibility differs from barrier-free accessibility.

The general rule for determining if a project is accessible is to see if the services provided by the project are readily usable by handicapped persons. This determination can best be made by having a handicapped person assess the program's accessibility.

Accessibility to a program or activity may be achieved by a number of different methods: redesigning of equipment, reassignment of classes or delivery of services in an accessible building, making aides available to the handicapped individual, home visits, or alternation of the facility. In choosing a method of compliance, however, you must keep in mind that the service needs to be offered in an appropriate integrated setting. Having a facility set aside "just for the handicapped" opposes the intent of Section 504. Structural changes in existing facilities are required ONLY where there is no other feasible way to make the program accessible.

For example: If an activity is being offered in an area that is NOT accessible to a handicapped person, it is sufficient to merely relocate that activity to an area of that building which is accessible. It is also sufficient to have a written plan as to what steps would be taken to make an activity accessible should a handicapped person desire to take part.

You may also obtain 504 compliance by delivering services at alternate accessible sites or by making home visits.

For example, if a nutrition program, which is located in a

building with structural barriers, has as its ONLY purpose serving meals, it could be deemed accessible (program-wise) if meals were delivered to the homes of the handicapped persons. The program accessibility standard is very flexible and permits you to devise ways to make your program accessible short of extremely expensive or impractical physical changes in the facility.

The center also must meet the specific Federal, state, and local codes that apply to the center. It thus should be noted that all recommendations and specifications provided are in congruence with the necessary codes and regulations of the state.

Building Codes:

Fire-

- must meet Class C Rating
- maximum width single exit doors 42"
- exit lights at all exit doors (illuminated at all times)
- unobstructed aisles to exits of not less than 36"
- walls should have a 2 hour fire resistance rating
- walls should not be collapsible if other section of wall collapses

Electrical-

- electrical wiring shall not be installed or altered until it has been checked and a permit issued
- electrical systems must be planned out and approved by inspector
- installation or correction of all electrical wiring must be inspected before it is closed or continued into the next step

Lighting-

- one footcandle general illumination at least
- three footcandle general illumination in restrooms
- standards of natural light 6 footcandle over area of room at a height of 30" above floor

Restroom Requirements-

- needed for women
 - three toilets, one of which is handicapped
 - two lavatories
- needed for men-
 - two toilets, one of which is handicapped
 - one urinal
 - two lavatories

Handicapped Restroom Requirements-

- clear space beyond room door of 60"x72" at least
- clear width between face of water closet and the wall can not be less than 48", 72" deep, outswing of door at least 32" wide
- hand rails must be provided on both sides of not less than 42" long, mounted 33" above and parallel to the floor and the front end positioned 24" in front of water closet

Exit Facilities-

- outside entrances, there must be at least one primary entrance accessible from parking lot of street by way of a walk way uninterrupted by steps or abrupt changes in grades
- outside entrances shall also have a width of not less than 5' and a gradient of not more than 1' in 20'
- doors of swinging type leading directly outside or to a lobby or passageway leading to the outside of the building
- any exit door from place of assembly having an exit capacity of 100 or more maybe provided with a latch or lock only if it is panic hardware

Number of Exits-

- at least two exits, giving access to two separate and independent exits in different directions

Arrangement of Exits-

- exits shall be remote from each other and shall be arranged to minimize the possibility that they may be blocked by any emergency

Measurement of Travel Distance to Exits-

- exits shall be so arranged that the total length of travel from any point to reach an exit will not exceed 150' in any place of building (Exception: the travel distance may be increased to 200' if protected by automatic sprinklers)

Illumination of Exits-

- illumination of exits shall be continuous during the time that the conditions of occupancy require that the means of exits be available for use
- the floors of exits shall be illuminated at all points including angles and intersections of corridors and passageways, stairways and exit doors to values not less than 1.0 fc measured at the floor
- any required illumination shall be so arranged that the failure of any single lighting unit will not leave any area in darkness

Emergency Lighting-

- emergency lighting facilities for exits shall be provided for every building
- when maintenance of illumination depends upon changing from one energy source to another, there shall be appreciable interruption of illumination during the change over. When emergency lighting is provided by prime mover-operated electric generator, a delay of not more than ten seconds shall be permitted.
- emergency lighting facilities shall be arranged to maintain the specified degree of illumination for a period of 1½ hours in the event of a failure of normal lighting
- emergency lighting system either shall be continuous in operation or shall be capable for repeated automatic operation without manual intervention

Exit Markings-

- access to exits shall be marked by readily visible signs in all cases where the exit or way to reach it is not immediately visible to the occupants
- where a main entrance also serves as an exit, the exit location will usually be sufficiently obvious and no exit sign is needed
- every required sign designating an exit shall be so located and of such size, distinctive color, and design as to be readily visible and shall provide contrast with decorations, interior finish or other signs
- every sign shall have the word EXIT in plainly legible letters not less than 6" high with the principal strokes of letters not less than 3/4" wide
- every sign shall be suitable illuminated by a reliable light source giving a value of not less than 5 fc on the illuminated surface
- location of exit signs is not specified but usually placed over exit entrances or near ceiling

Protection-

- the flame spread or smoke development classification of interior surfaces may be secured by applying approved fire retardant paints or solutions to existing interior surfaces having a higher flame spread rating than permitted
- fire retardant paints or solutions shall be renewed at such intervals as necessary to maintain the necessary retardant properties
- if automatic sprinklers are provided the above requirements may be deleted

Service Equipment-

- rooms containing service equipment subject to explosion shall not be located directly under or adjacent to required exits
- such rooms shall be effectively cut off from other parts of the building by construction having not less than a one-hour fire resistance rating
- all openings between rooms or enclosures for hazardous operations or materials shall be protected by standard self-closing automatic fire door and shall be provided with adequate vents to outer air

Service Equipment (continued)

- doors connected to such rooms must be 45 minute "B" labeled doors
- kitchen must have Vapor Removal Cooking Equipment in accordance with the NFPA Standard 96
- kitchen facilities must be approved by and accepted by authority having jurisdiction

Activity Analysis

The Activity Analysis including spatial requirements, furniture, and equipment, recommendations, and human needs requirements are located on the following pages. Column one consists of the activities the senior citizens requested. Column two consists of human need requirements. Column three consists of the furniture/equipment needed in the building.

