CALIFORNIA STATE COLLEGE - KERN COUNTY

MASTER PLAN - INTERIM REPORT JULY 1968

VICTOR GRUEN ASSOCIATES - MASTER PLAN ARCHITECTS

AN INTERIM REPORT ON MASTER PLANNING FOR: THE CALIFORNIA STATE COLLEGE - KERN COUNTY

Indicating the Academic Plan requirements, the Planning Criteria, the Response to the Criteria, the Physical Plan requirements, the Incremental Growth from the initial complement of buildings to a campus for 12,000 (and beyond) full time equivalent students, and the Capital Costs per increment and per student.

Prepared for Submission to: The Board of Trustees of The California State Colleges

Victor Gruen Associates
Architecture-Planning-Engineering

July 1968

PURPOSE OF THIS REPORT

The purpose of this report is to acquaint the Trustees with the basic concept of the physical Master Plan, its progress and the relationship of the Initial Buildings to the overall Master Plan.

A second purpose is to provide the Trustees with sufficient information for action on the schematic phase of the Initial Buildings. For this, supplemental plans dealing with the Initial Buildings are being submitted at the same time.

FINAL MASTER PLAN REPORT

The final Master Plan report is scheduled for submission in September 1968. By that time several important additions will have been made to the material being submitted now. The architectural vocabulary, including materials and colors will be developed. A more detailed examination of the academic core will be completed, and an appendix containing detailed data on space, costs, traffic, parking, utilities and other physical aspects of the plan will be documented. Equally important, a report on the status of community planning within the Zone of Influence will be included. This work is now in process and by September we believe substantial progress will have been made.

Obviously, this college has been proceeding on a highly accelerated time schedule. With site selection in 1967, and opening in 1970, the time for academic and physical planning has been compressed to the point where only the closest possible coordination on the part of all concerned has made this submission conceivable. It has been our very real pleasure to work with Dr. Romberg and his staff who have consistently responded to informational requests under unreasonable schedules and then followed through with many trying days of conferences until the complex translation from academic to physical planning was accomplished, and with the Chancellor's office as it interrupted its many duties to guide us through the procedural intricacies and give us the benefit of its considerable experience. Without this design partnership with the college and the continued assistance of Facilities Planning, the schedules could not have been met and certainly the results would have been less.

TABLE OF CONTENTS

THE MASTER PLAN CRITERIA

1. Provide for maximum interchange between disciplines both formally (instructional) and informally (free time).

2. Provide a scale within the overall institution that will encourage the maximum in personal identification - this scale and involvement to include the commuter as well as the resident student.

3. Provide for flexibility that can, over an extended period of time, rapidly respond to changes in anticipated growth, curriculum and curriculum loads, and instructional and learning techniques and allow for design and construction advances as appropriate.

4. Program the plan so that at each stage of development the physical facilities will be balanced with the needs of the target year, instructional or administrative moves from one location to another be held to a minimum, and that the campus at each stage will appear complete and operate efficiently.

5. Set forth a plan and a framework within which the college can grow with efficiency, beauty and interest, yet hold the potential for creative, innovative design as the plan develops into maturity through some 40 years.

6. Investigate all possible means to reduce capital and operating costs of the physical plant without restraining instruction capacity or diminishing the institutional prestige of a very major investment in higher education.

THE RESPONSE

The Master Plan responds to these criteria in a number of inter-related ways:

1. In meeting the requirements of the Academic Master Plan, it schedules space use per FTE, per type and per location.

2. It recognizes the philosophy of the college regarding inter-disciplinary action, human scale, living-learning and living-study by providing a central area for general inter-disciplinary study and by setting out a series of academic villages that combine living and learning, living and study, and contain those facilities necessary to make the commuter student a full member of the college society.

3. It sorts out the various types of spaces according to function and physical requirements and groups like spaces in like structures with the aim of gaining programming flexibility, construction economy and architectural compatibility.

4. The sorting out of spaces by function as well as discipline and grouping of similar spaces results in an extremely compact academic core. This compactness improves communications, insures maximum contact, reduces the space between activities and allows for a relatively low-rise campus. All of these operational advantages have positive cost reduction potentials.

5. Regarding the growth pattern, the college opens its modest initial complement of buildings in a role far more powerful than size alone would indicate - it forms the academic heart of the first Live and Learn Village. Within one year enough residential units will be added to make this a complete, self-contained semi-residential college. Far from being an adjunct, this initial complement is a permanent and significant element of the ultimate campus.

After this, growth starts in the central core and moves progressively eastward with special wing buildings coming onto line as enrollment and the academic programs expand. During this growth of the central spine and its associated special buildings, additional peripheral villages are added so that the scale, at all times and regardless of size, retains a balanced mix - small for intimacy and identification, large for widening contacts and expanding academic pursuits.

6. The opportunities for technological and creative advances either physical or operational are uninhibited. The very dominance and simplicity of the Master Plan - a strong uniform spine with semi-detached specialized buildings and an outer ring of academic villages - allows for a high degree of expression as it might exist in 1990 and the year 2000. This is intended as a "living" campus and with the basic controls of the Master Plan once established, these should be strong enough to thrive on creativity rather than restriction.

7. To meet the environmental criteria, the plan makes intensive use of closed and semi-enclosed courts, terraces, yards, and gallerias; the play of light and shadow between heavy structural members and light-reflecting walls; relief from the flatness of the site by the elevation of some structures on earth podiums designed as a formal base, a landscaped mound or a planted berm, as well as depressions in certain areas with the introduction of water gardens, ponds and lagoons.

   The architectural elements of the design are inseparable from the landscape elements and the relationship between earth mounding, water, planting, terraces, walls, trellises, and overhandgs is so intense that there is no noticeable boundary between building and site.

For interest and excitement, color and graphics will assume a strong architectural role. If buildings are designed with this in mind from the outset, they can "keep up" in ways unavailable to the assertive but "fixed" facility.

ILLUSTRATIVE SITE PLAN

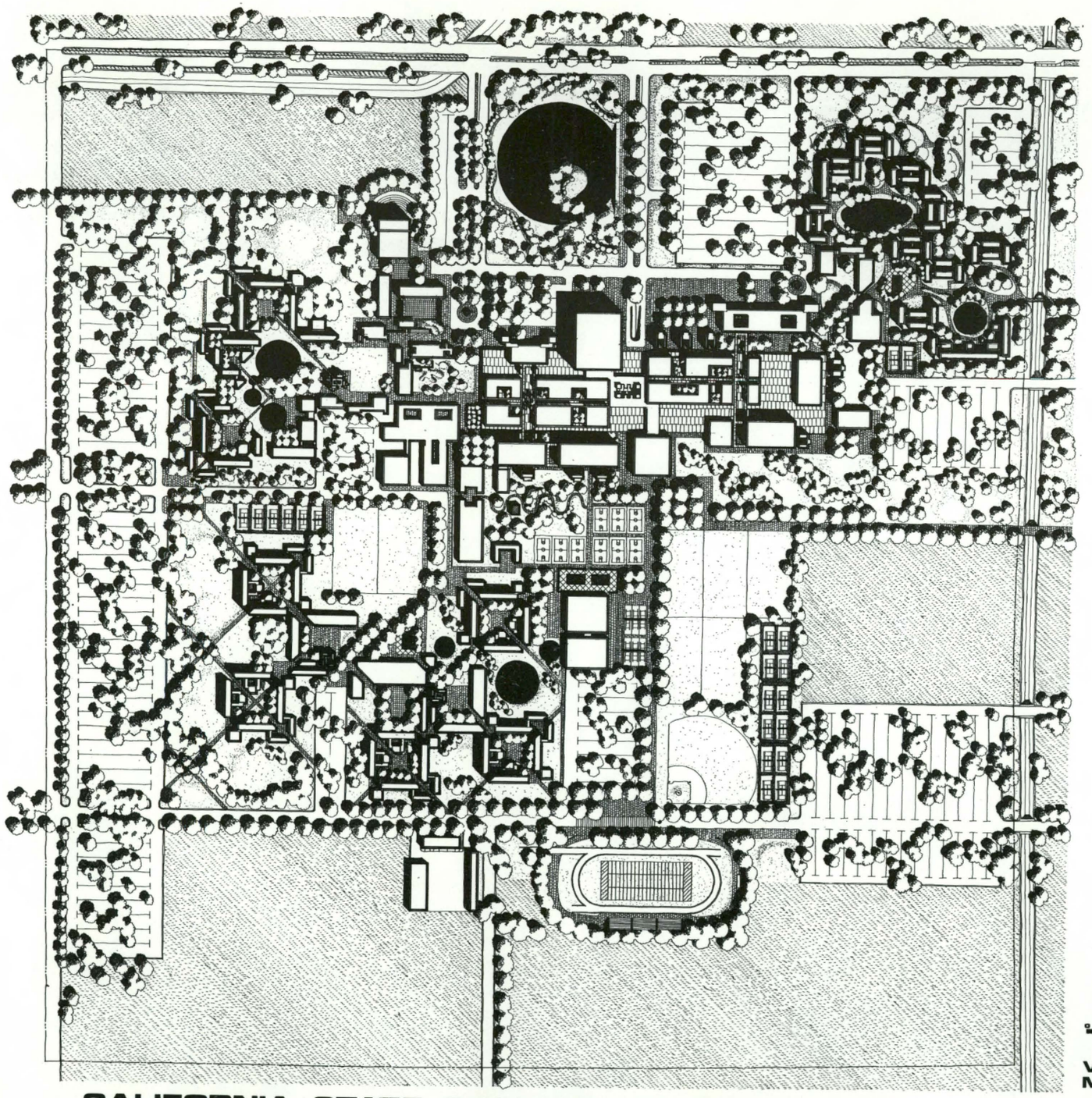
Here may be seen all of the elements of the 12,000 FTE campus in context and placed on the 370-acre site.

Note that the campus is built around an elongated building spine that runs east-west across the central portion of the site and connects a series of slightly separated buildings. Those in the center, north and south, are the library and the student union. The others house the major disciplines and are clustered at intervals along this academic core. To the left are located the Live and Learn Villages. To the right is upper division housing. To the south is physical education.

A major entrance garden area is bounded by the two primary entrance roads from Stockdale Highway on the north. Secondary access roads linking the campus with its surroundings are located on the east, west, and south. Parking penetrates the site as deeply as it can without interfering with pedestrian flows. The open areas are primarily courts, terraces and other gathering places, or play fields. Except for the entrance garden, there is very little in the way of major landscaped areas. As a result, the campus is quite compact.

Reserve areas, academic as well as residential, are held on all sides of the campus. These reserves would allow the college to expand well beyond its programmed 12,000 FTE, or beyond its programmed academic plan, or both.

This drawing is intended only to present an overall view. To understand it, a detailed explanation follows:



ILLUSTRATIVE SITE PLAN

0 150 450

NORTH

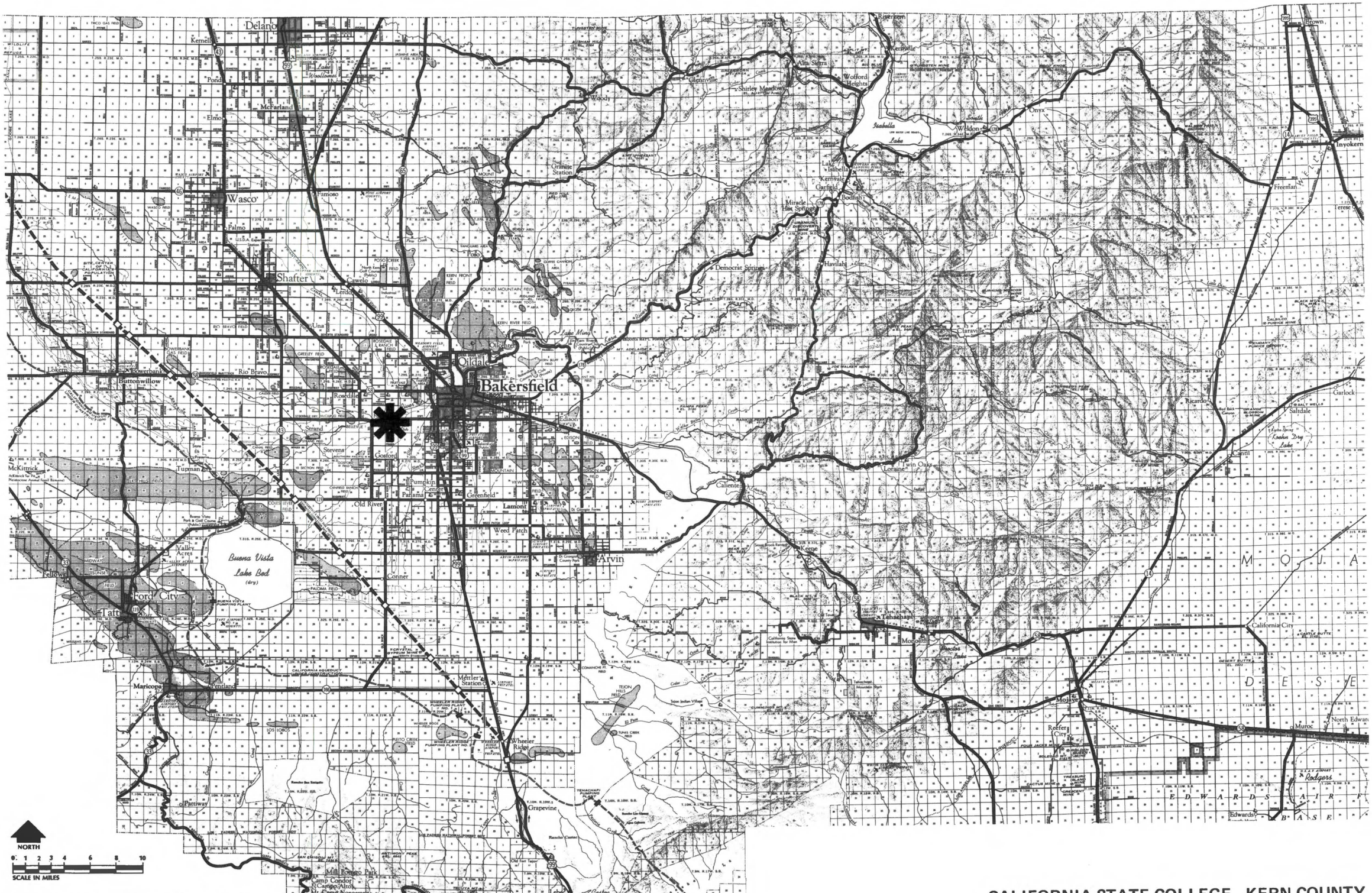
VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

RUSSELL Y. IWANAGA A.S.L.A.
LANDSCAPE ARCHITECT

CALIFORNIA STATE COLLEGE - KERN COUNTY

SITE LOCATION

This map shows the location of the campus and its relation to the area. It is in the southeast section of the San Joaquin Valley, about five miles west of central Bakersfield, and surrounded by the towns of Arvin, Taft, Shafter, Oildale, Wasco, and Delano. To the southeast lies Tehachapi and beyond it, Mojave and other desert communities.



VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

CALIFORNIA STATE COLLEGE - KERN COUNTY

THE SITE AND ITS RELATION TO THE SURROUNDINGS

A closer view shows the site and its relationship to existing and proposed roads and the general pattern of urbanization.

U.S. 99 Freeway is the existing regional north-south arterial with Stockdale Highway being the primary east-west road directly serving the site.

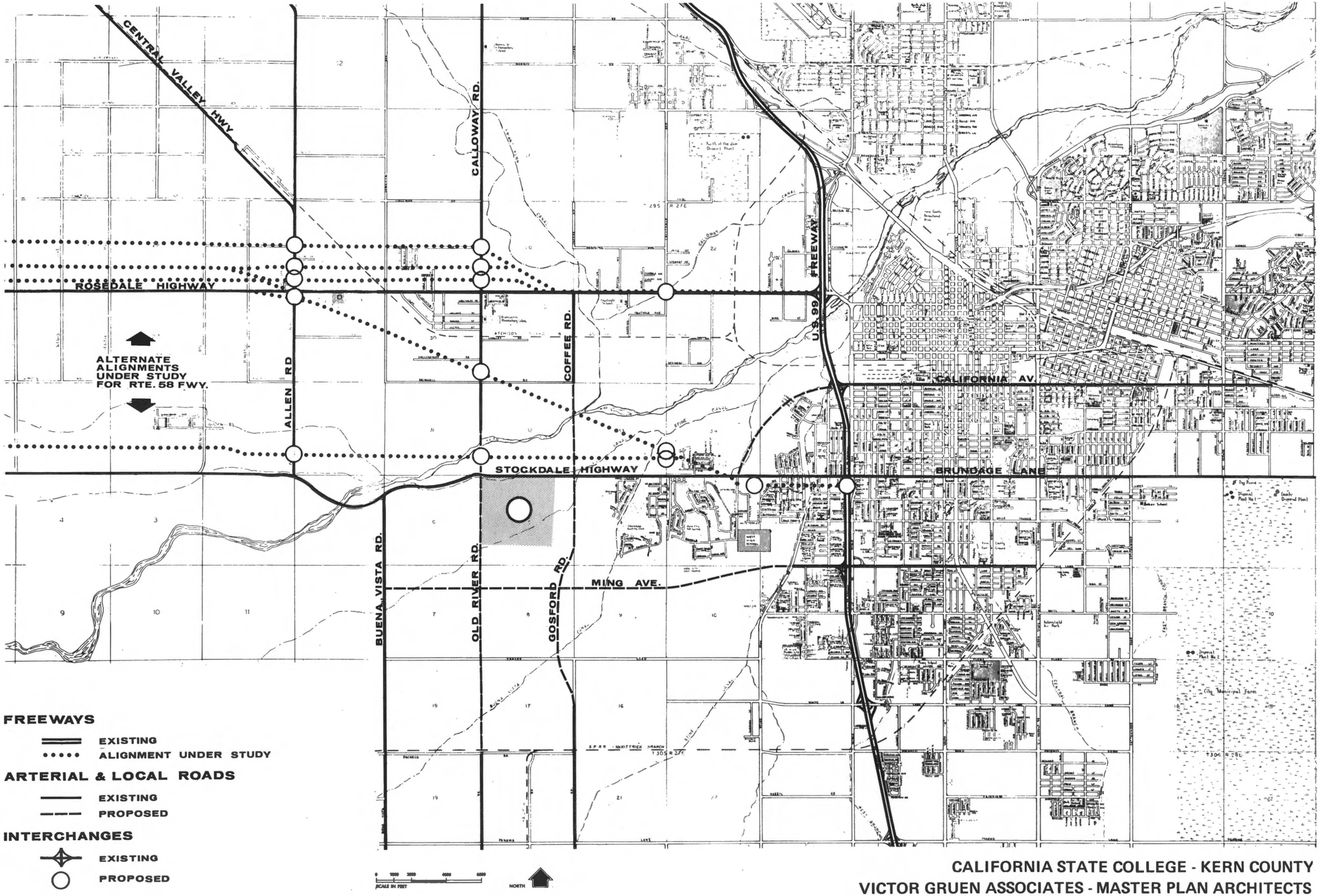
Route 58 is under study, and when completed in the late 1970's will relieve U.S. 99 and provide college access to the considerable student population north and west of the site.

Ming, Gosford and Old River Roads will act as important north-south, east-west ties and though not yet improved, both government and the land owner have given assurances that they will be in place when required by the college - perhaps before.

The site contains about 370 acres measuring approximately 4,000 feet along Stockdale Highway and 4,200 feet from Stockdale south. It has no distinctive features. Although it appears flat, there is an imperceptible fall to the south-west corner (about 9 feet total or a grade of .136%). Vegetation is limited to irrigated crops.

A major irrigation canal and an electric transmission line lie just outside the east property line. A second irrigation canal parallels Stockdale Highway, enters the western portion of the site and parallels the boundary line. Two water wells are now in operation on the site and funds for a third donated by Kern County Land are on deposit with the Trustees.

Utilities, as per the gift agreement, will be brought to the eastern boundary of the campus. Drainage at present is by sheet flow across the property and an agreement exists with Kern County Land for an off-site permanent drainage system.



CALIFORNIA STATE COLLEGE - KERN COUNTY
VICTOR GRUEN ASSOCIATES - MASTER PLAN ARCHITECTS

SPACE REQUIREMENTS

In addition to "The Academic Master Plan for California State College, Kern County" (as submitted and approved at the Trustees' meeting in June 1968) the college has prepared a series of documents setting forth the inter-disciplinary linkages and the incremental space requirements for 3,000, 6,000, and 12,000 FTE. Concurrently, the architects were attempting to analyze the various kinds of space by functional requirements and by disciplinary overlap. Out of this joint effort grew one of the basic concepts of the Master Plan - the separating out from each discipline of two basically different types of space, "universal" and "special"; and the subdividing of "special" into laboratory and instructional support areas.

Universal space is simply classroom space or any other type of space that requires little or no equipping or modification to make it multi-disciplinary or interchangeable. It can range in size from small seminar or conference rooms to major lecture halls.

Special space is area requiring special equipment (laboratories) or designed for a specific purpose (faculty offices, for example). It is not, in the main, either multi-disciplinary or interchangeable.

The reasons for sorting out instruction space in this manner relate directly to the criteria mentioned at the outset and they deal with flexibility, economy, building technology, and the desire for maximum action and reaction between disciplines. The Kern plan groups all its universal space in one major building and then rings this multi-disciplinary block with identifiable special structures devoted to specific purposes within a given discipline or within a group of compatible disciplines.

By combining all multi-purpose space into one structure, several advantages accrue:

1. The maximum flexibility in matching lecture room assignments to a changing student curriculum pattern can be achieved and over and under loads can be better balanced than if lecture room space is spread campus-wide and "assigned" to a discipline or building. (Efficiency and flexibility)

2. Student contact becomes campus-wide (even if the contact is only in court or galleria) but the encounter is on neutral ground without the environmental upset that occurs when an English major takes a Literature course in a "Science" lecture room, or vice versa. (Inter-disciplinary involvement)

3. Walking distances are shortened because at least some of the space between buildings is eliminated. (Efficiency)

4. One large "megastructure" with a minimum of columns and enclosing walls is very adaptable to internal rearrangement. (Flexibility)

5. If this lecture space is kept to one level and built with a uniform section and bay size, it can be the most economic of all building types. (Economy)

6. Also, the uniform repeating grid will reduce the lead time for building additions by about one year. (Rapid response to schedules)

As we move from the general (universal) buildings to the special ones, the planning problem becomes more technical. In an effort to separate technical space requiring special equipment from those special spaces not requiring elaborate fittings, we have made a subdivision between "laboratories" and "instructional support".

Laboratory spaces, because they require special plumbing, wiring, duct work, etc., cannot be efficiently or economically intermixed with the type of universal space described above. Therefore, aside from those exceptions that prove the rule, they are not included in the *universal* category. There is a need, however, for some close-in faculty space and administrative space. These are placed along fixed cross-gallerias where they interfere least with internal flexibility, still fit the uniform bay size and where ceilings can be dropped so that two levels of offices are nearly absorbed within the lecture room shell. These cross-gallerias and offices act as the link or "bridge" between the lecture room spine and the special buildings.

In the laboratories there is a need for ceiling and underfloor space that even though built today might change next year. Here we must have flexibility in *servicing* the rooms quite unlike the problem facing universal space. Also, it is quite unlike the requirements of the instructional support areas. Professional and clerical offices do not need the high flexibility at ceiling and floor that laboratories do - not to the same extent anyway, and they are small scale. Laboratories need a reasonable area of clear span, clearance for servicing from top and bottom and they encompass a rather large space. These are the reasons for the subdivision.

Instructional support, on the other hand, is small-scale and intimate (mainly offices and/or office-laboratories). Ceiling heights can be lower, services are not quite so complicated, but contact is more important. A person in a laboratory is "in" the laboratory, but a person in an office is going out and drawing in through a major segment of the campus.

When building requirements reach the point that mechanical and electrical costs approach structural costs, the economics enjoyed by one-story buildings no longer prevail. In laboratory buildings (unlike lecture buildings) the additional structural costs for multi-story are overwhelmed by mechanical costs, except for vertical transportation, and become less significant. However, once we exceed two or three stories and need elevators, the vertical transportation cost can proportionately exceed all others. And so the plan presumes that all special buildings will be held to a maximum of three levels (one-half down and one and one-half up from the universal space). It further assumes a structural difference between the large-scale laboratory block and the smaller-grained instructional support space. Lastly, it is mandatory to the plan that these differences be expressed architecturally. So far, we have described the regular, uniform, interchangeable, *universal* space acting as an academic spine with *specialized* peripheral elements closely attached. The sum of this is a continuum of related parts - the one-story spine containing the bulk of inter-related space (universal), the multi-level (but still low) specialized and mechanized lofts, each surrounded or flanked by academic enclaves and each with a scale of its own. It is intended that these different scales, varying from the monumental to the individual, will take maximum advantage of uniform construction techniques but at the same time relate every element of the composition to the individual student and the individual instructor.

A second concept of the Physical Master Plan is also inherent in the Academic Plan - the Live and Learn Village. The introduction to "The Academic Master Plan for California State College, Kern County" states --

> "In order to supplement the educational benefits that can be derived from formal instruction, the Plan is designed to insure that to the maximum extent possible this new college will constitute a cohesive academic community. As a means to this end, the Plan calls for a system of living-learning and living-study centers in which both residential and commuting students can

receive the benefits of a multi-faceted educational experience. The arrangements which are proposed will, without increasing either operating or capital fund requirements at this college, increase the educational impact of the college's program . They will provide insurance against the frustration-generating atmosphere of impersonality that has recently led to difficulties in many areas of higher education."

When translated into the Physical Master Plan, this results in three lower division academic villages and one or more (depending upon the availability of off-campus housing) upper division living-study clusters. The lower division villages are planned to accommodate about 1400 students each but are only partially independent of the central campus. While most lecture courses are provided for within the villages, most laboratory courses will be held in centrally located special buildings. While most of the faculty will be grouped by departments and located in the central area, each village will have its group of "resident fellows" in offices closely related to both the academic and residential areas of the village they serve.

The residential sector of each village will provide full housing services (rooms, lounges, study and dining areas) for about one half of the 1400 student complement. In addition, the commuter student will be provided with lounge and study areas so that he can participate in the full range of activities available.

Upper division housing areas will follow much the same pattern as employed in the lower division villages except that formal instruction will not take place within the housing groups and the room layouts will be modified to suit the changing life styles of upper division students. However, facilities for commuter students will still be provided.

As can be seen from the site plan, the three villages and the living-study centers are major campus elements.

