

LIBRARY
Montana State University
BOZEMAN

A COMMERCIAL AND COMMUNITY CENTER

FOR COLSTRIP, MONTANA

A JOINT THESIS PROJECT

JAMES BAKER

FLORIAN WALICKI

1 JUNE 1975

A PROJECT EXECUTED AS PARTIAL FULFILLMENT OF CREDIT FOR THE DEGREE OF
BACHELOR OF ARCHITECTURE AT THE SCHOOL OF ARCHITECTURE, MONTANA STATE
UNIVERSITY, BOZEMAN, MONTANA

P378
B174

~~720.6~~ NA2540
~~476~~
~~5117~~

TABLE OF CONTENTS

INTRODUCTION.....	1
PROJECT CONSIDERATION.....	5
HISTORY.....	7
FEASIBILITY STUDY FOR EXPANSIONS OF COLSTRIP.....	8
SITE SELECTION AND SITE ANALYSIS.....	16
CLIMATIC FEATURES.....	18
EXISTING LAND USE.....	20
VEHICLE AND PEDESTRIAN CIRCULATION.....	22
COMMERCIAL FACILITIES.....	22
PRESENT SCHOOL FACILITIES.....	23
HOUSING UNITS.....	24
PROPOSED LAND USE.....	26
SITE CONSIDERATIONS.....	27
HOUSING EVALUATION.....	28
SCHOOL.....	30
ROADS.....	31
GENERAL.....	32
COMMUNITY CENTER.....	33
SITE CONSIDERATIONS.....	35
GENERAL PLAN CONSIDERATION.....	35
PHYSICAL DESIGN CRITERIA.....	36
PROPOSED COMMERCIAL.....	39
DESIGN CRITERIA.....	40
BIBLIOGRAPHY.....	43

THE THOUGHTS AND PHILOSOPHIES DISCUSSED IN THIS THESIS ARE AN EXPRESSION OF TWO INDIVIDUALS. THE JOINT THESIS PROJECT WAS AN ATTEMPT AT SIMULATING PROFESSIONAL DESIGN TEAM PROCEDURES.

THROUGHOUT THE PAST MONTHS OF ENDEAVOR MANY OBSTACLES WERE INCURRED WHICH REQUIRED DISREGARD FOR PERSONAL CONVENIENCE. AS ONE OF THE MEMBERS OF THE DESIGN TEAM, I MUST EXPRESS MY APPRECIATION AND RESPECT FOR MY PARTNER, JIM BAKER AND FOR HIS UNSELFISH EFFORTS AT REALIZING A SUCCESSFUL CULMINATION TO THIS PROJECT.

MY SINCERE THANKS ARE EXPRESSED TO THE FOLLOWING PEOPLE, NOT ONLY FOR THEIR ASSISTANCE ON THE THESIS PROJECT BUT FOR MANY YEARS OF SHARING THEIR EXPERTISE: BILL SEMPLE, ELMIRA SMYRL, GEORGE McCLURE, HUGO ECK, DON COLLINS, DAVE WESSEL, ILMAR REINVALD, FRANCES WOODS AND IFAN PAYNE. TO DEBBIE, WHO HAS BEEN A PATIENT TYPIST AND FRIEND, THANK YOU FOR THE CONSTANT SMILE AND CONSIDERATION.

MY TOTAL EFFORTS ARE DEDICATED TO DEANNA, WHO HAS ENDURED SO MUCH AND IN RETURN HAS ASKED SO LITTLE.

L. Sonny Walicki

A NOTE OF APPRECIATION TO MY PARTNER SONNY WALICKI, FOR HIS TIME AND PATIENCE AND TOTAL INVOLVEMENT IN THIS PROJECT.

ALSO, I WOULD LIKE TO THANK DEB FOR WAITING THROUGH THE PAST FIVE YEARS.

James R. Baker

INTRODUCTION

THESIS STATEMENT: "A DESIGN TEAM'S EFFORT RESPONDS TO AND SYNTHESIZES A SOLUTION FOR ARCHITECTURAL NEEDS MORE THOROUGHLY AS OPPOSED TO AN INDIVIDUAL DESIGNER'S RESPONSE."

THE WORKING TEAM SITUATION HAS BEEN IN PRACTICE FOR CENTURIES. TRADITIONALLY, A PERSON ACCEPTS RESPONSIBILITY FOR PERFORMANCE AND WITHIN A CERTAIN TIME PROVIDES A SET OF GOODS OR A SERVICE. AS THE RESPONSIBILITIES GROW SO DOES THE NEED FOR MORE VARIED INPUT AND EVALUATION.

THIS TYPE OF PROGRESSION HAS LED TO THE FORMATION OF PARTNERSHIPS, CORPORATIONS, COMMITTEES, ETC., ALL DOING JOBS OF THE MAGNITUDE AND IN THE TIME SPAN THAT WOULD HAVE PUT THEM OUT OF REACH FOR THE INDIVIDUAL.

IT HAS BEEN PROVEN AND OBVIOUSLY SO, THAT TWO OR MORE PEOPLE WORKING AT THEIR LEVEL OF COMPETENCY CAN PRODUCE MORE OF WHATEVER THEY ARE STRIVING FOR THAN ANY ONE OF THESE PEOPLE WORKING INDIVIDUALLY AT THE SAME LEVEL.

IN ADDITION, UNLESS RESEARCH PROCEDURE IS SO RIGIDLY STRUCTURED THAT IT PRODUCES IDENTICAL SHEETS OF FACTS, THE INFORMATION WILL PROBABLY REPRESENT A GREATER NUMBER OF SOURCES AND, HENCE, BE MORE INFORMATIVE.

OCCUPATIONAL SPECIALIZATION IS ON THE INCREASE THROUGHOUT THE WORLD. AS PRACTICALLY ALL PHASES OF BUSINESS AND INDUSTRY ARE BECOMING MORE COMPLEX, SPECIALISTS ARE TRAINED TO HANDLE SEGMENTS OF THE WORK LOAD. A GROUP OF OVERSEERS THEN COORDINATES THE WORK LOAD.

THE FIELD OF ARCHITECTURE CAN NO LONGER RESIST SPECIALIZATION AND STILL PROVIDE FULL AND COMPETENT SERVICES.

DESIGN TEAMS HAVE BECOME INCREASINGLY POPULAR FOR ARCHITECTURAL FIRMS. TEAM MEMBERS MAY BE FROM A VARIETY OF BACKGROUNDS AND SPECIALIZED FIELDS ALL WORKING TOGETHER TO ESTABLISH A MEANINGFUL COMMUNICATION AND, THUS, A MORE THOROUGH DESIGN SOLUTION.

THIS TYPE OF TOTAL DESIGN OFFERING "INHOUSE" SERVICES WHEN HANDLED WELL IS CONVENIENT FOR THE CLIENT, PROFITABLE FOR THE FIRM, AND REWARDING FOR THE INDIVIDUALS INVOLVED.

HOWEVER, IT MUST BE REMEMBERED THAT DESIGN TEAMS, OR ANY PROBLEM SOLVING TEAM FOR THAT MATTER, WILL ONLY WORK WELL UNDER COOPERATIVE AND COMMON GOAL-ORIENTED SITUATIONS. MUTUAL RESPECT AND CONSISTANT WORK HABITS ARE A MUST FOR A SUCCESSFUL TEAM APPROACH.

THE DESIGN PROCESS HAS LONG BEEN REGARDED AS A HIGHLY INDIVIDUALIZED DECISION MAKING PROCESS. DECISIONS ARE OFTEN THE RESULTS OF "GUT REACTIONS" OR PRIOR INDIVIDUAL EXPERIENCES. DECISIONS SO DERIVED

OFTEN LACK THE FACTS OR STATISTICS TO BACK THEM UP.

NO DOUBT MANY ARCHITECTURAL MISTAKES ARE THE RESULTS OF THIS TYPE OF OVERSIGHT.

AS EACH DECISION BECOMES MORE CONSEQUENTIAL AND MORE RESPONSIBLE, IT IS MANDATORY THAT THE NUMBER OF OVERSIGHTS BE HELD TO A MINIMUM.

THIS IS WHERE A CONSCIENTIOUS TEAM APPROACH IS STRONG. EACH DECISION MUST SATISFY ALL TEAM MEMBERS JUST AS THE RESULTING ARCHITECTURE MUST SATISFY ALL PEOPLE, NOT THE INDIVIDUAL DESIGNER.

A TEAM DECISION, WHILE NOT ELIMINATING THE TOTAL POSSIBILITY OF OVERSIGHT, GUARANTEES THAT EACH DECISION RECEIVES THE SCRUTINIZING OF MORE THAN ONE PERSON. THIS TYPE OF INTERACTION IS INVALUABLE. A CRITIC(S) WHO IS WORKING WITH AND IS FAMILIAR WITH THE SAME PROJECT IS ALWAYS AVAILABLE FOR COMMENT WITHOUT THE NEED FOR A BRIEFING. THIS BRIEFING PERIOD MAY BECOME SO TIME CONSUMING AS THE PROBLEM UNFOLDS, THAT THE DESIGNER BEGINS TO RESPOND SOLELY ON HIS OWN JUDGEMENT.

IT IS IMPORTANT TO NOTE THAT A DECISION ARRIVED AT BY A TEAM SHOULDN'T BE TERMED A "COMPROMISE." IF TEAM MEMBERS ARE WILLING TO REMAIN OPEN TO SUGGESTION AND CHANGE WHEN A GOOD REASON IS SHOWN, THIS COMMUNICATION WILL FORM A GOOD SOLUTION. (IT IS IMPORTANT FOR ANY DESIGNER TO REALIZE THAT EVERY PROBLEM HAS MANY FEASIBLE AND GOOD SOLUTIONS.)

INDIVIDUALLY, MOST DESIGNERS EXPERIENCE HIGHS AND LOWS IN THEIR APPROACH TO A PROBLEM. COLLECTIVELY, DESIGNERS CAN OVERCOME THIS CYCLICAL PATTERN BY PRODDING THE OTHERS OUT OF THEIR SLUMP. THIS MAKES FOR A MORE EFFICIENT DESIGN PROCESS.

A TEAM PRESENTATION IS LIKELY TO EXPLORE A GREATER VARIETY OF GRAPHIC TECHNIQUES AS EACH INDIVIDUAL'S TALENTS ARE EXPRESSED. ALSO, THE VERBAL PRESENTATION WILL BE MORE INFORMATIVE AND CONVINCING TO THE CLIENT IF HE KNOWS THE PEOPLE ANSWERING THE QUESTION ARE PARTICULARLY KNOWLEDGEABLE IN THE FIELD THEY ARE TALKING ABOUT.

OF COURSE, TEAM WORK IS ESPECIALLY SUSCEPTIBLE TO A NUMBER OF PROBLEMS THAT HAVE KEPT IT FROM BECOMING MORE WIDE SPREAD IN USE. PROBLEMS SCHEDULING WORK TIME, DEALING WITH "DEAD WEIGHT" MEMBERS, AND KEEPING COMMUNICATION LINES OPEN MUST BE CONSTANTLY DEALT WITH.

ONE OBSTACLE PECULIAR TO THE ARCHITECTURAL DESIGN TEAM IS THE NOTION THAT DESIGN IS SO SUBJECTIVE AND SO MUCH A "WHOLE" THAT ANY BREAK AWAY FROM AN INDIVIDUAL DESIGNER'S CONCEPT REDUCES ITS EFFECTIVENESS.

IN A PROBLEM-SOLVING TEAM APPROACH THERE IS NO ROOM FOR THIS SORT OF IDEALISM.

THE DESIGN TEAM FOR THIS PROJECT WAS COMPOSED OF TWO ARCHITECTURAL THESIS STUDENTS. BOTH WERE ACADEMICALLY COMPATIBLE BUT THEIR ENVIRONMENTAL BACKGROUNDS WERE VARIED.

HAD THE THESIS OUTLINE ALLOWED IT, MORE TEAM MEMBERS FROM OTHER FIELDS SUCH AS MARKETING AND CIVIL ENGINEERING WOULD HAVE BEEN DESIRABLE.

PROJECT CONSIDERATION

IN SEARCH OF A MEANINGFUL AND TIMELY PROJECT, THE CURRENT ISSUES RAISED BY PUBLIC CLAMOR OVER STRIP MINING AND LAND RECLAMATION INTRODUCED THE PROSPECTS OF ATTEMPTING A MASTER PLAN FOR COLSTRIP, MONTANA. WITH OUR NATION CAUGHT UP IN THE MIDST OF AN ENERGY CRISIS, COAL DEVELOPMENT IN SOUTHEAST MONTANA APPEARED IMMINENT.

INITIAL INVESTIGATION OF THE CURRENT SITUATION REVEALED THE EXISTENCE OF A TOWN PLAN FOR COLSTRIP. THIS PLANNING PROPOSAL ACCOMODATED APPROXIMATELY 1800 PEOPLE, THE POPULATION NECESSARY TO PERFORM THE MINING AND OPERATION OF GENERATING PLANTS #1 AND #2, PRESENTLY UNDER CONSTRUCTION. IN THE NEAR FUTURE LOOMED THE POSSIBILITY OF EXPANDING THE NUMBER OF COAL GENERATING PLANTS AND, THUS, AN EVEN GREATER INFLUX OF POPULATION.

IT BECAME EVIDENT THAT A REALISTIC PROBLEM EXISTED: I.E. TO ANALYZE AND TO PLAN FOR THE FUTURE GROWTH AND NEEDS OF THE AREA. WITHOUT CAREFUL MASTER PLANNING FOR THE PROJECTED GROWTH, AN UNCONTROLLED RANDOM EXPANSION COULD OCCUR. DETERIORATION OF THE ORIGINAL PLANNING CONCEPTS WOULD INVARIABLY FOLLOW. THE LAND IN THE TOWN OF COLSTRIP AND SURROUNDING AREAS WAS EITHER OWNED, LEASED, OR MINERAL RIGHTS WERE HELD BY WESTERN ENERGY COMPANY, A WHOLELY OWNED SUBSIDIARY OF MONTANA POWER COMPANY.

THE REALITY OF DEALING WITH A COMPANY OWNED TOWN AND AN ACTUAL CLIENT BOLSTERED THE CREDIBILITY OF UNDERTAKING THIS PARTICULAR THESIS PROJECT. THE SCOPE OF THE PROJECT WILL BE TO DESIGN A GENERALIZED EXPANDED TOWN PLAN FOR THE INCREASE IN POPULATION THAT WOULD BE GENERATED BY THE PERMANENT EMPLOYMENT OPPORTUNITIES FOR PLANTS #3 AND #4. IN ADDITION A MORE DETAILED DEFINITION AND DESIGN OF COMMERCIAL AND COMMUNITY ENTERTAINMENT AND RECREATIONAL FACILITIES WILL BE RESOLVED.

MINIMAL COMMERCIAL LEASING AREA WAS PROVIDED FOR IN THE ORIGINAL TOWN PLAN. HOWEVER, AT THE TIME OF THIS WRITING, NO FACILITIES FOR SOCIAL FUNCTIONS WERE INCLUDED. CONSIDERING THE RELATIVE ISOLATION OF COLSTRIP, THE INCLUSION OF THESE AMENITIES SEEMED HIGHLY DESIRABLE.

THE ACCEPTANCE OF SUCH A PROBLEM NECESSITATED THE EXCLUSION OF ANY PERSONAL STAND IN REGARDS TO THE STRIP MINING ISSUE OR THE ENERGY SITUATION.

THE ACTUAL FUTURE OF GENERATING PLANTS #3 AND #4 IS PRESENTLY LOCKED IN LEGAL DEBATE ON STATE AND FEDERAL LEVELS. THE FINAL LEGAL DECISIONS MAY WELL PREPARE THE WAY FOR THE BEGINNING OF AN ERA OF "ELECTRIC PARKS" FOR SOUTHEASTERN MONTANA.

WITH ACTUAL CLIENT CONTACT AVAILABLE THROUGH THE TOWN MANAGER AND THE PRESIDENT OF THE ENERGY COMPANY, CLIENT FEEDBACK AND CRITICISMS THROUGH CRITIQUES WOULD AGAIN PUT REALISTIC CONSTRAINTS ON THE PROJECT. OVER THE PAST HALF DECADE THE PUBLIC HAS DEMANDED NUMEROUS PRIVATE,

FEDERAL, AND STATE FUNDED PROJECTS TO STUDY THE AREA. THE GAMUT OF STUDIES HAVE INCLUDED THE HISTORY, POPULATION, CLIMATE, TERRAIN, AND THE GEOGRAPHIC LOCATION OF COLSTRIP. ANALYSIS AND REVIEW OF THESE FACTORS WILL CERTAINLY ASSIST IN PREPARATION FOR THE BASIC FOUNDATION OF THE PROJECT.

HISTORY

NORTHERN PACIFIC RAILWAY COMPANY BEGAN OPEN STRIP MINING AT COLSTRIP IN 1923. THE ORIGINAL CONSTRUCTION OF THE TOWN COINCIDED WITH THE ONSET OF MINING OPERATIONS. COLSTRIP WAS OWNED AND OPERATED BY NORTHERN PACIFIC UNTIL 1958, AT WHICH TIME THE COAL-FIRED LOCOMOTIVES GAVE WAY TO THE NEWER DIESEL ENGINES AND MINING OPERATIONS CEASED. IN 1959, MONTANA POWER COMPANY PURCHASED THE ENTIRE TOWN AND THE SURROUNDING INTERESTS. USING A COAL MINING SUBSIDIARY, WESTERN ENERGY COMPANY, MINING OPERATIONS WERE RESUMED IN 1968 TO SUPPLY THE BILLING STEAM ELECTRIC GENERATING PLANT. TO DATE, THE COAL IS USED TO FIRE GENERATING PLANTS NEARBY OR IS SOLD TO OTHER UTILITY COMPANIES FOR CONSUMPTION IN AREA SUCH AS CHICAGO AND SEATTLE.

SINCE THE TOWN IS OWNED BY WESTERN ENERGY COMPANY, IT MUST SUPPLY COMMUNITY FACILITIES WHICH WOULD NORMALLY BE THE FUNCTION OF THE LOCAL MUNICIPAL SERVICES. EXCLUDING TWO CHURCHES, TWENTY-FOUR ACRES OF SCHOOL LAND, AND A PRIVATE BANK, ALL HOUSING AND LAND IS PRESENTLY OWNED BY THE COMPANY.

FEASIBILITY STUDY FOR EXPANSION OF COLSTRIP

COLSTRIP IS NOT A TYPICAL MONTANA TOWN, NOR IS IT TYPICAL OF ANY NEW TOWN ACROSS THE COUNTRY. IT HAS IT'S OWN SET OF ECONOMIC, SOCIAL, GEOGRAPHICAL, AND POLITICAL PROBLEMS. VOLUME AFTER VOLUME OF STUDIES HAVE BEEN DONE IN THE AREA CONCERNING ALL ASPECTS OF THE IMPACT THAT IS FORTHCOMING. MILLIONS OF DOLLARS WERE SPENT AT THE REQUEST OF THE VARIOUS ENERGY COMPANIES INVOLVED AS WELL AS BY A VERY CONCERNED PUBLIC AUDIENCE.

SOME STUDIES ARE CONCLUSIVE AND NEED NO FURTHER VERIFICATION. OTHERS, BY THEIR NATURE, ARE MERELY SPECULATION MADE IN GOOD FAITH.

FOR THE PURPOSE OF THIS PROJECT, MUCH OF THE SITE ANALYSIS INFORMATION WAS ACCEPTED AS FOUND IN STUDIES SUCH AS THE WESTINGHOUSE REPORT, NOVEMBER, 1973, AND THE ENVIRONMENTAL IMPACT STATEMENT, MONTANA STATE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION, NOVEMBER, 1974.

THE MAJOR THRUST OF THESE IMPACT STUDIES SEEMED TO DEAL WITH THE POTENTIAL FOR ENVIRONMENTAL HOLOCAUST. THE IMPACT OF A PROJECT SUCH AS COLSTRIP, IN LIGHT OF MORE POTENTIAL DEVELOPMENT, NECESSITATED A DEMAND FOR STUDIES BEFORE IT COULD FURTHER DEVELOP WITHOUT CONTROL.

VERY LITTLE CONCLUSIVE PROOF OF SOCIO-ECONOMIC EFFECTS RESULTED. IN ORDER TO DETERMINE A VIABLE ARCHITECTURAL APPROACH, KEEPING FOREMOST IN MIND THE NEEDS AND WANTS OF THE PEOPLE, MORE RESEARCH AND EVALUATION

HAD TO BE DONE.

THE EXISTING FACILITIES WERE DETERMINED FROM RESEARCH, SITE INSPECTION, AND INTERVIEWS WITH INFORMED PEOPLE INVOLVED DIRECTLY WITH THE DEVELOPMENT OF THE COLSTRIP AREA.

THE MASTER PLAN FOR THE INITIAL NEW TOWN OF 1800 WAS SCRUTINIZED AND EVALUATED. A DECISION WAS THEN MADE TO ACCEPT THE PLAN ON WHICH THE CONSTRUCTION WAS ACTUALLY ABOUT SEVENTY-FIVE PER CENT COMPLETED AND WORK WITH THE GUIDELINES AND CONSTRAINTS IT HAD SET UP.

COMMERCIAL AND COMMUNITY ENTERTAINMENT FACILITIES AS WELL AS OTHER SERVICES NECESSARY IN SUCH AN ISOLATED SITUATION INDICATED THAT PROVISIONS HAD BEEN MADE FOR JUST 1800 PEOPLE.

ASSUMING THAT GENERATING PLANTS #3 AND #4 WOULD BE BUILT ADJACENT TO THE EXISTING PLANTS #1 AND #2, AND THAT IT WOULD BE DESIRABLE TO INVOLVE THE RESULTING WORK FORCE AND THEIR FAMILIES IN THE TOWN, COLSTRIP DEFINITELY WOULD NEED MORE FACILITIES.

IN DETERMINING THE TYPE AND NUMBER OF FACILITIES THAT WOULD BE NEEDED AT A FUTURE DATE ONLY A PORTION OF INFORMATION CONCERNING SOCIO-ECONOMIC TENDENCIES OF SMALL TOWNS OR NEW TOWNS IS APPLICABLE.

AGAIN, COLSTRIP WAS VERY ATYPICAL.

IN ORDER FOR THE THESIS PROJECT TO TAKE A REALISTIC DIRECTION, MARKETING FEASIBILITY STUDY WAS PREPARED AS A MEANS TO ESTABLISH AND VERIFY NEEDS. THIS WOULD SET A DIRECTION FROM WHICH RESPONSE TO SUCH NEEDS COULD BE INITIATED.

THE FIRST STAGE OF THE FEASIBILITY STUDY DEALT WITH POPULATION. WHAT WOULD THE STABLE POST-CONSTRUCTION INFLUX BE AND HOW WOULD IT COMPOSITIONALLY BREAK DOWN?

THERE WAS A GREAT DEAL OF VARIATION IN POPULATION PROJECTIONS, AS NOTED IN THE MANY STUDIES. SOME INDICATED POPULATIONS TWENTY YEARS FROM NOW TO BE RELATIVELY UNCHANGED IN ROSEBUD COUNTY; OTHERS INDICATED THE POPULATION WOULD GROW TO SEVEN TIMES ITS PRESENT SIZE BEFORE FINALLY LEVELING OFF.

THESE HUGE DIFFERENCES MUST BE ATTRIBUTED TO UNCERTAINTY SURROUNDING THE MAGNITUDE OF COAL DEVELOPMENT. WILL COAL BECOME THE NATION'S PRIMARY ENERGY SOURCE OR WILL IT BE REPLACED BY A NEW MORE ATTRACTIVE ENERGY SOURCE AND, THUS, DIMINISH IN IMPORTANCE?

THE PROJECTION OF ROSEBUD COUNTY AND COLSTRIP POPULATIONS (SEE FIG.1) FOR THE PURPOSE OF THIS THESIS REFLECTS THE CURRENT PATH OF COAL DEVELOPMENT WITH RESPECT TO INCREASING ENVIRONMENTALISTS' OBJECTIONS; IT ALSO REFLECTS THE OPINION OF A NUMBER OF PEOPLE INVOLVED WITH THE ACTUAL COMMUNITY PLANNING.

A SHARP RISE IN POPULATION WILL OCCUR BETWEEN 1975 AND 1980, ASSUMING GENERATING PLANTS #3 AND #4 ARE GIVEN LEGAL APPROVAL. THE RISE WILL REVERSE AS THE PLANTS ARE COMPLETED AND THE CONSTRUCTION WORKERS LEAVE. AROUND 1980 THE POPULATION IN COLSTRIP IS EXPECTED TO STABILIZE AT 4000 AND THEN ASSUME A MORE NATURAL RATE OF GROWTH AS EXPERIENCED BY COMMUNITIES OF SIMILAR SIZE AROUND THE STATE.

THIS 1980 PROJECTION OF 4000 IS THE BASIS ON WHICH THE MARKET FEASIBILITY STUDY TAKES OFF FROM.

COMPOSITIONALLY, COLSTRIP'S POPULATION IS RATHER UNIQUE TO MONTANA IN THAT A GREATER PERCENTAGE OF ITS POPULATION IS IN YOUNGER AGE BRACKETS, THE MOST PROMINENT DIFFERENCE OCCURRING IN THE 20-44 GROUP (SEE FIG. 3).

THE POPULATION LIVING IN A THIRTY-MILE RADIUS AROUND COLSTRIP WAS DETERMINED FROM A 1970 CENSUS (SEE FIG. 4) A SIMILAR RADIUS ADJUSTED TO ACCOUNT FOR THE PROBABLE COMMERCIAL AND COMMUNITY FACILITY DRAW WAS CHARTED AND THE 1980 POPULATION OCCUPING THIS AREA WAS ESTIMATED, TAKING INTO ACCOUNT A SOMEWHAT ACCELERATED COAL DEVELOPMENT (SEE FIG. 5).

ONCE THE POPULATION FIGURES WERE ESTABLISHED, THE INCOME PER WORKER AND THE RESULTING TOTAL INCOME FOR THE TOWN WAS CALCULATED (SEE FIG. 11).

A COMPARISON CHART BETWEEN MONTANA AND ROSEBUD COUNTY SHOWS THE PERCENTAGE OF WORKERS IN EACH INCOME GROUP FOR 1973. RESULTS SHOW ROSEBUD COUNTY WORKERS OVERALL MAKING LESS MONEY (SEE FIG. 9).

ANOTHER BREAKDOWN FOR ROSEBUD COUNTY IN 1972 SHOWS THE PERCENTAGE OF WORKERS IN VARIOUS TYPES OF EMPLOYMENT AND THE AVERAGE ANNUAL PERSONAL INCOME FOR EACH EMPLOYMENT TYPE (SEE FIG. 8). PERSONAL INCOME FOR MINING EMPLOYEES IS SECOND ONLY TO FARM PROPRIETORS.

POPULATION, PERSONAL INCOME, AND INCOME AVAILABLE FOR RETAIL SPENDING IS COMPARED ON A STATE AND COUNTY LEVEL (SEE FIG. 10).

INCLUDED IS A TABLE (SEE FIG. 10) WHICH FURTHER BREAKS DOWN RETAIL SPENDING CATAGORIES BY PERCENTAGE. IT IS INTERESTING TO NOTE THE DIFFERENCE IN THE PERCENTAGE OF PERSONAL INCOME SPENT IN RETAIL OUTLETS: STATEWIDE, THE PERCENTAGE IS 54.4% WHILE IN ROSEBUD COUNTY THE PERCENTAGE IS 69%.

UTILIZING THE DERIVED POPULATION AND WORKER PROJECTIONS FOR COLSTRIP, INCOME BY EMPLOYMENT TYPE FOR 1980 ARE ESTIMATED (SEE FIG. 11). THESE ESTIMATES PROVIDE A TOTAL GROSS EARNINGS, A SPENDABLE INCOME, AND AN AVERAGE INCOME PER WORKER (\$13,500).

THE ADDITIONAL 4000 PEOPLE IN THE COLSTRIP DRAWING RADIUS ARE ASSUMED TO HAVE THE \$10,533 INCOME PER WORKER THAT WAS EXPERIENCED IN ROSEBUD COUNTY. THE TOTAL GROSS EARNINGS AND SPENDABLE INCOME FOR THIS GROUP WERE CALCULATED. (SEE FIG. 11).

THE TOTAL INCOME FIGURE, COMPILED WITH STATISTICS ON INCOME EXPENDITURE

BREAKDOWNS (SEE FIG. 6 AND 10) ESTABLISHED A POTENTIAL SET OF NEEDS AND THE DOLLAR AMOUNTS AVAILABLE TO BE SPENT IN EACH AREA.

ALSO, A COMPARATIVE SPENDING CHART COMPARES THE MONEY SPENT IN VARIOUS RETAIL AREAS IN ROSEBUD COUNTY (1973) TO MONEY THAT WILL BE AVAILABLE FOR EXPENDITURE IN COLSTRIP IN 1980 (SEE FIG. 7). THIS CONCLUSION ASSUMES THE COLSTRIP MONEY WILL BE SPENT ACCORDING TO THE SAME PERCENTAGE BREAKDOWN.

IT MUST BE EXPLAINED THAT THE COUNTY FIGURES REFLECT A COLSTRIP POPULATION IN 1973 OF APPROXIMATELY 900 PEOPLE. ~~THE~~

THE NUMBER AND TYPE OF STORES IN THE COUNTY IN 1973 CAN BE COMPARED TO THE NUMBER OF FACILITIES SCHEDULED TO BE PROVIDED FOR IN COLSTRIP ACCORDING TO THE INITIAL TOWN EXPANSION PROPOSAL FOR 1800 PEOPLE.

THIS COMPARISON CLEARLY POINTS TO AN IMBALANCE IN THE STORE-TO-POTENTIAL-INCOME RATIO. THE CONCLUSION BEING THAT COLSTRIP IN 1980 WILL BE LACKING IN ALL COMMERCIAL FACILITIES WITHOUT ADDITIONAL PROVISIONS (SEE-FIG. 7).