Activities Desired	Human Need Requirements	Spatial Requirements	Furniture/Equipment
I. Nutrition Site A. Indoor meals 1. preparation 2. tray and flat storage 3. serving 4. consuming food in comfortable position 5. cleaning up 6. storage (food, utensils, tables, chairs)	See pages 30-33	I. Nutrition Site A. Kitchen 1. work triange 850-900 sq. ft. 2. base cabinet heights (metal) 18" 3. cupboard clearance heights 30½" 4. appliances' floor space oven/range 24½"x24" double sink 60"x24" dishwasher 24"x25½" refrigerator 31x29½"x68" B. Storage (supply items) 1. freezer floor space upright 32x31x64" 2. large cannister/commercial storage pantry C. Serving/eating 1. chair width minimum 1'6" 2. table height/clearance 2'6" at underside minimum 3. eating space per person 20" 4. table and chairs' proximity to one another 4'4"	I. Nutrition Site A. Commercial range B. Convection oven C. Commercial refrigerator D. Three compartment sink E. Vegetable sink F. Dishwasher G. Two mobile work tables H. tables 20-36" square, 4 persons each, 10.3' per unit I. chairs for tables, accomodate 80 persons J. 1-2 chairs for low work surfaces in kitchen K. trash receptacle L. Freezer

Activities Desired	Human Need Requirements	Spatial Requirements	Furniture/Equipment
II. Table games/activities A. cards B. dominoes C. small crafts D. puzzles	See pages 30-33	II. Table games/activities A. table heights 2'6" underside minimum B. chair width 1'6" C. adequate space per person 15-20"	II. Table games/activities A. tables- same as those for dining B. chairs- same as those for dining
III. Storage Area A. storage of food stuffs B. secretarial work C. handwashing		III. Storage Area A. App. 200 Sq. ft	III. Storage Area A. desk, chair B. handwashing sink C. freezer D. Shelving
IV. Hand Crafts A. quilting B. crocheting C. knitting D. needle pointing		IV. Hand Crafts A. floor space for quilting frame 21-45"x27-82" B. floor space for chairs 18½x20" per chair C. personal storage 14x11x5" bin per person	IV. Hand Crafts A. frames for quilts B. appropriate chairs for frames- same as those for dining C. comfortable seating D. direct lighting
V. Quiet Room A. reading B. listening to cassettes		V. Quiet Room A. book shelving History books, 7 books/linial ft. width 8" B. cassette tape storage each tape 3½x2x½"	V. Quiet Room A. comfortable seating B. storage C. shelving D. direct lighting

Activities Desired	Human Need Requirements	Spatial Requirements	Furniture/Equipment
	See pages 30-33	V. Quiet Area (continued) C. cassette player storage 4x2½x8" (storage for 12 tapes) D. floor space for seating 18½x20" per chair	
VI. Meeting Room A. drama presentation B. exercise and aerobics C. guest speaker D. small conversation groups E. self-serve coffee F. dancing G. movie and slide show		VI. Meeting Room A. open floor space, flexible setting, (minimum amount of that required for meal seating 220 sq. ft.)	VI. Meeting Room A. large group seating- meeting- same as those for dining B. comfortable/conversation groups C. coffee pot and stand/ workspace
VII. Enclosed Conference Room A. Meetings B. Rental space		VII. Enclosed Conference Room A. 15' X 15' space B. flexible seating	VII. Enclosed conference Room A. folding chairs B. desk C. file cabinet
VIII. Janitor's Room A. Storage of equipmnet		VIII. Janitor's Room A. App. 35 Sq. ft.	VIII. Janitor's Room A. Faucet and drain

Activities Desired	Human Need Requirement	Spatial Requirements	Furniture/Equipment
IX. Woodworking A. large board sawing B. detail sawing C. turning D. hammering E. bracing F. glueing G. staining/finishing/oiling	See pages 30-33	IX. Woodworking A. floor space for 1. table saw 20x27" 2. ban saw 14x12½" tilts to 45° 3. lathe 19½x12x45½" B. low work surface C. floor space for seating 18½x20" per chair D. work bench 24x60x12"	IX. Woodworking A. seating at counter work B. table saw C. ban saw D. lathe E. saw horse F. work bench
X. Office Space A. consultation B. filing C. desk work		X. Office Space A. desk single pedestal 49½x28x29" B. occupant's chair space (accommodates wheelchair) 3'6½"x2'1" C. visitor's chair space (accommodates wheelchair) 3'6½"x2'1" D. file cabinet 4 drawer 20½x52x30"	X. Office Space A. desk B. chairs (2) C. file cabinet

Activities Desired	Human Need Requirements	Spatial Requirements	Furniture/Equipment
XI. Restrooms A. toileting B. hand washing/drying	See pages 30-33	XII. Restrooms A. toilet stall for handi capped, stall to be farthest from restroom entrance B. urinals floor or wall mounted with projection of 1'6" from wall and lip at 1'5" above floor, flush valve at maximum of 4'0" above floor C. water closet seat height 20" off floor, wall hung D. grab bars (12, 16, 24, or 32" placed 2'9" above floor E. electric hand dryer (10x11½") placed 3'4" above floor F. roll paper holder without stops placed 1' from front of stool, 3'5" above floor G. lavatories- cantilever type water taps low profile, cross shape or lever type, below basin clearance 2'2", mirror hung 5'10" up from floor	XII. Restrooms A. sinks (2) B. toilets () C. sets of hand rails (2) D. urinals (1)

Activity Analysis of Human Need Requirements

The following specifications are recommended for the general use of the Center to fulfill human needs requirements.

Acoustical Control

- STC 55 (47-50 decibels for floors, walls, ceilings, partitions)

Thermal Control

- maintained at 68-72°F
- 45-50% Relative Humidity
- central heat and air recommended

Luminous Control

- high level of unconcentrated lumination without glare
 - Kitchen (70-100 fc)
 - Dining (20-30 fc)
 - Bathroom (30 fc)
 - Halls, passages, stairs (20 fc)
 - Exterior (20 fc)
 - Storage (10 fc)
 - Office space (70 fc)
 - Woodworking (120-150 fc)
 - Quiet reading (70 fc)
 - Table games and activities (30 fc)
 - Meeting (30 fc)
 - Hand crafts (70+ fc)
- placed so that doors, signs, keyholes, etc. are clearly illuminated
- multiple switch controls
- permanent fixtures in areas requiring general illumination (One light fixture in each 200 square feet)
- avoid shadows
- avoid drastic changes in levels of illumination
- greater use of indirect lighting and greater use of unbalanced

- light sources (i.e. incandescent and fluorescent)
- chosen to flatter skin

Convenience Outlets

- general: duplex 24-36" on center above floor
switches 36" on center above floor
one every 12'
- halls, passages, etc: one duplex for each 50 linear feet
- kitchens: 30-60" above floor, 15 amp/125 volts, 240 volt
above counters 6" high
one every 4'
- bathroom: not less than 30" not more than 60" above floor
rated 15 amp/125 volts
above vanities 6"
- intercoms and circuit breakers: 56" maximum from floor

Ventilation

- air should move across to provide air circulation between open windows and the room air inlet or outlet
- the system may be: Individual, serving each unit
Group, serving a group of units
Central, serving all units
- controlled by means of a readily accessible and operable damper or switch
- dust filters should be provided
- screened weatherproof louvers for all vent openings in exterior walls and similarly exposed locations
- air changes/hour: 10/hour-summer
8/hour-kitchen
8/hour-bathroom
4/hour-public entrance and corridors

Plumbing

- pipes sized to eliminate noise
- down feed water supply system for buildings requiring a water booster pressure system

- isolated hot and cold water shut off valves for each space
- "look-see" access panel to all pipe spaces
- all cold water piping to be insulated
- expansion loops in hot water piping
- expansion joints