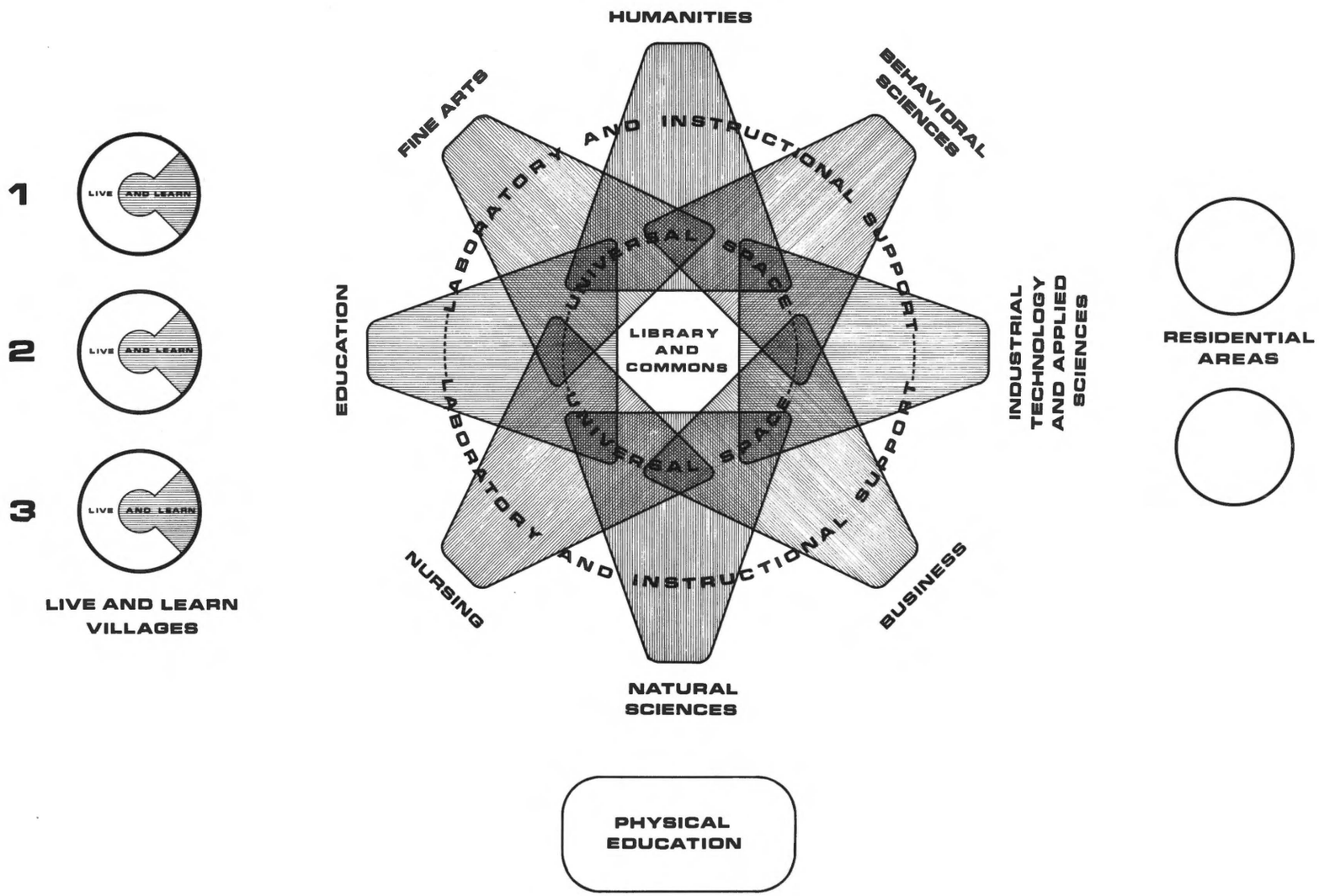
SPACE RELATIONSHIPS

This diagram illustrates the curriculum, the interdisciplinary relationships and the types of space.

With the library and commons at the core, the disciplines overlap and mingle. But as they near the periphery, they separate. The general area of overlap contains the universal space while the outer, segregated areas contain the special spaces with their divisions into laboratory and instructional support.

The three Live and Learn Villages, containing academic as well as residential space are indicated on the left. The upper division living-study complexes are shown on the right. Physical education (and health science) is somewhat separated from the academic area in order to provide a closer tie between physical education classrooms and outdoor activities.

SPACE RELATIONSHIP DIAGRAM



CALIFORNIA STATE COLLEGE - KERN COUNTY

VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

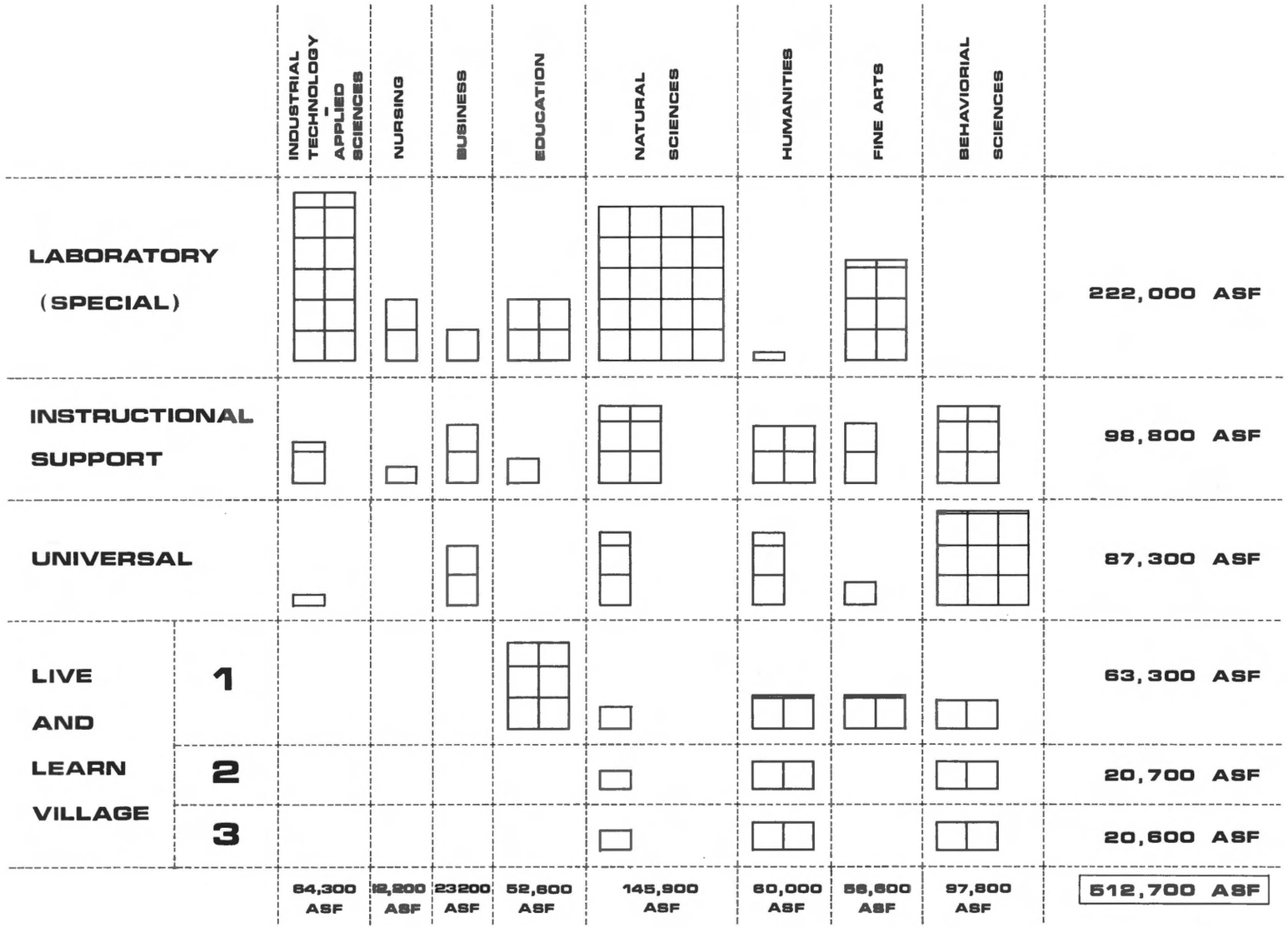
SPACE DISTRIBUTION

This diagram summarizes the total instructional space required, by discipline and by type, for 12,000 FTE (8-5). Each square represents 5,000 ASF.

Table I, following, gives details of this area distribution and tabulates it by increments of 3,000, 6,000, and 12,000 FTE.

Table II lists the support space also in increments of 3,000, 6,000 and 12,000 FTE.

SPACE DISTRIBUTION 12000 FTE (8-5)



CALIFORNIA STATE COLLEGE - KERN COUNTY

VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

TABLE I - SUMMARY OF INSTRUCTIONAL SPACE DISTRIBUTION (By Discipline and Type of Space)

A = Lecture
B = Laboratory
C = Instructional Support

Academic Area	Type Space	3000 FTE (8-5) Total ASF	Total GSF	(1)	(2)	(3)	Universal	Special	6000 FTE (8-5) Total ASF	Total GSF	(1)	(2)	(3)	Universal	Special	12,000 FTE (8-5) Total ASF	Total GSF	(1)	(2)	(3)	Universal	Special
Behaviorial Sciences	A	8,000		4,300	-	-	3,700		15,500		4,300	4,300	-	6,900	-	31,300		4,300	4,300	4,300	18,400	
	B	8,800		2,000	-	-	6,800		16,800		2,000	2,000	-	12,800	-	33,100		2,000	2,000	2,000	27,100	
	C	9,200		2,600	-	-	400	6,200	17,600		2,600	2,600	-	700	11,700	33,400		2,600	2,600	2,600	1,400	24,200
		26,000	37,100	8,900	-	-	10,900	6,200	49,900	71,400	8,900	8,900	-	20,400	11,700	97,800	139,800	8,900	8,900	8,900	46,900	24,200
Fine Arts	A	1,200		400	-	-	800	-	2,500		800	-	-	1,700	-	5,400		1,600	-	-	3,800	-
	B	9,600		6,300	-	-	-	3,300	19,700		9,800	-	-	-	9,900	41,400		9,800	-	-	-	31,600
	C	2,000		-	-	-	-	2,000	4,400		-	-	-	-	4,400	9,800		-	-	-	-	9,800
		12,800	18,300	6,700	-	-	800	5,300	26,600	38,100	10,600	-	-	1,700	14,300	56,600	81,000	11,400	-	-	3,800	41,400
Humanities	A	7,900		4,300	3,600	-	-	-	14,300		4,300	4,300	4,200	1,300	200	24,800		4,300	4,300	4,200	12,000	-
	B	3,200		2,800	100	-	-	300	5,700		2,800	2,300	-	-	600	9,500		2,800	2,800	2,800	-	1,100
	C	7,900		3,800	1,300	-	-	2,800	14,700		4,000	1,800	1,300	-	7,600	25,700		4,000	1,800	1,800	-	18,100
		19,000	26,800	10,900	5,000	-	-	3,100	34,700	49,700	11,100	8,400	5,500	1,300	8,400	60,000	86,000	11,100	8,900	8,800	12,000	19,200
Natural Sciences	A	4,600		2,200	700	-	1,700	-	9,900		2,200	2,200	1,000	3,800	700	19,200		2,200	2,200	2,200	11,300	1,300
	B	27,000		200	-	-	200	26,600	51,700		200	200	-	300	51,000	100,500		200	200	200	800	99,100
	C	6,800		1,100	-	-	-	5,700	13,700		1,100	500	-	-	12,100	26,200		1,100	500	500	-	24,100
		38,400	54,900	3,500	700	-	1,900	32,300	75,300	107,600	3,500	2,900	1,000	4,100	63,800	145,900	208,500	3,500	2,900	2,900	12,100	124,500
Business	A	1,500		-	-	-	1,500	-	4,300		-	-	-	4,300	-	7,900		-	-	-	7,900	-
	B	1,200		-	-	-	1,200	-	2,500		-	-	-	2,300	200	6,300		-	-	-	2,300	4,000
	C	1,600		-	-	-	-	1,600	4,000		-	-	-	-	4,000	9,100		-	-	-	-	9,100
		4,300	6,200	-	-	-	2,700	1,600	10,800	15,500	-	-	-	6,600	4,200	23,300	33,300	-	-	-	10,200	13,100
Education	A	2,100		1,900	-	-	-	200	4,500		4,100	-	-	-	400	8,800		7,700	-	-	-	1,100
	B	5,300		2,100	-	-	-	3,200	13,200		5,900	-	-	-	7,300	28,200		9,100	-	-	-	19,100
	C	3,700		3,000	-	-	-	700	8,100		6,300	-	-	-	1,800	15,600		11,600	-	-	-	4,000
		11,100	15,900	7,000	-	-	-	4,100	25,800	36,900	16,300	-	-	-	9,500	52,600	75,200	28,400	-	-	-	24,200
Nursing	A	100		-	-	-	-	100	300		-	-	-	-	300	900		-	-	-	-	900
	B	1,000		-	-	-	-	1,000	2,700		-	-	-	-	2,700	8,500		-	-	-	-	8,500
	C	400		-	-	-	-	400	1,100		-	-	-	-	1,100	2,800		-	-	-	-	2,800
		1,500	2,200	-	-	-	-	1,500	4,100	5,900	-	-	-	-	4,100	12,200	17,500	-	-	-	-	12,200
Industrial Technology & Applied Sciences	A	600		-	-	-	400	200	1,500		-	-	-	900	600	3,600		-	-	-	2,300	1,300
	B	8,400		-	-	-	-	8,400	19,700		-	-	-	-	19,700	54,000		-	-	-	-	54,000
	C	700		-	-	-	-	700	2,700		-	-	-	-	2,700	6,700		-	-	-	-	6,700
		9,700	14,000	-	-	-	400	9,300	23,900	34,200	-	-	-	900	23,000	64,300	91,900	-	-	-	2,300	62,000
Subtotals	A	26,000		13,100	4,300	-	8,100	500	52,800		15,700	10,800	5,200	18,900	2,200	101,900		20,100	10,800	10,700	55,700	4,600
	B	64,500		13,400	100	-	8,200	42,800	132,000		20,700	4,500	-	15,400	91,400	281,500		23,900	5,000	5,000	30,200	217,400
	C	32,300		10,500	1,300	-	400	20,100	66,300		14,000	4,900	1,300	700	45,400	129,300		19,300	4,900	4,900	1,400	98,800
TOTALS		122,800	175,400	37,000	5,700	-	16,700	63,400	251,100	359,300	50,400	20,200	6,500	35,000	139,000	512,700	733,200	63,300	20,700	20,600	87,300	320,800

ASF @ 3,000 FTE - 122,800
GSF @ 3,000 FTE - 175,400

ASF @ 6,000 FTE - 251,100
GSF @ 6,000 FTE - 359,300

ASF @ 12,000 FTE - 512,700
GSF @ 12,000 FTE - 733,200

June 1, 1968

CALIFORNIA STATE COLLEGE - KERN COUNTY
VICTOR GRUEN ASSOCIATES - MASTER PLAN ARCHITECTS

TABLE II - SUPPORT SPACE: INCREMENTAL GROWTH

LIBRARY AND AUDIO-VISUAL

Type Space	Initial ASF 700 FTE	ASF:3000 FTE	ASF:6000 FTE	ASF:12,000 FTE
Stacks	8,125	17,800	35,600	71,200
Reader Stations	4,380	18,700	37,400	74,800
Tech. Services	3,800	4,300	8,500	17,100
Audio-Visual	1,750	3,200	6,500	12,900
Total: Library and A-V	18,055	43,000	87,000	176,000
GSF @ 70% Efficiency	N.A.	62,200	124,400	251,700

ADMINISTRATION AND STUDENT SERVICES

Type Space	Initial ASF 700 FTE	ASF:3000 FTE	ASF:6000 FTE	ASF:12,000 FTE	
Administration	6,990	12,000	18,000	32,500	
Student Services	8,420	12,000	17,000	30,500	
	15,410	24,000	35,000	63,000	
GSF @ 65% Efficiency	N.A.	37,000	53,900	97,000*	(*20,000 GSF in Universal Space) (77,000 GSF in Spec. Bldg.)