COLSTRIP IS LOCATED 130 MILES EAST OF BILLINGS, 77 MILES NORTHEAST OF SHERIDAN, WYOMING, 52 MILES SOUTHWEST OF MILES CITY, AND 30 MILES FROM THE NEAREST COMMERCIAL CENTER OF ANY SIZE, FORSYTH, WHICH HAS A FULL-TIME POPULATION OF APPROXIMATELY 2000 PEOPLE (SEE FIG. 4).

KEEPING IN MIND THESE DISTANCES AND THE FACT THAT COLSTRIP WOULD GROW TO 4000 PEOPLE, IT SEEMED REASONABLE TO SURMISE THAT THE TOWN WOULD BECOME A SMALL COMMERCIAL HUB FOR A SIZEABLE LAND AREA TO THE SOUTH AND WEST.

SIX MAJOR COAL COMPANIES ARE PRESENTLY MINING IN THE GENERAL AREA: PEABODY, DECKER, KNIFE RIVER, CONSOLIDATION, WESTMORELAND RESOURCES AND WESTERN ENERGY.

WITH THE ASSURED ASSUMPTION THAT A PORTION OF THE OUTLYING INCOME WOULD BE SPENT IN COLSTRIP AS WELL AS A SIZEABLE PORTION OF THE "IN-TOWN" INCOME, IT WAS DEEMED SAFE TO PROVIDE ADDITIONAL COMMERCIAL AND COMMUNITY FACILITIES AS WELL AS INCREASED HOUSING, UTILIZING THE FACTS AND FIGURES GATHERED FROM THE MARKET FEASIBILITY STUDY.

THE LIST OF POSSIBLE FACILITIES WAS NARROWED WITH THE HELP OF SURVEYS AND PREFERENCE MATRICES. THESE ARE EXPLAINED IN THE INDIVIDUAL CRITERIA BREAKDOWNS FOR COMMERCIAL AND COMMUNITY CENTERS (SEE FIG. 18-23).

ONCE A LIST OF FACILITIES WAS ARRIVED AT, AN AVERAGE SALES PER SQUARE FOOT OF FLOOR SPACE WAS DETERMINED. SOURCES OF THESE DETERMINATIONS WERE NATIONAL RETAILING MAGAZINES AND MERCHANTS IN RELATED STORES THROUGHOUT DOWNTOWN BOZEMAN. USING THESE FIGURES, "SAFE" SQUARE FOOTAGE AREAS WERE ALLOCATED THAT COULD ASSURE EACH MERCHANT AN ANNUAL PROFIT RETURN ON HIS ORIGINAL INVESTMENT.

IN ADDITION TO DETERMINING MARKETING FEASIBILITY FOR COMMERCIAL AND COMMUNITY FACILITIES, THE TEAM INVESTIGATED THE HOUSING POTENTIAL IN COLSTRIP, ROSEBUD COUNTY, AND THE STATE OF MONTANA AND COMPARED THESE CHARACTERISTICS TO NATIONAL TRENDS.

ROOMS PER UNIT AND PERSONS PER UNIT WERE CHARTED FOR STATE AND COUNTY LEVELS (SEE FIG. 13).

VARIOUS FORMS OF HOUSING WERE DISCUSSED AND THE POSITIVE AND NEGATIVE POINTS OF EACH WERE WEIGHTED; THE DISCUSSION WAS AN ATTEMPT TO UNDERSTAND THE NATIONAL TREND TOWARD A HIGHER DENSITY LIVING (SEE FIG. 12).

IT WAS REALIZED THAT INDIVIDUAL LAND OWNERSHIP WAS STILL A PREDOMINANT THEME IN MONTANA BUT THE SHIFT TO HIGHER DENSITY LIVING IS BEING REFLECTED IN CITIES AS CLOSE AS BILLINGS (SEE FIG. 15).

A DESIGN DECISION WAS REACHED IN THE FORM OF A 70-30 MULTI-UNIT DWELLING TO SINGLE-UNIT DWELLING RATIO (SEE FIG. 14).

HAVING ESTABLISHED FACILITY TYPES AND THEIR REQUIRED AREAS, CONCEPTUAL PLANNING BEGAN.

A MASTER PLAN INDICATING COMMERCIAL, COMMUNITY, RECREATIONAL, AND HOUSING MIX AS WELL AS AUTO AND PEDESTRIAN FLOW WAS ARRIVED AT TO COMPLEMENT BOTH THE EXISTING PORTION AND THE NEW PORTION OF TOWN.

SITE SELECTION AND SITE ANALYSIS

THE PRESENT SITE LOCATION OF COLSTRIP HAS VERY RESTRICTING PHYSICAL BOUNDARIES. THE BURLINGTON NORTHERN RAILROAD TRACKS FORM THE EASTERN BOUNDARY WHEREAS THE WESTERN SIDE OF TOWN RUNS PARALLEL WITH STATE HIGHWAY, 315. THE SOUTHERN BOUNDARY BORDERS ON THE MINING AREA AND RAILROAD RIGHT-OF-WAY, WITH THE NORTHERN END OF TOWN TERMINATING AT THE INTERSECTION OF THE HIGHWAY AND RIGHT-OF-WAY. THIS ORIGINAL SITE COVERS 245 ACRES.

A NUMBER OF SITES, TOTALLY SEGREGATED FROM THE EXISTING TOWN, WERE CONSIDERED. LAND OWNERSHIP PRESENTED A PROBLEM IN SOME CASES. LIKEWISE, TOTAL SEPARATION OF THE TOWNS WOULD CREATE COMPETITIVE COMMUNITIES RATHER THAN ONE COMPLIMENTARY COMMUNITY, THUS, REDUCING THE POSSIBILITY OF CREATING A COMMERCIAL HUB FOR THE AREA NEAR COLSTRIP.

THE PROPOSED EXPANSION SITE LIES DIRECTLY OPPOSITE THE EXISTING TOWN WEST OF HIGHWAY 315.

LEAVING THE HIGHWAY AT THE PRESENT ENTRANCE TO COLSTRIP AND PROCEEDING DIRECTLY WEST, THE LAND IS RELATIVELY FLAT AND TERMINATES WITH LARGE BUTTES AND RUGGED TERRAIN WHICH SUPPORTS A RELATIVE ABUNDANCE OF TREES AND SHRUBBERY; THIS FORMS THE WESTERN BOUNDARY OF THE NEW SITE.

TO THE NORTH IS A MAN-MADE SURGE POND, CONSTRUCTED TO SUPPLY THE TOWN AND GENERATING PLANTS WITH SUFFICIENT WATER.

THE LAND SURROUNDING THE NORTHEASTERN AND NORTHWESTERN SECTION OF THE SURGE POND IS ACCESSIBLE VIA A ROAD BUILT ACROSS A LAND-FILL DAM. THIS UNDEVELOPED AREA WOULD BE AN EXCELLENT OPEN SPACE AND RECREATIONAL AREA FOR THE COMMUNITY. SURROUNDING THE POND ARE PERHAPS SOME OF THE MORE PLEASANT LANDSCAPING SPECIES AVAILABLE ON THIS SITE...

THE SOUTH AND SOUTHWESTERN LIMITS OF THE NEW SITE BORDER AN AREA WHICH WILL BE STRIP MINED BEGINNING IN MARCH 1974. ONCE THE MINING OPERATION AND LAND RECLAMATION HAVE BEEN COMPLETED, THIS AREA COULD BE MADE AVAILABLE FOR FUTURE EXPANSION OR LEFT AS OPEN SPACE FOR RECREATION FACILITIES.

THE TOPOGRAPHY LENDS ITSELF IN MOST CASES TO ROAD CONSTRUCTION AND BUILDING, WITH THE EXCEPTION OF THE WESTERN BORDER.

ALL OF THE LAND MENTIONED IS EITHER OWNED OUTRIGHT BY WESTERN ENERGY COMPANY OR THE MINERAL RIGHTS HAVE BEEN SECURED WITH AN OPTION TO BUY THE LAND. AS A RESULT, THERE EXISTS NO FORSEEABLE PROBLEMS IN SECURING THIS SITE FOR FUTURE DEVELOPMENT.

THE SITE BEARS THE SAME CHARACTERISTICS AS THE REGIONAL AREA. THE LANDFORM IS ONE OF A ROLLING, BARREN TERRACE, WITH ISOLATED BUTTES, MESA-LIKE HILLS, AND NARROW RIDGES AND BLUFFS.

ELEVATIONS ON THE SITE VARY FROM 3200 FEET TO 3440 FEET. SEVERAL

ROUNDED HILLS AND ELONGATED RIDGES EXIST ON THE SITE, HAVING A NORTHWEST TO SOUTHEAST ORIENTATION AND AVERAGING 3350 TO 3360 FEET IN HEIGHT, WITH THE HIGHEST HILLTOPS APPROXIMATELY 3440 FEET (190 FEET ABOVE THE FLOOD PLAIN IN THE EXISTING TOWN).

ARMELL'S CREEK AND NUMEROUS NEARBY TRIBUTARIES DRAIN NORTHWARD INTO THE TONGUE RIVER AND YELLOWSTONE RIVER. THE STREAMS ARE PERENNIAL WITH GENTLE GRADIENTS AND WELL DEVELOPED FLOODPLAINS. THE NEW SITE HOWEVER HAS NO FLOODPLAIN PROBLEM.

CLIMATIC FEATURES

THE COLSTRIP AREA IS LOCATED IN THE MID LATITUDES AND THE PREVAILING WINDS ARE GENERALLY FROM NORTHWEST, WEST NORTHWEST AND WEST. THE STRONGEST WINDS HAVE BEEN RECORDED IN MARCH AND THE WEAKEST IN DECEMBER.

THE WEATHER IS TYPICAL OF A CONTINENTAL CLIMATE, CHARACTERIZED BY ABUNDANT SUNSHINE, LOW RELATIVE HUMIDITY, AND LIGHT RAINFALL.

THE RAINFALL IS CONFINED LARGELY TO THE WARMER HALF OF THE YEAR, WITH MODERATE WIND MOVEMENT, LARGE DAILY TEMPERATURE CHANGES, AND PRONOUNCED TEMPERATURE EXTREMES ARE CHARACTERISTIC.

THE TOTAL PRECIPITATION AVERAGE FOR COLSTRIP IS 14 INCHES PER YEAR WITH THE HEAVIEST RAINS OCCURRING IN MAY AND JUNE.

THE WINTERS ARE COLD WITH INVERSIONS OF COLD ARTIC AIR FROM THE NORTH. TEMPERATURES OF ZERO OR BELOW LASTING FROM 2 TO 4 DAYS USUALLY ACCOMPANY THE COLD WAVES. FREEZING AND SUB-FREEZING TEMPERATURES OCCUR ON THE AVERAGE OF 170 DAYS PER YEAR, MOSTLY FROM NOVEMBER TO APRIL.

TEMPERATURES ABOVE 90°F OCCUR ON THE AVERAGE FOR 30 DAYS DURING JUNE, JULY, AUGUST, AND SEPTEMBER. THE ANNUAL AVERAGE DAILY TEMPERATURE MAXIMUM AND MINIMUM RANGE IS 51°F AND 38°F WITH AN ANNUAL AVERAGE OF 45°F.

AT PRESENT FOUR PUBLIC WELLS SUPPLY WATER TO COLSTRIP EACH AVERAGING 40 GALLONS PER MINUTE WITH AN APPROXIMATE DEPTH RANGE FROM 300 FEET TO 1000 FEET. MOST OF THE PRIVATE WELLS IN TOWN PRODUCE A FLOW RATE OF 20 GALLONS PER MINUTE AND HAVE DEPTH RANGE OF 20 FEET TO 350 FEET.

ONCE CONSTRUCTION IS COMPLETED AND OPERATIONAL, THE SURGE POND, WHICH IS PIPELINE FED FROM THE YELLOWSTONE RIVER, WILL BECOME THE MAJOR SOURCE OF WATER FOR THE ORIGINAL TOWN AND THE EXPANSION TOWN.

THE FLORAL AND FAUNAL COMPOSITION OF THE COLSTRIP AREA ARE REPRESENTATIVE OF THE SOUTHEAST REGION OF MONTANA. MIXED GRASSLANDS AND PINE WOODLANDS PREVAIL THROUGHOUT THIS AREA, WITH THE GRASSLAND VARYING FROM YEAR TO YEAR DEPENDING ON THE AMOUNT OF RAINFALL. THESE GRASSLANDS CONSIST OF MIXED PRAIRIE AND SHORT GRASS PRAIRIE SPECIES.

WHERE THE GRASSLANDS MERGE WITH THE PONDEROSA PINE, SAVANNAH OCCURS.

THE SAVANNAH IS DOMINATED BY THE GRASSES, WITH SCATTERED PINES OCCURRING PRIMARILY ON STEEP RIDGES AND SANDSTONE OUTCROPPINGS. IT CONSISTS OF VARYING DENSITIES OF PINE TREES WITH OPEN STRETCHES OF MIXED GRASSES OF THE RANGELAND TYPE. ALSO, STRETCHES OF RIPARIAN (HARDWOOD DECIDUOUS) WOODLAND OCCUR INTERMITTENTLY ALONG THE STREAMS. THE PONDEROSA PINES ARE LIMITED TO ROCK OUTCROPPINGS AND SHALLOW ROCKY SOILS. A SECTION OF DRYLAND WHERE WHEAT AND HAY ARE GROWN EXISTS ON THE SITE.

THE GENERAL RANGE CONDITIONS ARE POOR TO FAIR WITH THE EXCEPTION OF THE PONDEROSA PINE WOODLANDS WHICH HAVE FAIR TO GOOD RANGE CONDITIONS.

SOIL INFORMATION IS LIMITED BUT AT PRESENT A STUDY IS BEING SPONSORED BY WESTERN ENERGY COMPANY. THE PRIMARY UNDERLYING GEOLOGICAL STRUCTURE IS THE FORT UNION FORMATION COMPOSED OF CLAY, SHALE, SILTSTONE, AND SANDSTONE.

EXISTING LAND USE

OVER THE PAST FEW YEARS COLSTRIP HAS EXPERIENCED A POPULATION EXPLOSION. FOR A HALF CENTURY THE COMMUNITY FELT NO MAJOR POPULATION FLUCTUATION. WITH THE ADVENT OF STRIP MINING AND THE CONSTRUCTION OF THE ELECTRICAL GENERATING PLANTS, THE TOWN WAS COMPELLED TO EXPAND FROM ITS SIX SQUARE BLOCK AREA.

MONTANA POWER COMPANY AND WESTERN ENERGY COMPANY WELL AWARE OF THE UNPOPULAR ATTITUDE THE PUBLIC HAD TOWARD THE COLSTRIP DEVELOPMENT, DECIDED IT WOULD BE TO THEIR ADVANTAGE TO PRODUCE, OVER A PERIOD OF

YEARS, A MODEL COMPANY TOWN. SUCH A PROJECT WOULD BOLSTER THEIR PUBLIC IMAGE AS WELL AS MAINTAIN A HIGH EMPLOYEE MORALE, A LOW TURNOVER RATE, AND, THUS, A MORE EFFICIENT OPERATION.

AFTER A PERIOD OF TIME THE TOWN WILL BE SOLD OFF TO THE PUBLIC, GIVING THE EMPLOYEES AN OPPORTUNITY FOR OWNERSHIP AND PERMANENCE.

COMPANY OFFICIALS REALIZED THAT FOR A FEW YEARS DURING THE UNSTABLE CONSTRUCTION PERIOD, THE TOWN POPULATION WOULD BE IN A STATE OF FLUX BUT WOULD EVENTUALLY SETTLE BACK INTO A MORE NORMAL GROWTH RATE.

COLSTRIP IS PRESENTLY FEELING THE DISCOMFORT OF THIS INSTABILITY. THE TEMPORARY FACILITIES FOR THE CONSTRUCTION WORKERS ARE INADEQUATE. THESE MEN AND THEIR FAMILIES ARE OFTEN FORCED TO LIVE IN AREAS REMOTE TO COLSTRIP. THE WEATHER, ROADS, AND DISTANCES TO BE TRAVELED ALL THREATEN THE OVERALL WORKER EFFICIENCY.

THOSE WORKERS FORTUNATE ENOUGH TO FIND LODGING IN THE TOWN ARE CROWDED INTO PORTABLE DORMITORIES OR FORCED TO PARK THEIR TRAILERS ON BARREN WIND-BLOWN CLEARINGS WITH FEW SERVICES.

A MASTER PLAN WAS CREATED FOR THE TOWN WHICH ASSURED THAT ORDERLY GROWTH WAS MAINTAINED AND LAND USE WAS CAREFULLY CONTROLLED.

VEHICLE AND PEDESTRIAN CIRCULATION

THE MASTER PLAN BROKE AWAY FROM THE GRID SYSTEM OF THE ORIGINAL TOWN AND CARRIED CURVILINEAR STREETS WITH BRANCHING CUL-DE-SACS TO THE NORTH AND SOUTH. THIS TYPE OF LAYOUT IS ECONOMICALLY MORE EFFICIENT IN THAT LESS PAVING SURFACE, CURBS, AND UTILITIES ARE NEEDED AND FEWER CUTS ARE NECESSARY TO ESTABLISH SATISFACTORY ROAD GRADES.

ALSO THE WINDING STREETS RELIEVE THE MONOTONOUS RHYTHM OF HOUSES AND DRIVEWAYS, AND PROVIDES GREATER OPPORTUNITIES FOR DISTINCTIVE INDIVIDUAL SITTING AND ATTRACTIVE LANDSCAPING.

THE MASTER PLAN DOES NOT ALLOW THE RANDOMNESS OF THE STREETS TO BECOME CONFUSING.

A SECONDARY TRAFFIC FLOW WAS INTRODUCED IN THE FORM OF A PEDESTRIAN AND BIKE PATH SYSTEM. THESE PATHS FEED THROUGH THE BACK YARDS, PARKS, AND OPEN SPACES OF THE RESIDENTIAL AREAS AND CONNECT THE HOUSING WITH THE COMMERCIAL. DANGEROUS STREET-SIDE PEDESTRIAN WALKWAYS ARE ELIMINATED.

THE TWO MOVEMENT SYSTEMS WERE DESIGNED TO HAVE MINIMAL CONTACT WITH EACH OTHER.

COMMERCIAL FACILITIES

THE COMMERCIAL CENTER WAS CENTRALLY LOCATED ALONG THE HIGHWAY

BETWEEN THE SCHOOL AND THE MAIN ENTRANCE TO THE TOWN. IT LIES ON AN IMPORTANT EAST-WEST AXIS CONTAINING THE PRIMARY ACCESS TO THE PLANT AS WELL AS A PEDESTRIAN LINKAGE TO CENTRAL PARK. THIS AXIS WHEN COMPLETED SHOULD PROVIDE A STRONG VISUAL ORIENTATION FOR THE TOWN.

THE COMPLEX IS COMPOSED OF TWO BUILDINGS CONNECTED BY A BREEZEWAY. THE FIRST BUILDING A LONG, EAST-WEST ORIENTED TWENTY-UNIT MOTEL. THE REMAINDER OF THE COMPLEX IS LEASABLE COMMERCIAL SPACE OFF A DOUBLE-LOAD ENCLOSED CORRIDOR. WESTERN ENERGY HOPES TO SIGN LEASES WITH MERCHANTS REPRESENTING FOOD, DRUG, HARDWARE, LAUNDRY, CLOTHING, AND DEPARTMENT STORES AS WELL AS PEOPLE NEEDING OFFICE SPACE SUCH AS DOCTORS, LAWYERS, INSURANCE SALESMAN, ETC.

ACROSS THE STREET TO THE SOUTH WILL BE AN AUTO SERVICE STATION. JUST EAST OF THE COMMERCIAL COMPLEX, A BANK HAS PUT UP A BUILDING. ON THE SAME BLOCK A FIRE-POLICE STATION WILL BE CONSTRUCTED.

TOTAL SQUARE FOOTAGE OF LEASEABLE COMMERCIAL AREA INCLUDING THE SERVICE STATION WILL BE ABOUT 34,000 SQUARE FEET.

PRESENT SCHOOL FACILITIES

A PUBLIC SCHOOL FOR ALL GRADES EXISTS ON A 23-ACRE SITE BORDERING THE HIGHWAY. THIS SITE AND A FEW SMALLER PARCELS OF LAND IN THE CONFINES OF THE SITE BOUNDARIES ARE THE ONLY PARCELS NOT OWNED BY WESTERN ENERGY COMPANY.

ASIDE FROM THE SCHOOL, THE PARKS PROVIDE THE ONLY COMMUNITY AND RECREATIONAL FACILITIES; THESE ACTIVITIES ARE OF THE OUTDOOR VARIETY, I.E. BASEBALL, BASKETBALL, FOOTBALL.

HOUSING UNITS

THE PRESENT TOWN HAS BEEN DESIGNED TO ACCOMMODATE HOUSING UNITS AT AN AVERAGE OF 5 UNITS PER ACRE. DESCRIPTIVELY THIS ACCOUNTS FOR 128 MOBILE HOMES ON 24 ACRES, 273 SINGLE-FAMILY UNITS ON 60.8 ACRES AND 95 MULTI-FAMILY ON 16.7 ACRES. THE TOTAL OF 496 UNITS PLUS COMMUNITY FACILITIES SUCH AS COMMERCIAL, SCHOOLS, AND CHURCHES, PLUS OPEN SPACE AND RECREATION AREAS ACCOUNTS FOR LAND USE OF APPROXIMATELY 245 ACRES.

ABOUT 75 PER CENT OF THESE UNITS ARE IN PLACE. THEY ARE BEING RENTED BY WESTERN ENERGY WITH HOPES OF EVENTUALLY SELLING THEM TO THE PUBLIC. SURVEY'S TAKEN IN THE TOWN INDICATE THAT THESE SINGLE UNITS WERE THE CURRENT PREFERENCE. MOST FAMILIES WANT THREE BEDROOMS, BASEMENT, GARAGE, CARPETING, AND A NUMBER OF CONVENIENCE APPLIANCES.

SINGLE FAMILY DWELLINGS DOMINATE THE NORTHERN HALF OF THE SITE; SOME ARE OLD HOUSES BUILT ON THE GRID SYSTEM, BUT THE MAJORITY ARE NEW PREFABRICATED MODULAR UNITS SITED ON THE ROLLING TERRAIN. GENEROUS OPEN SPACES SERVE ALL THE UNITS AND ACT AS BUFFERS AND DRAINAGES.

THE MODULAR UNITS APPEAR IN A NUMBER OF VARIATIONS AND PROVIDE A FAST, COMFORTABLE, AND RELATIVELY CHEAP FORM OF HOUSING

CURRENTLY, SOUTH OF THE MAIN ENTRANCE IS A MIXTURE OF MULTI-AND SINGLE-FAMILY DWELLINGS WITH DENSITIES UP TO TEN UNITS PER ACRE. THESE UNITS ARE CLUSTERED AROUND A LARGE PARK WHICH LIES IN THE FLOOD PLAIN OF ARMELL'S CREEK.

THE MULTI-FAMILY DWELLINGS ARE FOUR-TO EIGHT-PLEXES WITH TWO STORY CONSTRUCTION; SOME ARE INTENDED TO BE PURCHASEABLE CONDOMINIUMS AND SOME ARE INTENDED TO BE RENTAL UNITS. FOR NOW, ALL OCCUPIED UNITS ARE BEING RENTED.

THE SOUTHEAST CORNER OF TOWN IS ALLOCATED TO A MOBILE HOME PARK.

THE GENERATING PLANTS AND RELATED FACILITIES OCCUPY LARGE TRACTS OF ACREAGE JUST EAST OF THE RAILROAD TRACKS. IT IS HOPED THAT THE PREDOMINANT NORTHWEST WINDS WILL CARRY THE MAJORITY OF THE NOISE AND ODORS AWAY FROM THE TOWN.

STRONG PEDESTRIAN ORIENTATION WAS AN IMPORTANT CRITERIA IN THE DEVELOPMENT OF THE MASTER PLAN. THIS IS EVIDENCED BY THE PATH SYSTEM, THE PARK AND OPEN SPACE ALLOCATIONS, AS WELL AS THE RELATIVE COMPACTNESS OF THE COMMUNITY.

ARCHITECTURALLY, THE DEVELOPMENT HAS PURPOSELY BEEN KEPT LOW-KEY AND UNOBTRUSIVE. ROOF LINES ARE GENTLE, MATERIALS ARE SOFT, AND COLORS ARE EARTH TONES.

THERE IS A DISTURBING SENSE OF INTROVERTEDNESS ABOUT THE TOWN. CLIMATE, NO DOUBT, KEEPS THE OUTDOOR ACTIVITY LEVEL DOWN; ALSO, WITH RESPECT TO LANDSCAPING, THE TOWN HASN'T HAD THE OPPORTUNITY TO DEVELOP THIS MUCH NEEDED SOFTNESS. PRIMARILY THIS INTROVERTEDNESS IS MAGNIFIED BY THE NATURE OF THE BUILDINGS: SMALL-WINDOWED, AUSTERE, AND UNWELCOMING.

ALL THESE FACTORS MAKE IT VERY DIFFICULT TO ACHIEVE A SENSE OF COMMUNITY.

THE OVERALL SUBTLETY OF THE TOWN, TO THE POINT OF NONDESCRIPTIVENESS, IS OUT OF BALANCE WITH THE OVERWHELMING SILOUTTE OF THE PLANTS.

THE 500-FOOT STACKS ARE SO PREDOMINANT IN THE SURROUNDING AREA THAT ALL ELSE IS LOST, EVEN THE VAST RUGGEDNESS OF THE TOPOGRAPHY.

PROPOSED LAND USE

WHATEVER METHOD A DESIGN TEAM EMPLOYS TO GATHER INFORMATION AND DATA PERTINENT TO A PROJECT, THE FINAL SYNOPSIS OF ALL THESE FACTS EVENTUALLY FUNNELS INTO A PROGRAM FROM WHICH TO DESIGN.

FROM THE COMMENCEMENT OF THE PROJECT THE FACT WAS RECOGNIZED THAT IN ORDER TO ESTABLISH COLSTRIP AS A COMMERCIAL HUB, THE EXISTING AND THE PROPOSED EXPANSION TOWN MUST COMPLEMENT EACH OTHER.

SITE CONSIDERATIONS

PHYSICAL BOUNDARIES SUCH AS THE STATE HIGHWAY SEPARATING THE TWO SITES IMMEDIATELY CAME UNDER SCRUTINY. THOUGHT WAS GIVEN TO MOVING THE HIGHWAY AND, PERHAPS, HAVE IT FOLLOW THE SAME RIGHT OF WAY AS THE BURLINGTON NORTHERN RAILWAY. AFTER ANALYSIS OF THE PROPOSAL, UTILIZING INTERVIEWS WITH THE PRESIDENT OF THE UTILITY COMPANY, THE TOWN MANAGER, AND HIGHWAY OFFICIALS, IT WAS AGREED THAT THE HIGHWAY WOULD NOT MOVE FOR REASONS OF COST, LAND ACQUISITION, AND INCONVENIENCE OF ALTERNATIVES.

ALTHOUGH THE ROAD APPEARS TO DIVIDE THE TOWN, WITH PROPER DESIGN THE PROBLEM COULD BE OVERCOME AND PERHAPS STRENGTHEN THE TRANSITION BETWEEN THE TWO SITES. SINCE A SERIES OF FUNCTIONS INVOLVING VEHICULAR AND PEDESTRIAN TRAFFIC WOULD RELY UPON THIS TRANSITION, IT BECAME A PARAMOUNT ELEMENT IN THE PROGRAMMING AND CONCEPTUAL STAGES.

A PEDESTRIAN PATHWAY HAS ALREADY BEEN ESTABLISHED IN THE ORIGINAL PLAN AND STRONG JUSTIFICATION EXISTS TO MAINTAIN THIS ELEMENT THROUGHOUT THE NEW PROPOSAL.

REITERATING THE INTEREST IN CREATING A COMMERCIAL HUB AT COLSTRIP, THE INTERGRATION OR CLOSE PROXIMITY OF THE TWO COMMERCIAL AREAS WOULD APPEAR NECESSARY TO THE DEVELOPMENT OF THIS THEME.

GIVEN THE EXISTING LOCATION OF THE COMMERCIAL AREA AND THE EXISTING SCHOOL SITE, ACCESS TO THE AREA NECESSITATES CONVENIENCE TO BOTH PEDESTRIAN

TRAFFIC AS WELL AS VEHICULAR. THE POINT OF TRANSITION BETWEEN THE EXISTING TOWN AND THE PROPOSED EXPANSION AGAIN BECOMES ONE OF CRITICAL IMPORTANCE.

WITH THE INCLUSION OF ANOTHER SCHOOL BUILDING IN THE PROPOSED LAND USE, A METHOD OF TRANSITION IS AGAIN REQUIRED TO SATISFY THE SAFETY NEEDS CRITICAL TO TRANSPORTATION OF SCHOOL AGE CHILDREN, WHETHER IT BE AS A PEDESTRIAN, OR VEHICULAR.

HOUSING EVALUATION

ADDRESSING A COMMUNITY THAT NOW APPEARS INTROVERTED, PROVOKED THOUGHTS AS TO ALTERNATIVE HOUSING METHODS THAT COULD REVERSE THIS TREND.

NATIONAL TRENDS, AS WELL AS RECENT STATE TRENDS IN THE POPULAR CITIES OF MONTANA, REVEAL AN EVER INCREASING PERCENTAGE OF MULTI-DWELLING STARTS.

OTHER CONSIDERATIONS PRESENTED ARGUMENTS OF ECONOMICS WITH RESPECT TO THE VALUE OF LAND PRESENTLY AVAILABLE IN THE COLSTRIP AREA. WITH LAND AT A PREMIUM AND TREMENDOUS STORES OF VALUABLE RESOURCES JUST BELOW THE SURFACE, THOUGHT MUST BE GIVEN TO THE AVAILABILITY OF LAND FOR IMMEDIATE BUILDING PURPOSES. PRESENT BANKING TRENDS LIKEWISE HAVE DISINTEGRATED THE AVAILABILITY OF MORTGAGE MONEY AT REASONABLE RATES.

THE COST OF CONSTRUCTION AND BUILDING MATERIALS ARE ALSO AT AN ALL TIME RECORD HIGH.