Doors and Access Openings

- allow for wheelchair access
 - 32" minimum width
 - 34" width primary building doors
 - 39" clear approach to door
- no raised door sills or steps
- automatic doors not recommended
- no revolving doors
- avoid sliding doors

Seating

Lounge Chairs:

- designed to support the resident
- designed for convenience
- fabric or breathable vinyl upholstery
- arm rests should extend beyond the leading edge of the seat
- rests should offer enlarged, upturned gripping surfaces
- legs should be sufficiently splayed to contact floor surfaces at four points outside the periphery of the seat platform
- seat should not deflect beyond 2" to provide an adequate cushioning
- should provide adequate "ride"
 - needs spring base or firm foam over springs
 - no down cushions
- should provide "initial feel" a sense of relative softness

Dining Chairs

- must offer adequate support in lower back and lumbar region
- arms for entrance and egress
 - must penetrate beneath table apron

- have four legs
 - leg point of contact with floor should be in a square periphery outside the seat platform periphery
- ease of moveability

Sofa

- other standards same as lounge chairs
- two seated positions best (love seat)

Open Display Storage and Case Goods

- safety first consideration
- rounded corners
- sufficiently stable to act as a brace or support
 - no modular or vertical pole or column styles
- stable shelving

Chapter IV

CONCLUSIONS

This project/report was conducted to assist the senior citizens of Marion County, Kansas toward the arrival of the design and development of a senior citizen's center.

A literature search was conducted as an attempt toward establishing a connection between human behavior and the environment in order to provide validity for the design of the Senior Citizen's Center.

Interviews were conducted to determine the needs, expectations, likes, dislikes, building structure and size, and financial resources available.

Findings from the initial interview were evaluated in conjunction with Federal, state, and local codes to determine the space allotment requirements for the center's restrooms and kitchen. The remainder of the space was planned in order to meet the needs and requirements of the senior citizens. The resulting space allocations were presented to the Marion County Board for their evaluation. The necessary changes were implemented in the plan which resulted in an acceptable space plan for the senior citizen's center.

For the center to be acceptable and workable, the design solution had to meet certain criteria which included: staying within the set budget, meeting Federal, state and local codes, satisfying

the needs of the senior citizens and staff, and providing social, recreational, educational, and nutritional opportunities for the citizens.

A post occupancy evaluation, though not a portion of this report, will be conducted at a later date to determine if the design and development of the center met the needs of the senior citizens of Marion County, Kansas.

During the post occupancy evaluation study, the following issues will be considered:

1. Does the center provide the social, recreational, educational, and nutritional opportunities for the citizens?
2. Does the center meet the physiological, sociological, and psychological needs of the users?
3. Does the space function effectively as a senior citizen's center for the users?
4. Does the selection of furnishings, colors, patterns, textures, finishing materials, and accessories meet the requirements of senior citizens?
5. What is the responsibility or role of the designer toward developing a workable plan for senior citizens centers?

REFERENCES CITED

Administration on Aging, Office of Human Development Services,
Department of Health, Education, and Welfare

- 1979 Older American's Act of 1965, as Amended.
Washington, D.C.

All-University Gerontology Center and Center for Instructional
Development

- 1975 Barrier-Free Design for the Elderly and the Disabled.
Syracuse, N.Y.: Syracuse University.

Architectural and Transportation Barriers Compliance Board.

- 1977 Resource Guide to Literature on Barrier-Free
Environments with Selected Annotations. Washington,
D.C.

Bednar, Michael J

- 1976 Barrier-Free Environments. Stroudsburg, Penn.:
Downen, Hutchinson, and Ross, Inc.

Cohen, Lilly

- 1979 Funding in Aging. Garden City, N.Y.: Adelphi
University.

Department of Health, Education, and Welfare's Office for Civil
Rights

- 1979 Handbook for the Implementation of Section 504 of the
Rehabilitation Act of 1973. Washington, D.C.

Gelwicks, Louis E. and Newcomer, Robert J.

- 1974 Planning Housing Environments for the Elderly.
Washington, D.C.: National Council on the Aging, Inc.

Koncelik, Joseph A.

- 1976 Designing the Open Nursing Home. Stroudsburg, Penn.:
Downen, Hutchinson, and Ross, Inc.

McRae, John

- 1976 Elderly in the Environment. Nashville, Tenn.: American
Institute of Architects.

Maslow, Abraham

- 1954 Motivation and Personality. New York, N.Y.: Harper and Row.

Nahemow, L. and Lawton, P.

- 1976 Toward an Ecological Theory of Adptation in Aging.
Environmental Psychology. New York, N.Y.: Holt,
Rinehardt, Wilson.

Office of the Secretary for Civil Rights.

- 1978 Handicapped Persons Rights Under Federal Law-Section 504
of the Rehabilitation Act of 1973. Washington, D.C.