GYMNASIUM (GSF)

Type Space	Initial GSF 700 FTE	GSF:3000 FTE	GSF:6000 FTE	GSF:12,000 FTE
GYMNASIUM	0	27,500	49,000	49,000

CORPORATION YARD

Type Space	Initial ASF 700 FTE	ASF:3000 FTE	ASF:6000 FTE	ASF:12,000 FTE
Buildings	3,000	7,500	15,000	30,000
Screened Yard	9,000	25,000	25,000	50,000

RESIDENTIAL (Including Dining)

Location	Units @ 700 FTE	Units @ 3000 FTE	Units @ 6000 FTE	Units @ 12,000 FTE
1. Villages	No living, interim dining only	525 L.D. Units 650 U.D. Units Permanent Dining. 525 Commuters	1050 LD Units 1050 UD Units Perm. Dining 1050 Commuters	2100 LD Units Perm. Dining 2100 Commuters
2. U.D. Housing			250 Units Perm. Dining	250 to 2930 as required. Perm. Dining.

DIAGRAMMATIC PLAN

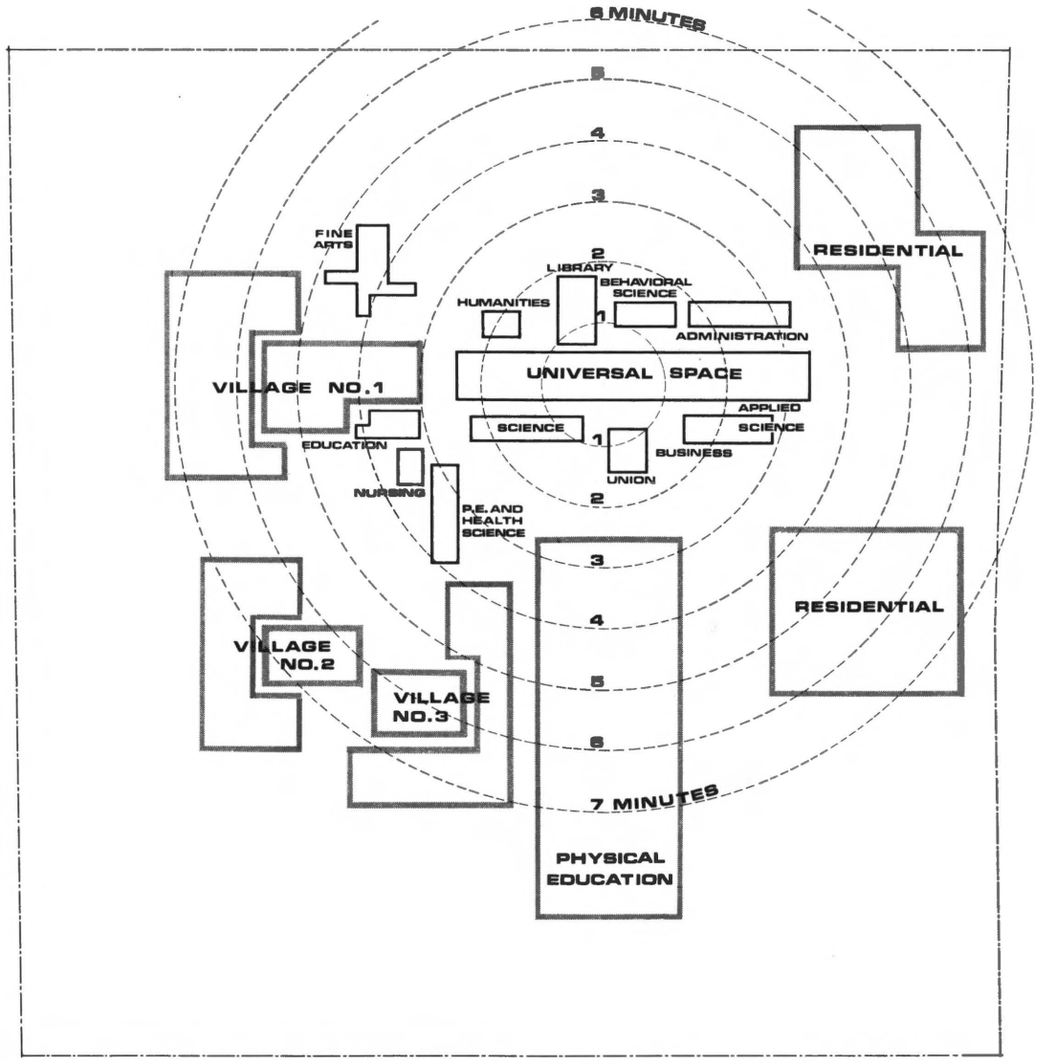
This plan is based on the preceding space relationship and space distribution diagrams and is sized in accordance with Tables I and II.

Building heights have been assigned as follows:

Universal Space	1 story
Humanities	2 stories
Library	4 stories and basement
Behavioral Sciences	1 and 3 stories
Administration	2 stories
Applied Science & Technology	1 and 3 stories
Business	1 story
Physical Education and Health Science	1 story
Fine Arts	1 and 3 stories
Nursing and Medical Technology	1 story
Live and Learn Villages - Academic	1 story
Live and Learn Villages - Residential	1 and 3 stories

Because of the compaction due to interdisciplinary grouping into the central class block and elimination of some of the normal spaces required between buildings, walking times remain well within 10 minutes even with the predominantly low-rise character of the campus.

DIAGRAMMATIC PLAN



1 MINUTE WALKING TIME - 250 FEET

CALIFORNIA STATE COLLEGE - KERN COUNTY

VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

ACCESS, CIRCULATION AND PARKING

Access to the site will be from four arterials - Stockdale Highway on the north, Gosford Road on the east, Ming Road on the south, and Old River Road on the west. Of these, Stockdale Highway will carry the heaviest traffic volumes. All of these arterials are or will be four-lane divided highways with sufficient right-of-way for future widening.

The internal road system is composed primarily of a series of cul-de-sacs or loops that terminate in or else feed the dispersed parking areas. Both the streets and the parking areas penetrate the campus rather deeply in order to provide close-in vehicular access and reduce walking distances. However, no road or parking area cuts any major pedestrian path. Service and emergency traffic within the campus is by widened paths of suitable material. No private vehicles would be allowed on these inner drives.

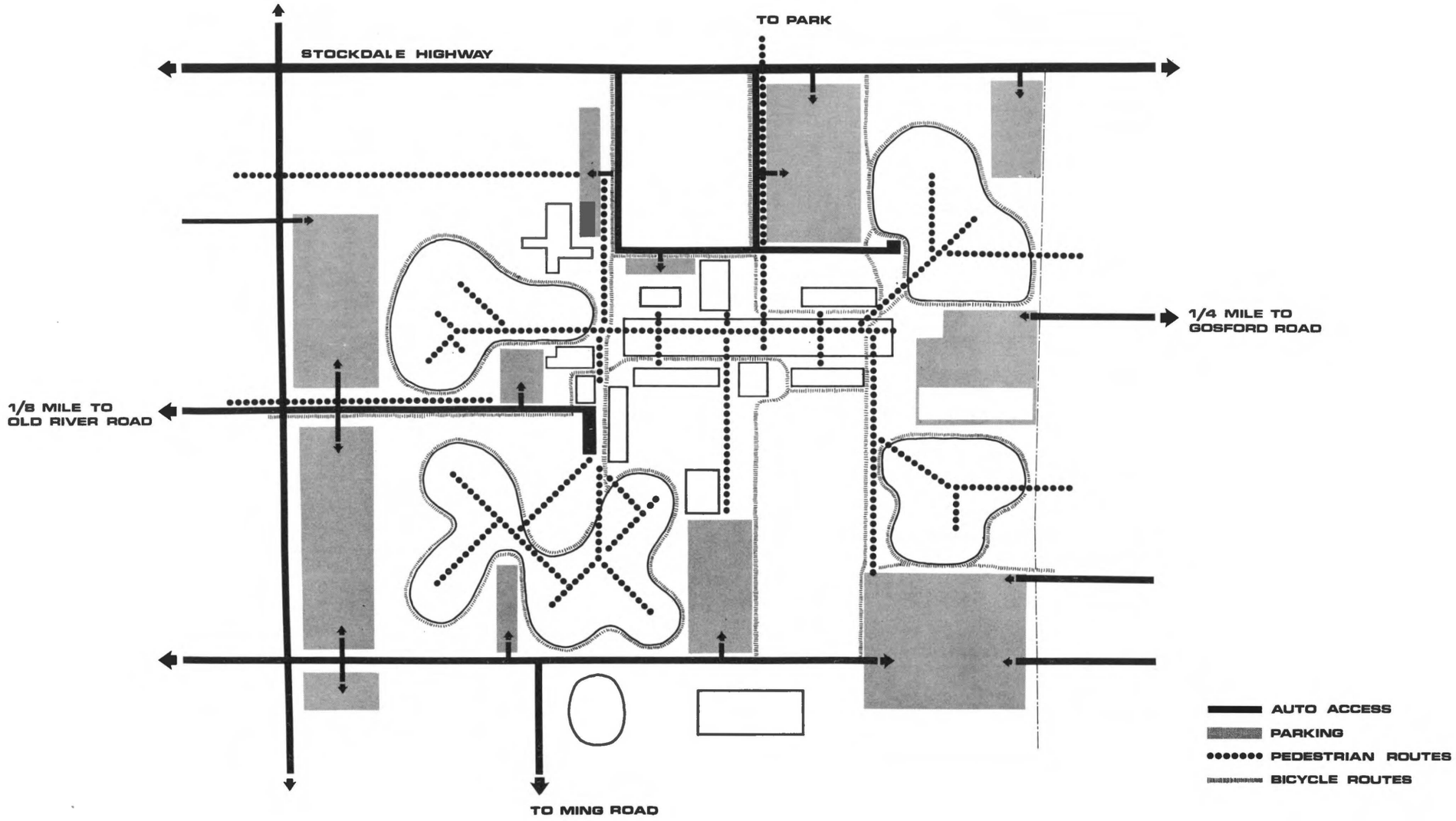
Parking is peripheral but, so far as possible, is not continuous. The aim is to provide maximum, uninterrupted contact with the surrounding community by landscaped areas, foot and bicylce paths. These contacts are made on the east, west, and south, but Stockdale Highway, on the north, is an important vehicular feeder and traffic signals will be required for safe transfer between the campus and the proposed Riverbed Park. The parking requirement is estimated at 7,200 stalls. (For calculations see Appendix.) (September)

Within buildings, pedestrian circulation is primarily internal and weather-protected both for the comfort of the pedestrian and as a protection against cooling losses to the outside. Between buildings, paths connect all entrances by a combined rectilinear and diagonal pattern designed as the shortest distance between given points. Where these paths coincide with grounds servicing routes, they are widened accordingly. The universal space will have an east and west galleria as its prime circulation route, connected by north-south "bridges" to the special buildings.

Bicycle paths connect all elements of the campus and are separated from the major pedestrian walks. Parking racks will be provided at appropriate points around both the academic and residential buildings. Motor bikes or scooters will be limited to the vehicular roads and regular parking areas. Because of the relatively short distances between residential and academic activity points within the campus, bicycle traffic is not expected to be heavy.

Land planning for the Zone of Influence is now underway and until it progresses further, some peripheral conditions cannot be exactly determined. However, the Master Plan provides for flexibility in boundary conditions and modifications will be made as community planning work progresses.

ACCESS - CIRCULATION - PARKING DIAGRAM



CALIFORNIA STATE COLLEGE - KERN COUNTY

VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

INCREMENTAL GROWTH

One of the most important and complex planning problems for a college programmed for long-term growth is designing the sequence of development for a highly organized institution that must be operable, efficient and complete at each stage even though the exact program, capacity and year cannot be accurately predicted over the long term. The concept for this campus (a multi-use spine with peripheral specialized structures) greatly simplifies the often unpredictable problems of growth. Nevertheless, a great deal of attention has been given to incremental growth, always with the requirements of an expanding academic program as the guide. The following sequential plans were derived with the principal input being from the college as it traced its evolution from the initial academic village with about 700 FTE to the ultimate campus for 12,000 FTE.

The growth pattern has been designed in two degrees of detail - a rather specific plan for the short term development 1970 through 1973; and a more generalized plan for the college as its 3,000, 6,000, and 12,000 FTE levels. The detailed series is referred to as "Status" and relates to actual dates. The later series is referred to as "Development Program "and relates to enrollment level rather than specific years.