RECOGNIZING THESE PRESENT CONDITIONS, IT HAS BECOME THE OBJECTIVE OF THIS DESIGN TEAM'S EFFORTS TO PRODUCE A MASTER PLAN WITH EMPHASIS ON THE USE OF MULTI-FAMILY LIVING UNITS, INCORPORATING RENTAL UNITS WITH CONDOMINIUM OWNERSHIP. THE PROPOSED EXPANSION PLAN WILL RELY UPON A HEAVIER DENSITY, PERHAPS WITHIN THE RANGE OF 10 UNITS PER ACRE.

THE HOUSING BREAKDOWN WILL BE IN THE FOLLOWING PROPORTIONS:

70%-MULTIDWELLING, APPROXIMATELY, 160 UNITS

30%-SINGLE FAMILY, APPROXIMATELY, 350 UNITS

(SEE FIG. 14).

ALSO RECOGNITION MUST BE MADE OF THE FACT THAT CLUSTERING PEOPLE INTO MULTI-DWELLING UNITS WILL SIMPLY NOT CREATE AN ACCEPTABLE IDENTIFYING CHARACTER FOR THE OCCUPANTS. THROUGH EVALUATION OF ALTERNATIVES THE DESIGN TEAM WILL STRIVE TO CREATE A MIXED NEIGHBORHOOD ATMOSPHERE, INTERGRATING SINGLE FAMILY UNITS WITH A MIXTURE OF MULTI-FAMILY UNITS. THE OVERALL OBJECTIVE IS TO DEVELOP A COMMUNITY IDENTITY, NOW LACKING IN THE EXISTING TOWN.

SOME MULTI-UNIT HOUSING WILL BE INTERGRATED WITH THE COMMERCIAL AND COMMUNITY CENTER, STRIVING TO CREATE AN AMENITY OF CONVENIENCE AND PROXIMITY; THOSE UNITS NOT DIRECTLY ATTACHED TO THE COMMERCIAL OR COMMUNITY CENTER WILL SHARE A COMMON OPEN SPACE WITH DIRECT PEDESTRIAN ACCESS TO THE COMMERCIAL AREAS AS WELL AS THE GOLF COURSE. OTHER MULTI-DWELLING UNITS WILL BE INTERGRATED WITH THE GOLF COURSE AND SINGLE-

FAMILY UNITS PROVIDING LARGE EXPANSES OF OPEN SPACE AND RECREATION FACILITIES. THE SAME TYPES OF AMENITIES WILL APPLY TO THE CLUSTER DWELLINGS THAT ARE SCHEDULED FOR DEVELOPMENT NEAR THE SURGE POND AND THE OPEN SPACE SURROUNDING IT.

SINCE A PORTION OF THE NEW POPULATION WILL HAVE BEEN BORN AND RAISED IN SMALL RURAL COMMUNITIES, THE DESIRE FOR INDIVIDUAL HOME OWNERSHIP WILL UNDOUBTEDLY EXIST. PRIVACY, LAND OWNERSHIP AND THE OPPORTUNITY TO RAISE A PERSONAL GARDEN AND LANDSCAPING ARE JUST A FEW OF THE REASONS TO PROVIDE INDIVIDUAL UNITS.

THE SPECIFIC LOCATION OF SINGLE-FAMILY UNITS WILL BE ESTABLISHED TO PROVIDE THE GREATEST AMOUNT OF AMENITIES INCLUDING PRIVACY. SOME SINGLE-FAMILY UNITS WILL BE INCORPORATED INTO THE PROPOSED GOLF COURSE. THE OBJECT IN MIND BEING AN EXTENSION OF INDIVIDUAL LAND OWNERSHIP INTO THE OPEN SPACE OF THE GOLF COURSE AREA, THUS UTILIZING THE LANDSCAPE FOR A DUAL PURPOSE AND INCREASING THE VALUE OF THE HOME SITES.

ANOTHER SERIES OF SINGLE-FAMILY UNITS WILL BE DESIGNED IN CLOSE PROXIMITY TO THE SURGE POND AND THE PROPOSED OPEN SPACE SURROUNDING THE POND. IN ALL CASES, THE SINGLE-FAMILY UNITS WILL HAVE SIDE YARD SETBACKS AND DIRECT ACCESS TO AMPLE OPEN SPACE FOR COMMUNAL USE.

SCHOOL

WITH THE INCREASE IN POPULATION OF WORKERS TO COLSTRIP, THE YOUTH

POPULATION WILL GROW AND SCHOOL REQUIREMENTS MUST BE MET. THE PRESENT SCHOOL FACILITIES WERE BUILT TO HANDLE AN ENROLLMENT OF 350 STUDENTS IN GRADES K THROUGH 12. THE PROJECTED INCREASE OF STUDENTS IS ESTIMATED AT 936. USING A NATIONAL STANDARD RATIO OF 1 TO 30 STUDENT TO TEACHER, 20 TEACHER 16 ADDITIONAL CLASSROOMS WILL BE REQUIRED.

GIVEN THE PRESENT LOCATION OF THE SCHOOL, IT IS SUGGESTED THAT THE NEW FACILITIES BE BUILT ON THE NEW SITE, SOUTHWEST OF THE PRESENT FACILITIES AND ACCESSIBLE BY A PEDESTRIAN PATH OR VEHICLES FROM EITHER COMMUNITY. THE LOCATION WILL BE CENTRALIZED FOR THE PROPOSED EXPANSION SITE AND LOCATED NEAR THE FUTURE EXPANSION AREA. THE LOCATION TAKES INTO CONSIDERATION THE FACT AS THE PROPOSED COMMUNITY GROWS OLDER, THE NEED FOR A SCHOOL WILL BE DIMINISHED. AS NEW DEVELOPMENT TAKES PLACE ON THE ADJACENT LAND, THE PROXIMITY OF LOCATION WILL EVENTUALLY FAVOR THE NEW HOUSING. THEORETICALLY, THE NEW POPULATION WILL HAVE THE GREATER NEED FOR SCHOOLING SINCE IT SHOULD BE A YOUNGER CHILD-BEARING AGE GROUP.

THE TWO SCHOOL SITES WILL BE CONNECTED BY AN OPEN SPACE AND ALSO SHARE THE ADVANTAGE OF ROOM FOR EXPANSION AS THE NEED ARISES. CLOSE PROXIMITY TO THE PROPOSED COMMUNITY CENTER WOULD ALSO PROVIDE RECIPROCAL AMENITIES TO EITHER FUNCTION, RECOGNIZING THE POSSIBILITIES OF SHARING OPEN SPACE AND FACILITIES.

ROADS

A MAJOR ARTERIAL ROAD WILL CONNECT THE NORTH AND SOUTH END OF TOWN

IN AN ENLARGED LOOP. FROM THIS WILL BRANCH OFF COLLECTOR ROADS TO HOUSING COMMUNITIES, WHICH WILL BE SPECIFICALLY SERVED BY LOCAL STREETS SUCH AS CUL-DE-SACS.

COLSTRIP IS AN ISOLATED YOUNG COMMUNITY WITH A RATHER LARGE PERCENTAGE OF ITS POPULATION BEING WELL EDUCATED OR HIGHLY TECHNICAL AND AN EARNING CAPACITY EQUAL TO A MIDDLE INCOME GROUPS.

GENERAL

ITS COMMERCIAL, COMMUNITY, AND RECREATIONAL NEEDS ARE DETERMINED BY (1) THE EXISTING FACILITIES, (2) THE DESIRED FACILITIES, AND (3) THE ABILITY TO SUPPORT THESE FACILITIES. THE MARKETING FEASIBILITY STUDY ANSWERS MANY QUESTIONS AND SHOULD BE A STRONG GUIDELINE THROUGH THE DESIGN PROCESS.

THE RESEARCH HAS INDICATED THAT 40 PERCENT OF COLSTRIP'S 4000 POPULATION FALLS INTO THE 20-44 AGE BRACKET AND THAT THESE PEOPLE WILL HAVE AN UNUSUALLY HIGH INCOME. ALSO, ROSEBUD COUNTY SPENDS A GREATER PERCENTAGE OF ITS PERSONAL INCOME IN RETAIL OUTLETS THAN MOST MONTANA COMMUNITIES.

FACTS SUCH AS THESE ALONG WITH PREFERENCE RESPONSES FROM THE COMMUNITY ARE A BASIS ON WHICH TO START DESIGNING.

COMMUNITY CENTER

THE LACK OF COMMUNITY FACILITIES IS QUITE EVIDENT. AS PROPOSED, A COMMUNITY CENTER WOULD BE PROVIDED FOR IN THE EXPANSION PLAN. ONCE AGAIN SOME TYPE OF ACCESS AND TRANSITION BETWEEN THE TWO SITES IS NEEDED.

RE-EVALUATION OF THESE FEW ITEMS IMMEDIATELY DRAWS INTEREST TO THE PHYSICAL LOCATION AND THE PROPOSED METHOD OF RELATING THESE NUMEROUS FUNCTIONS INTO A HARMONIOUS INTERACTION.

A MODERN COMMUNITY CANNOT SURVIVE SOLELY HAVING ITS NEEDS FOR FOOD AND SHELTER SATISFIED. GIVEN A SOCIETY CONVERTED TO MODERN TRENDS, THE NEED TO INTERACT WITH EACH OTHER WILL NORMALLY BE PREVELANT. COMPOUND THE MSITUATION BY ISOLATING THE COMMUNITY AND THE REQUIREMENT FOR A SPECIFIC MEANS OF COMMUNITY INTERACTION BECOMES A PARAMOUNT ISSUE.

THE FUNCTIONS AND ACTIVITIES OF A COMMUNITY CENTER ARE VIABLE AND NECESSITATE RESEARCH ON THE PART OF THE DESIGN TEAM. IN EFFORT TO ESTABLISH THE FUNCTIONS OF SUCH A CENTER FOR COLSTRIP, THE POPULATION MUST BE ANALYZED QUITE CAREFULLY WITH REGARDS TO THE AGE GROUPS BEING ACCOMMODATED.

INITIAL INVESTIGATION REVEALED THE POPULATION WOULD REQUIRE A VARIETY OF SPACES FOR A SELECTION OF ACTIVITIES AND FUNCTIONS, FOLLOWING AN ANALYSIS OF THE EXISTING COMMUNITY FACILITIES IT WAS RELATIVELY SIMPLE

TO DERIVE AN OVERALL NEED. CATAGORICALLY DETERMING NEEDS PRESENTED A MORE DIFFICULT TASK. WESTERN ENERGY COMPANY PREPARED A SURVEY AND QUESTIONNAIRE AND DISTRIBUTED IT THROUGHOUT THE COMMUNITY OF COLSTRIP. CONSEQUENTLY, HAVING HAD ACCESS TO THIS SURVEY A LIST OF NEEDS AND REQUESTS WERE ESTABLISHED. IN CONJUNCTION WITH THIS LIST ANOTHER SELECTIVE LIST OF ACTIVITIES AND A PREFERENCE MATRIX WERE PREPARED BY THE DESIGN TEAM AND ISSUED TO A SIMILAR GROUP WHO WERE INSTRUCTED TO ANSWER THE MATRIX AS THOUGH THEY WERE ACTUALLY LIVING IN COLSTRIP. THE FINAL EVALUATION OF THIS MATRIX RESULTED IN THE FOLLOWING LIST OF ACTIVITIES IN THEIR ORDER OF PREFERENCE. THOSE ACTIVITIES GIVEN A VERY LOW PREFERENCE, WERE RE-EVALUATED AND WHERE NECESSARY, ELIMINATED FROM THE LIST. ACTIVITIES THAT WERE PROVEN TO BE UNFEASIBLE FOR REASONS OF COST, SAFETY, OR OTHERWISE WERE DELETED.

THE MORE POPULAR FUNCTIONS WERE THEN ASSIGNED TO A SERIES OF CATAGORIES TO DETERMINE A MORE SPECIFIC SET OF RELATIONSHIPS. THE FIRST CATAGORY DETERMINED IF THE NEED WAS ESTABLISHED FOR USE BY A GROUP, AND ORGANIZATION, OR SIMPLY AN INDIVIDUAL. THE NEXT AREA OF STUDY ANALYZED THE ACTIVITY WITH RESPECT TO NECESSARY SQUARE FOOTAGE REQUIREMENTS AND WHETHER THE ACTIVITY REQUIRED AN INDOOR OR AN OUTDOOR ENVIRONMENT. THE FUNCTIONS WERE MORE SPECTIFICALLY CATAGORIZED PERTINENT TO ACTIVITY INTENSITY LEVELS, THESE BEING PASSIVE, SEMI-ACTIVE, OR ACTIVE FUNCTIONS. ANOTHER CATAGORY SPECIFICALLY COVERED THE QUESTION OF ACCEPTABLE NOISE LEVELS WITH RESPECT TO HOW CERTAIN FUNCTION COULD RELATE WITH OTHER FUNCTIONS.

SITE CONSIDERATIONS:

- * CLOSE PROXIMITY TO OPEN SPACE FOR OUTDOOR ACTIVITIES
- * PEDESTRIAN ACCESS TO HOUSING NEARBY AND SCHOOLS
- * VEHICULAR ACCESS AND ADEQUATE PARKING
- * CENTRAL LOCATION TO PROVIDE ACCESS FROM ALL PARTS OF TOWN AND RESIDENTIAL AREAS
- * LOCATION CONVENIENT TO SCHOOL TO PROVIDE OPPORTUNITY FOR COMMON SHARING OF FACILITIES
- * ADEQUATE AND CONDUCIVE TOPOGRAPHICAL AREAS FOR OUTDOOR ACTIVITIES
- * LOCAL SHOPS AND COMMERCIAL AREA TO BE WITHIN WALKING DISTANCE
- * SUFFICIENT ROOM TO PROVIDE BUILDING EXPANSION FOR THE FUTURE

GENERAL PLAN CONSIDERATIONS:

- * PROVIDE A SENSE OF ENCLOSURE AND SPACE.
- * PROVIDE A CENTRAL MEETING PLACE FOR RESIDENTS.
- * PROVIDE A VARIETY OF EXPERIENCES TO ENCOURAGE PARTICIPATION BY VARIED AGE GROUPS AND TO ASSURE THE USER HAS AN OPPORTUNITY TO SELECT AN APPROPRIATE ACTIVITY.
- * ENCOURAGE CONSISTENT USE OF THE FACILITY BY UTILIZING IT TO DISSEMINATE INFORMATION THROUGH OCCASIONAL EXHIBITS AND PROGRAMS.
- * PROVIDE A FEELING OF COMMUNITY IDENTITY AND PARTICIPATION BY PERMITTING RESIDENTS TO SHARE AND EXHIBIT PERSONAL HOBBY AND CRAFT SKILLS.

PHYSICAL DESIGN CRITERIA

ART DISPLAY-- SPACES SHOULD BE FLEXIBLE AND EXPANDABLE, CONTROLLED ARTIFICIAL LIGHTING (PREFERABLY NATURAL NORTH LIGHT), NEED FOR A LOT OF WALL OR PANEL DISPLAY AREA-VARIABLE CEILING HEIGHT TO ACCOMODATE LARGER DISPLAY SUCH AS SCULPTURES, LOW NOISE LEVEL, PROVIDE STORAGE SPACE FOR DISPLAY PANELS AND CABINETS.

PARKING-- PROVIDE APPROXIMATELY 400 PARKING SPACES, 400 SQUARE FEET PER SPACE, CLOSELY LINKED TO PEDESTRIAN WALKWAYS - INTERGRATE LANDSCAPING WITH PARKING BUT MAINTAIN SAFETY UTILIZING LANDSCAPING AS A VISUAL BARRIER, CLOSE ACCESS TO HIGHWAY AND INTERIOR ROADS, ADJACENT TO COMMERCIAL AND, COMMUNITY CENTER.

DAY CARE CENTER-- PROVIDE A FLEXIBLE SPACE, ORIENTED IN SCALE TO CHILDREN OF PRESCHOOL AGE, STORAGE AREA A NECESSITY TO HOUSE TOYS AND EXTRA FURNITURE. IF LUNCHESES ARE TO BE PROVIDED, ACCESS TO KITCHEN FACILITIES MUST BE PROVIDED. DIRECT ACCESS TO OPEN SPACE AWAY FROM HIGHWAYS, ROADS, OR PARKING, PROTECTIVE LANDSCAPE. PROXIMITY TO HOBBY AND CRAFTS, SHARE COMMON STORAGE AND CLEAN-UP FACILITIES, ALSO OPPORTUNITY FOR PARENTAL OBSERVATION.

LIBRARY-- ORIENTATION CONDUCIVE TO NATURAL LIGHTING DURING DAYLIGHT HOURS, LOCATION REQUIRES RELATIVE NOISE CONTROL LEVELS - PROVIDE OPPORTUNITY FOR CHANGE OF VIEW AND NOISE LEVEL WHEN USER IS SEAKING A BREAK - SPACE REQUIRES LOT OF SHELF AND BOOK DISPLAY AREA

PRIVATE AND MUNICIPAL OFFICE SPACE-- ADJACENT TO OUTDOORS, USE OF NORTH AND REFLECTED SOUTH LIGHT, COULD BE CONNECTED TO ART DISPLAY AND SHARE COMMON STORAGE. MUST BE FLEXIBLE TO SERVE FUTURE NEEDS OF MUNICIPAL FUNCTIONS, SHOULD HAVE CLOSE PROXIMITY TO PARKING AND PEDESTRIAN WALKWAYS, VISUAL AID FACILITIES NECESSARY TO HANDLE GROUP OR ORGANIZATIONAL NEEDS - STORAGE AREA AND JANITORIAL ROOM SHOULD BE PROVIDED NEARBY.

HOBBY AND CRAFT ROOMS-- NOISE LEVEL VARIABLE, PROVIDE A VARIETY OF VIEW ALTERNATIVES FOR PAINTERS, LIGHTING PREFERABLY NORTH LIGHT FOR PAINTING AREA, AMPLE STORAGE SPACE NECESSARY FOR EQUIPMENT AND CRAFT SUPPLIES, SMALL AREA FOR DISPLAY AND INSTRUCTION, ACCESS TO VISITOR OBSERVATION.

PHOTO DARK ROOM-- NO NEED FOR WINDOW ACCESS, MUST BE MECHANICALLY VENTILATED, SHOULD BE IN CLOSE PROXIMITY TO HOBBY AND CRAFT AREA, ISOLATED ACCESS TO MAJOR CIRCULATION.

RIFLE RANGE-- ISOLATED ENTRANCE FOR ADDED SAFETY, NOISE LEVEL EXTREMELY INTENSE, HIGH DEGREE OF SAFETY REQUIRED, PHYSICAL RESTRAINTS OF SPACE WILL REQUIRE BULLET PROOFING, PROVIDE POSSIBLE OBSERVATION AREA, MINIMAL STORAGE AREA REQUIRED, ISOLATED ACCESS FROM MAJOR CIRCULATION SYSTEM, WIDTH EQUAL TO THAT OF BOWLING AREA.

ARCHERY RANGE-- NOISE LEVEL MINIMAL, HIGH DEGREE OF SAFETY REQUIRED, ACTIVITY COULD HAVE INDOOR OR OUTDOOR LOCATION, ISOLATED ACCESS FROM MAJOR CIRCULATION SYSTEM, PROVIDE OBSERVATION AREA, SAME SPACE AS RIFLE RANGE.

GAMEROOM-- FLEXIBLE SPACE WITH DIRECT ACCESS TO MAJOR CIRCULATION AND REST ROOMS, PROVIDE SOME NATURAL LIGHT AND ACCESS TO EXTERIOR, CLOSE PROXIMITY TO HOBBY AND CRAFT ROOM DESIRABLE, SPACE COULD BE IN DIRECT RELATIONSHIP WITH A TELEVISION ROOM OR A LOUNGE, NOISE LEVEL RELATIVELY HIGH.

THEATRE-- PROVIDE A SPACE LARGE ENOUGH TO ACCOMMODATE 350 PEOPLE AS A COMMERCIAL VENTURE, DIRECT ACCESS TO MAJOR PEDESTRIAN AND AUTOMOBILE CIRCULATION SYSTEM, NEED FOR WINDOWS MINIMAL, ACCESS TO PARKING DESIRABLE, PROVIDE REST ROOMS AND SMALL OFFICE SPACE, AUDIO VISUAL AREA NECESSARY. VARIETY OF NOISE LEVELS POSSIBLE, "ISLAND" TICKET BOX TO ALLOW DOUBLE LINES, TWO EXITS, PROVIDE 2 SMALL CINEMAS RATHER THAN ONE LARGE UNIT, PROJECTION ROOM AND SUPPORT FACILITIES CAN SERVE BOTH THEATRES, TWO THEATRES CAN ALSO SUPPLY A GREATER VARIETY OF MOVIES.

BOWLING ALLEY-- PROVIDE FOUR OR SIX LANES AS A COMMERCIAL VENTURE, ACCESS TO REFRESHMENTS AND REST ROOMS, STORAGE AREA REQUIRED FOR LOCKERS AND SUPPLIES, LOCATE WITH DIRECT ACCESS TO PEDESTRIAN TRAFFIC, VEHICLE PARKING ACCESS DESIRABLE, SMALL DISPLAY AND SALES AREA REQUIRED, PROBABLY TWO ENTRANCES.

PHYSICAL RECREATION CENTER-- TO PROVIDE ACTIVITIES SUCH AS WEIGHT AND EXERCISE ROOM, HANDBALL COURTS, GYMNASIUM, MEETING ROOMS, TENNIS, INDOOR POOL, LOCKER ROOM WITH ACCESS TO ALL FACILITIES, RUNNING TRACK, ADMINISTRATIVE OFFICE.

EXERCISE AND WEIGHT ROOM--SMALL SPACE REQUIRED, WELL VENTILATED, NO REQUIREMENT FOR WINDOW ACCESS, NOISE LEVEL MODERATE, PROVIDE ACCESS TO LOCKER ROOM AND REST ROOMS, OBSERVATION IS MINIMAL REQUIREMENT

HANDBALL COURTS (FOUR WALL) --EXTREMELY ACTIVE SPORT, REQUIRES MINIMAL OF 680 SQUARE FEET PER COURT, PROVIDE ACCESS TO LOCKER ROOMS AND REST ROOMS, OBSERVATION AREA MODERATE REQUIREMENT, NOISE LEVEL MODERATE, TENNIS COURT BECOMES OPTIONAL USE OF GYMNASIUM FLOOR, PROVIDE MOVEABLE BLEACHERS AND MOVEABLE STAGE AND STORAGE AREA, GYMNASIUM - 90 x 50 PLUS BLEACHERS, 20' CEILING, POOL SIZE - ABOUT SAME AS GYMNASIUM - CEILING SAME AS GYM, PROVIDE EXTERIOR DECK, ELEVATED PERIMETER RUNNING TRACK.

PROPOSED COMMERCIAL

THE MARKETING RESEARCH INDICATED A DEFINITE NEED FOR CONSIDERABLE COMMERCIAL EXPANSION FOR A POPULATION OF 4000. EXISTING FACILITIES WOULD NOT BE ADEQUATE TO SERVICE THE NEEDS OF THE TOWNSPEOPLE NOR WOULD THEY BE ATTRACTIVE ENOUGH TO DRAW IN PEOPLE FROM THE OUTLYING AREAS.

IT WAS DECIDED THAT ADDITIONAL COMMERCIAL FACILITIES BE PROVIDED TO A SCALE AND SCOPE THAT WOULD ASSURE EACH MERCHANT A POTENTIALLY PROFITABLE MARKET AND AT THE SAME TIME PROVIDE A COMPREHENSIVE RANGE OF SERVICES AND COMPETITIVE PRICING FOR THE PEOPLE OF THE COLSTRIP AREA.

TO FURTHER DEFINE THE FUNCTIONS NEEDED IN A COMMERCIAL CENTER, A

SURVEY CIRCULATED THROUGH COLSTRIP BY WESTERN ENERGY COMPANY WAS OBTAINED. IN ADDITION, A PREFERENCE MATRIX WITH AN EXPANDED CHOICE OF STORES TYPES WAS GIVEN TO A SIMILARLY EDUCATED GROUP WITH INSTRUCTIONS TO ANSWER AS THOUGH THEY WERE ACTUALLY LIVING IN COLSTRIP (SEE FIG. 21). THOSE FACILITIES WHOSE FEASIBILITIES WERE QUESTIONABLE AND ALSO RATED LOW IN THE SURVEY AND/OR PREFERENCE MATRIX WERE ELIMINATED. THE EVALUATION OF THE MATRIX PROVIDED THE FOLLOWING ESTABLISHED LIST (SEE FIG. 23).

THE ESTABLISHED LIST WAS THEN BROKEN DOWN FURTHER BY SELECTING SIMILAR STORES OR STORES THAT HAVE COMMON DESIGN ELEMENTS AND CONSOLIDATING THEM INTO GROUPS AS POSSIBLE DESIGN CONSIDERATIONS.

IN ORDER TO ENHANCE BOTH SHOPPING AREAS AND PROVIDE THE ADDED CONVENIENCE TO THE SHOPPERS, IT WAS DECIDED TO CARRY THE COMMERCIAL DEVELOPMENT WEST ACROSS HIGHWAY 315.

DESIGN CRITERIA

HOUSING WILL BE INCORPORATED IN WITH THE COMMERCIAL CENTER WITH THE HOPES OF GIVING THE MERCHANTS MORE IDENTITY WITH THE TOWN. A NONRELATED BUSINESS IN A COMPANY TOWN MAY APPEAR DWARFED IN IMPORTANCE.

HOUSING WITHIN THE COMMERCIAL CENTER MUST PROVIDE A DIFFERENT SET OF AMENITIES (CONVENIENCE, PROXIMITY, ACTIVITY) TO COMPLETE WITH OTHER

MULTI - AND SINGLE-FAMILY DWELLINGS THROUGHOUT THE AREA.

SAFE PEDESTRIAN AND AUTOMOBILE ACCESS BETWEEN THE TWO COMMERCIAL COMPLEXES IS A NECESSITY.

SAFE PEDESTRIAN ACCESS BETWEEN COMMERCIAL AND COMMUNITY CENTERS IS A NECESSITY.

IN LIGHT OF THE CLIMATIC EXTREMES IN COLSTRIP, PEDESTRIAN MOVEMENT SHOULD BE PROTECTED ENOUGH TO MAKE WALKING AN ATTRACTIVE SUBSTITUTE OR ALTERNATIVE TO THE AUTOMOBILE.

COMMERCIAL-COMMUNITY COMPLEX SHOULD SERVE AS A STRONG FOCAL POINT FOR THE PEDESTRIAN WALKWAY THAT WINDS FROM CENTRAL PARK IN THE ORIGINAL TOWN NORTHWEST TO THE SURGE POND IN THE PROPOSED EXPANSION.

AMPLE OPEN SPACE SHOULD BE LEFT AROUND THE COMMERCIAL AREA TO ENCOURAGE OPEN MARKETS.

SERVICE ACCESS AND DISTRIBUTION SHOULD CONFRONT THE SHOPPER AS SELDOM AS POSSIBLE.

CHARACTER OF THE COMMERCIAL AREA SHOULD BE THAT OF A NUMBER OF SMALL, SPECIALITY STORES. WITH THE OVERWHELMING SHADOW OF A LARGE AND POWERFUL COMPANY IN THE TOWN THESE SMALL STORES MAY ACT AS TRANSITIONAL ELEMENTS

BETWEEN THAT COMPANY AND THE RESIDENTS.

NO PROVISIONS SHOULD BE MADE FOR THE LARGE MULTI-PURPOSE DEPARTMENT STORE.

SHOPS WILL BE LOCALLY OWNED AND OPERATED AND WILL PROVIDE EMPLOYMENT FOR WIVES AND CHILDREN OF PLANT AND MINE WORKERS, AN OPPORTUNITY LACKING IN THE PRESENT TOWN SITUATION.

THE AUTOMOBILE WILL BE RESTRICTED TO THE OUTER FRINGE OF THE COMMERCIAL-COMMUNITY CENTER. THIS LINE ALSO CORRESPONDS WITH THE SOUTHERN PERIMETER OF THE TOWN.

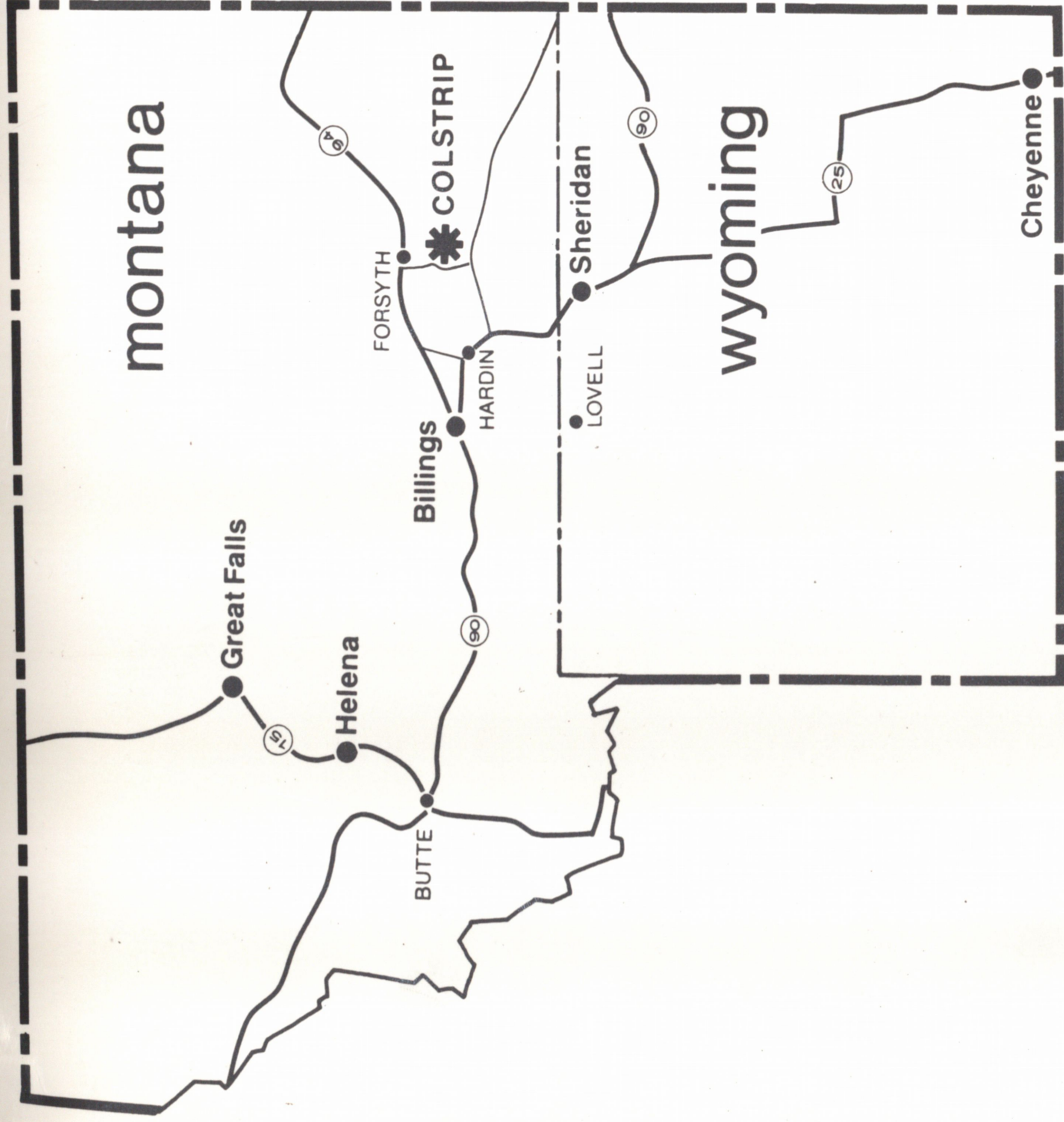
AS MANY FUNCTIONS AS POSSIBLE SHOULD BE SHARED BETWEEN THE COMMERCIAL AND COMMUNITY CENTER AS WELL AS THE EXISTING COMMERCIAL CENTER.