Pastalan, Leon

1970 Perception and the Elderly. Ann Arbor, Michigan: Institute of Gerontology, University of Michigan.

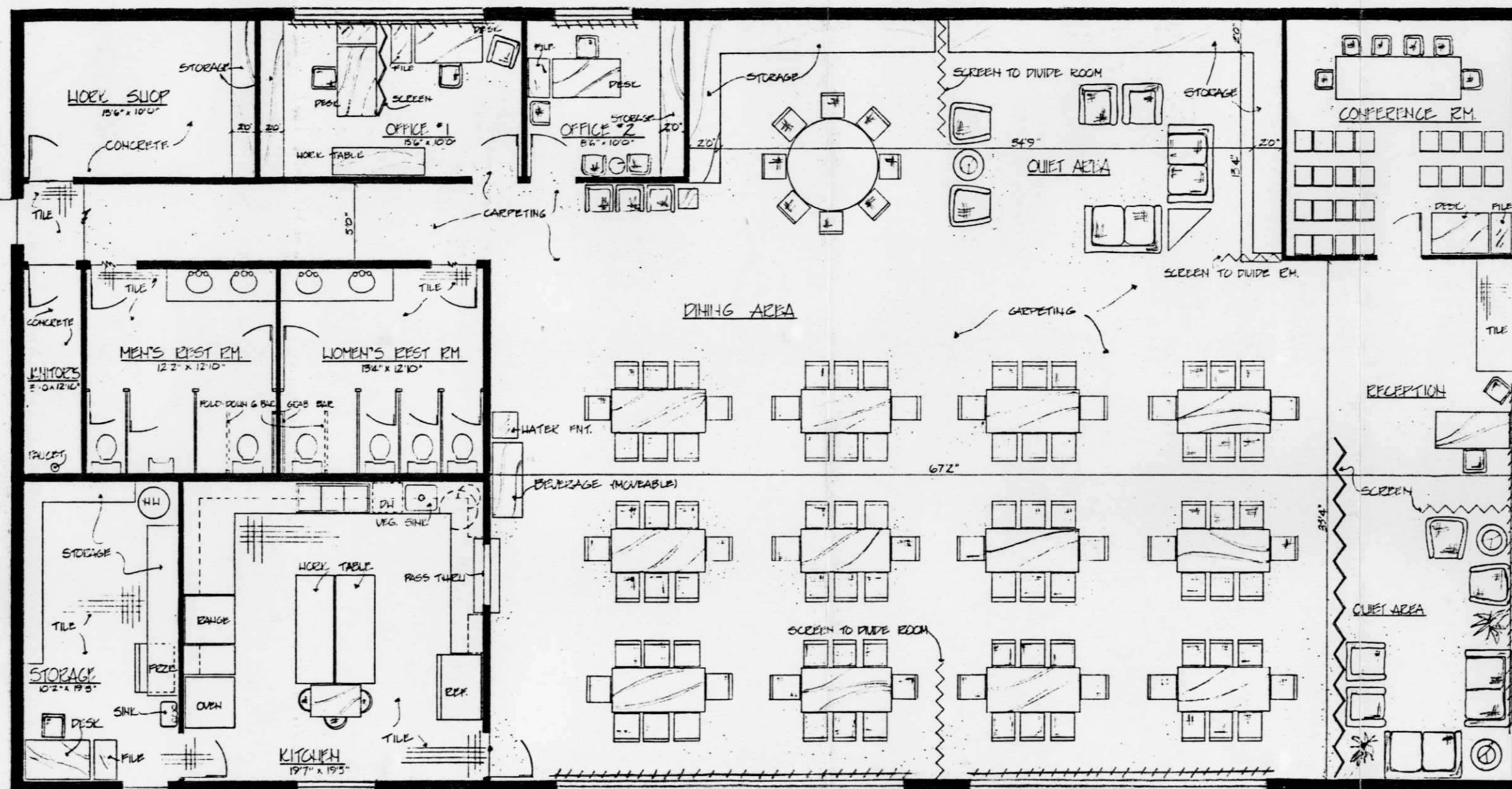
Pena, William

1977 Problem Seeking An Architectural Programming Primer. Houston, Texas: Wall Company Inc.

Porteous, J. Douglas

1977 Environment and Behavior: Planning and Everyday Urban Life. Reading, Mass.: Addison-Wesley Publishing Co.

APPENDIXES



GENERAL NOTES:
 1 ALL EXTERIOR WALLS 8"
 2 ALL INTERIOR PLUMBING WALLS 6"
 3 ALL OTHER WALLS 4"
 4 ALL DIMENSIONS ARE INSIDE WALLS

FLOOR PLAN
 SCALE: 1/4" = 1'-0"

FIGURE 1

FLOOR PLAN
 MARION COUNTY

SHEET
 OF 8 SHEETS

ROOM FINISH SCHEDULE								
REMARKS	FLOOR	BASE	WALLS				CEILING	NOTES
C = CARPETING W = WOOD R = RESILIENT FL. CUG. WC = WALL COUG. P = PAINT CP = CEILING PANELS			SOUTH	WEST	NORTH	EAST		
							HT.	
NAME								
OFFICE #1	C	W	WC	W	WC	WC	CP	9'0"
OFFICE #2	C	W	WC	WC	WC	W	CP	9'0"
QUIET AREA	C	W		W	W	W	CP	9'0"
CONFERENCE	C	W	WC	WC	WC	WC	CP	9'0"
MEN'S REST ROOM	R	W	P	P	P	P	CP	9'0"
WOMEN'S REST ROOM	R	W	P	P	P	P	CP	9'0"
HALL	C	W	WC		WC		CP	9'0"
JANITOR'S							CP	9'0" UNFINISHED
WORKSHOP	UNFINISHED	W	P	P	P	P	CP	9'0"
STORAGE	R	W	P	P	P	P	CP	9'0"
KITCHEN	R	W	P	P	P	P	CP	9'0"
DINING	C	W	WC	WC			CP	9'0"
QUIET AREA	C	W	WC			WC	CP	9'0"