STATUS: FALL 1970

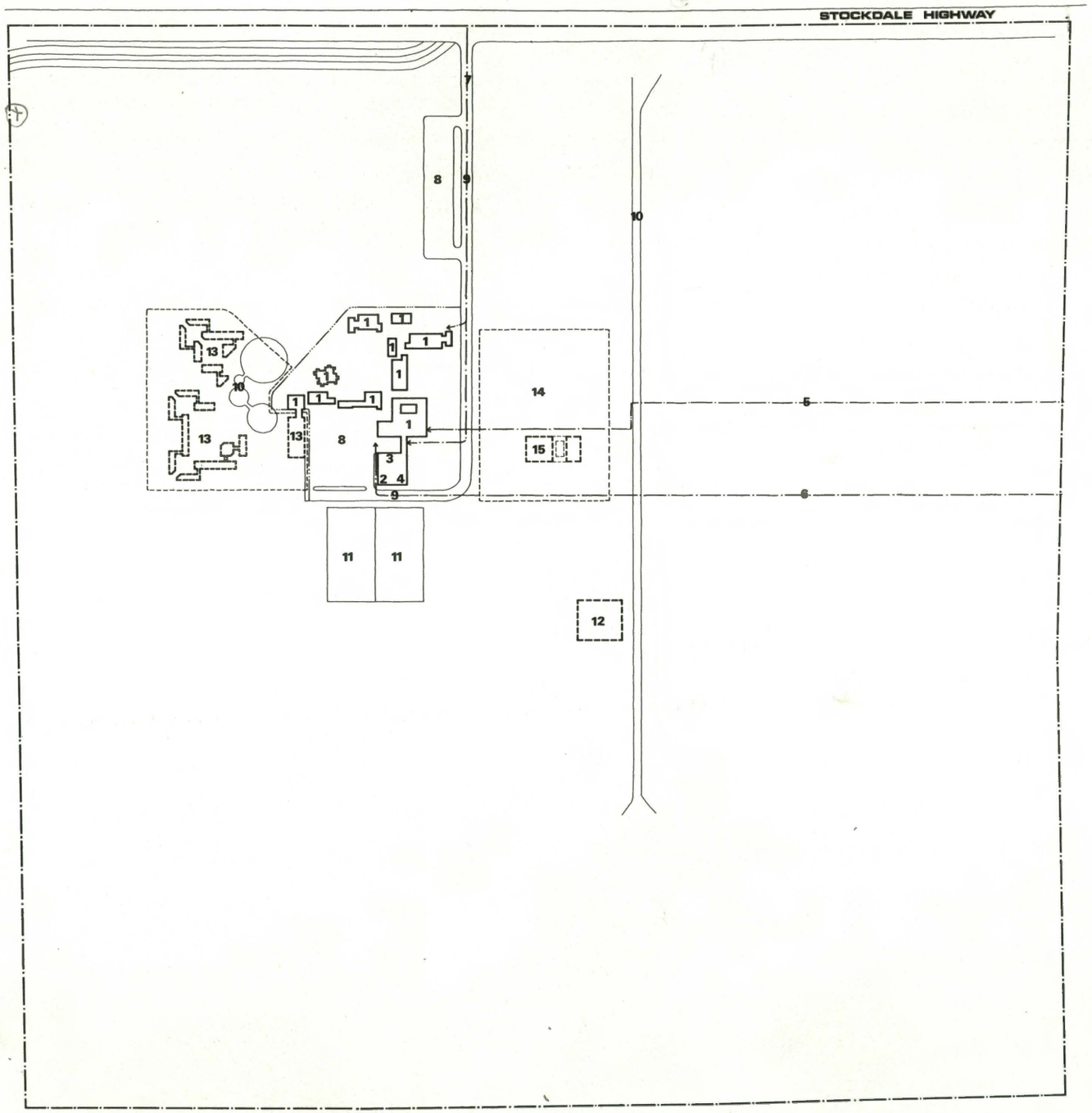
The drawing opposite indicates the status of the campus when it opens in September of 1970. The initial complement of buildings, capable of handling 726 FTE, will be in operation.

In addition, important elements of the campus will be in various stages of construction. The first residential clusters will be in advanced construction while the initial gymnasium and science building will be in early construction.

All main utility trunks except water will be in place and site drainage for the building areas will be operable. Parking for 350 cars and an entrance road, with landscaping, will be available. Two multi-purpose fields provide outdoor physical education. Landscaping is confined to the Academic area of Village No. 1. Most of the non-used area will remain in agriculture.

The solid lines indicate facilities in operation and dotted lines show facilities under construction.

(NS) indicates non state funded facilities.



STATUS:

FALL 1970
726 FTE (8-5)

1. INITIAL COMPLEMENT OF BUILDINGS IN OPERATION
2. INITIAL OPERATIONS FACILITY COMPLETE
3. SKELETON CENTRAL PLANT IN OPERATION
4. NEW WATER WELL IN OPERATION **NS (NON-STATE FUNDS)**
5. UNDERGROUND ELECTRICAL AND TELEPHONE IN PLACE
6. SEWER TRUNK IN PLACE
7. GAS SERVICE IN PLACE
8. 350 PARKING STALLS AVAILABLE
9. PARTIAL ENTRANCE ROAD IN SERVICE
10. STORM RETENTION BASIN AND DITCH
11. TWO MULTI-PURPOSE PLAYING FIELDS COMPLETED
12. INITIAL GYM UNDER CONSTRUCTION
13. ± 340 UNIT RESIDENTIAL, DINING AND COMMONS UNDER CONSTRUCTION **NS**
14. SITE PREPARATION AREA FOR EXPANSION
15. SCIENCE BUILDINGS UNDER CONSTRUCTION

0 150 450 NORTH

CALIFORNIA STATE COLLEGE - KERN COUNTY

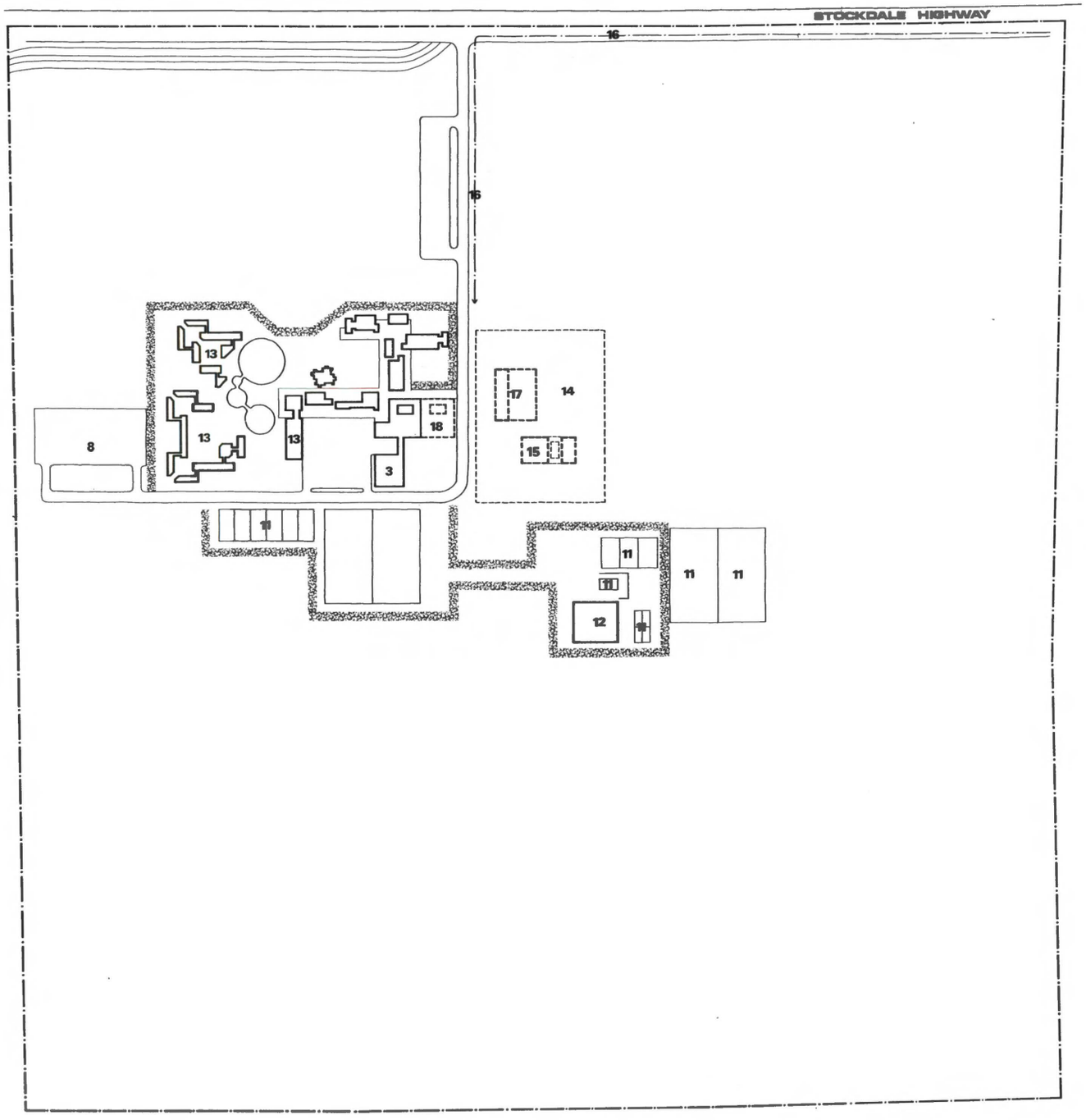
VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

STATUS: FALL 1971

One year after opening, the status of the campus will be as indicated by the plan opposite. (For identification, the numbers used on the original status plan are continued here for the same or similar facilities; the numbers for projects completed have been dropped and new numbers added for projects being initiated.)

At this time, Village No. 1 is nearly complete and the Live and Learn concept of the Academic Master Plan commences. The initial gym and additional outdoor physical education have been opened (Nos. 11 and 12). The science building (No. 15) is in advanced construction and two new projects - a classroom-office segment and a library addition - have been initiated. The classroom-office space (No. 17) is the first element of the academic spine and as such will begin to define the "universal space".

Landscaped areas have been extended to include the completed gym unit and enclose the play fields. Parking has been increased by 200 stalls servicing the residential areas (No. 8).



STATUS:

FALL 1971
726 FTE (8-5)

3. ADDED CAPACITY TO CENTRAL PLANT
8. ADD 200 PARKING STALLS
11. ADD TENNIS COURTS (± 6)
    MULTI-PURPOSE FIELDS (± 2)
    POOL (± 1)
    HANDBALL (± 4)
    BASKETBALL (± 3)
12. OPEN INITIAL GYM
13. OPEN INITIAL RESIDENTIAL, DINING AND COMMONS NS
14. SITE PREPARATION AREA FOR EXPANSION
15. SCIENCE BUILDINGS UNDER CONSTRUCTION
16. EXTEND STOCKDALE WATER MAIN
17. CLASSROOM-OFFICES UNDER CONSTRUCTION
18. LIBRARY EXPANSION UNDER CONSTRUCTION

0 160 480 NORTH

CALIFORNIA STATE COLLEGE - KERN COUNTY

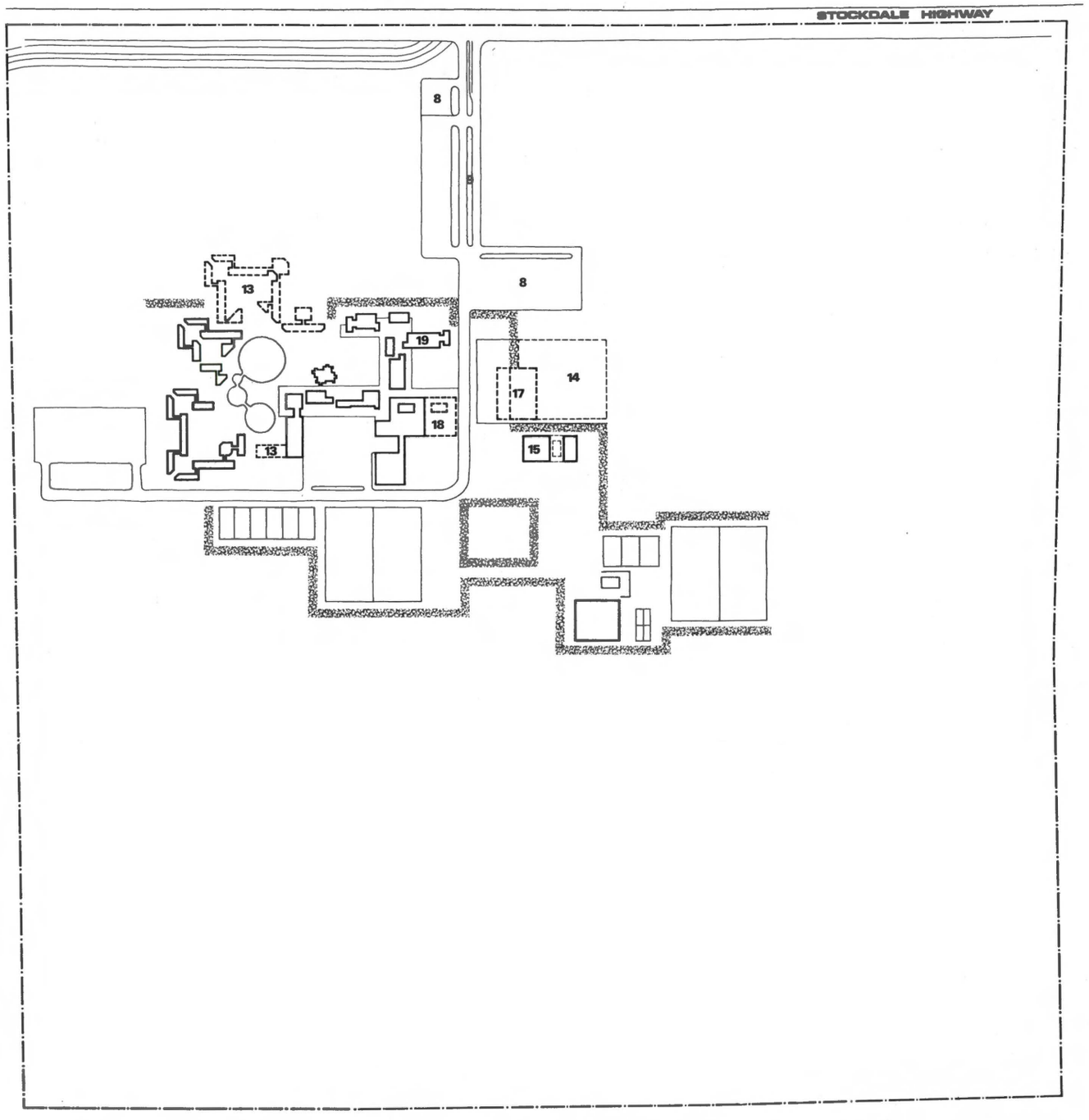
VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

STATUS: FALL 1972

The second year after opening brings the Science Building on line (No. 15) and frees the science space in Village No. 1 (No. 19) for conversion to Fine Arts. The classroom-office space and the Library expansion are in advanced construction and a new program, additional residential, has moved into the construction stage.