AREA OF INFORMAL PUBLIC ASSEMBLY SHOULD BE PROVIDED WITHIN THE SHOPPING DISTRICT.

SPACES SHOULD BE FLEXIBLE AND ADAPTABLE TO PROVIDE FOR THE SPECIFIC NEEDS OF INDIVIDUAL MERCHANTS. IN ORDER TO PROVIDE INTERESTING AND ATTRACTIVE SHOPPING AREAS AND, AT THE SAME TIME, EFFECTIVE MERCHANDISING, THE INTERIOR SPACE SHOULD CONFORM TO A DESIGN UNIQUE TO THE PARTICULAR STORE TYPE. THIS NECESSITATES THE ABILITY FOR A COMPLETE INTERIOR METAMORPHOSIS.

BIBLIOGRAPHY

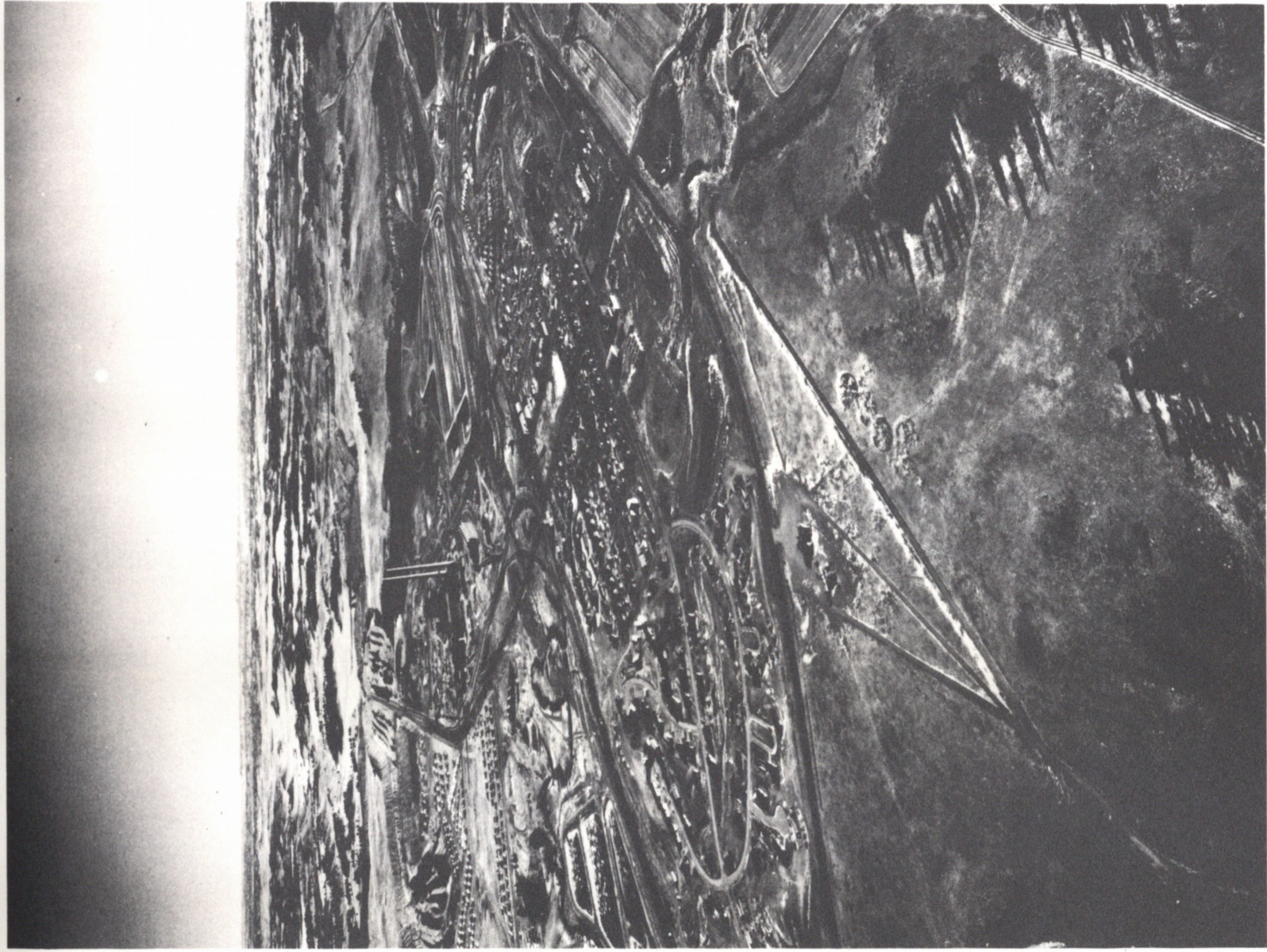
1. Bureau of Reclamation. Anticipated Effects of Major Coal Development on Public Services, Costs and Revenues in Six Selected Counties. Bozeman: The Institute of Applied Research, 1975.
2. Chiara, Joseph de, and Koppelman, Lee. Planning Design Criteria. New York: Reinhold Co., 1969.
3. Faber, Tobias. New Danish Architecture. New York: Praeger Pub., 1968.
4. Ken R. White Co. The Plan for Colstrip, Montana, prepared for the Western Energy Co. Denver: 1972.
5. McHaug, Ian L. Design with Nature. New York: Doubleday, 1971.
6. Montana State Department of Natural Resources and Conservation, Energy Planning Division. Draft Environmental Impact Statement on Colstrip Electric Generating Units 3 & 4, 500 Kilorolt Transmission Lines & Associated Facilities. Volume 1. Bozeman: Color World of Montana, 1974.
7. National Facilities Conference. Planning Facilities for Health, Physical Education, and Recreation. Chicago: The Athletic Institute Inc., 1956
8. Pierce, Rowland S.; Cutbush, Patrick; and Williams, Anthony. Planning; The Architect's Handbook. London: Iliffe & Sons, 1959.
9. Redstone, Louis G. New Dimensions in Shopping Centers and Stores. New York: McGraw - Hill, 1973.
10. Rudofsky, Bernard. Streets for People. New York: Doubleday, 1969
11. Speiregen, Paul D. Urban Design: The Architecture of Towns and Cities. New York: McGraw - Hill, 1965.
12. Tempel, Egon. New Finnish Architecture. New York, Praeger Pub., 1968.



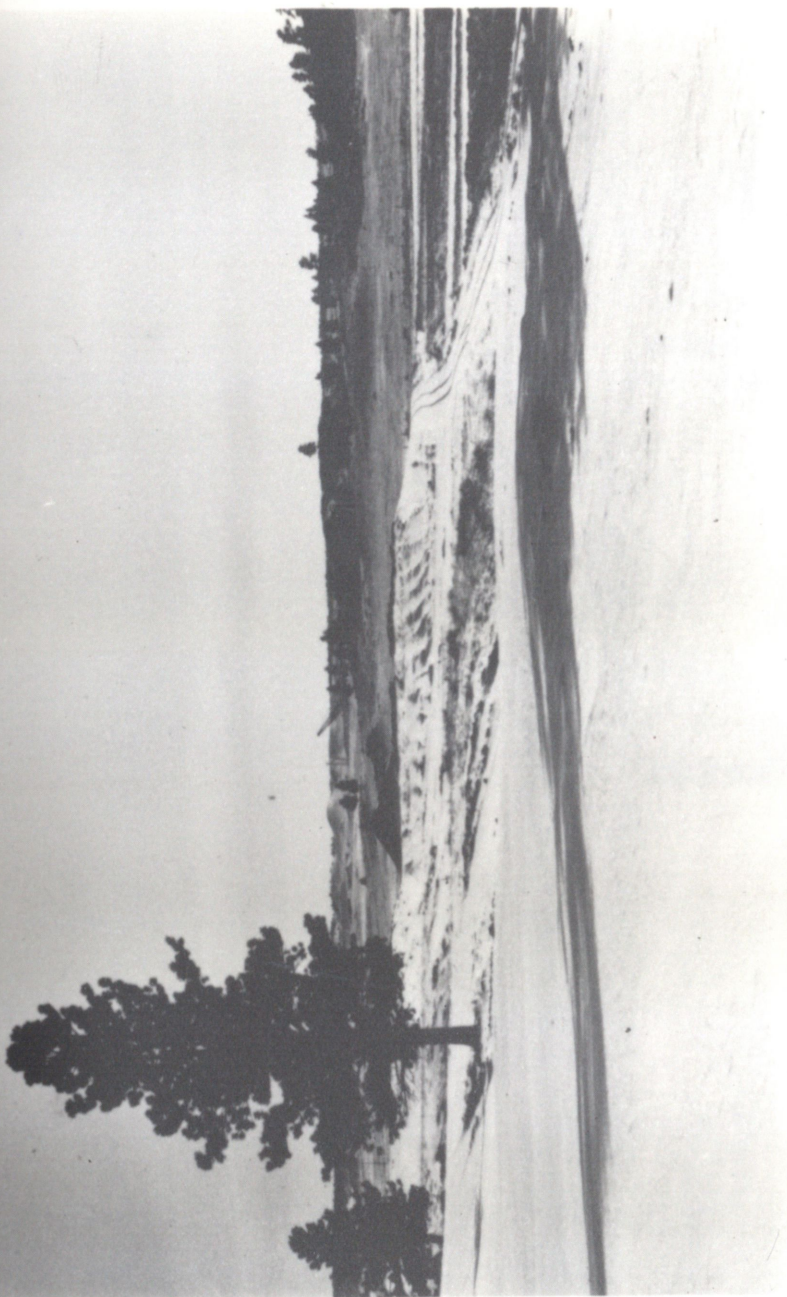
COLSTRIP, MONTANA Vicinity Map



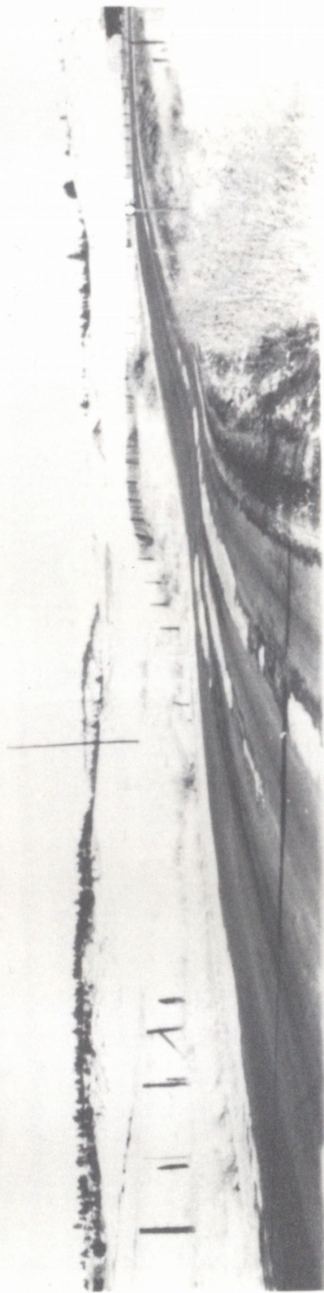
RECENT AERIAL OF COLSTRIP



VIEW OF COLSTRIP LOOKING SOUTHEAST

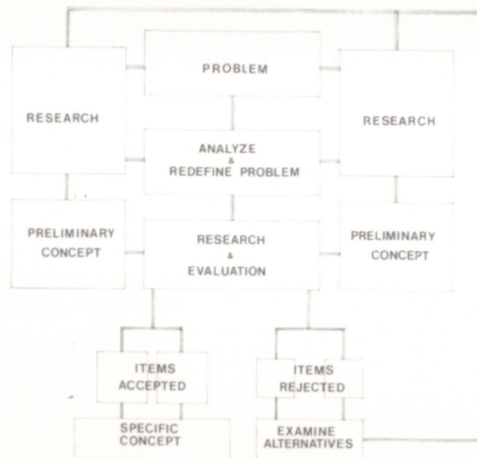








....A DESIGN TEAM'S EFFORTS
RESPOND TO AND SYNTHESIZE
A SOLUTION FOR ARCHITECT-
URAL NEEDS MORE THOROUGH-
LY AS OPPOSED TO AN INDIVIDUAL
DESIGNER'S RESPONSE.



A DESIGN TEAM APPROACH

EXPANSION PLANNING COLSTRIP

1980

THESIS PROGRAMMING

BY

J.BAKER & F.WALICKI

- SURFACE COAL MINING BEGUN BY NORTHERN PACIFIC CO. CONSTRUCTION OF TOWN W OWNERSHIP UNTIL 1958. **1923**
- MINING OPERATION CEASES. DIESEL LOCOMOTIVE INTRODUCED. COAL DEMAND DIMINISHED. **1958**
- COAL INTERESTS AND TOWN PURCHASED BY MONTANA POWER CO. **1959**
- MINING RESUMED UNDER THE SUPERVISION OF WESTERN ENERGY CO. A SUBSIDIARY OF MONTANA POWER CO. **1968**
- A TOWN PLANNING STUDY BY KEN R WHITE CO. FOR A PROJECTED POPULATION OF 1780. RESULTING FROM COAL FIRED GEN. PLANTS 1&2 **1972**
- TOWN CONSTRUCTION UNDERWAY. 3 4 UNDER LEGAL CONSIDERATION AND AWAITING APPROVAL **1975**

POPULATION

CURRENT
PROJECTIONS
COLSTRIP
SURROUNDING AREA
AGE GROUPS
STATUS
CHARACTER TYPE

INCOME

EMPLOYMENT TYPES
EMPLOYMENT INCOME
SPENDABLE INCOME
EXPENDITURE BREAKDOWN

EXISTING

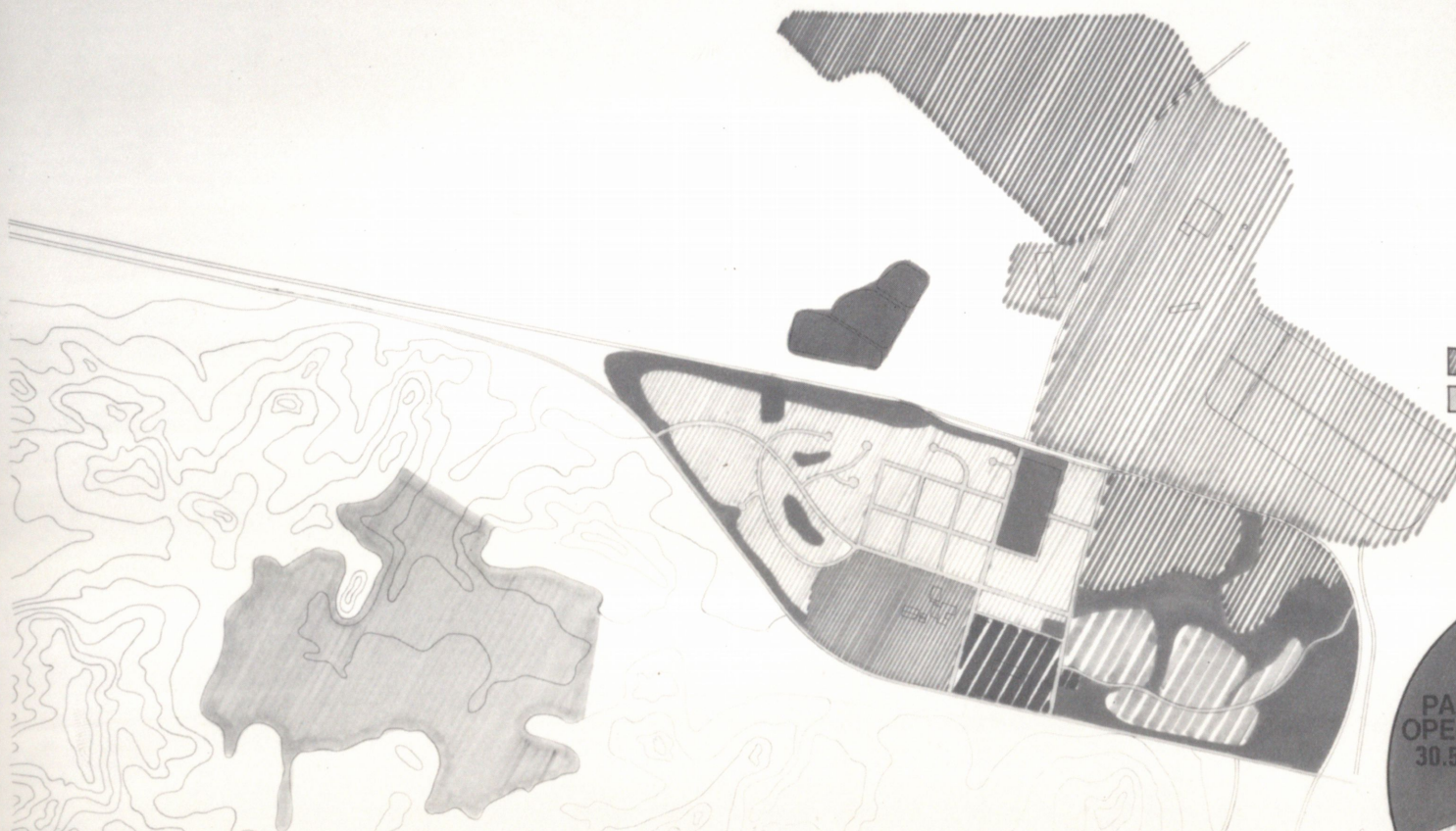
TOWN OF 2000 PEOPLE WITH
HOUSING, RECREATION, COMMERCIAL
AND HOUSING PROVIDED.
ELECTRICAL GENERATING UNITS ONE
AND TWO UNDER CONST. UNIT THREE
AND FOUR UNDER CONSIDERATION

NEEDS

ADDITIONAL HOUSING
ADDITIONAL SCHOOL
ADDITIONAL COMMERCIAL
COMMUNITY

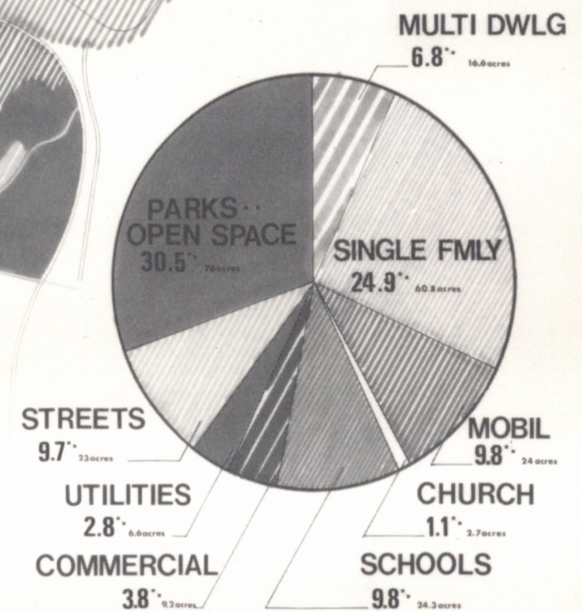
LAND USE PLAN

TOWN EXPANSION FOR 2000 ADDITIONAL
PEOPLE CONSIDERING APPROVAL AND
CONSTRUCTION OF THREE AND FOUR.



INDUSTRIAL
SURGE POND

EXISTING LAND USE
243.7 ACRES



SCALE 1" = 400'-0"

N

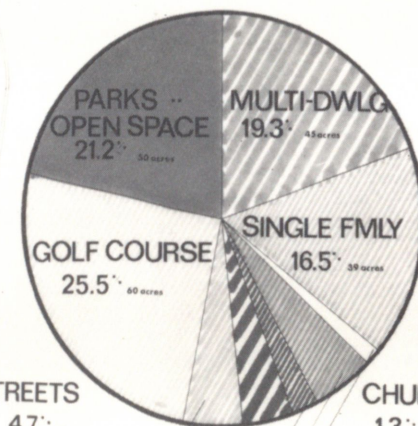
SINGLE FAMILY

195 UNITS
1500 sq ft UNIT (approx)
292,500 sq ft TOTAL LIVING SPACE
39 acres LAND AREA W OPEN SPACE

MULTI DWELLING

455 UNITS
1100 sq ft UNIT (approx)
5 LEVELS 391,250 LEVEL
782,500 sq ft TOTAL LIVING SPACE
318,500 sq ft PARKING
45.5 acres LAND AREA W OPEN SPACE

-  SURGE POND
-  FUTURE EXPANSION
-  RECREATION undeveloped



PROPOSED LAND USE
235 ACRES

SCALE 1" = 400' 0"



HOUSING

EXIST. TOWN

SCHOOL

PEDESTRIAN

HIGHWAY

ROADS

SERVICE

COMMERCIAL

TOTAL 30000

SPECIALTY FOOD, DELI 2000

BAKERY 1000

DRIVE IN FOOD, CONFECTIONERY

RESTAURANT 3000

SOUND STORE

APPLIANCES

FURNITURE 6500 COMBINED

HOBBY, CRAFT, FABRIC SHOP 1500

OFFICE SPACE 2500

SHOE STORE 1200

BOOKS, GIFTS, STATIONARY 1500

JEWELRY 1000

BARBER-BEAUTY 1750

BAR, LIQUOR STORE 2800

CLOTHING-MEN, WOMEN 4500

KIDDIES 1500

SPORTING GOODS, BICYCLES 4000

BOWLING ALLEY 6250

WEIGHT ROOM 3000

HANDBALL COURTS 680' EACH

TENNIS 1800

GYMNASIUM 8000

MEETING ROOM

INDOOR POOL 2400

ART-MUSIC ROOM 1500

CAFETERIA 2100

THEATRE 4200

GAMEROOM 1400

ARCHERY RANGE

RIFLE RANGE 3200

HORSE SHOE PITCH 1000

COMMUNITY

TOTAL 33000

PHOTO DARK ROOM 4000

HOBBY-CRAFTS 10500

LOUNGE-LOBBY 6000

FUTURE MUNICIPAL ROOMS 20000

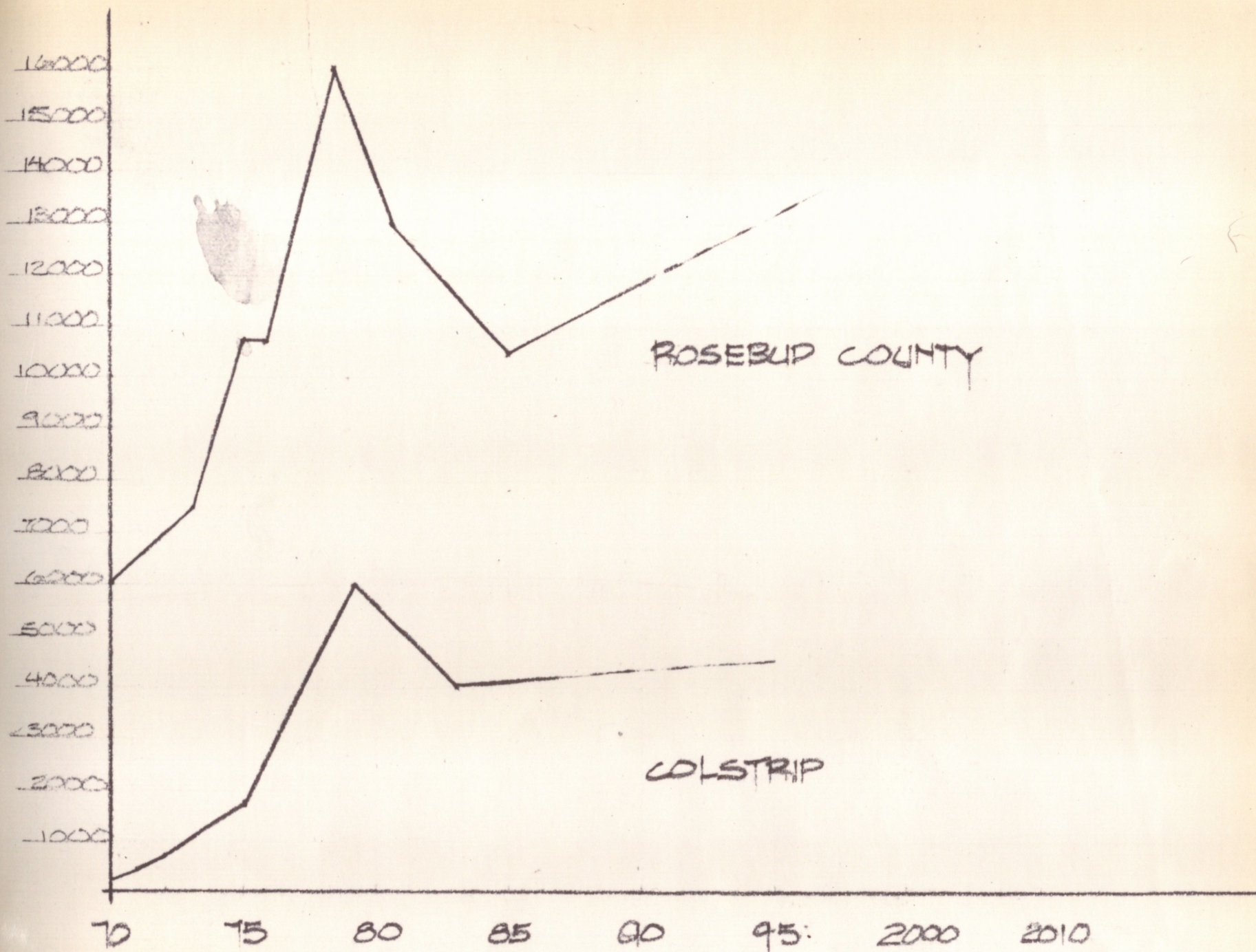
DAY CARE CENTER 1500

LIBRARY 33000

OPEN SPACE

PARKING

ROADS



SOURCE: BAKER-WALICKI CENSUS BUREAU
FIGURE 1

C.O.L. STRIP - 1980-4000 POP.