FIGURE 2

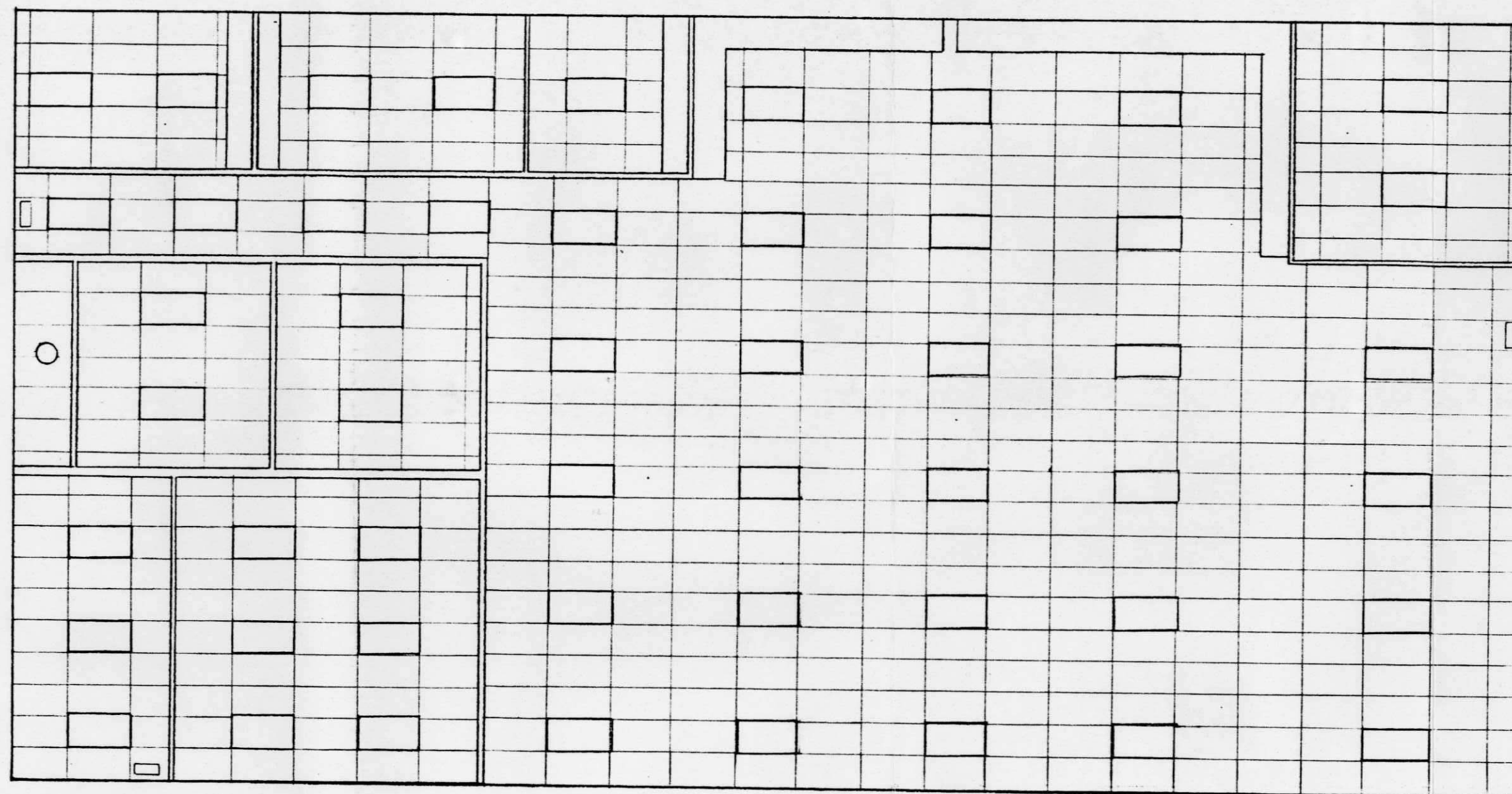
FURNITURE SCHEDULE

	ITEM #	QUANTITY	MANUFACTURER	UPHOLSTERY	HARDWARE	WOOD FINISH	REMARKS
OFFICE #1	1	2	DESK & CHAIR				CLIENT'S
	2	1	WORK TABLE				"
	3	2	FILE				"
OFF. #2	4	1	NEMSCHOFF CHAIR # 811-1	1190 RICEBRAID			
	5	1	SCREEN				CLIENT'S
	6	1	DESK & CHAIR				CLIENT'S
QUIET AREA	7	1	FILE				"
	8	3	NEMSCHOFF CHAIR # 811-1	1189 WINTER WHEAT			
	9	1	TABLE			WALNUT	CLIENT'S
CONF. RM.	10	2	NEMSCHOFF CHAIR # 815-1	1192 OATMEAL			
	11	2	NEMSCHOFF CHAIR # 815-1	1136 OATMEAL			
	12	2	NEMSCHOFF LOUVER SEAT # 813-2	8401 GRAPHIC			
DINING RM.	13	1	TABLE			WALNUT	GIFT
	14	1	LAMP & TABLE				GIFT
	15	30	FOLDING CHAIR'S				CLIENT'S
REC.	16	1	FOLDING TABLE				"
	17	1	DESK				CLIENT'S
	18	1	FILE				"
QUIET AR.	19	1	NEMSCHOFF TBL # X247-21K			WALNUT	
	20	12	NEMSCHOFF TBL # X247-19K			WALNUT	
	21	52	NEMSCHOFF CHAIR # 34K	1190 OATMEAL		WALNUT	
	22	52	NEMSCHOFF CHAIR # 35K	1198 OATMEAL		WALNUT	
	23	1	DESK & CHAIR			WALNUT	CLIENT'S
	24	1	NEMSCHOFF CHAIR # 34K	1190 OATMEAL		WALNUT	
	25	2	SCREEN				CLIENT'S
	26	2	NEMSCHOFF CHAIR # 811-1	1198 OATMEAL			
	27	2	NEMSCHOFF CHAIR # 811-1	1187 OATMEAL			
	28	2	NEMSCHOFF LOUVER SEAT # 811-2	8576 STRIPE			
	29	2	TABLE & LAMP				CLIENT'S
	30		KITCHEN APPLIANCES		S. STEEL		ACA PROVIDED
	31	1	DESK & CHAIR				CLIENT'S
	32	1	FILE				"

FIGURE 3

FURNITURE SCH.
MARION COUNTY

SHEET
3
OF 8 SHEETS



SYMBOL KEY	
SYMBOL	DESCRIPTION
○	CEILING MOUNTED INCANDESCENT
□	RECESSED FLUORESCENT 2'x4' GRID
□	CEILING MOUNTED EMERGENCY EXIT

GENERAL NOTES:
 1. 2'x4' CEILING GRID WITH RECESSED FLUORESCENT
 2. 9'0" CEILING HEIGHT



REFLECTED CEILING
 SCALE: 1/4" = 1'0"

FIGURE 4

REFLECTED CELG.
 MARION COUNTY

SHEET
 4
 OF 8 SHTS



SYMBOL KEY	
SYMBOL	DESCRIPTION
T-S	SINGLE POLE TOGGLE SWITCH - IVORY
T-S ⁴	4 WAY TOGGLE SW. IVORY
RHO	RANGE HOOD WITH EXHAUST, FAN, LT. & SW.
O	120 V. FLOOR OUTLET GROUNDING TYPE
O—	120 V. CONVENIENCE OUTLET-DUPLEX GROUND TYPE
O—	240 V. CONVENIENCE OUTLET-DUPLEX GROUND TYPE
T	TELEPHONE
□	BREAKER BOX

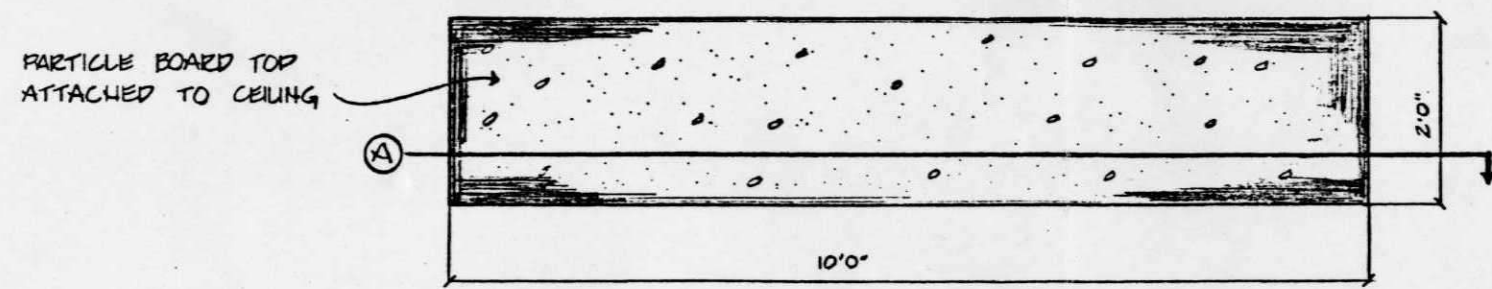
GENERAL NOTES:

1. ALL KITCHEN CONVENIENCE OUTLETS +39"

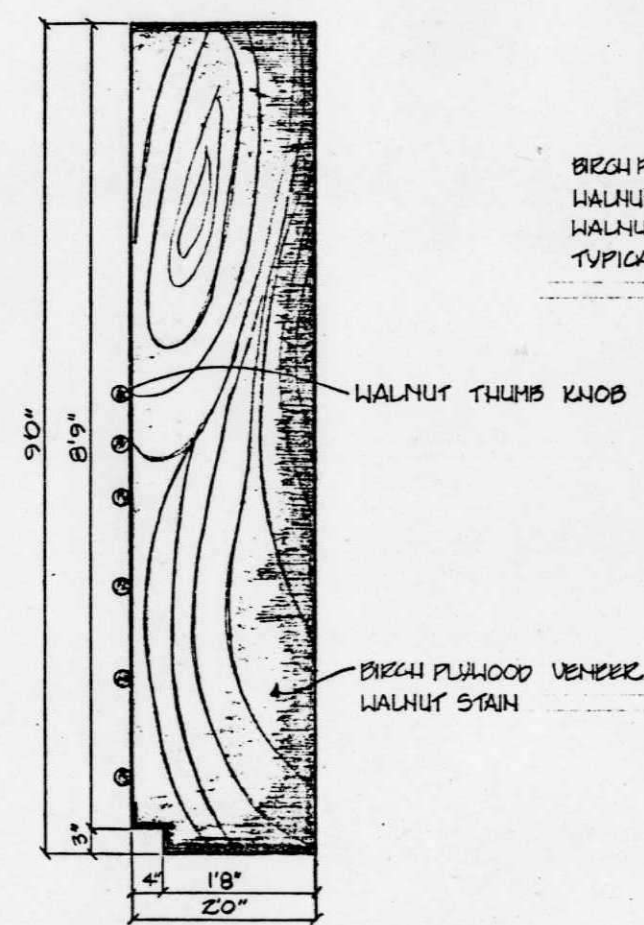
ELECTRICAL PLAN
SCALE: 1/4" = 1'0"