Road facilities have been extended and improved and parking has been increased by 150 stalls. The landscaping has been extended to encompass the new facilities. As shown here, the campus has a capacity of 1,081 FTE (8-5).

Site preparations are under way for extension of the campus to the east.



STATUS:

FALL 1972
1081 FTE (8-5)

8. ADD 150 PARKING STALLS **NS**
9. COMPLETE ENTRY ROAD
13. ± 340 RESIDENTIAL UNITS AND DINING ENLARGEMENT UNDER CONSTRUCTION **NS**
14. SITE PREPARATION AREA FOR EXPANSION
15. OPEN SCIENCE BUILDINGS
17. CLASSROOMS AND OFFICES UNDER CONSTRUCTION
18. LIBRARY EXPANSION UNDER CONSTRUCTION
19. REMODEL INITIAL SCIENCE BUILDING FOR ART EXPANSION

0 100 400 NORTH

CALIFORNIA STATE COLLEGE - KERN COUNTY

VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

STATUS: FALL 1973

The third year of operation presents a campus scoped for 1,292 FTE and with three projects under construction. In this year, the first classroom-office segment of the academic spine is open and an easterly expansion is under construction. The corporation yard, initially located adjacent to Village No. 1 has by now outgrown its original space and incremental expansions of the central plant are about to occupy all of the available space formerly devoted to operations. A permanent corporation yard (No. 20) is under construction.

Residentially, Village No. 1 has opened its final unit and is now a completed entity. A portion of Village No. 2 is under construction (No. 21).

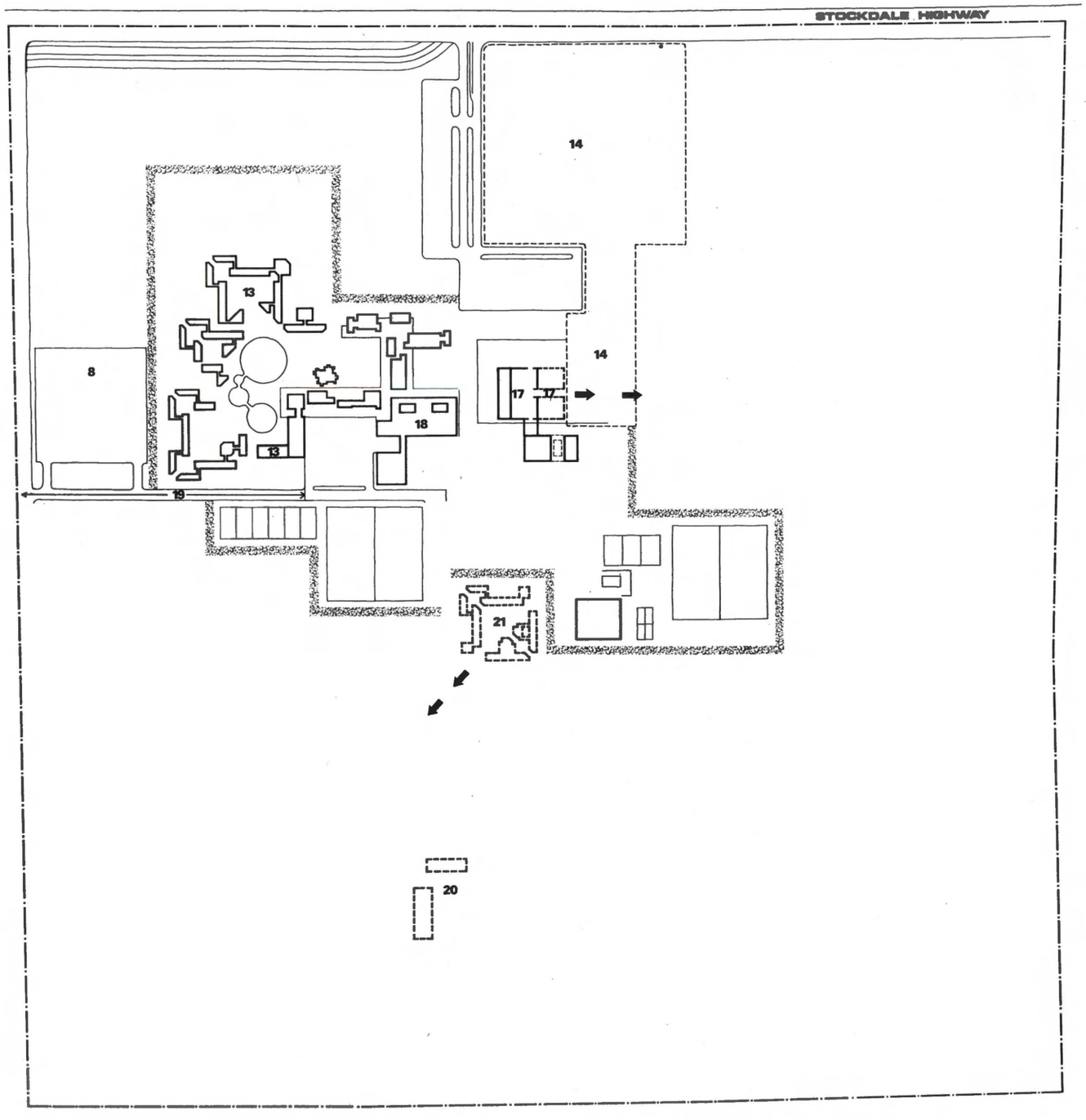
The library addition has been completed and is ready for occupancy (No. 18).

Ming and Old River Roads will have been improved by the county or city and a vehicular tie to the west boundary is available (No. 19). The temporary road running between Village No. 1 and the central campus is closed and this area, the West Court, becomes a pedestrian compound.

Site preparations continue to the north and east . Parking for 200 cars has been added.

Beyond this year it is not especially meaningful to detail the year-by-year status because it is not possible to predict detailed planning modifications that might occur over the very long run. This series has carried the plan through the five-year capital outlay program and if it is revised as actual operating experiences develop, it will perform an important contemporary function in pointing out those areas scheduled for immediate development. This can be a positive guide for almost any type of short term (5 year) planning ranging from the placement of lawn sprinklers to the site preparations necessary for the installation of a major building.

So, from this series we move to the *Development Program.*



STATUS:

FALL 1973
1292 FTE (8-5)

8. ADD 200 PARKING STALLS **NS**
13. OCCUPY ± 340 RESIDENTIAL UNITS AND DINING **NS**
14. SITE PREPARATION AREA FOR EXPANSION
17. OCCUPY CLASSROOM-OFFICES. CLASSROOM ADDITION UNDER CONSTRUCTION
18. OCCUPY LIBRARY ADDITION
19. EXTEND ACCESS ROAD TO OLD RIVER ROAD AND CONNECT TO COUNTY IMPROVED MING AND OLD RIVER ROADS
20. CORPORATION YARD UNDER CONSTRUCTION
21. INITIAL RESIDENTIAL CONSTRUCTION - VILLAGE NO. 2

AREAS OF GROWTH TO 3000 FTE

0 150 450 NORTH

CALIFORNIA STATE COLLEGE - KERN COUNTY

VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

DEVELOPMENT PROGRAM: 3,000 FTE (8-5)

This plan shows the development of the campus at about one-fourth of its ultimate size. We have purposefully not indicated the year at which this might occur because a date is not as important as the balance between enrollment and facilities. A continuing appraisal (as will be done through the five-year short term planning) will keep budgeting schedules current and, further, will successively bring the 3,000 FTE date into sharper focus.

However, if one uses the base figures prepared by the Chancellor's office and projects them on a straight line basis, the level of 3,000 FTE would occur about 1980.

Several important additions and changes will have taken place since the last status plan (1973: 1,292 FTE).

In several successive stages, the academic spine has by now been extended through the central plaza and beyond. The bookstore and audio-visual space have been moved into this area in order to free the library building for needed expansion, behavioral sciences has been established in its permanent location, and a student cafeteria is in operation off the central plaza.

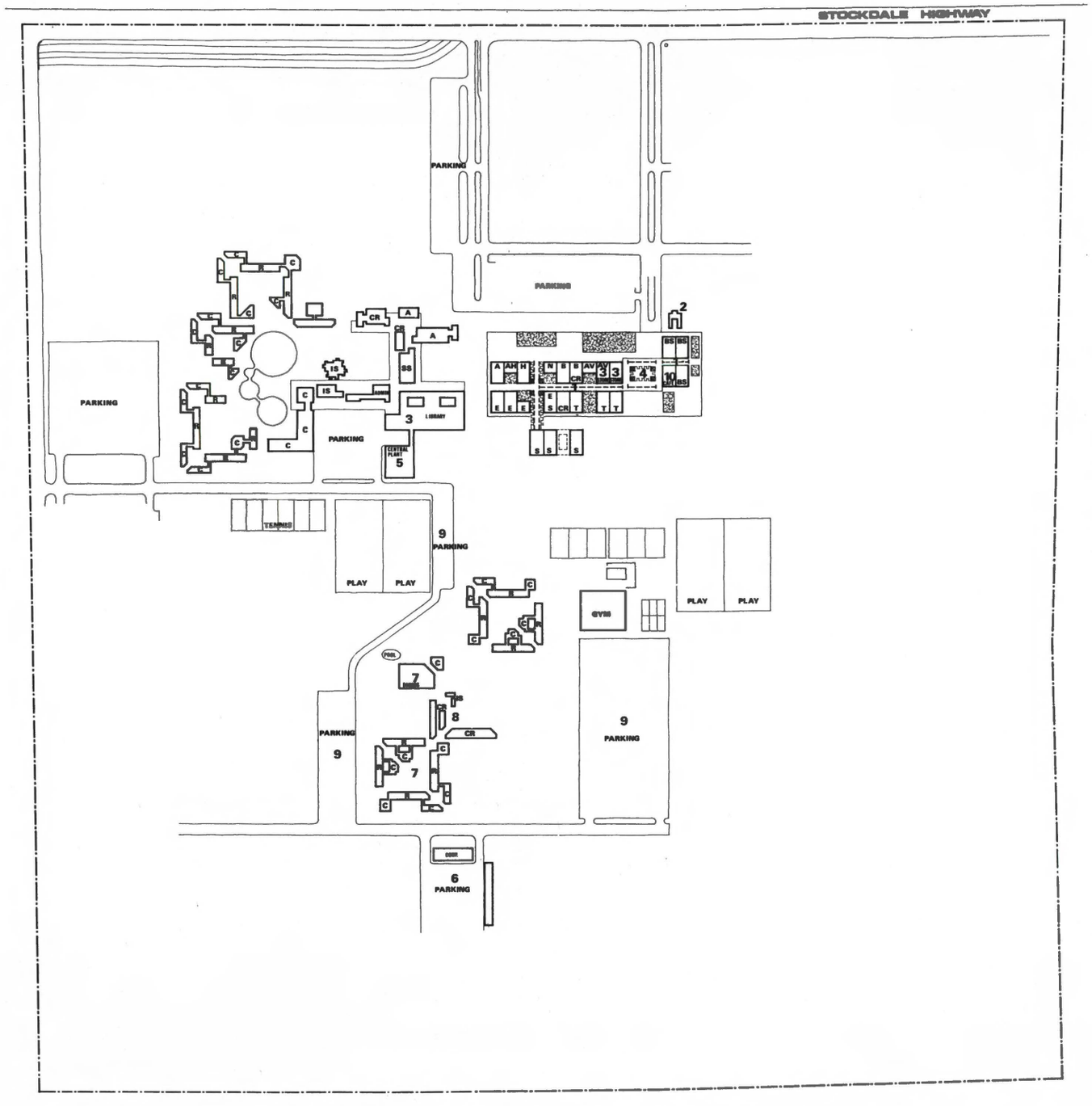
Disciplines now functioning in the spine are -

- Art (A)
- Humanities (H)
- Education (E)
- Nursing (N)
- Science (S)
- Industrial Technology (T)
- Behavioral Sciences (BS)
- plus some general classroom space (CR)

The main entrance roads and garden have been completed.

Village No. 1 has not changed (except for the library enlargement mentioned earlier), but the second Live and Learn Village is over one-half complete with residence halls (R), commons (C) and instruction areas (IS).

Parking has been added near all buildings with the total now at 1,700 stalls. The corporation yard has been in operation for some time. Some outdoor physical education has been added.



DEVELOPMENT PROGRAM:

3000 FTE (8-5)

1. EXTEND UNIVERSAL SPACE THROUGH PLAZA AND ABOUT 100 FEET BEYOND. INITIATE BASEMENT CENTRAL RECEIVING AND CONSTRUCT MEZZANINE LEVEL IN PLAZA.
2. BUILD INITIAL INSTRUCTIONAL SUPPORT BUILDING FOR BEHAVIORAL SCIENCE
3. MOVE A-V AND BOOK STORE INTO UNIVERSAL SPACE AND DEVOTE VACATED AREA TO LIBRARY EXPANSION **(BOOKS NS)**
4. INSTALL ADMINISTRATIVE SPACE IN PLAZA MEZZANINE AND BASEMENT
5. FINAL ENLARGEMENT OF WEST CENTRAL PLANT
6. OCCUPY INITIAL UNIT OF PERMANENT CORPORATION YARD
7. ADD HOUSING UNIT VILLAGE NO. 2 (INCLUDING DINING) **NS**
8. ADD FIRST ACADEMIC UNIT IN VILLAGE NO. 2
9. INCREASE PARKING TO 1700 **NS**
10. ADD CAFETERIA (5000±) STATE FUNDED

0 150 450 NORTH

CALIFORNIA STATE COLLEGE - KERN COUNTY

VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

DEVELOPMENT PROGRAM: 6,000 FTE (8-5)

Here the campus is shown about halfway through its total development and all major elements have been established.