STATUS

0 250 500 750 1000 1250

MARRIED WORKERS

WORKERS WIVES

SCHOOL-AGERS

SINGLE WORKERS

OTHERS

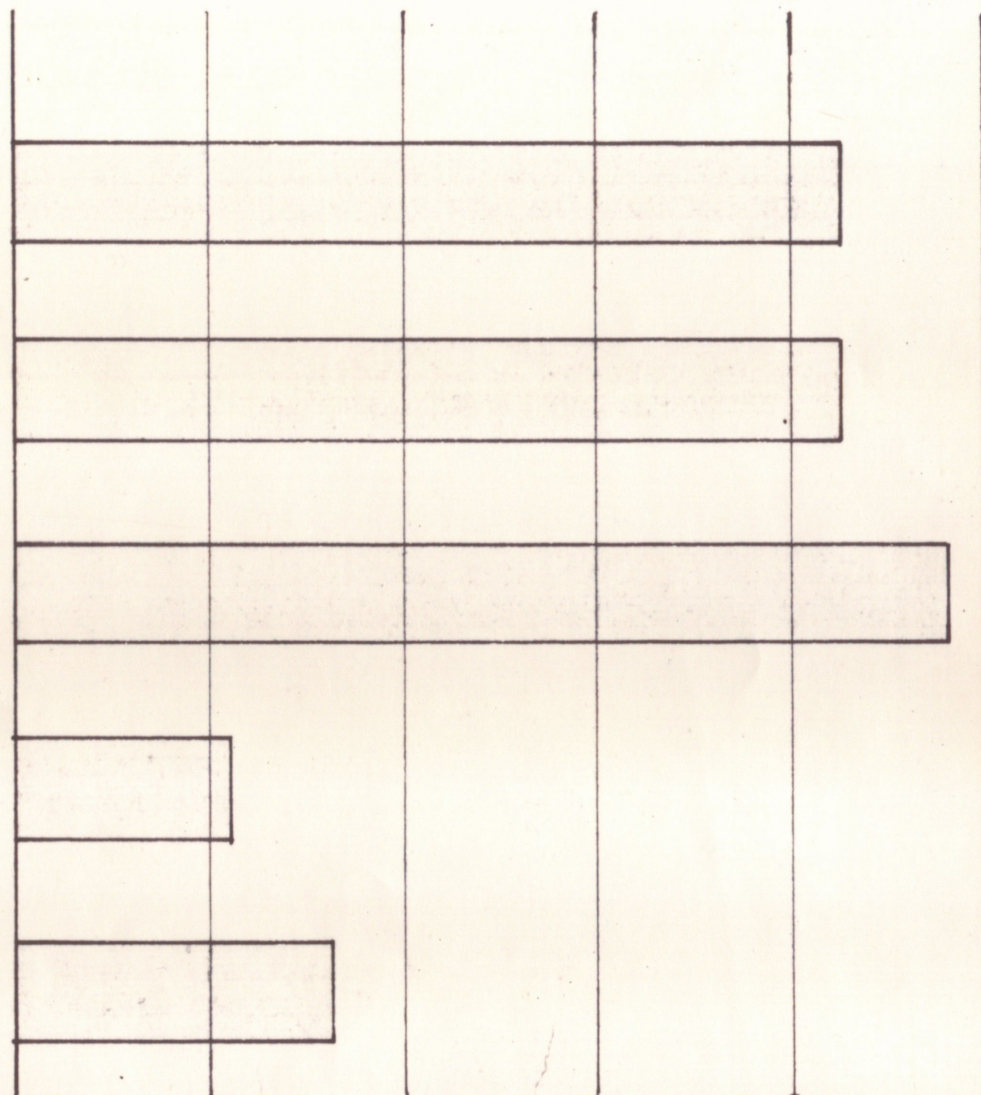
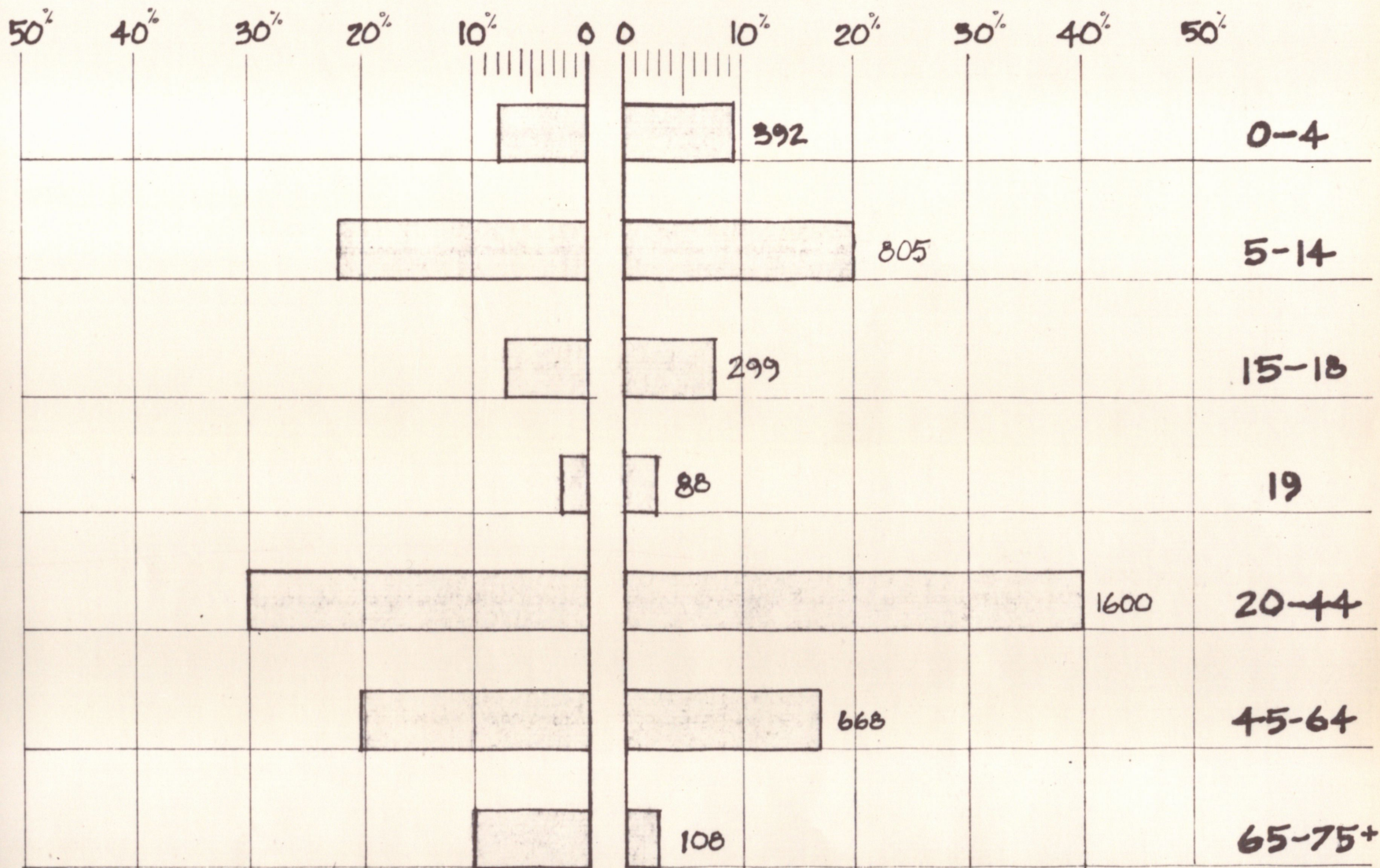


FIGURE 2



MONTANA - 1970 CENSUS

COLSTRIP - 1980 - 4,000 POPULATION

POPULATION % by AGE GROUP
FIGURE 3

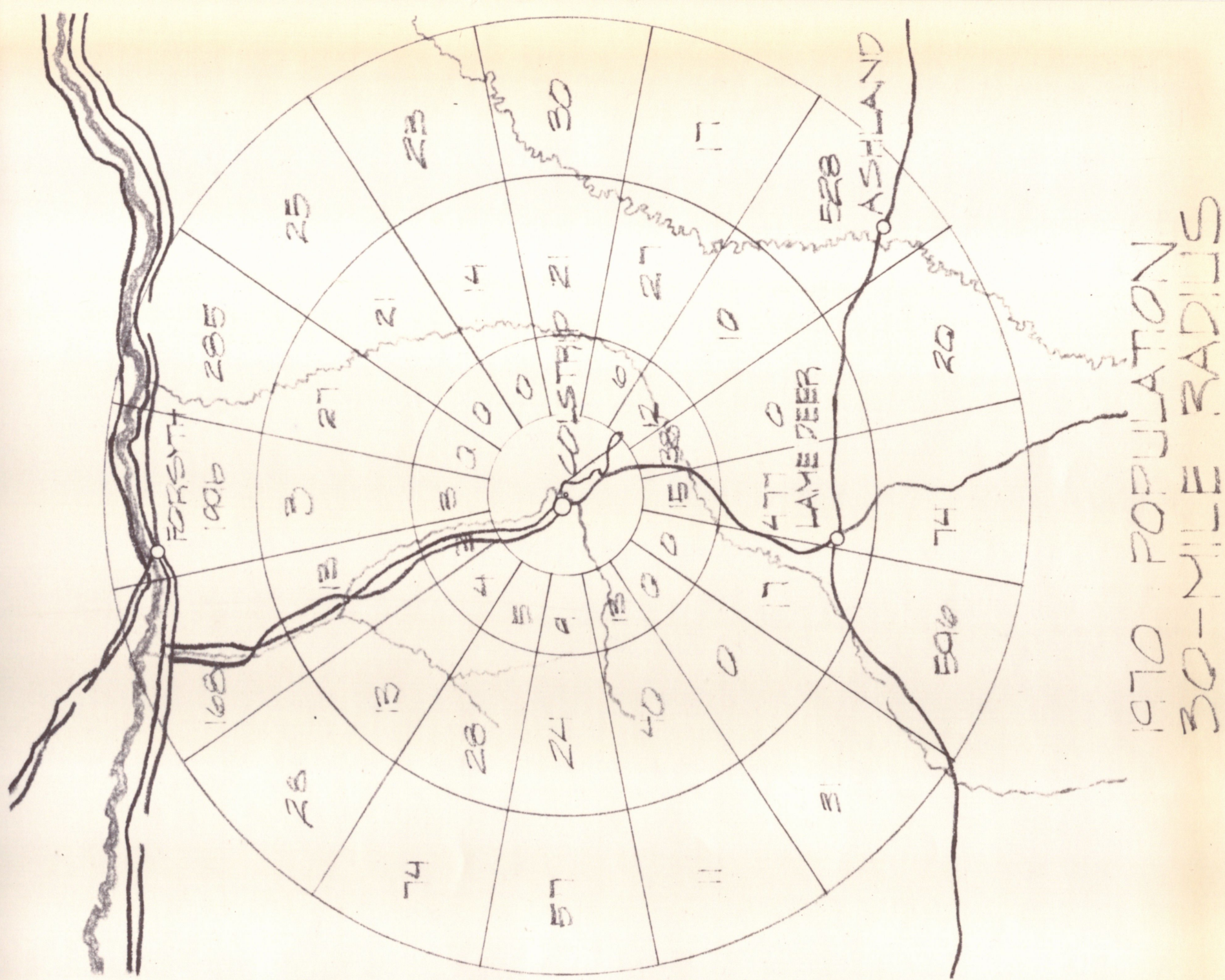


FIGURE 4

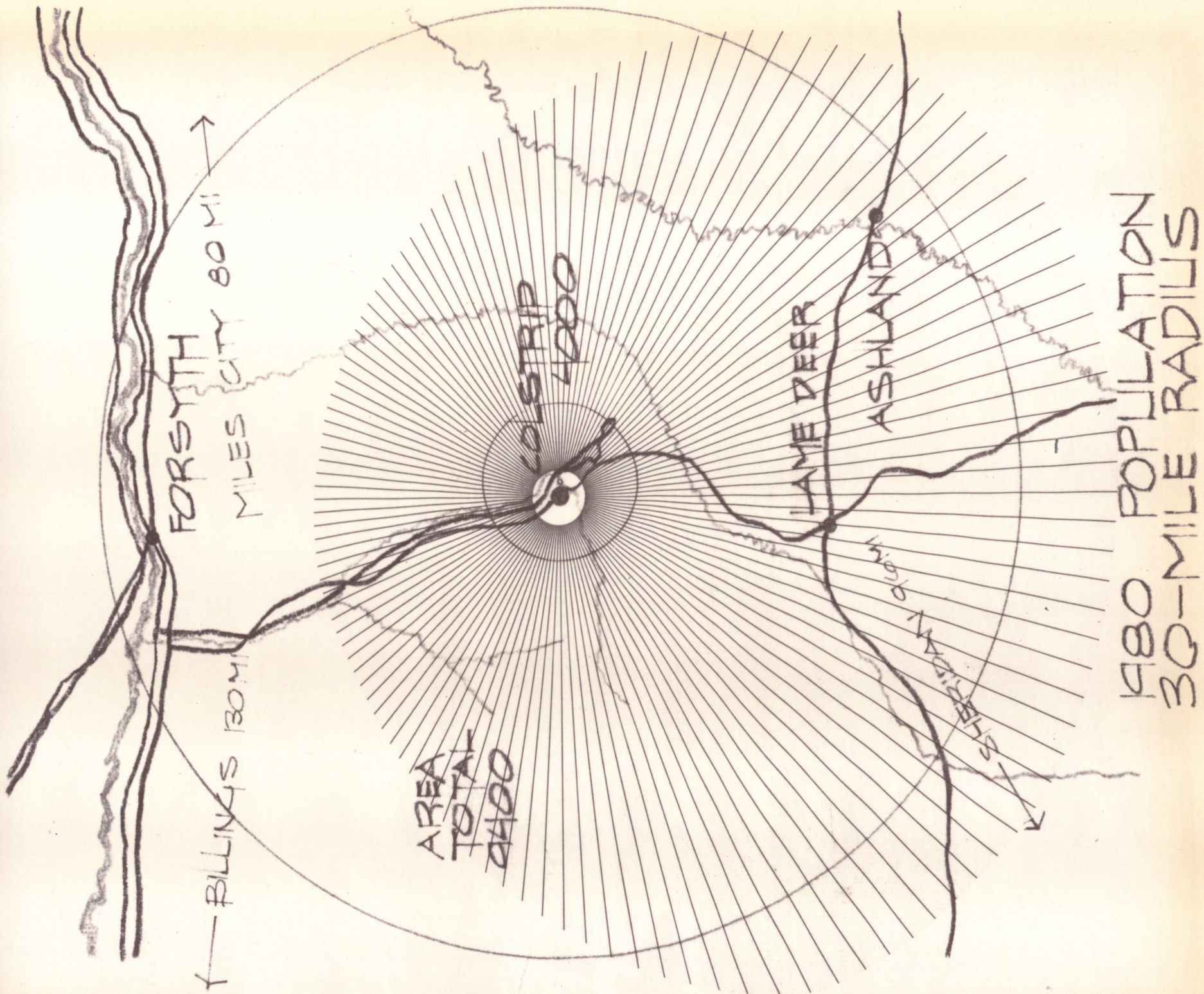


FIGURE 5

PERSONAL EXPENDITURES

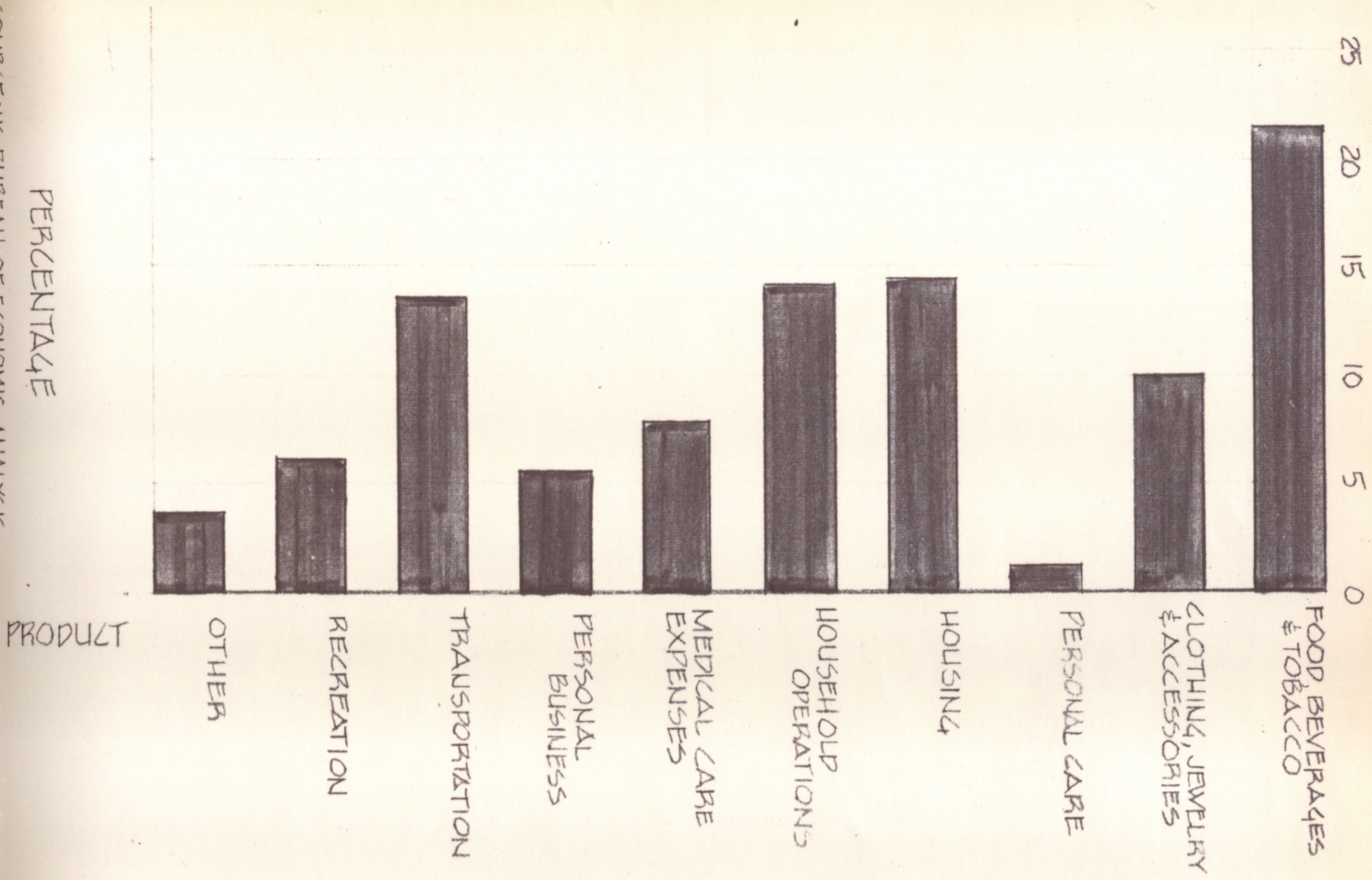


FIGURE 6

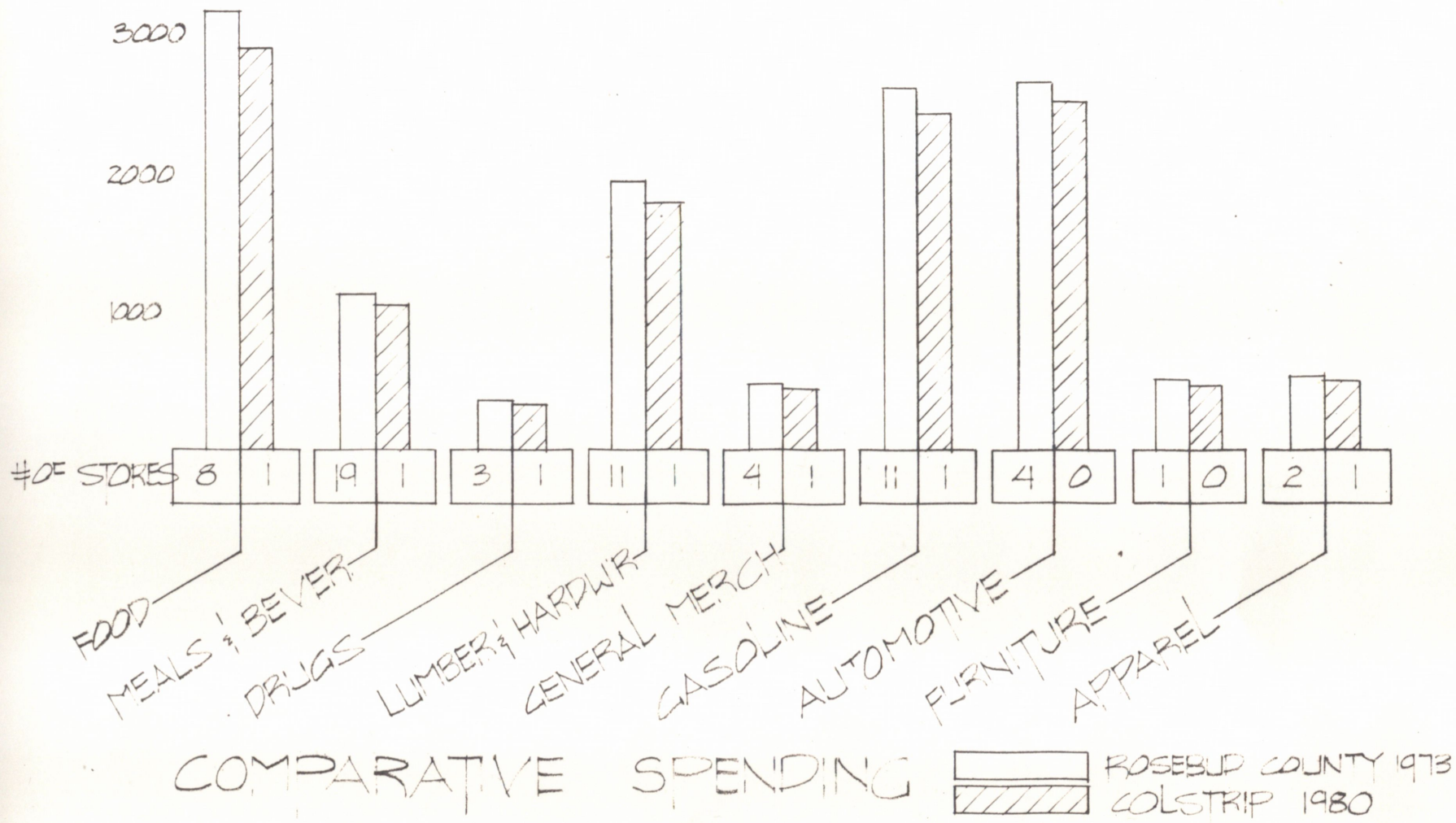
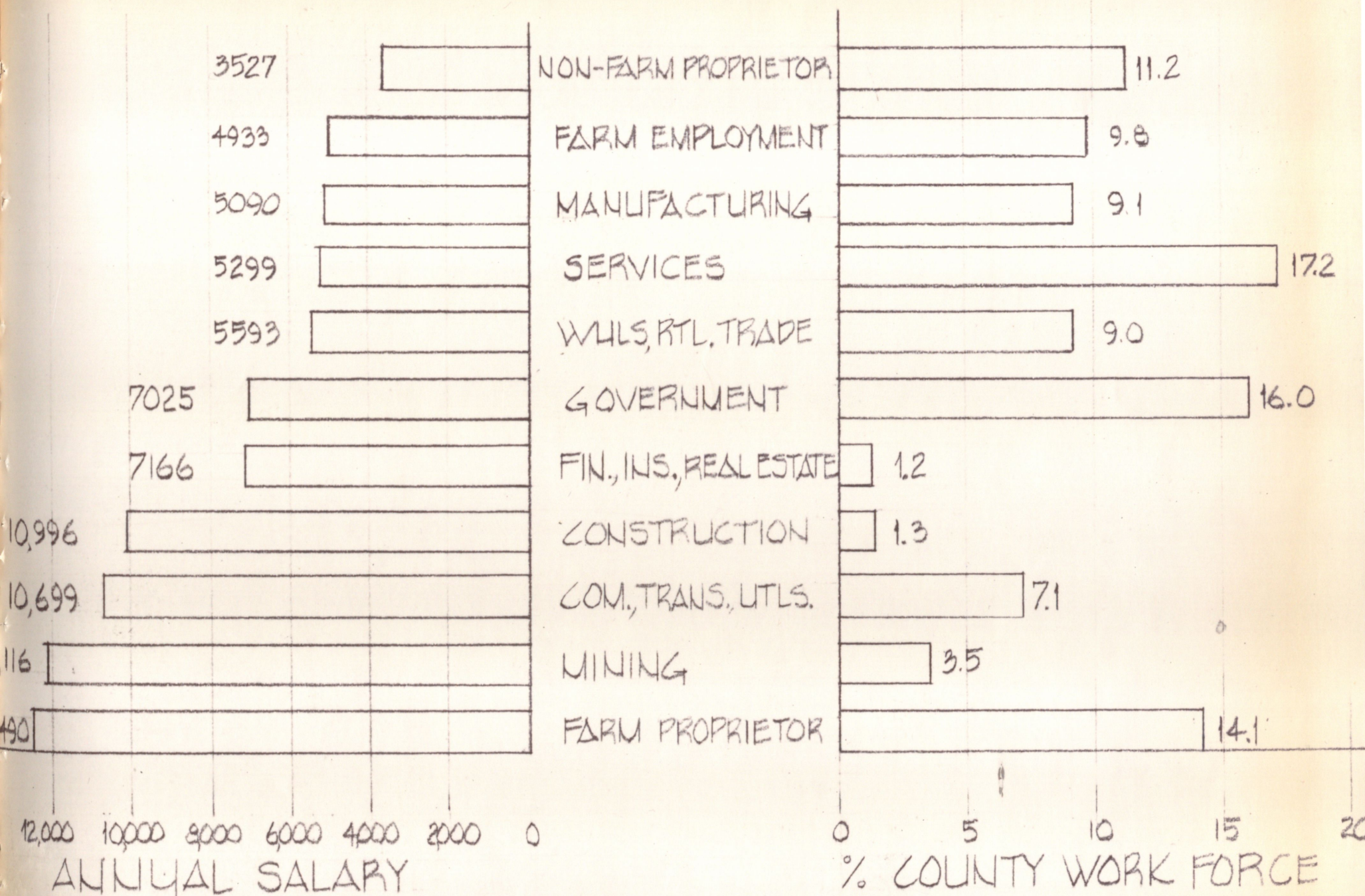


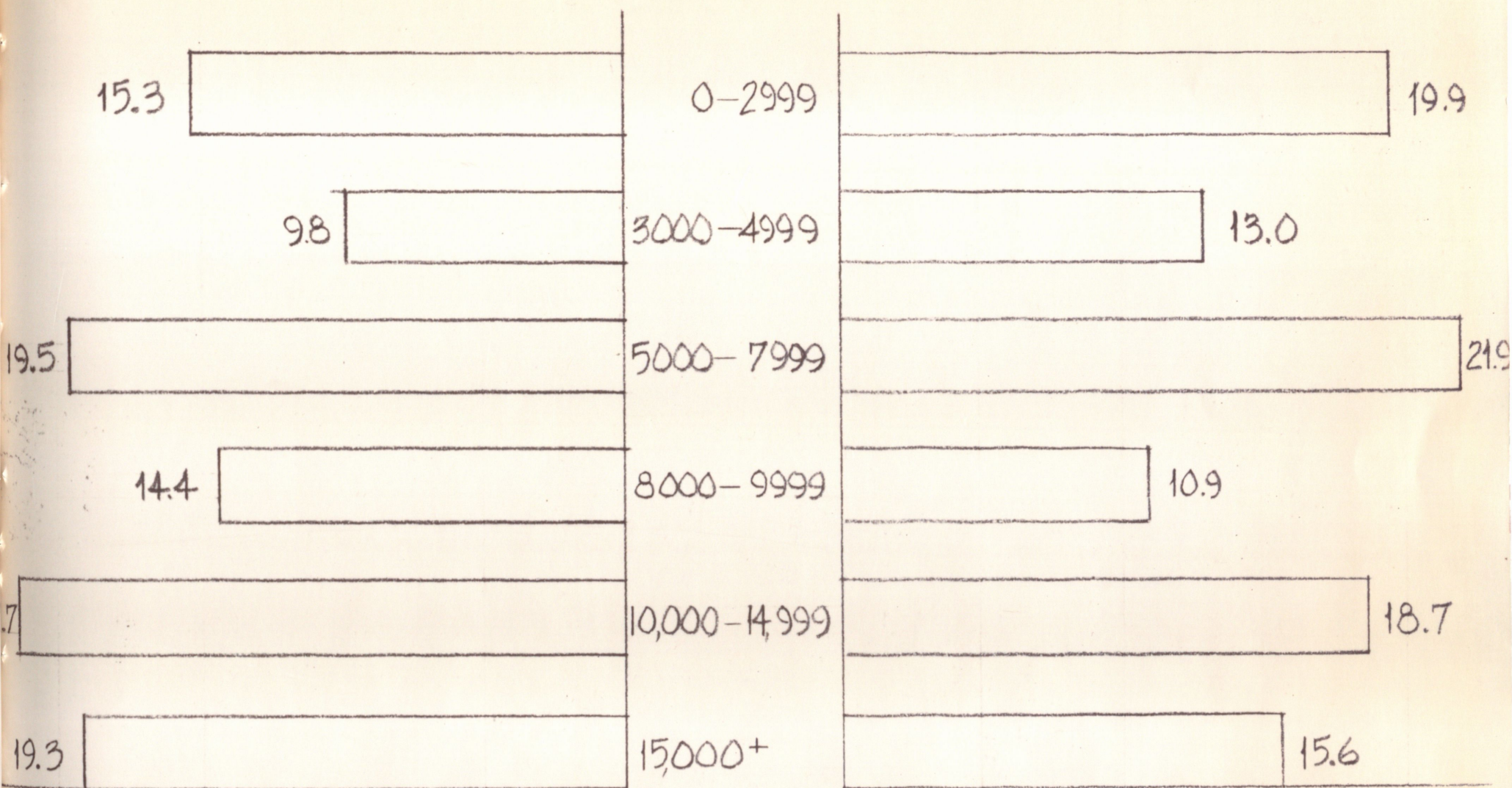
FIGURE 7



PERSONAL INCOME & EMPLOYMENT TYPE by % - 1972

FIGURE 8

SOURCE: BUREAU OF ECONOMIC ANALYSIS, U.S. DEPT. OF COMM



20% 15% 10% 5%

MONTANA

5% 10% 15% 20%

ROSEBUD

WORKER% / INCOME GROUP - 1973

FIGURE 9

SOURCE: SALES MANAGEMENT - JULY-1974

STATE POPULATION	727,000
STATE INCOME (PERSONAL)	2,574,569,000
STATE INCOME (RETAIL SPENDING)	1,401,481,000
-----RETAIL SPENDING = 54.4% PERSONAL INCOME	

RETAIL SPENDING BREAKDOWN (\$000)

	LUMBER	GEN.	FOOD	AUTO	GAS	APPAREL	FURNIT.	EAT	DRUGS
	HARDWR	MERCH.						DRINK	
STATE	158.341	129.386	305.197	284.203	125.265	58.334	52.628	117.991	55.182
				20.2%		4.2%	3.8%		
ROSEBUD	1.920	476	3.144	N/A	2597	N/A	N/A	1.105	343
	14.1%	3.6%	23.2%		19.6%			8.4%	2.6%

ROSEBUD POPULATION	6700
ROSEBUD INCOME (PERSONAL)	18,981,000
ROSEBUD INCOME (RETAIL SPENDING)	13,166,000
-----RETAIL SPENDING = 69% PERSONAL INCOME	

SOURCE: EDITOR & PUBLISHER MARKET GUIDE - 1973

FIGURE 10

COLSTRIP POPULATION	4000
TOTAL WORKERS	1333
WORKER INCOME BREAKDOWN:	
MINES---500 WORKERS @ \$16000	
PLANT---200 WORKERS @ \$14000	
PROFESSIONALS, MERCHANTS---122 @ \$15000	
OTHERS---511 @ 10,500	
COLSTRIP TOTAL GROSS EARNINGS	\$17,995,500
AVERAGE INCOME---\$13,500	
SPENDABLE INCOME FOR COLSTRIP (69%)	\$12,416,895
INCOME AVAILABLE FOR HOUSING	\$1,889,527
OUTLYING AREAS POPULATION	4000
OUTLYING TOTAL GROSS EARNINGS	\$14,040,484
AVERAGE INCOME---\$10,533	
SPENDABLE INCOME FOR OUTLYING AREA	\$96,879,337
INCOME AVAILABLE FOR HOUSING	\$2,948,502