ELECTRICAL PLAN
MARION COUNTY

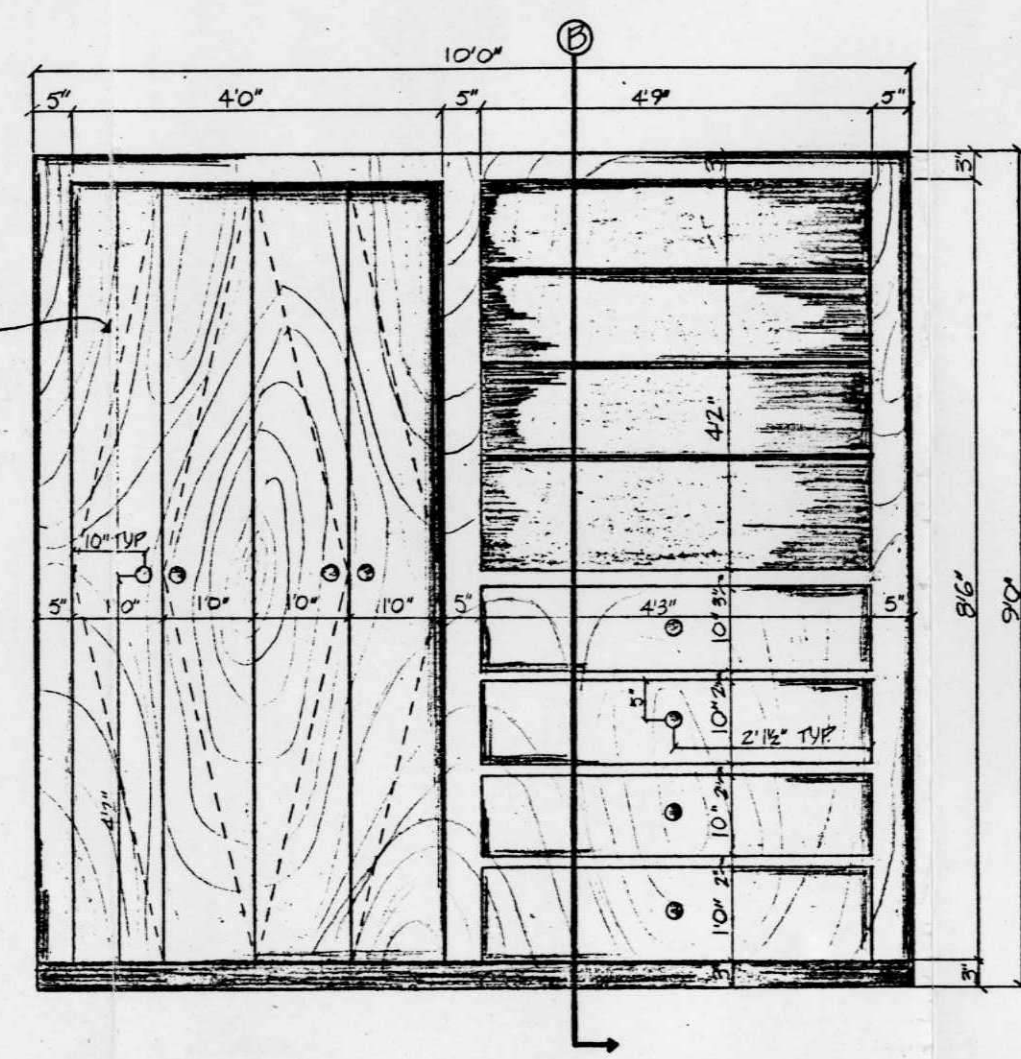
SHEET
5
OF 8 SHEETS



TOP VIEW - OFFICE STORAGE UNIT
SCALE: 3/4" = 1'0"



SIDE VIEW - STORAGE UNIT
SCALE: 3/4" = 1'0"