The universal space in the central spine has continued its growth to the east, laboratories and special buildings have been added for natural and behavioral sciences, and a reassignment of universal space has taken place to accommodate departmental growth into space vacated by education, nursing and fine arts as these move into new quarters.

The initial unit of the permanent library is now in operation and education and nursing have moved to its former location.

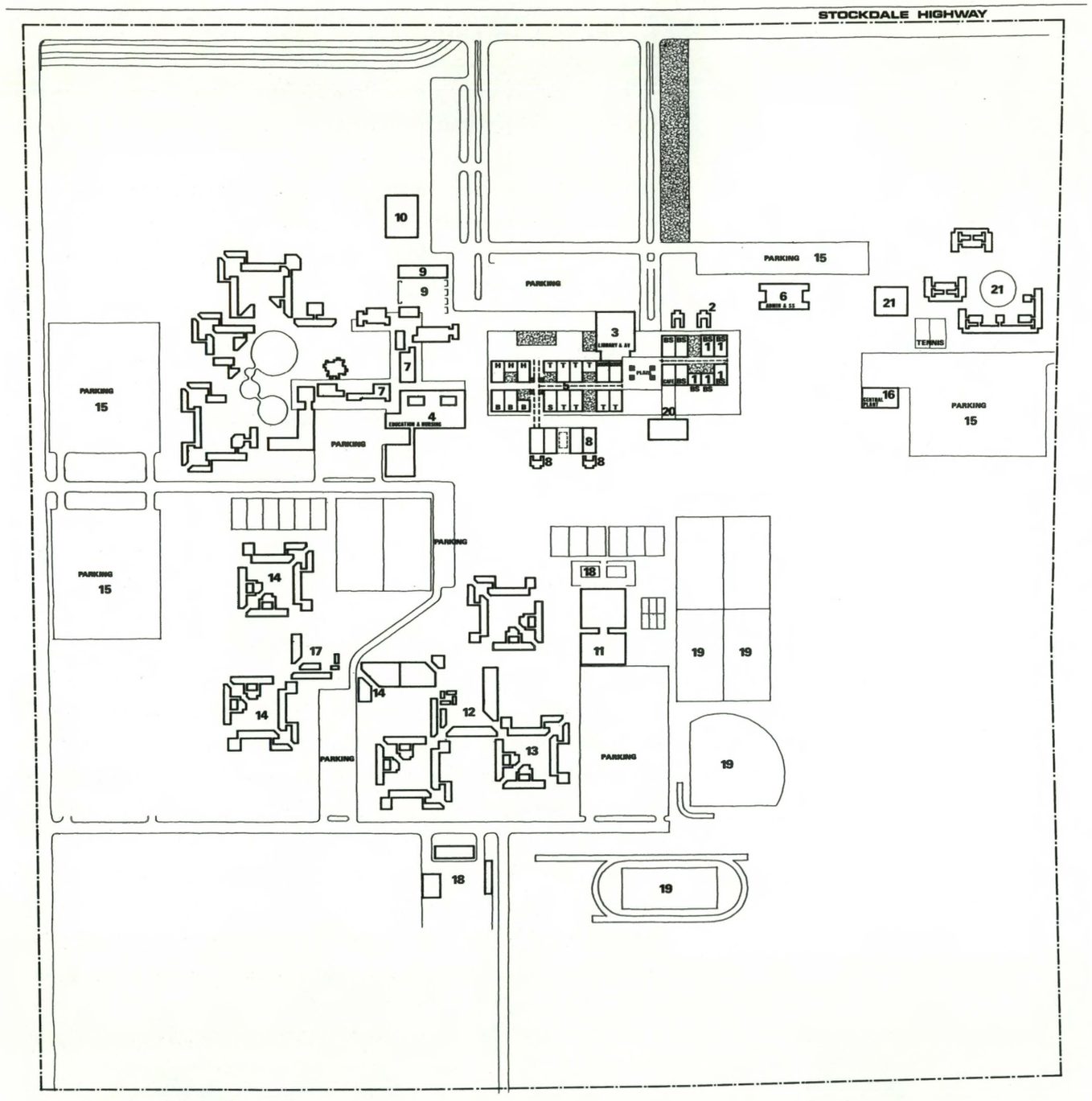
The initial unit of the permanent administration building is operating thus freeing the original administration space in Village No. 1 for conversion to classrooms.

A fine arts building and a little theatre have been added and a strong nucleus of the speech, art and drama group is now established.

Additions have been made to both indoor and outdoor physical education. A second central plant is in operation and increases of the corporation yard have been accomplished. All three Live and Learn Villages are now complete and the housing program has extended into the first upper division live and study clusters. An initial student union element has been installed off the central plaza and connected with the cafeteria that was built earlier.

Parking has been expanded to a total of 3,200 stalls.

If straight line projections of enrollment based on early studies by the Chancellor's office were continued, this stage of development would exist by about 1990.



DEVELOPMENT PROGRAM: 6000 FTE (8-5)

1. EXTEND UNIVERSAL SPACE APPROXIMATELY 150 FEET FOR BEHAVIORAL SCIENCE ADDITION
2. ADD BEHAVIORAL SCIENCE INSTRUCTION
3. BUILD INITIAL UNIT OF PERMANENT LIBRARY
4. MOVE EDUCATION AND NURSING TO VACATED LIBRARY SPACE
5. ADJUST UNIVERSAL SPACE (WEST WING) TO ENLARGE TECHNOLOGY, HUMANITIES, BUSINESS, SCIENCE AND THE BOOK STORE INTO AREA VACATED BY EDUCATION, NURSING, AUDIO-VISUAL AND ART **(BOOKS NS)**
6. BUILD INITIAL UNIT OF ADMINISTRATION AND S.S. BUILDING
7. REMODEL VILLAGE NO. 1 ADMINISTRATION AND S.S. SPACE INTO CLASSROOMS
8. ADD TO SCIENCE BUILDINGS AND BUILD INSTRUCTIONAL SUPPORT SPACE
9. BUILD FINE ARTS BUILDING NEAR OTHER ART IN VILLAGE NO. 1 AND COMPLETE ART COURT
10. BUILD LITTLE THEATRE
11. COMPLETE GYM
12. COMPLETE ACADEMIC AREA VILLAGE NO. 2
13. BUILD FINAL HOUSING UNITS IN VILLAGE NO. 2 **NS**
14. BUILD RESIDENTIAL UNITS IN VILLAGE NO. 3 INCLUDING DINING **NS**
15. INCREASE PARKING TO 3,200 STALLS **NS**
16. BUILD SECOND CENTRAL PLANT
17. BUILD ABOUT ONE-HALF OF VILLAGE NO. 3 ACADEMIC AREA
18. INCREASE CORPORATION YARD
19. ADD TO OUTDOOR PHYSICAL EDUCATION
20. BUILD INITIAL UNIT OF STUDENT UNION **NS**
21. UPPER DIVISION AND MARRIED STUDENT HOUSING AS REQUIRED (INCLUDES DINING) **NS**

0 150 450 NORTH

CALIFORNIA STATE COLLEGE - KERN COUNTY

VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

DEVELOPMENT PROGRAM: 12,000 FTE (8-5)

Here the plan has completed its programmed development. On the straight line projection method mentioned before, the year would be about 2010.

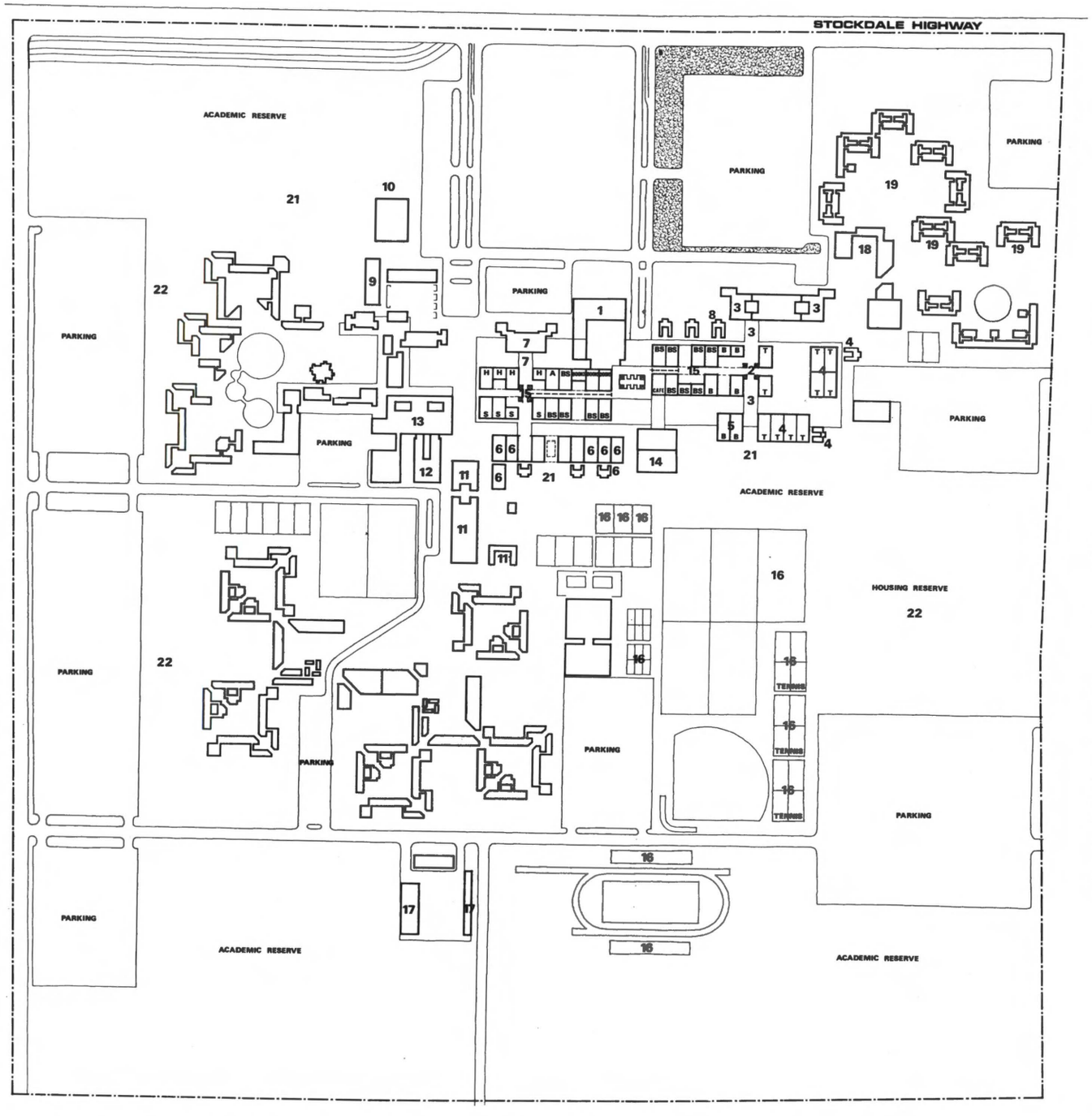
Within the academic core, expansion has continued to the east and peripheral additions have been made to the library, administration, sciences and the student union. New buildings have been initiated for humanities, business, and industrial arts and technology.

The speech, art and drama area has installed its final structure. A new building for nursing and medical technology has been completed and education has expanded into the vacated area. A health science and physical education complex is complete and additional outdoor physical education has been added.

Additions to the corporation yard have been made, the road system expanded and parking capacity brought up to its total of 7,200 stalls.

All three academic villages had been previously completed but additions to upper division housing have continued and approximately 1,500 upper division units are now in place. But in case private developers have left an on-campus demand in excess of this, the number could be readily doubled. Additions to lower division housing above the 2,100 units now shown can also be accomplished by augmenting the existing villages with medium rise structures.

Academic expansion beyond the presently programmed 12,000 FTE can take place in any or all of the four major areas shown or even within certain areas of the core itself. 20,000 FTE could be accommodated on the site but some relocation of parking areas and playfields would be required.



DEVELOPMENT PROGRAM:

12000 FTE (8-5)

1. COMPLETE LIBRARY
2. EXTEND UNIVERSAL SPACE, BY INCREMENTS, TO ULTIMATE
3. EXTEND ADMINISTRATION AND S.S. SPACE BOTH WITHIN UNIVERSAL SPACE AND IN SPECIAL BUILDING
4. BUILD SPECIAL BUILDINGS FOR APPLIED SCIENCES AND TECHNOLOGY
5. BUILD SPECIAL BUILDINGS FOR BUSINESS
6. ADD TO SCIENCE BUILDINGS
7. BUILD SPECIAL HUMANITIES BUILDING AND BRIDGE TO UNIVERSAL SPACE
8. BUILD INSTRUCTIONAL SUPPORT TOWER IN BEHAVIORAL SCIENCE
9. BUILD MUSIC, SPEECH AND DRAMA BUILDING
10. ADD OUTDOOR AMPHITHEATER
11. BUILD HEALTH SCIENCE AND PHYSICAL EDUCATION BUILDINGS
12. BUILD NURSING AND MEDICAL TECHNOLOGY UNIT
13. REMODEL EDUCATION BUILDING TO EXPAND INTO AREA VACATED BY NURSING, HEALTH SCIENCE AND PHYSICAL EDUCATION
14. COMPLETE COLLEGE UNION NS
15. SHIFT UNIVERSAL SPACE ALLOCATIONS TO FIT CURRENT DEMAND
16. ADD TO OUTDOOR PHYSICAL EDUCATION
17. ADD TO CORPORATION YARD
18. ADD TO UPPER DIVISION COMMONS AND DINING NS
19. ADD TO UPPER DIVISION HOUSING NS
20. ADD TO PARKING FOR TOTAL OF 7,200 STALLS NS
21. AREAS FOR POSSIBLE ACADEMIC EXPANSION BEYOND 12,000 FTE
22. HOUSING RESERVES

0 150 450 NORTH

CALIFORNIA STATE COLLEGE - KERN COUNTY

VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

MASTER PLAN: 12,000 FTE (8-5)

The plan opposite has exactly the same configuration as the previous one, but for purposes of clarity, it omits the lines and notes dealing with sequential development. Also, the site improvement work is shown in finished form. The legend identifies the major elements of the completed campus.