FIGURE 11

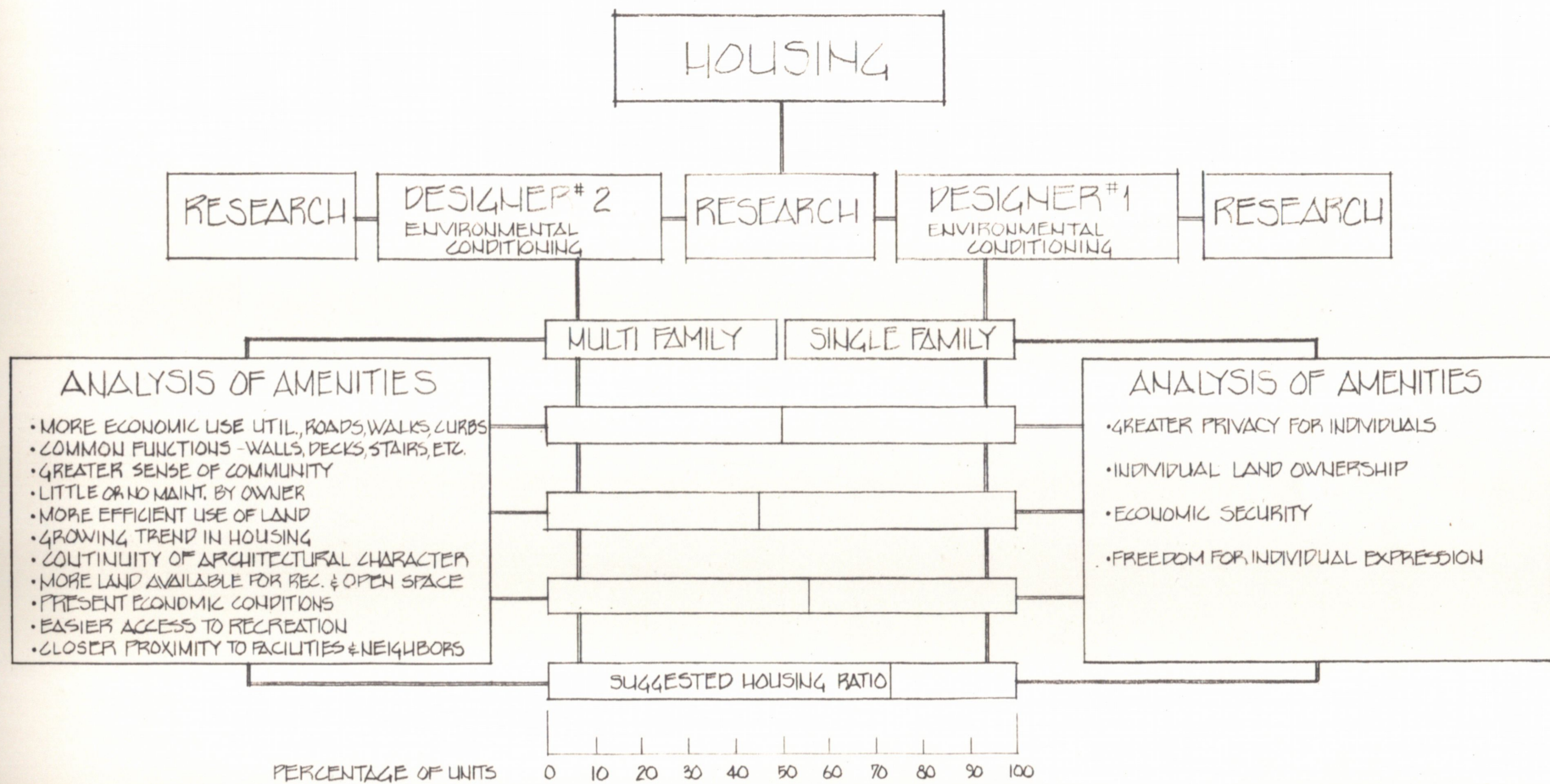
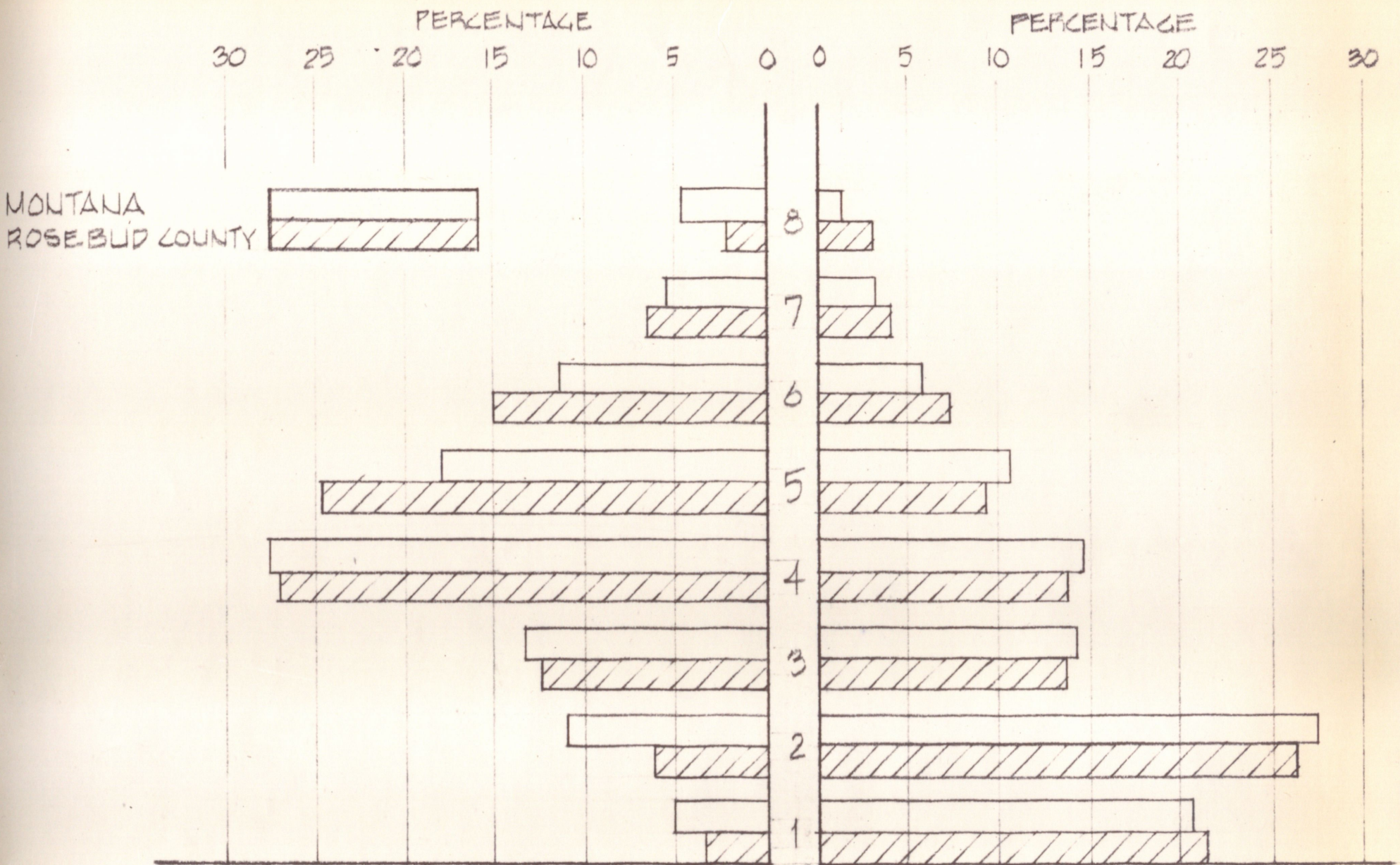


FIGURE 12

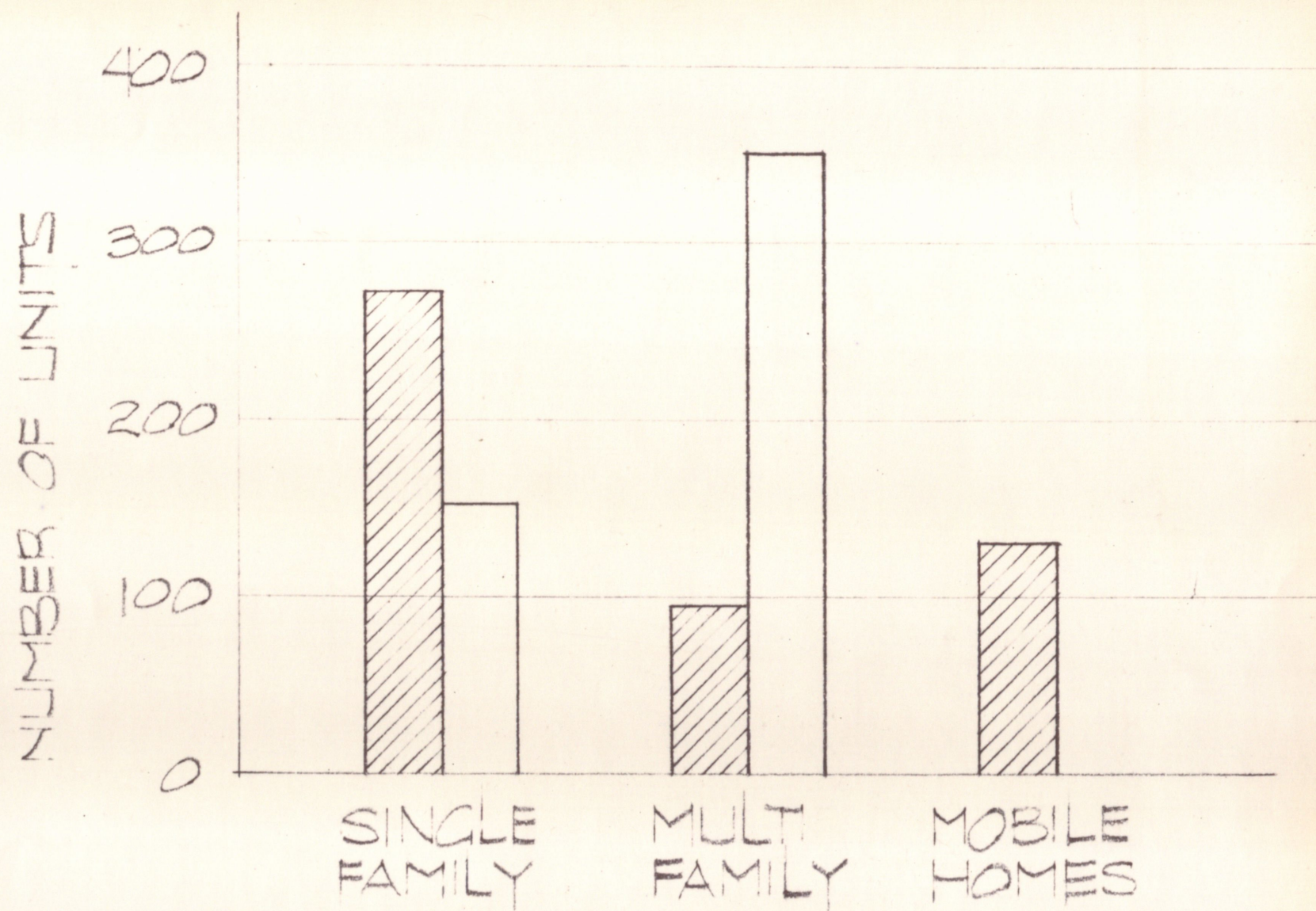


ROOMS/UNIT

PERSONS/UNIT

FIGURE 13

HOUSING CHARACTERISTICS



PROPOSED HOUSING

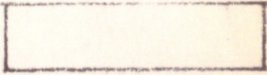
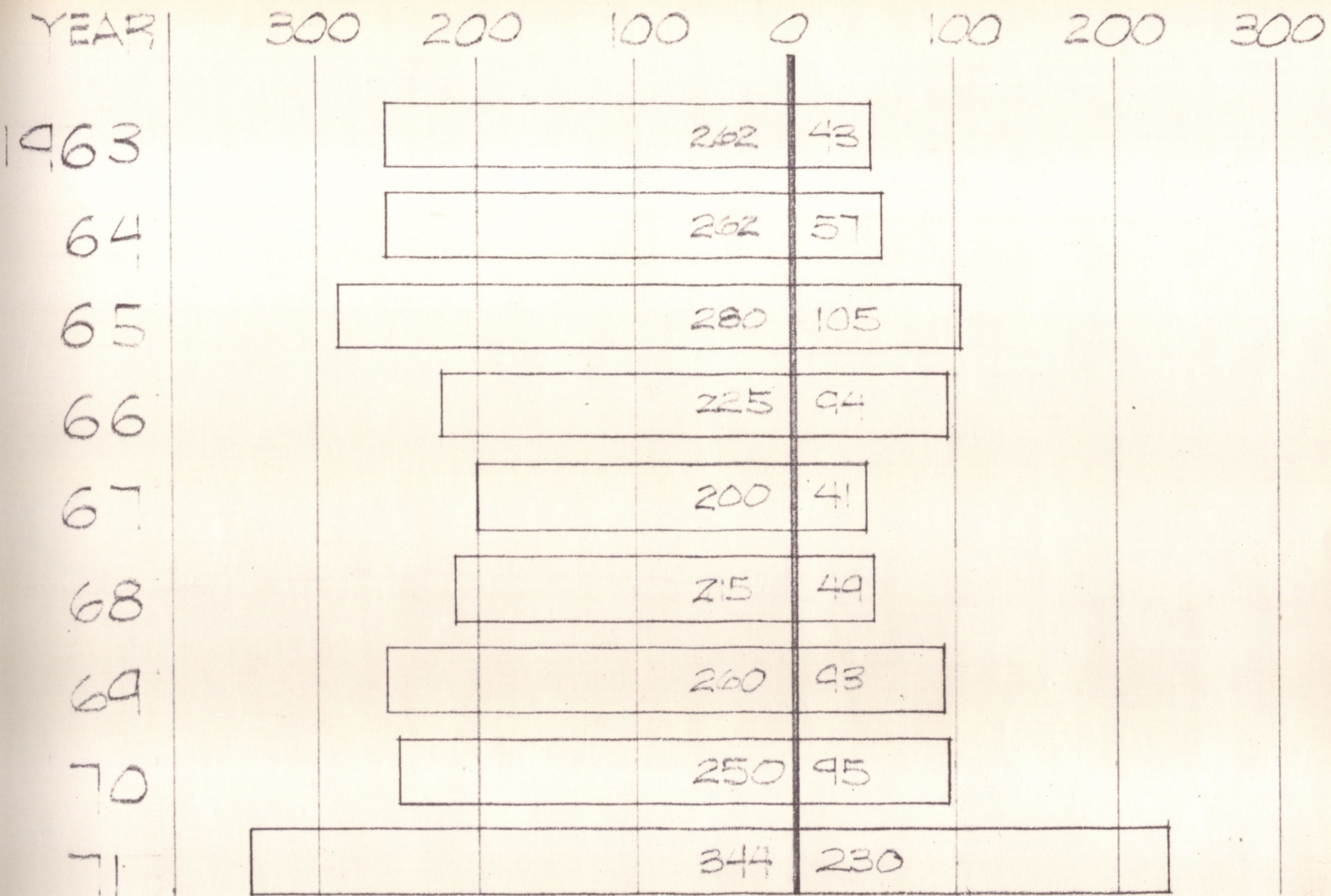
EXISTING  PROPOSED 

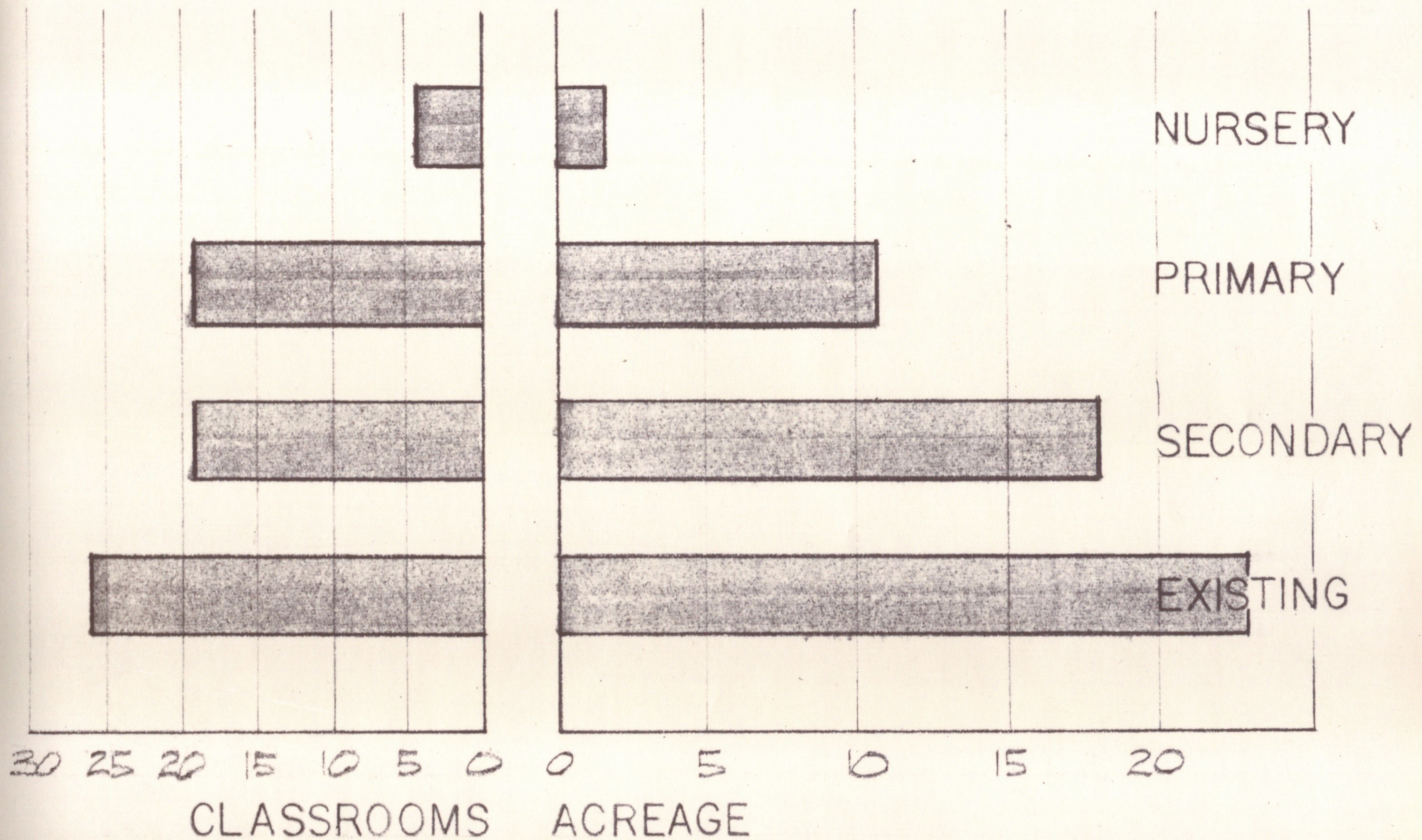
FIGURE 14



HOUSING STARTS BILLINGS 1963-71

SOURCE: REAL ESTATE RESEARCH CORP.

FIGURE 15



FUTURE EDUCATIONAL
FACILITIES REQUIRED

FIGURE 16

1480-COLSTRIP-4000

[illegible]

RELATIVE DISTANCE PREFERENCE MATRIX
FIGURE 17

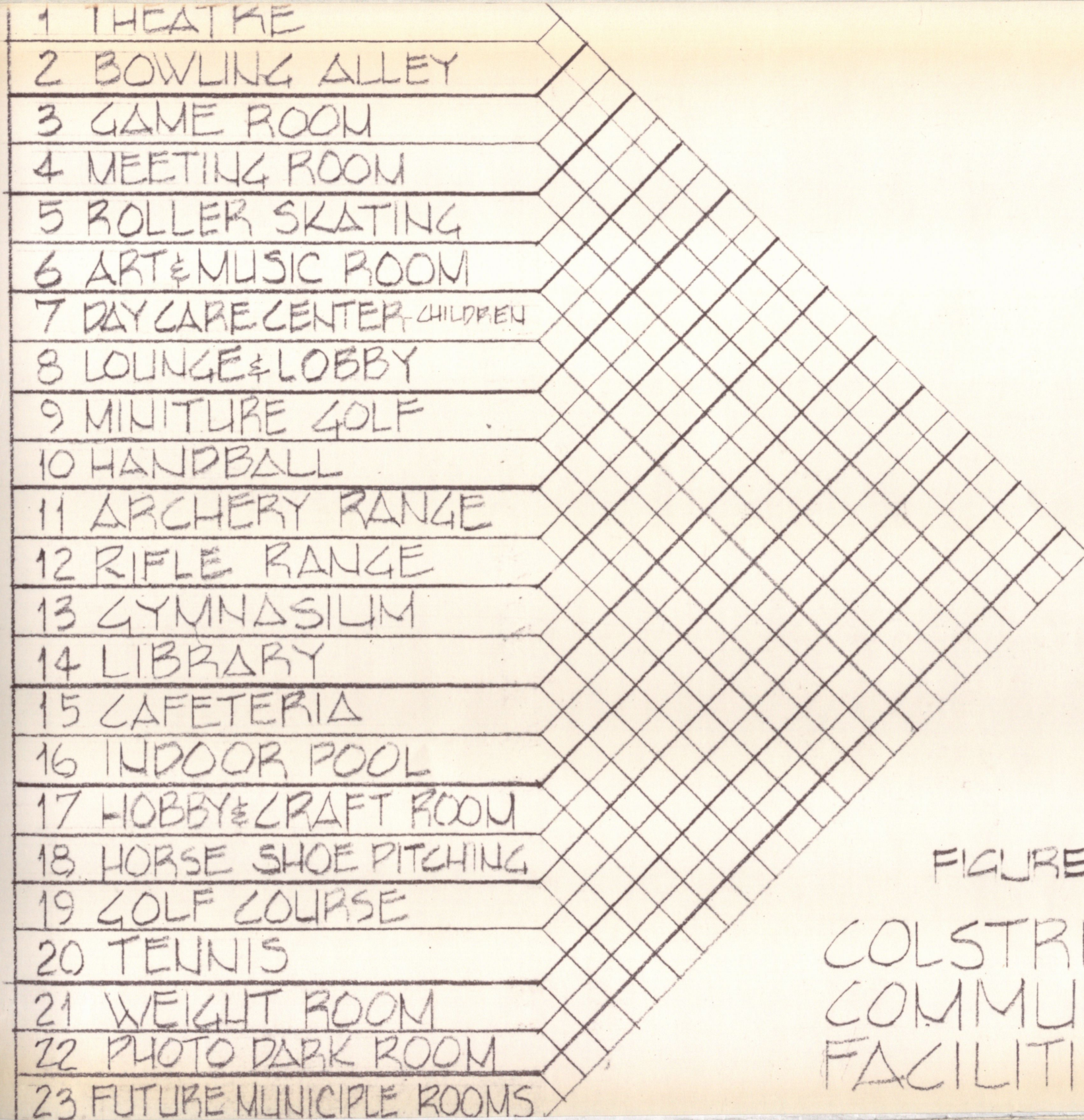


FIGURE 18:

COLSTRIP
COMMUNITY
FACILITIES

MAGNITUDE OF RESPONSE

100 00

FACILITY

MOVIE THEATRE

BOWLING ALLEY

SWIMMING POOL

BASEBALL FIELD

RIFLE RANGE

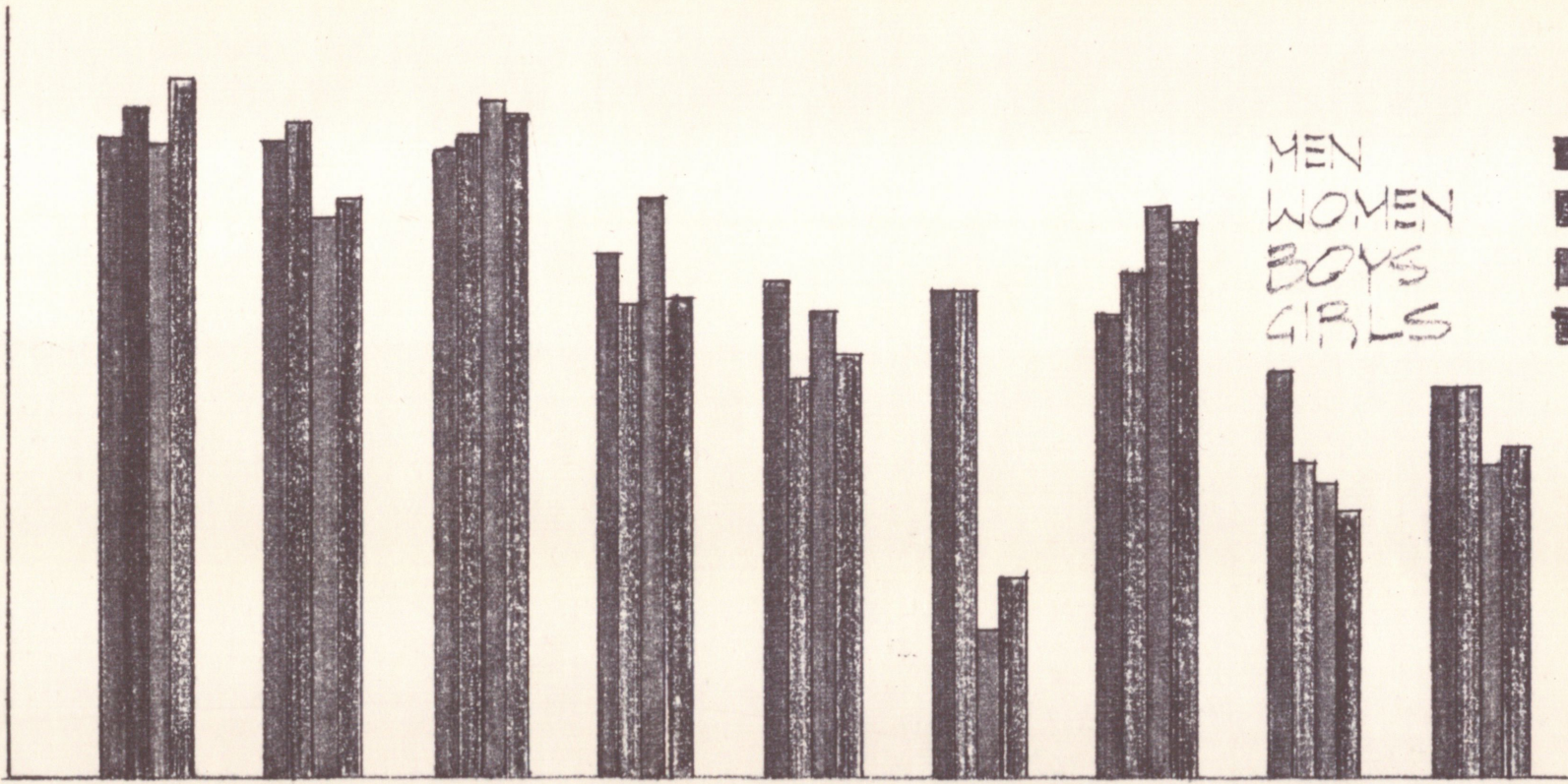
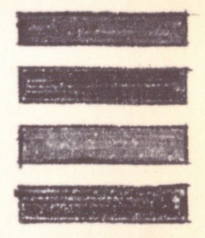
GOLF COURSE