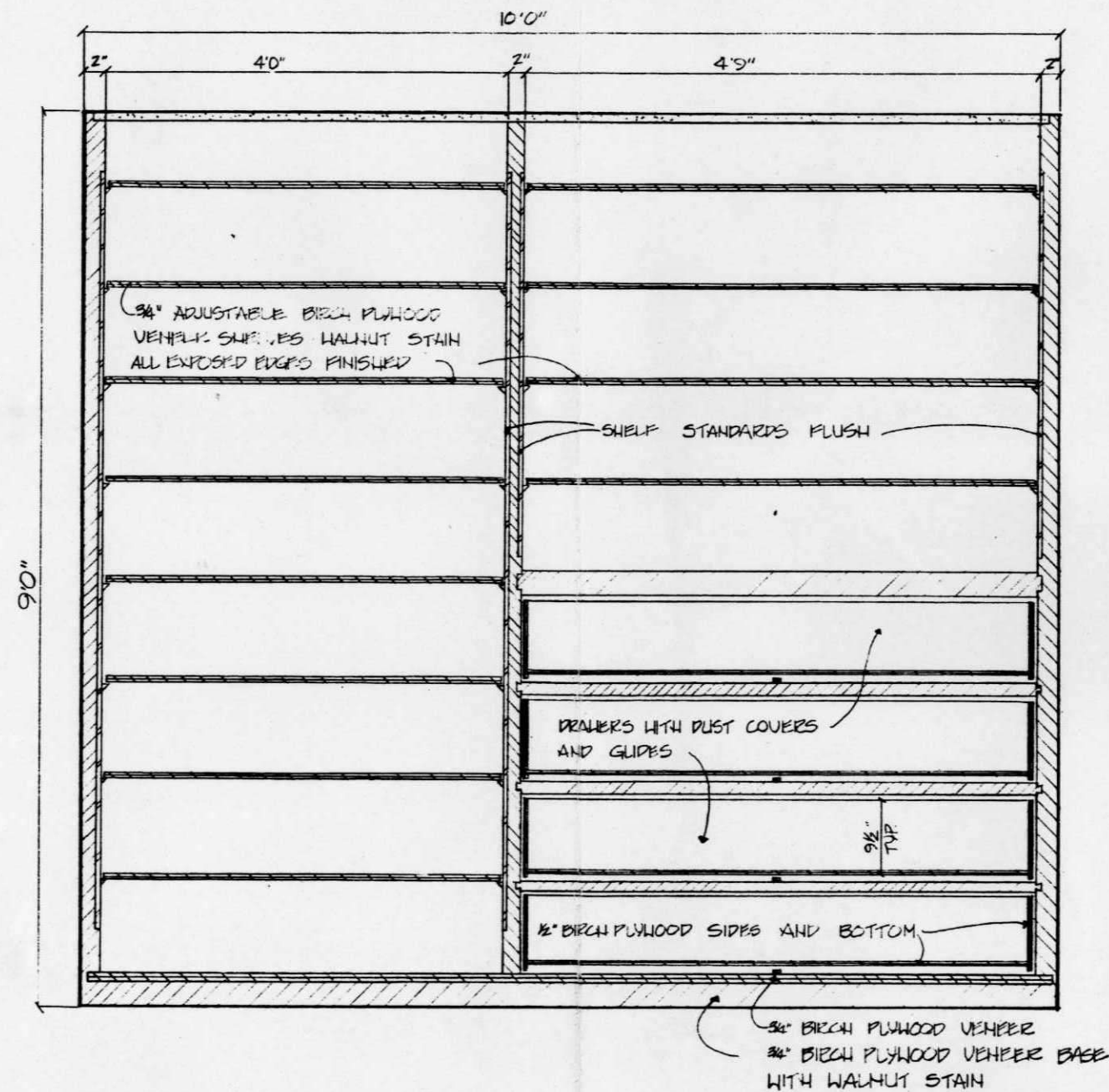


FRONT VIEW - STORAGE UNIT
SCALE: 3/4" = 1'0"

FIGURE 6

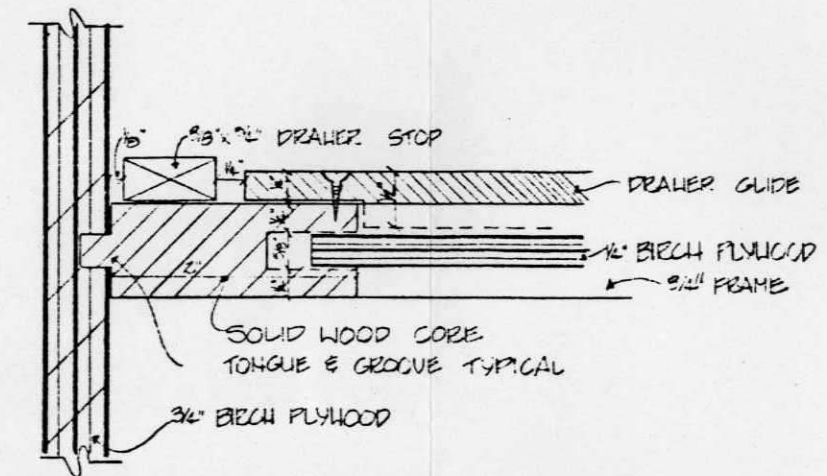
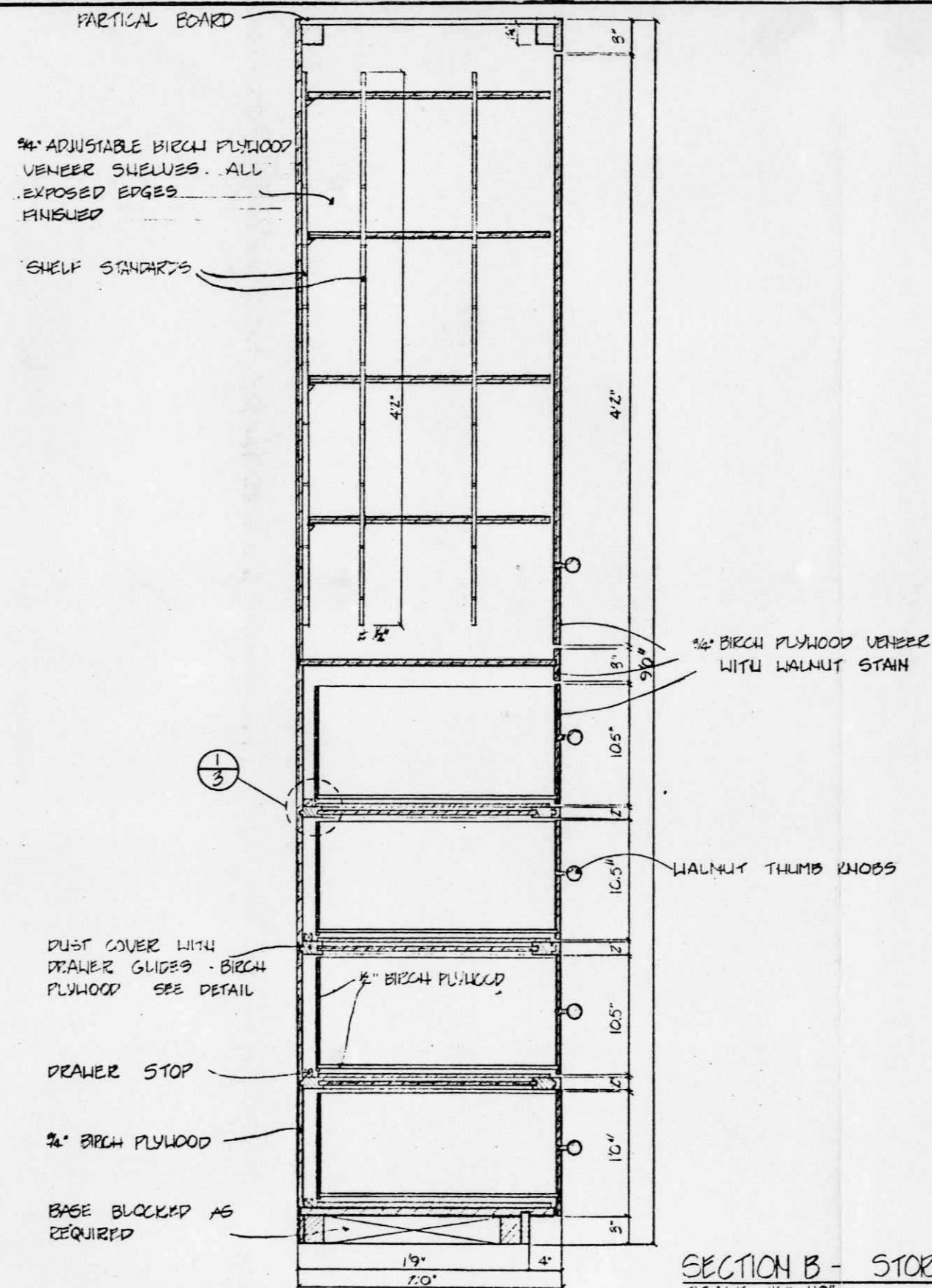
OFFICE #1
STORAGE UNIT - VIEWS
MARION COUNTY

SHEET
6
OF 8 SHTS



SECTION A - STORAGE UNIT
SCALE: 1"=1'0"

FIGURE 7



SECTION B - STORAGE UNIT
SCALE: 1/2" = 1'0"