SKATING RINK

PISTOL RANGE

ARCHERY RING

MEN
WOMEN
BOYS
GIRLS



RECREATION

SURVEY

FIGURE 19

PREFERENCE CHART

COMMUNITY FACILITIES

TENNIS

GOLF COURSE

LIBRARY

THEATRE

PHOTO DARK ROOM

ART & MUSIC ROOM

GYMNASIUM

INDOOR POOL

HOBBY & CRAFT ROOMS

HANDBALL

GAMEROOM

LOUNGE & LOBBY

CAFETERIA

FUTURE MUNICIPAL ROOMS

WEIGHT ROOM

BOWLING

MEETING ROOM

ARCHERY RANGE

DAY CARE CENTER

RIFLE RANGE

HORSE SHOE PITCHING

ROLLER SKATING

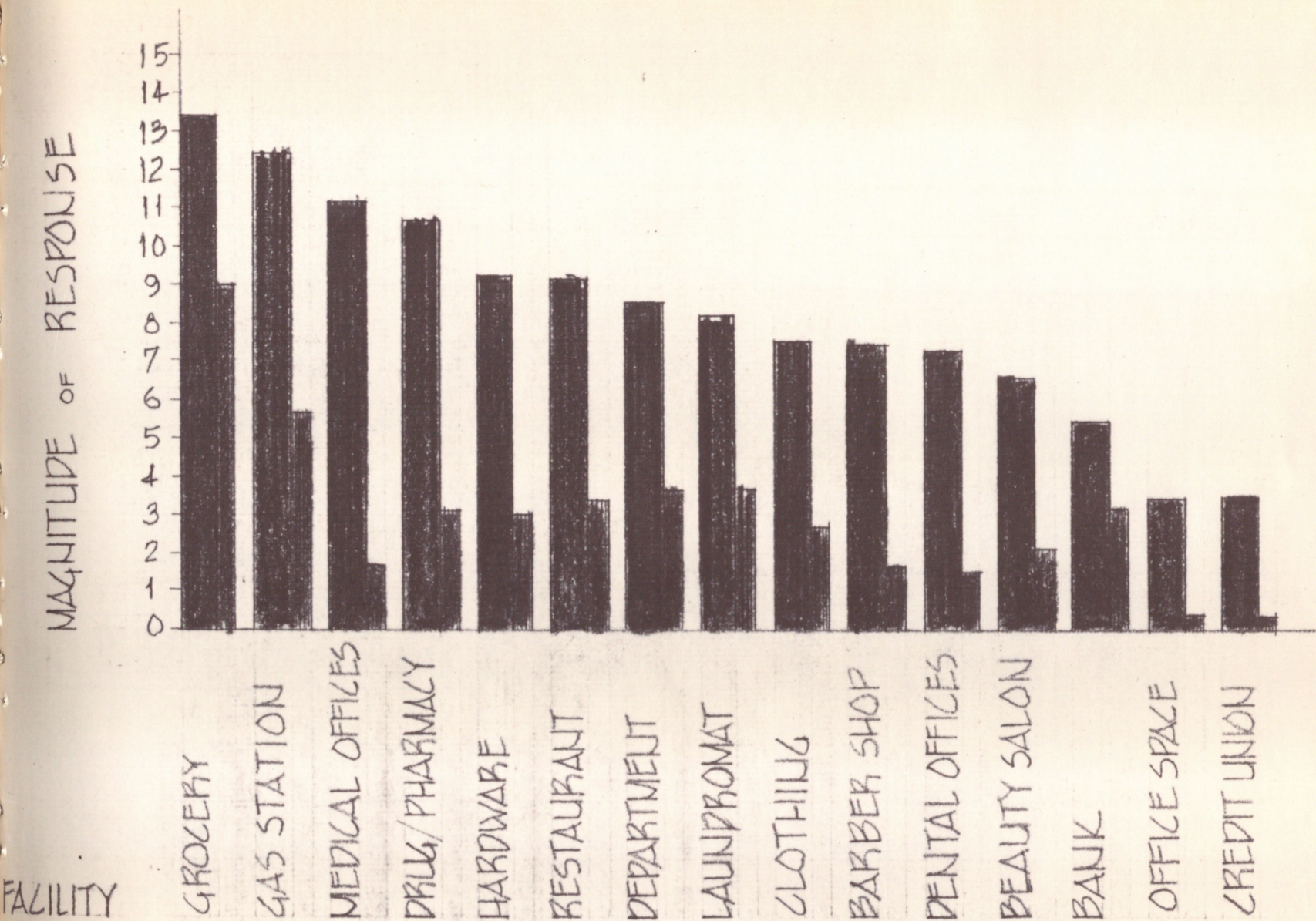
MINIATURE GOLF

FIGURE 20



COLSTRIP
COMMERCIAL
FACILITIES

FIGURE 21



SOURCE: WESTERN ENERGY

FIGURE 22

PREFERENCE CHART

COMMERCIAL FACILITY

BOOKSTORE

FOOD STORE (DELI)

CLOTHING

BAR-LIQUOR

SPORTING GOODS

HOBBY & CRAFTS

SOUND & APPLIANCES

SHOE STORE

BAKERY

FURNITURE

JEWELRY

CONFECTIONERY

BICYCLE SHOP

PARTS HOUSE

FABRIC SHOP

OFFICE SPACE

BARBER-BEAUTY

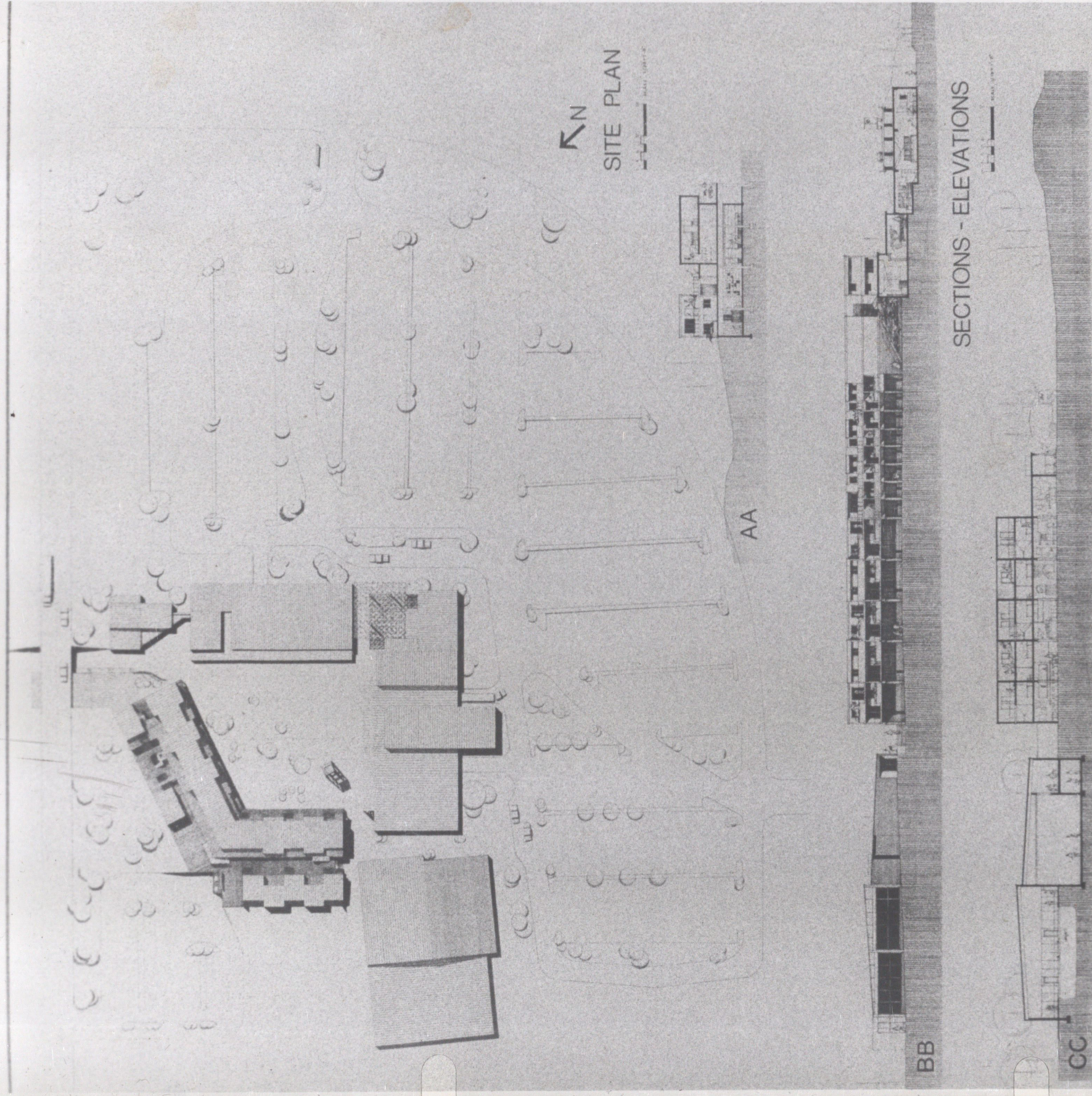
AUTO DEALER

PAINT STORE

FIGURE 23







COLSTRIP EXPANSION
COLSTRIP, MONTANA

BAKER - WALICKI
JUNE 1975

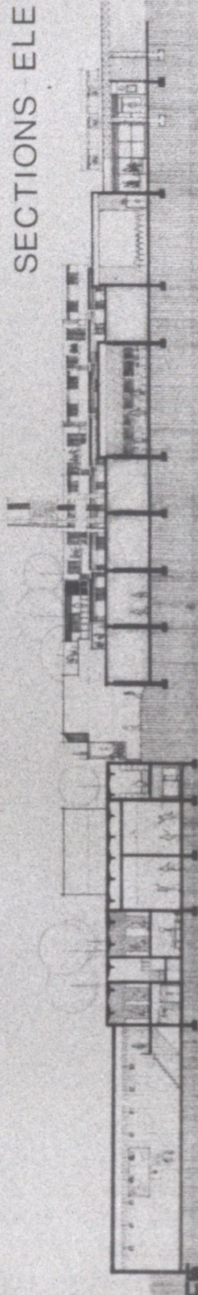
SITE PLAN
SECTIONS
ELEVATIONS



OVERALL SITE PLAN



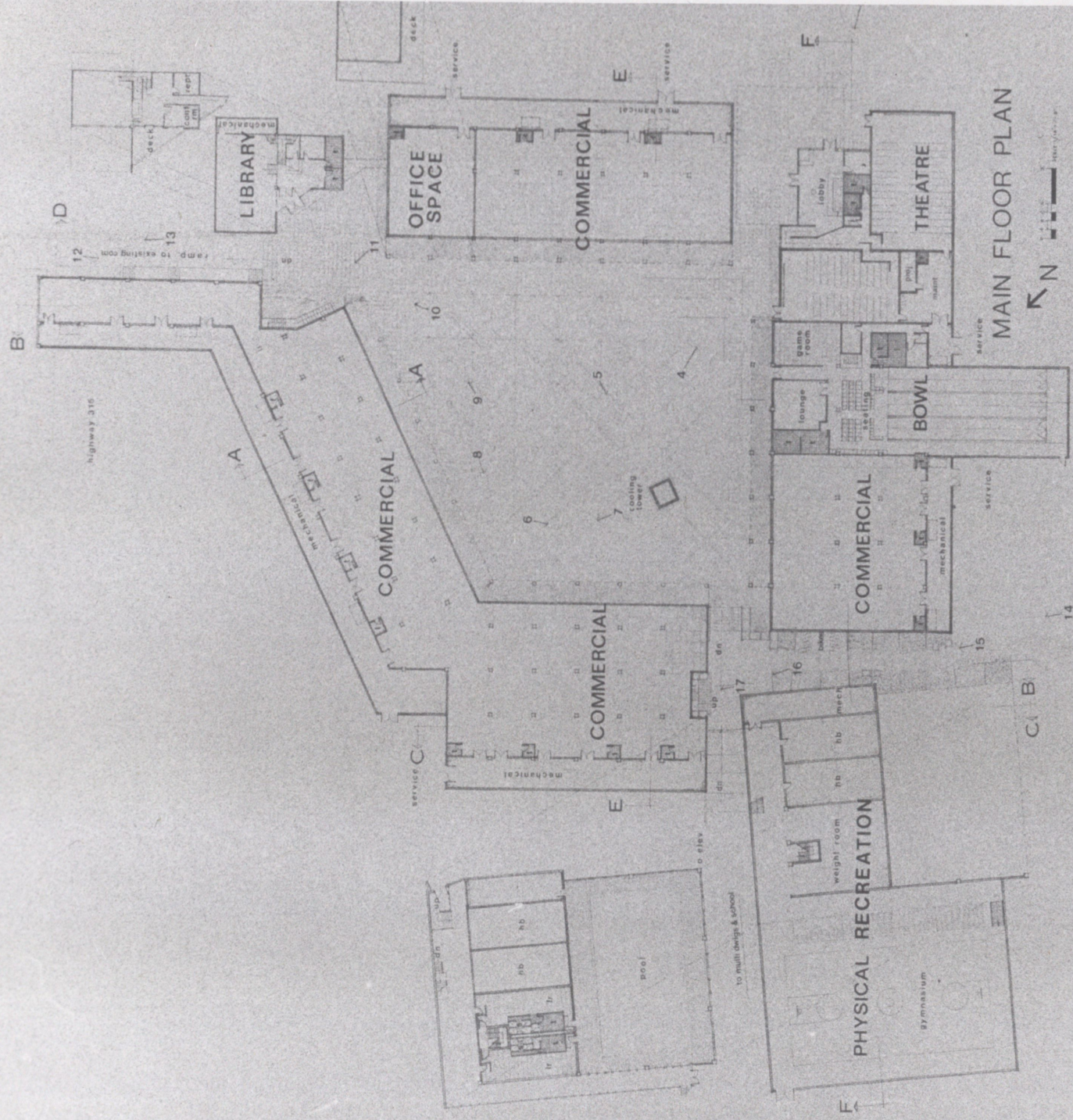
SECTIONS ELEVATIONS



COLSTRIP EXPANSION
COLSTRIP, MONTANA

BAKER - WALICKI
JUNE 1975

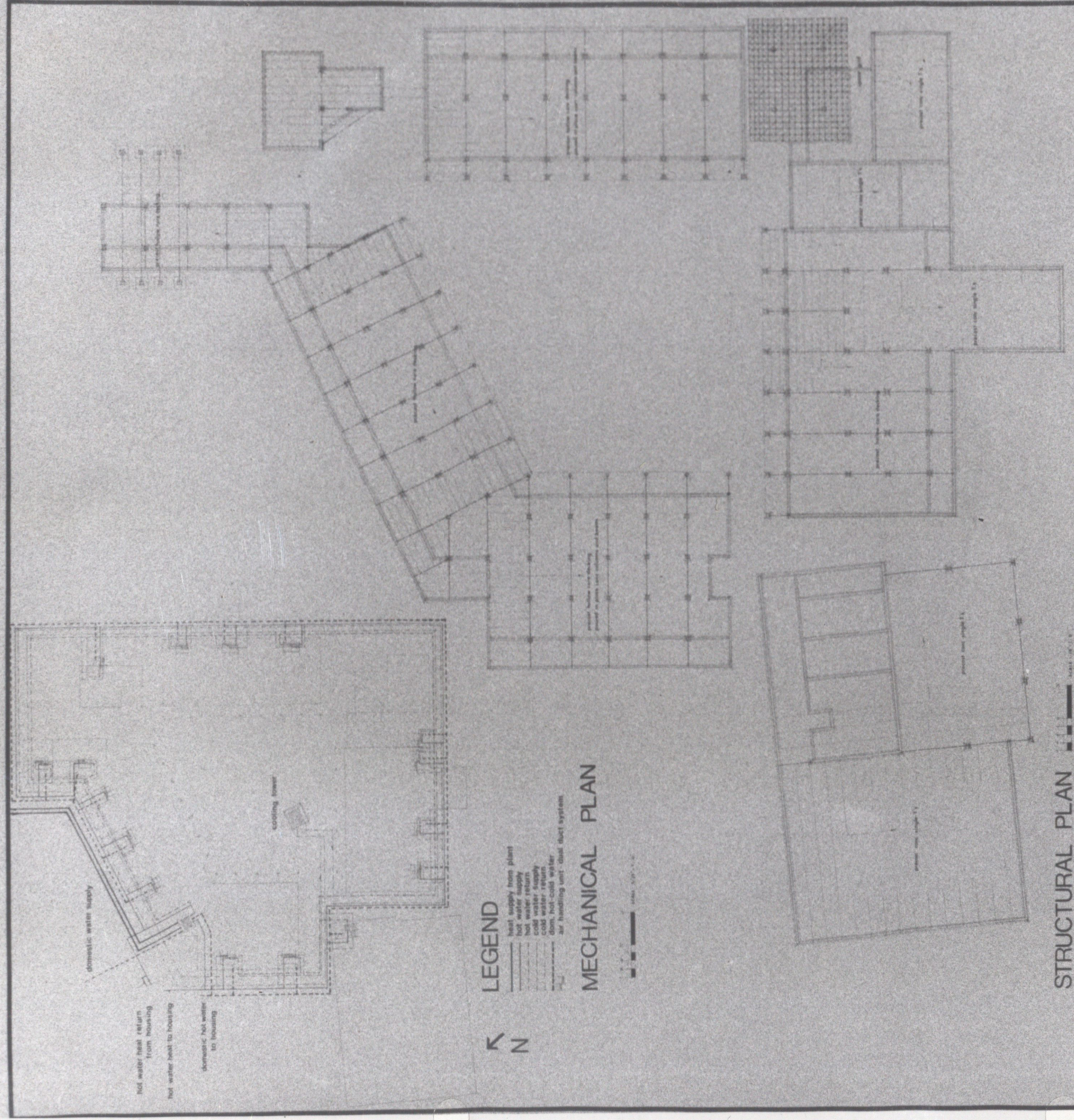
TOWN SITE
SECTIONS
ELEVATIONS



COLSTRIP EXPANSION
COLSTRIP, MONTANA

BAKER - WALICKI
JUNE 1975

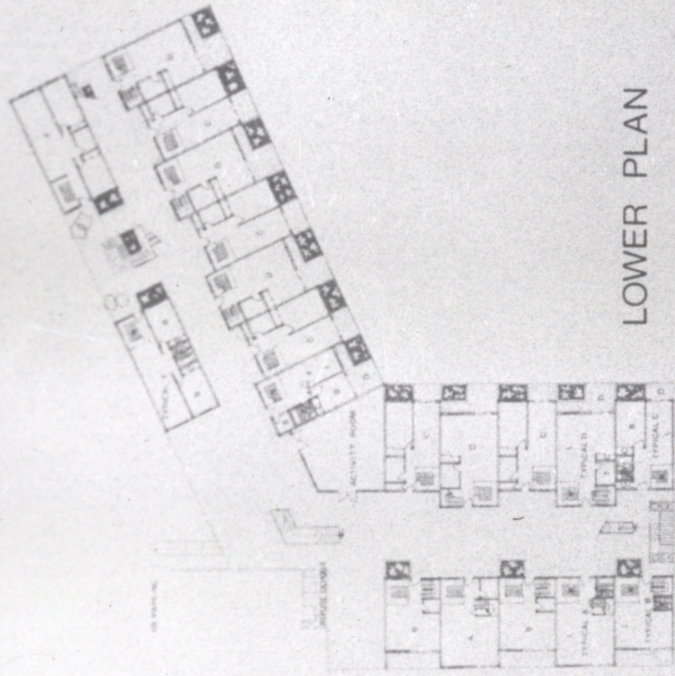
COMMERCIAL COMMUNITY PLAN



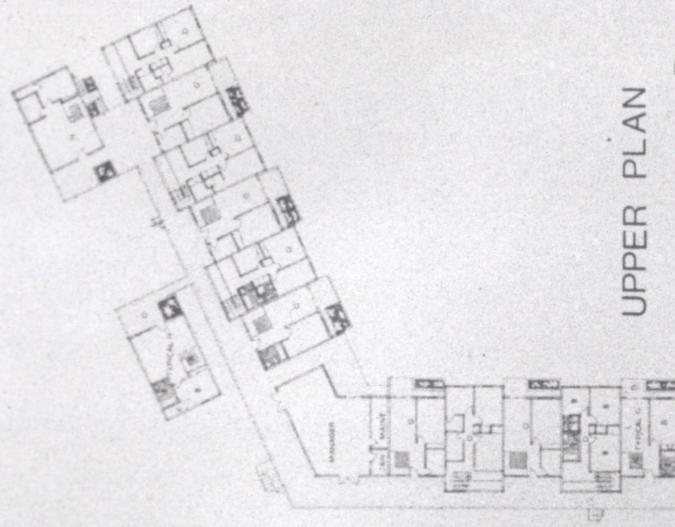
COLSTRIP EXPANSION
COLSTRIP, MONTANA

BAKER - WALICKI
JUNE 1975

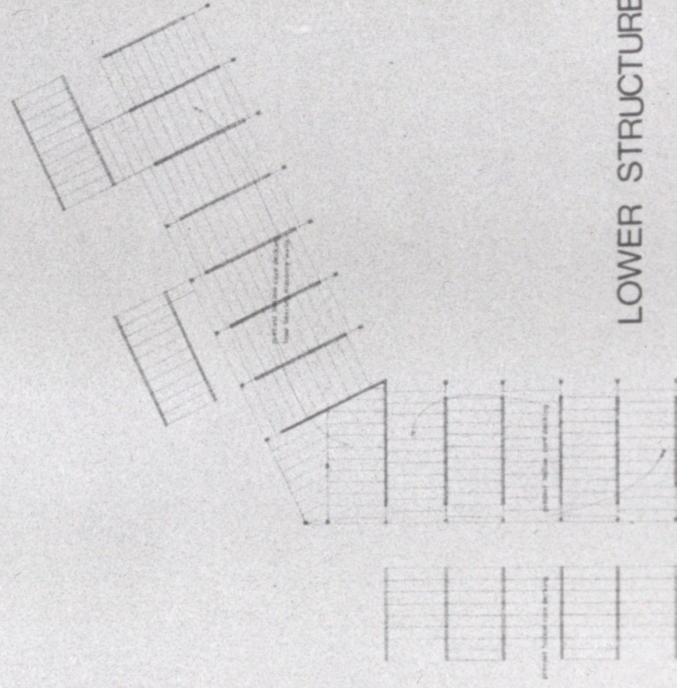
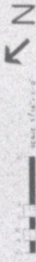
MECHANICAL
STRUCTURAL



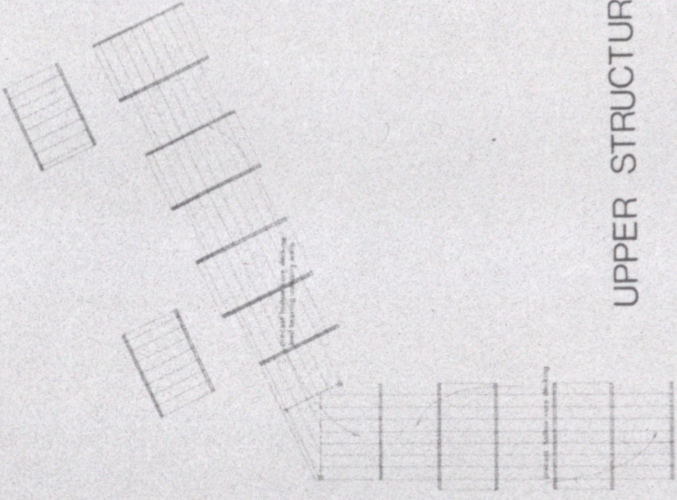
LOWER PLAN



UPPER PLAN



LOWER STRUCTURE



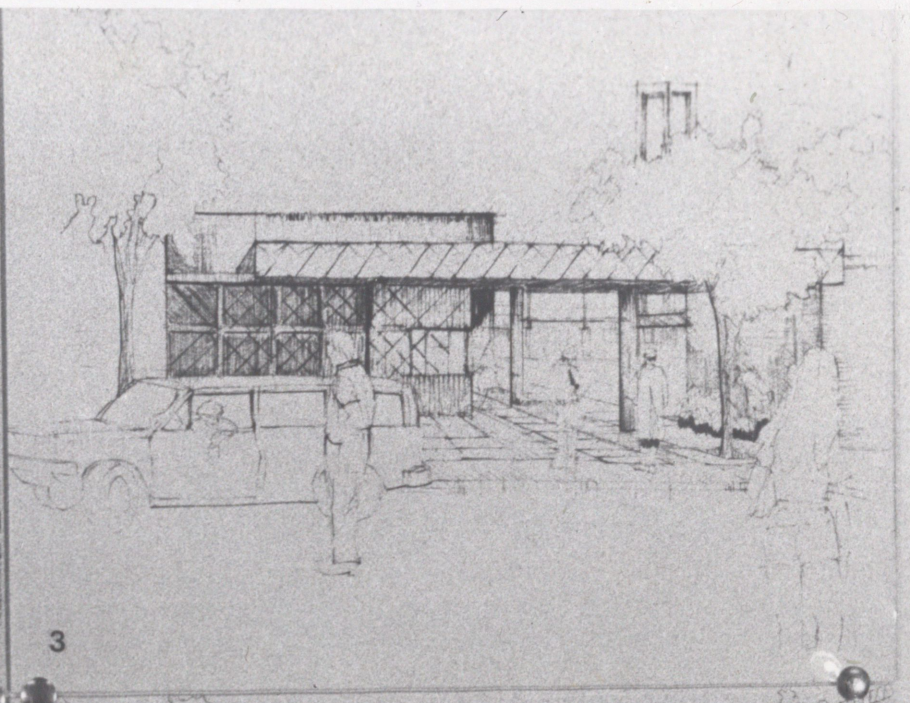
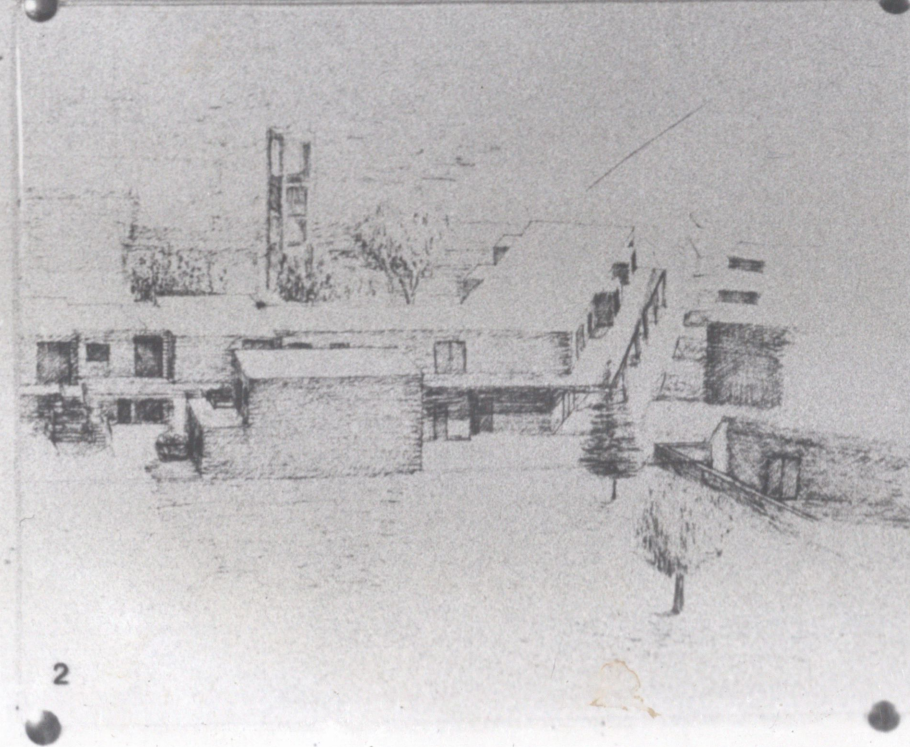
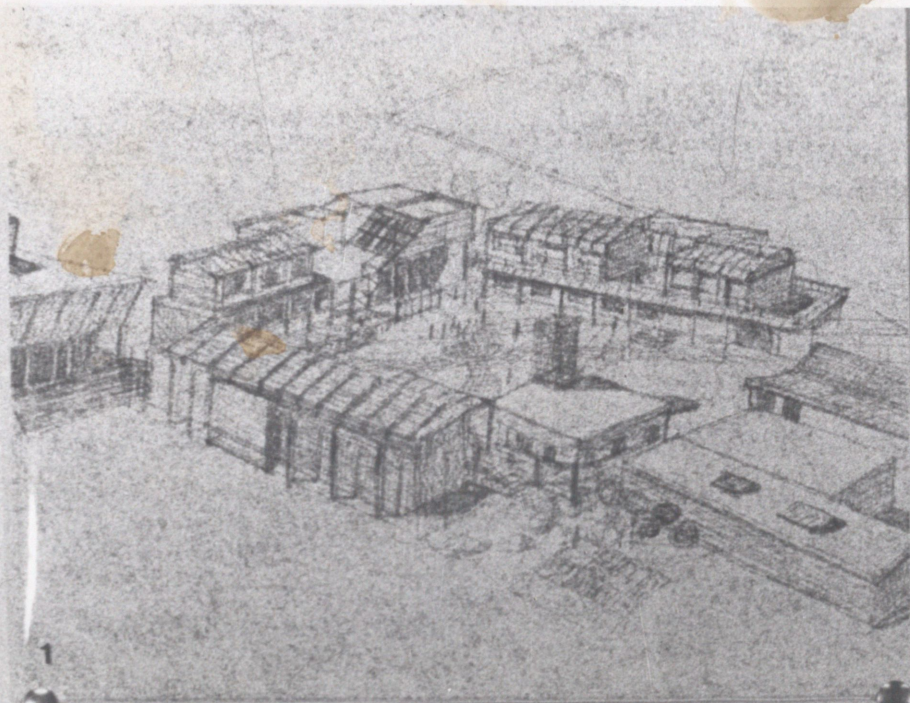
UPPER STRUCTURE