FIGURE 8

OFFICE #1
STORAGE UNIT - SECTION 4 B
MARION COUNTY

SHEET
8
OF 8 SHEETS

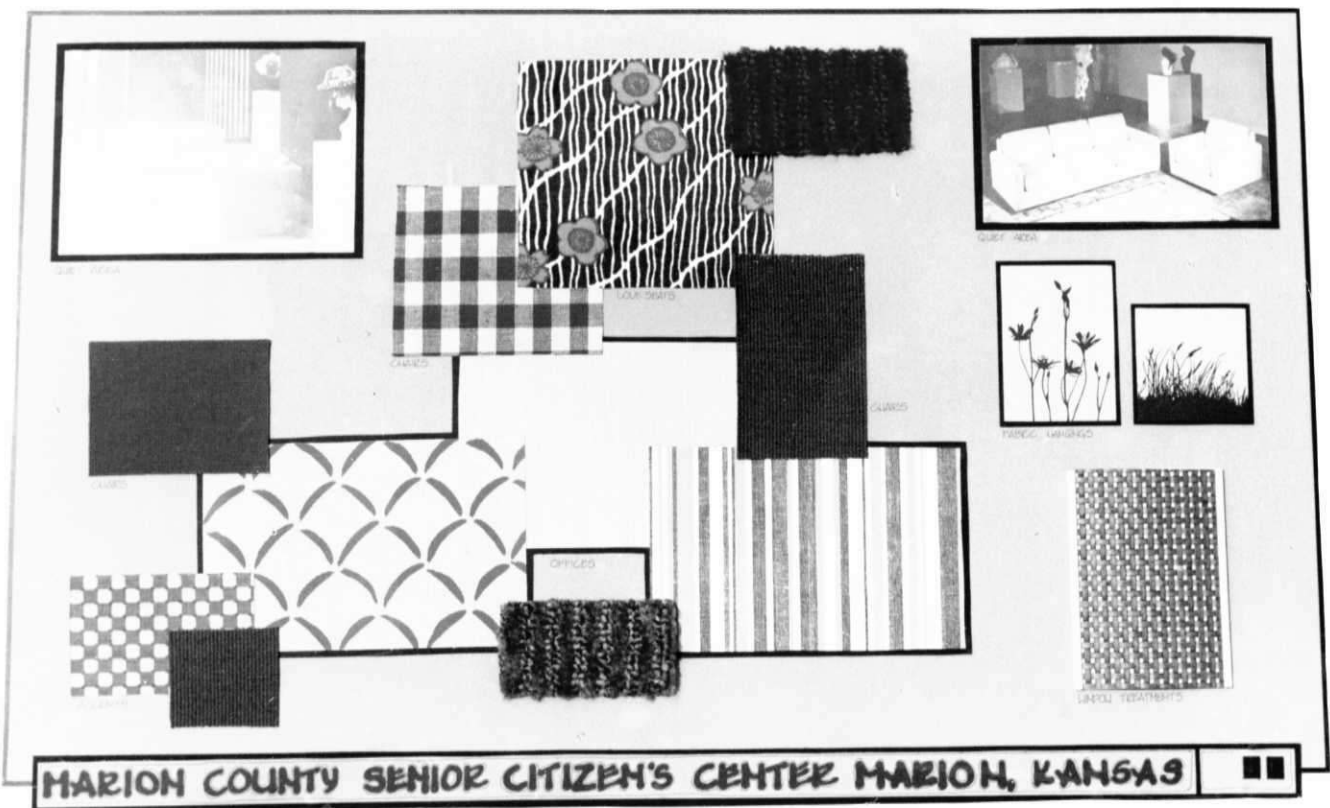


Figure 3

PROJECT SCHEDULE AND WORK FLOW. CRITICAL PATH BAR CHART

Time in weeks

0 5 10 15 20 25+

Project pre-program

0

Pre-construction Phases

5

Project Construction Phases

10

20

25+

Project Evaluation

No time table items

Interview with Board
Preliminary Design
Finalize financing

Interviews, Design work, Approvals.

Contract Documents: 1. Building 2. Furniture and equipment. 3. Finishes.

Bidding of all items.

Contract awards, Signing, Insurance, Bonds, Permits for all items.

Delivery and installation of equipment.

Delivery and installation of finishes.

Delivery and installation of furniture. Trouble shoot problems.

Final inspection. Final payments to include guarantees and all paperwork.

Project evaluation at end of 6 months to 1 year.

TABLE I

PROJECT CHART
MARION COUNTY

APPENDIX A

RESOURCE PERSONS

Senior Citizen's Planning Board of Marion County, Kansas:

Mr. J.L. Fruechting, President

Mr. David Blackim, Vice-President

Mr. Dale Koegoern, Treasurer

Mrs. Mildred Siebert, Secretary

Mr. Herbert Wullschger

Mr. Ezra Bermhardt

Mrs. Joyce Clark, Senior Citizen's coordinator, Office of
the Elderly, Marion, Kansas

Area Office on Aging, Manhattan, Kansas

Mr. Jim Lyons, Director

Mrs. Ginger Brookins, Aging Consultant

Ms. Barbara Roth, Director, Mid-Kansas Senior Services

Code Requirements

Mr. Dale Petty, Firechief

Mr. Duane Nichols, Electrician

Mr. Clifford Bennington, Plumber

DOCUMENTATION OF DESIGN PROCESS AND THE DESIGN OF A
SENIOR CITIZEN'S CENTER IN MARION COUNTY, KANSAS

by

BARBARA JEAN CANNON

B.S., Kansas State University, 1971

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements of the degree

MASTER OF SCIENCE

Department of Clothing, Textiles and Interior Design

Kansas State University
Manhattan, Kansas

1981

ABSTRACT

The report deals with the development of a design solution for a senior citizen's center in Marion County Kansas. The center, a newly constructed building, is being designed specifically to meet the particular needs of the elderly of Marion County.

The report is divided into two phases: 1. the literature review and the documentation of the design process and 2. the graphic and pictorial representation of the actual recommended design.

Part I includes: 1. the review of the literature which provides information on the elderly concerning physiological, sociological, and psychological changes which occurs throughout the aging process, and 2. Federal, state, and local codes which need to be followed to accommodate the changes in the elderly. The literature review also provides information about the interaction between the elderly and their environment on which to base design decisions. The design process consisted of three major parts. The first part was concerned with interviewing senior citizens and staff to determine their needs and wants. The interviews were necessary in order to help meet the specific needs of the Marion County elderly. The second part consisted of a literature review. The final step of the process was the selection of problem solutions. This consisted of two parts: 1. determining the design alternatives and 2. selecting the best solution to the design problem. From the best solution, an exact set of plans was developed which the senior citizens of Marion County could use for the design and development of their center.

Part II presents the actual design of the center. The report includes a graphic communication of the design solution by means of a program, floor-plan, electrical and reflected ceiling plans, sample boards, furniture and

room finish schedules, and the critical path work flow chart.

The report is an attempt to identify the needs of the elderly of Marion County and develop a plan that will be of benefit to them.