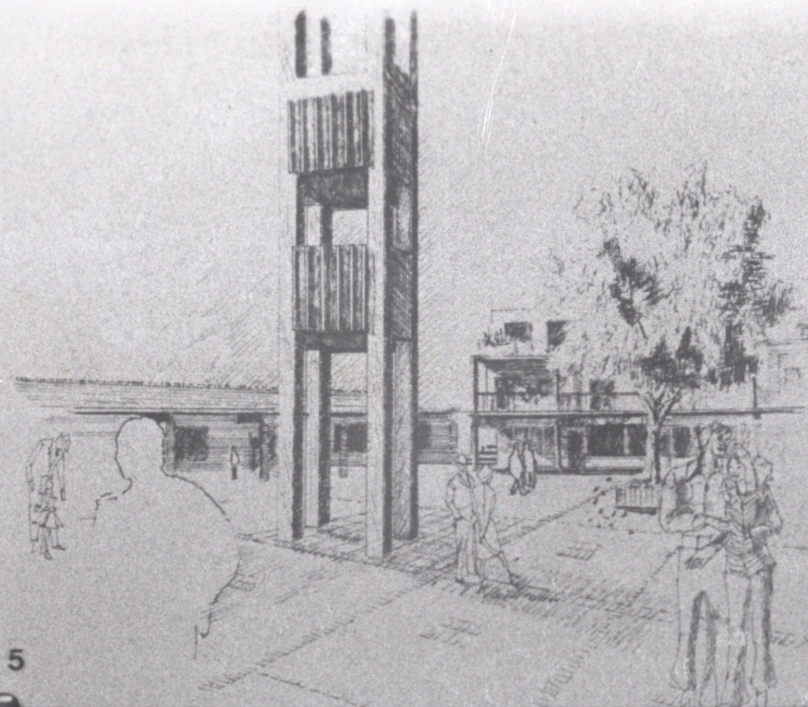


COLSTRIP EXPANSION
COLSTRIP, MONTANA

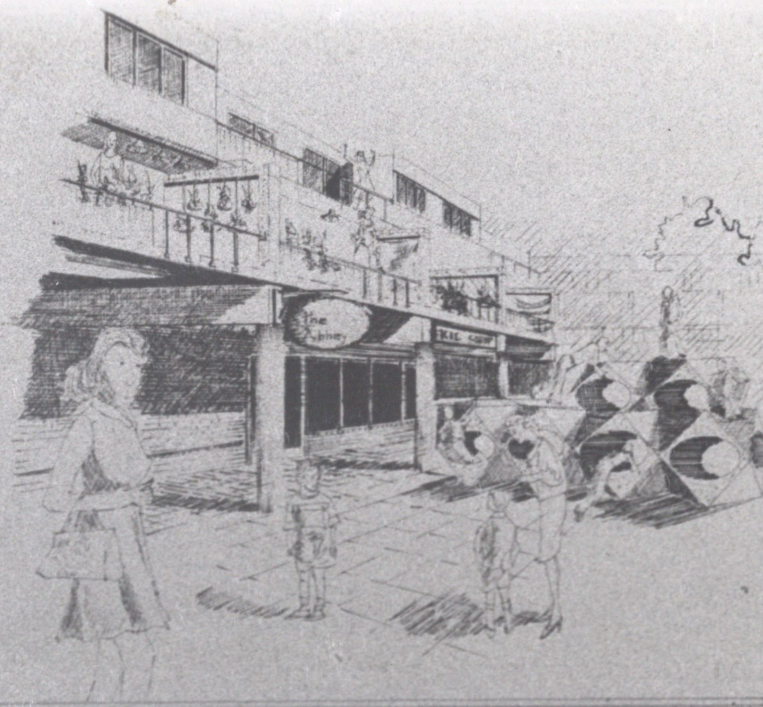
BAKER - WALICKI
JUNE 1975

HOUSING
PLAN
STRUCTUR

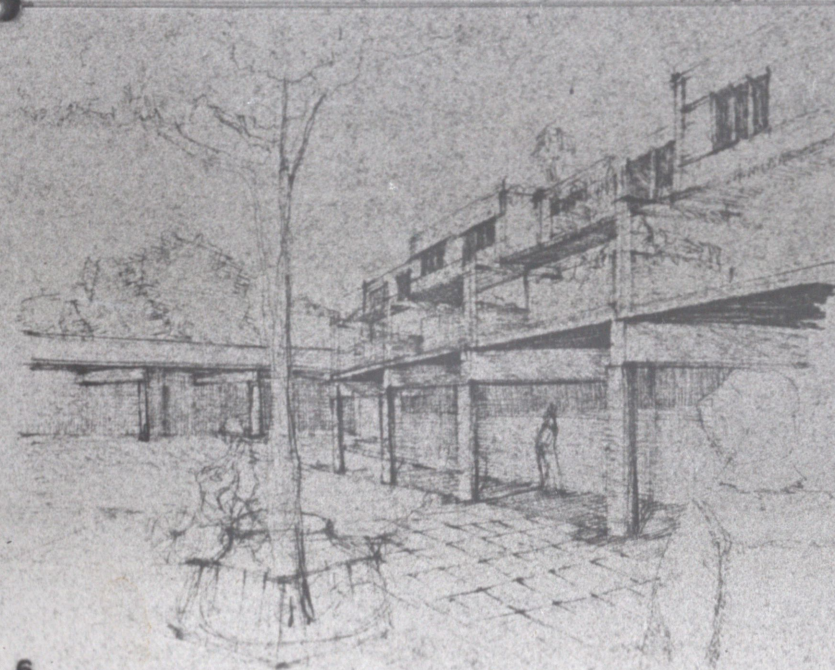




5



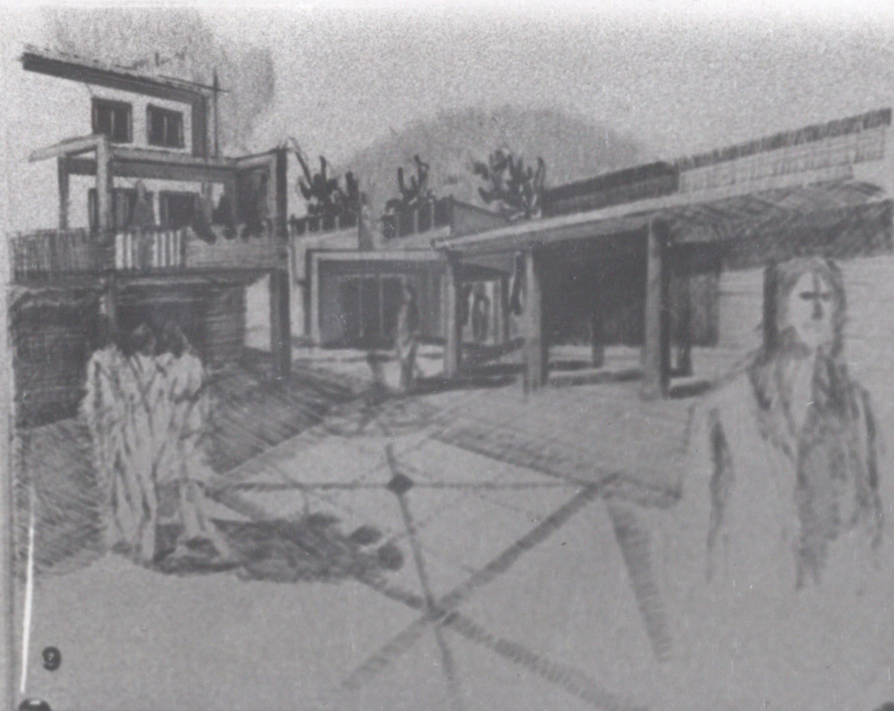
7



6



8



9



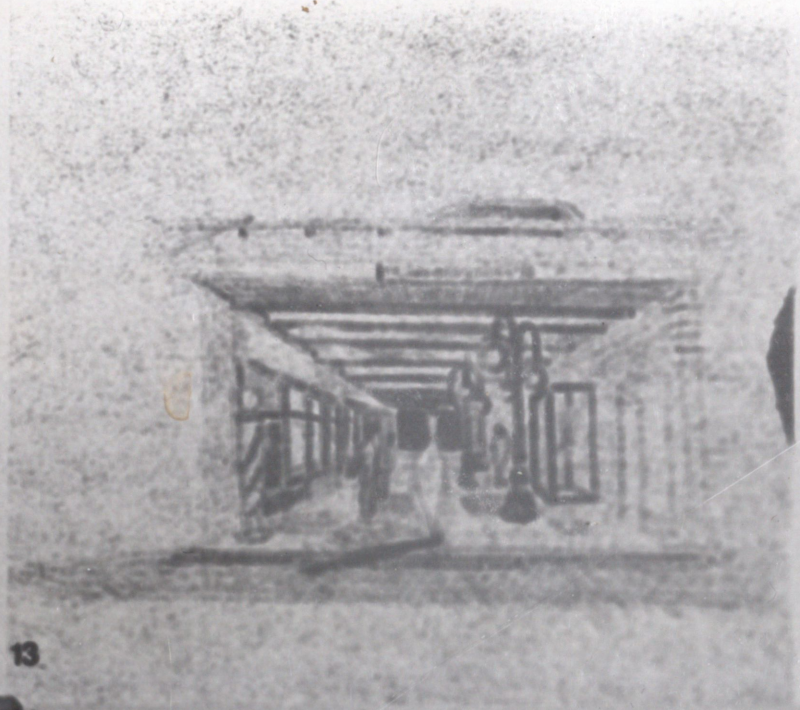
11



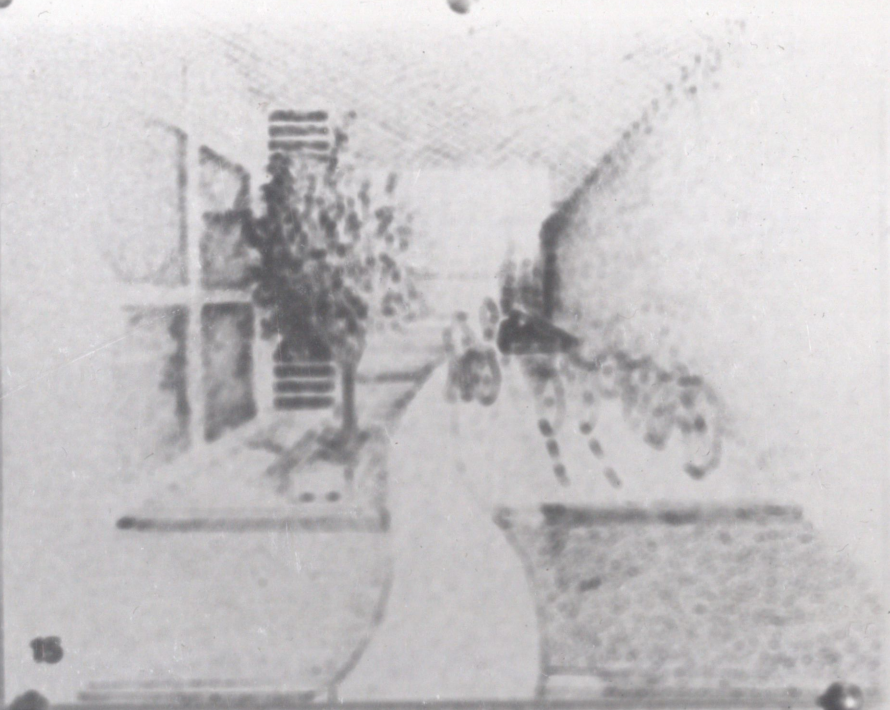
10



14



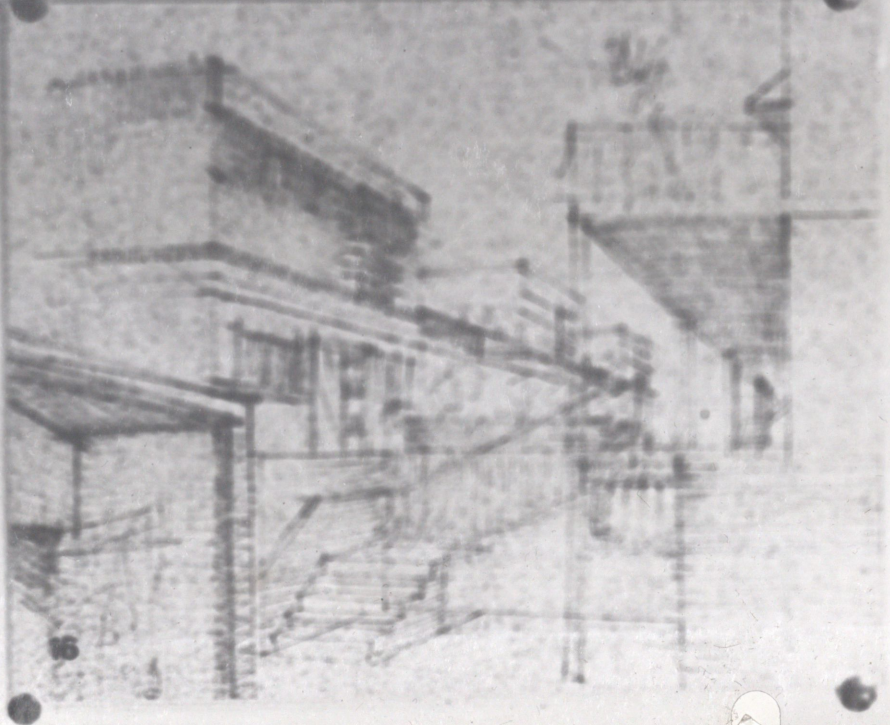
13



15



12

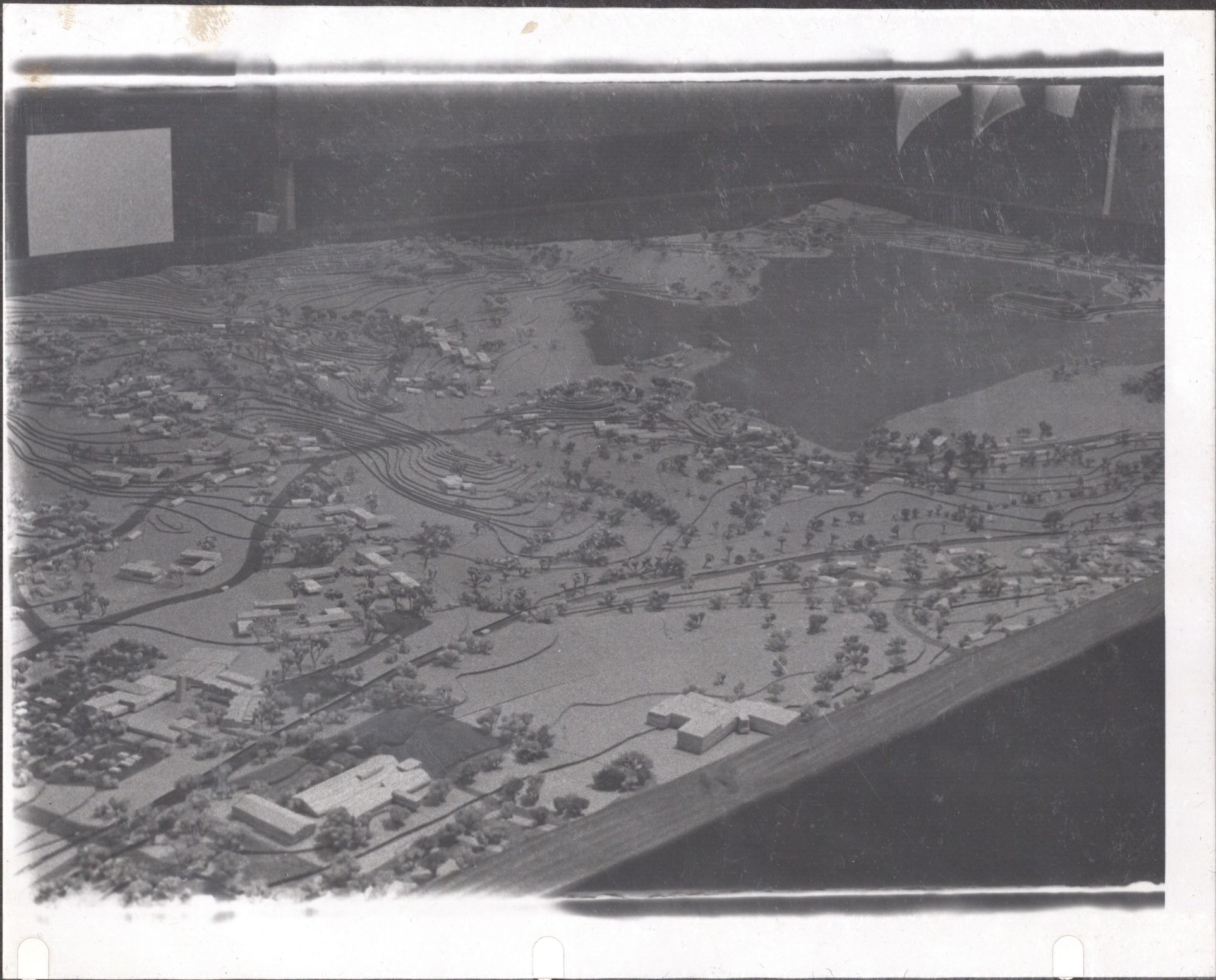


14

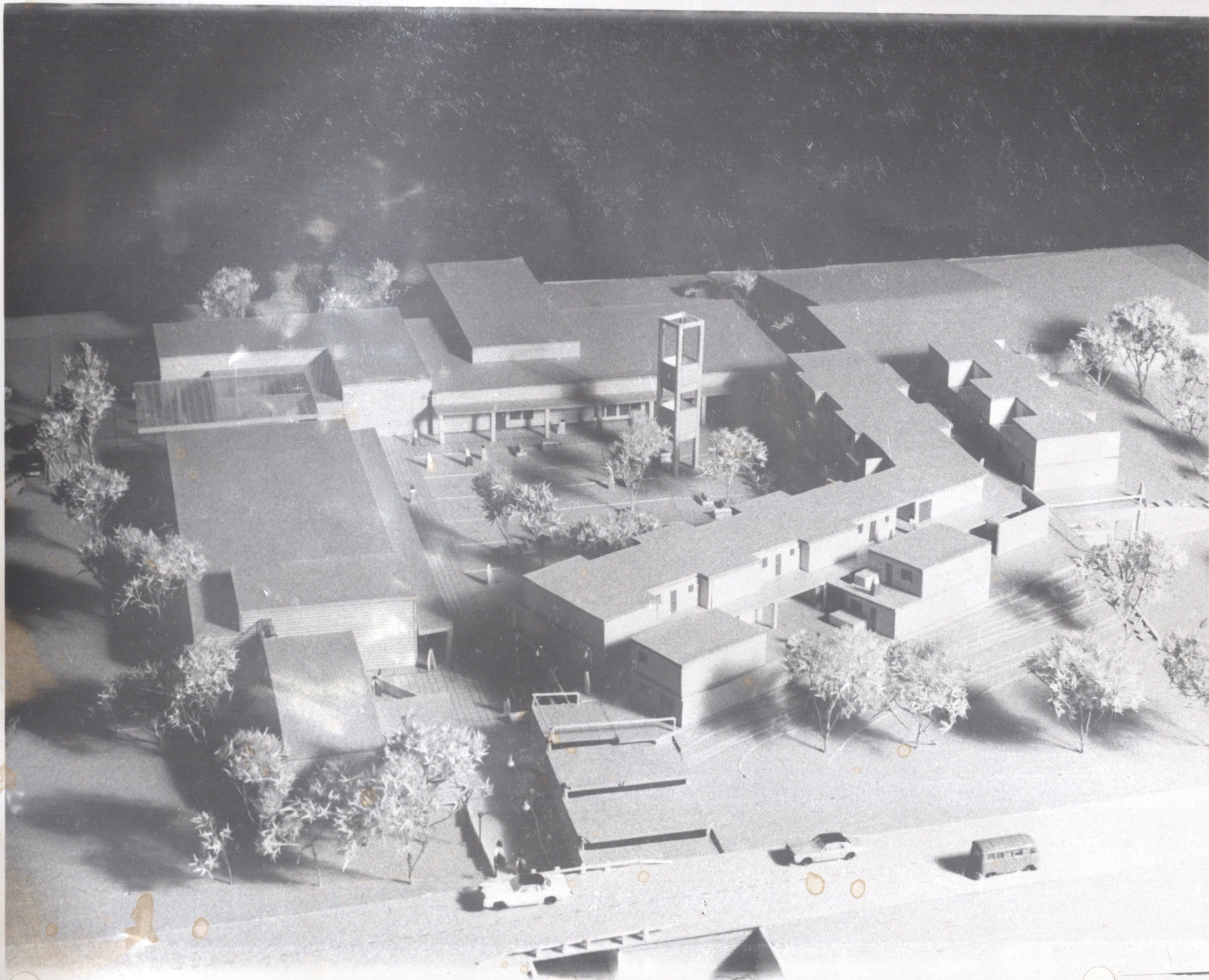


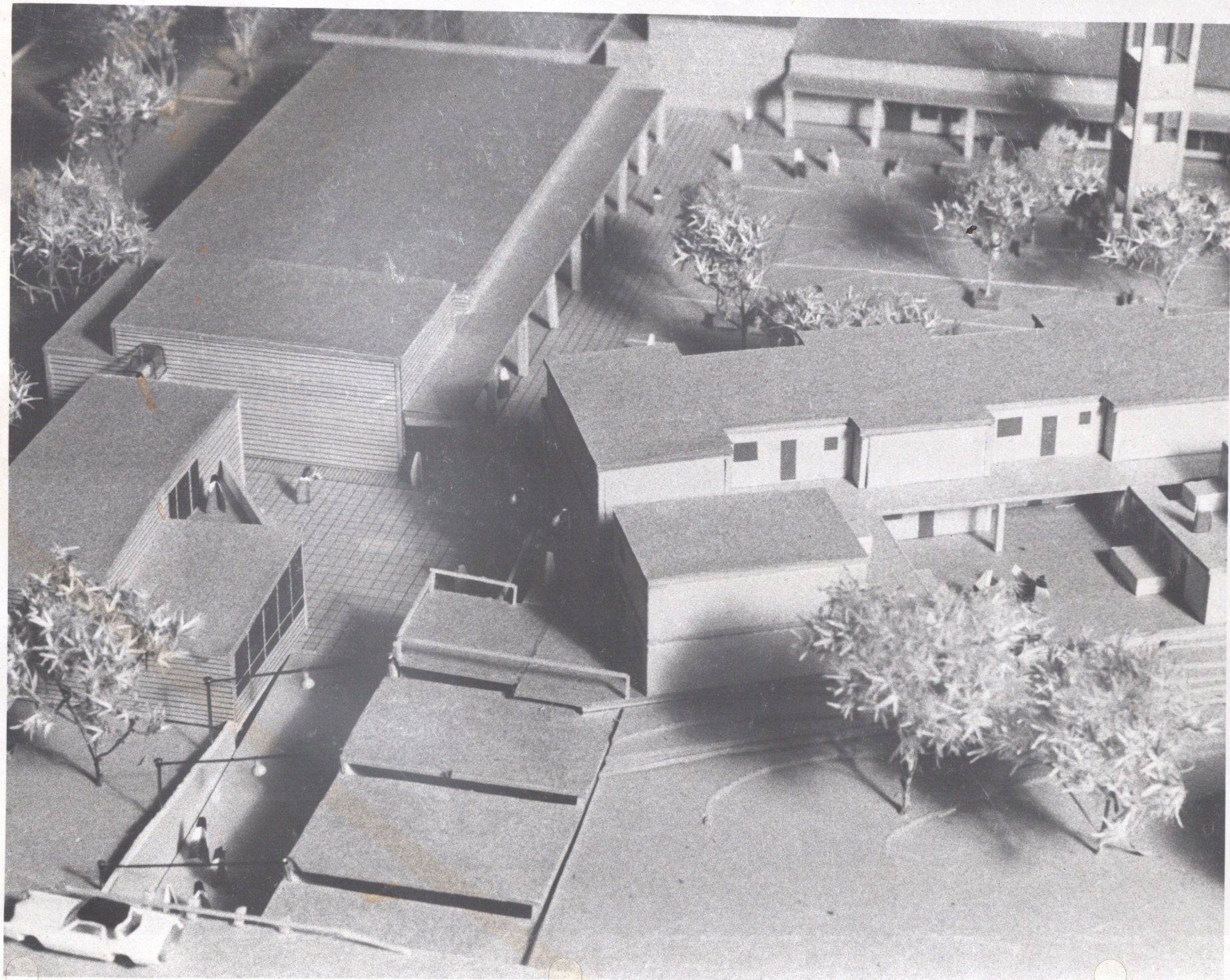


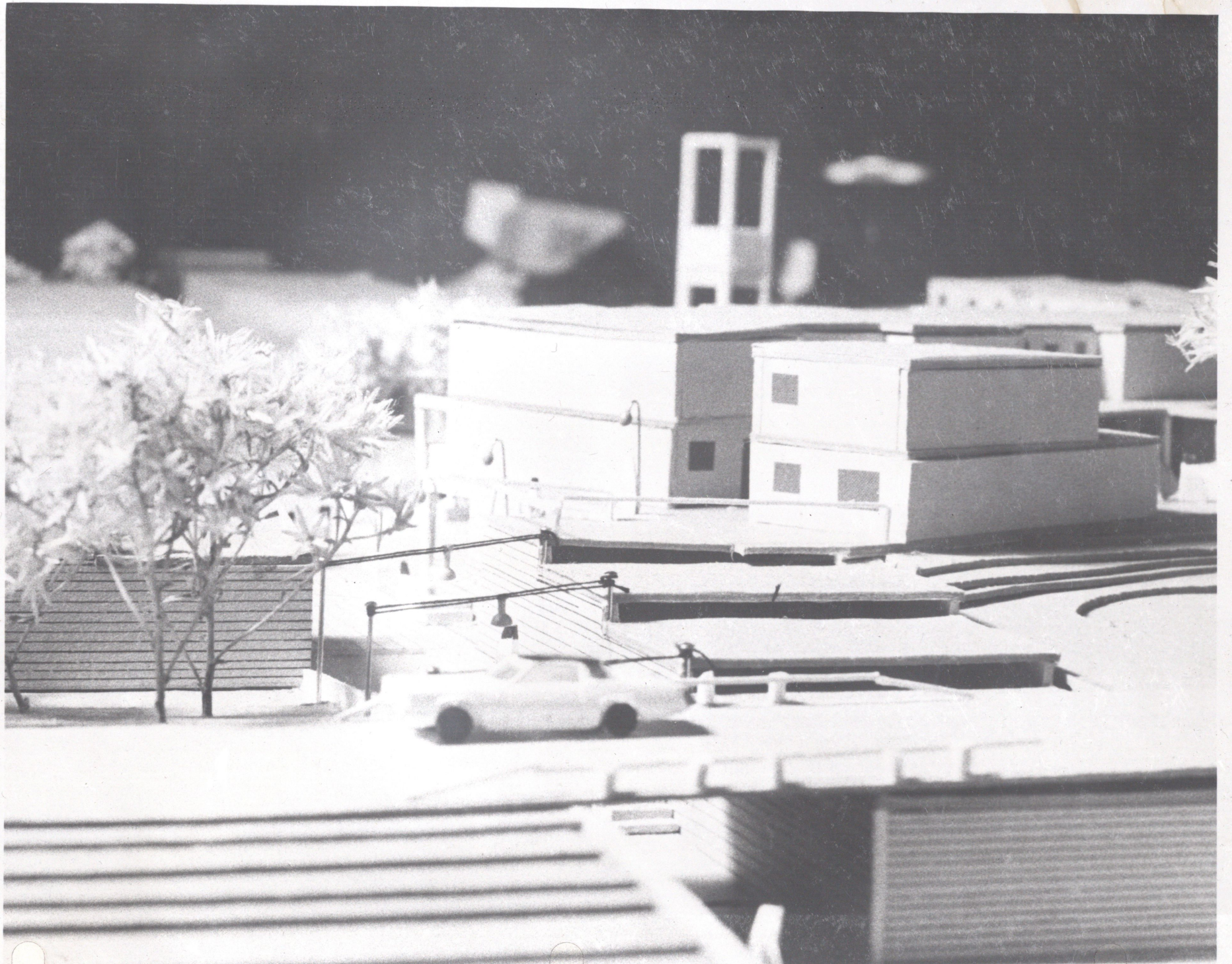


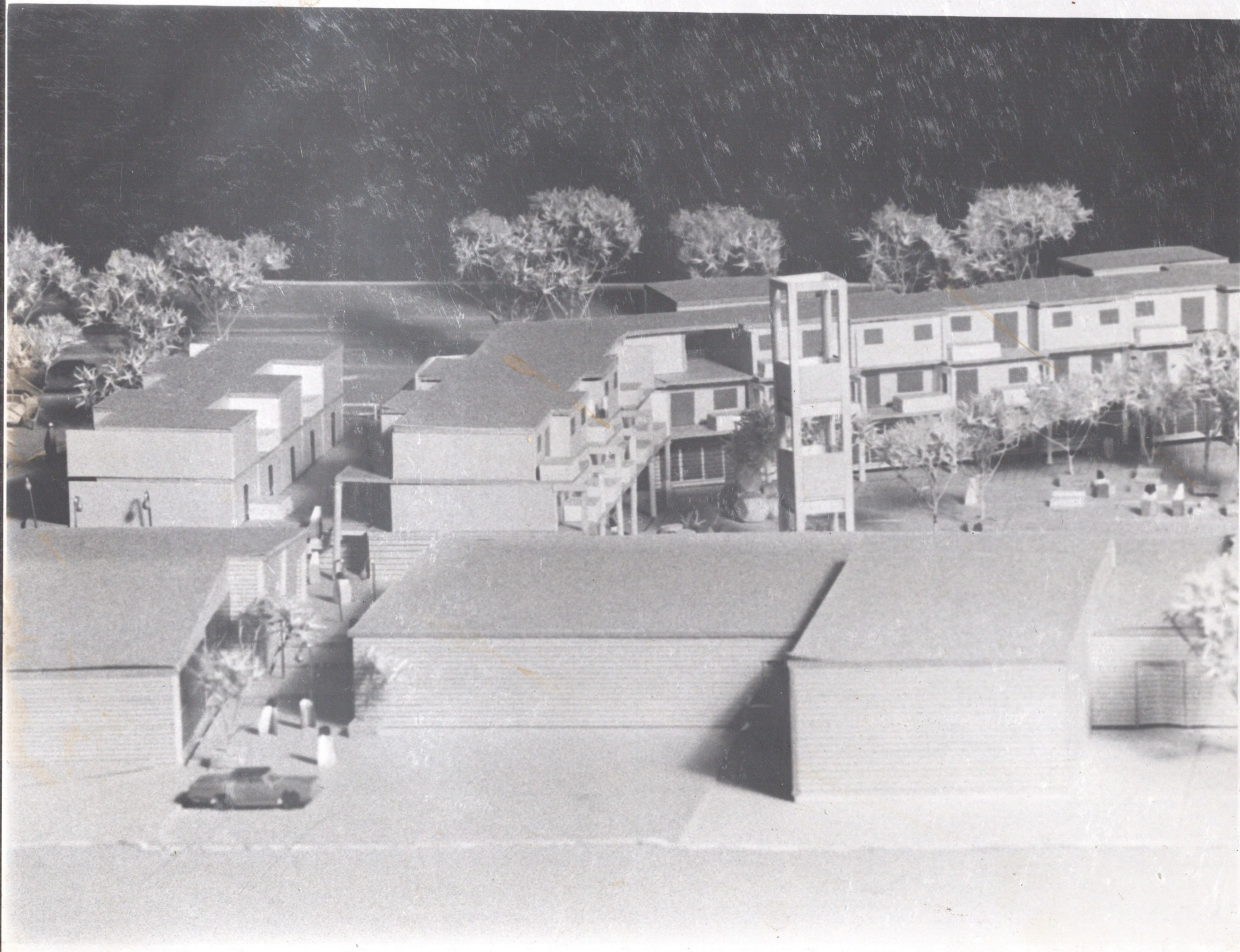


















MONTANA STATE UNIVERSITY LIBRARIES
stks 720.6.M76B174
A commercial and community center for Co CA

3 1762 00154458 2

NA 2540

~~720.6~~

~~M76~~

B174

~~LIB. USE ONLY~~