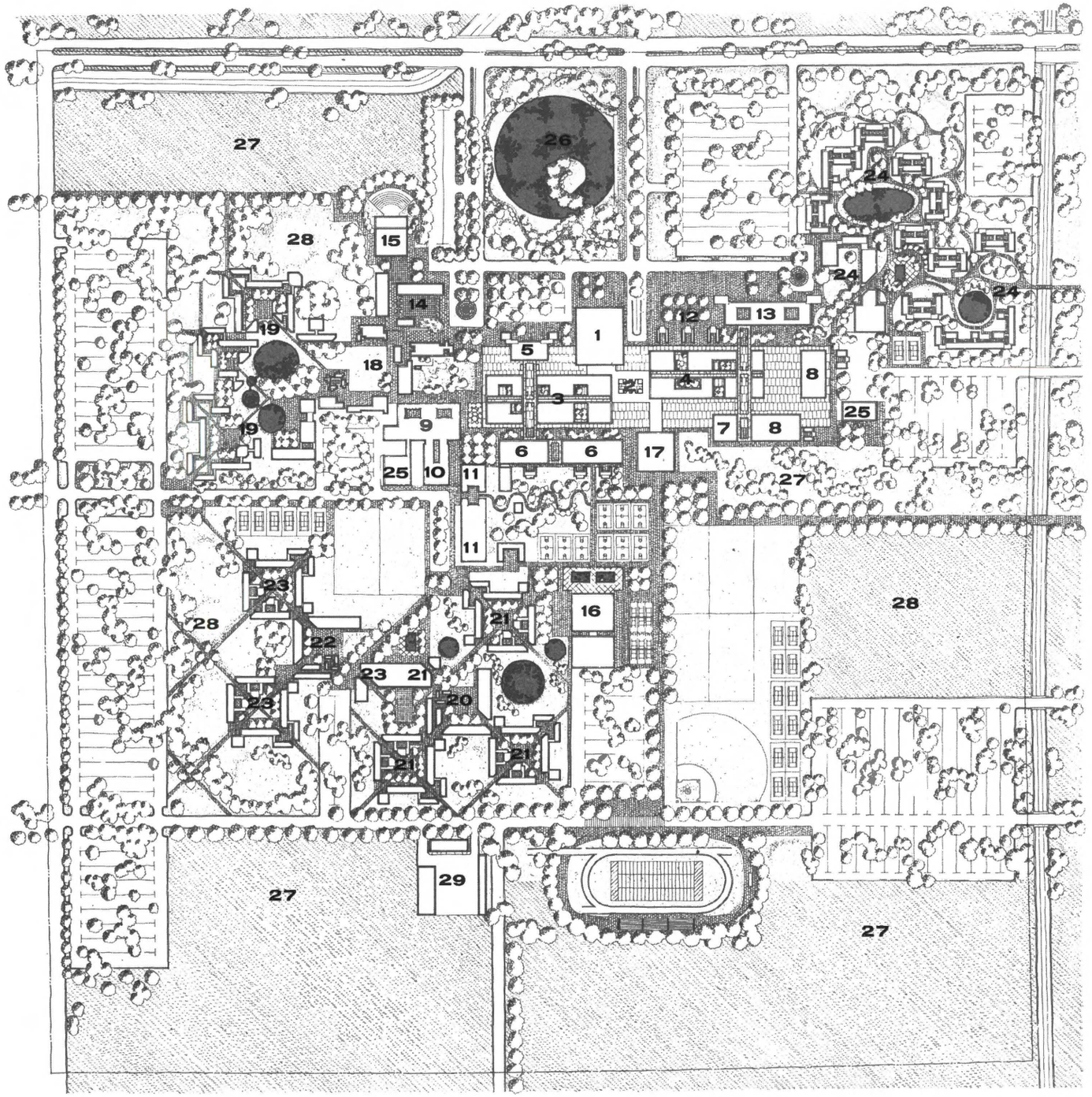
THE BASIC LANDSCAPE CONCEPT

The dominating feature of the environment is its open, "flat land" character. The basic design approach will be the eventual development of an area that will be a contrast to this environment. The total effect of the campus, with the maturing of the plant materials, will be of buildings situated within a landscaped setting of bermed earth forms, ponds and lagoons, varied greens and assorted textures; the impression gathered as one enters the campus will be of entry into a sheltered, ponded, shaded, rolling, green environment.

The effect of trees with their irregular and softening shadows against the strong presence of the elevated podium of the academic core will present a dramatic contrast in line and form. The campus design is a deliberate separation of building groups and units, reflecting the concept of the educational program. These component complexes, with their individual identities, will be linked to the central core and to each other by avenues of trees with their shade and definitions of greenery.

The introduction of pools and ponds in conjunction with surface water control will create microclimatic situations that will make possible the use of plantings that will be delightfully different for the general region. The area of the large pool at the north of the academic complex is proposed as an arboretum, thereby serving as an area of experimental study as well as being a feature marking the entrance to the campus. The area will be one that is heavily planted and will afford quiet places for resting and for plant study. This pool, situated at the main drive may well become, not only one of the most distinctive features of the campus, but a landmark along the highway.

Within the design scheme, trees have been planted in large stands and groups, making outstanding impressions in the landscape. Their use in this manner will serve to create large areas of shade; their size will relate them to the buildings in scale and scope. Trees will be used to frame and delineate, to flow between buildings and to knit areas together. Tree rows crossing the boundaries of the campus site will be continued beyond the property lines to become ties with the surrounding areas, relating the whole campus to its environs.



MASTER PLAN: 12000 FTE (8-5)

1. LIBRARY
2. CENTRAL PLAZA, BOOKSTORE, CAFE
3. WEST GALLERIA: CLASS ROOMS
4. EAST GALLERIA: CLASS ROOMS
5. HUMANITIES
6. NATURAL SCIENCES
7. BUSINESS
8. IND. TECHNOLOGY + APPLIED SCIENCE
9. EDUCATION
10. NURSING AND MEDICAL TECHNOLOGY
11. HEALTH SCIENCE AND PHYSICAL EDUCATION
12. BEHAVIORAL SCIENCES
13. ADMINISTRATION
14. ART, SPEECH AND DRAMA
15. LITTLE THEATRE
16. FIELD HOUSE AND GYM
17. COLLEGE UNION
18. VILLAGE NO. 1 ACADEMIC
19. VILLAGE NO. 1 RESIDENTIAL
20. VILLAGE NO. 2 ACADEMIC
21. VILLAGE NO. 2 RESIDENTIAL
22. VILLAGE NO. 3 ACADEMIC
23. VILLAGE NO. 3 RESIDENTIAL
24. UPPER DIVISION AND MARRIED STUDENT RESIDENTIAL
25. CENTRAL PLANTS
26. ENTRANCE GARDEN AND ROADS
27. ACADEMIC RESERVES
28. RESIDENTIAL RESERVES
29. CORPORATION YARD

0 180 480

NORTH

VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

RUSSELL Y. IWANAGA A.S.L.A.
LANDSCAPE ARCHITECT

CALIFORNIA STATE COLLEGE - KERN COUNTY

PLANT MATERIALS

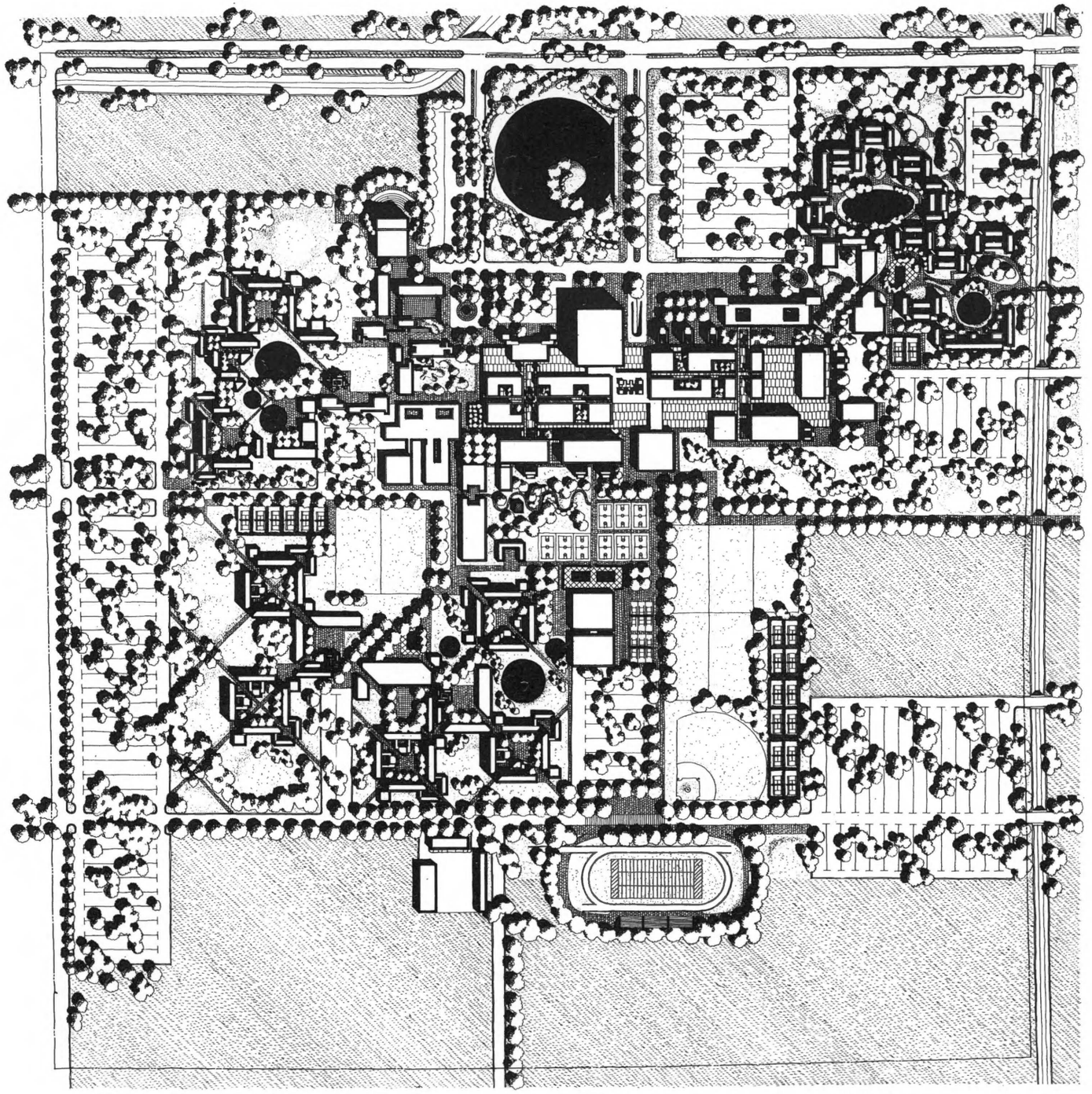
The campus, being located in the Central Valley region of California, is subjected to the extremes of the summer sun and freezing winter temperatures. Being very level throughout the surrounding land and on site, there is frequent exposure to winds with their dehydrating effects. These, together with the requirements of the design parameter, are the conditions that form the framework within which plant selections must be determined. The introduction of ponds and lakes overcomes some of the natural problems and expands the scope of plant materials.

Plants and trees will be selected to fulfill the various requirements posed by the region and by the landscape design with trees playing the important role in the landscape development of a pleasant and comfortable campus. There will be trees which, because of their particular character, will be used as structural elements in the design. Comprising this list, within their respective genera, will be pines, eucalyptus, pepper, olive, oak, elm, cypress, catalpa and sycamore. There will be much use of the stone pine, aleppo pine and eucalyptus varieties. To provide seasonal diversity and color, flowering trees will be used to accent and as contrasts; these will include the gingko, koelreuteria, crape myrtle, albizzia and the locust. Bottlebrush, oleander, raphiolepis, acacia, dwarf forms of crape myrtle and flax will be used for masses and lines of color in plantings of lower height.

Large, open spaces will be largely planted in turf and lawn; primarily to serve as play areas and for maintenance considerations. Turf, together with groupings and clusters of trees will be inviting places in the warm days of the year and will provide constantly changing vistas.

With the maturity of trees and the resulting change in the growing conditions will come the possibility of using many plant materials that might be questionable at the outset of the landscape program. As the trees grow, the list of plant materials will expand.

The Illustrative Site Plan is repeated here so that it may be related to the landscape description.



ILLUSTRATIVE SITE PLAN

0 120 480

NORTH

VICTOR GRUEN ASSOCIATES
MASTER PLAN ARCHITECTS

RUSSELL Y. IWANAGA A.S.L.A.
LANDSCAPE ARCHITECT

CALIFORNIA STATE COLLEGE - KERN COUNTY

DEVELOPMENT COSTS

1. *INITIAL BUILDINGS*

The initial buildings were programmed in late 1967. In March 1968, a budget of $1,688,000 was set for the buildings and Group I equipment. Site development costs were set at $398,482 for a total of $2,086,582 at 1100 ENR.

Our aim in the design of the initial buildings was to build the most economical group of buildings possible regardless of budget allowances and we believe that the design concept proposed will (first) meet the academic and environmental requirements, and (second) meet the present budget allocation with one exception. If a central plant is to be initiated now, we will exceed the budget by about $50,000.

Detailed estimates have been prepared in cooperation with the college for the five year program. These relate to the "status" plans included in this report. For details, please see the Five Year Capital Outlay Program for Kern.

2. *SUBSEQUENT DEVELOPMENT*

Tables III and IV following indicate the total project costs by discipline, type of space, by FTE increment (3,000, 6,000, and 12,000 FTE) and by state or non-state funded categories. The dollar figures used on these tables relate directly to the space requirements shown on Tables I and II for direct comparisons between facility size, type and cost.

Most unit costs were derived by using the standard values and formulas as developed by the Chancellor's office (CO-4.102, CO-5.106, CO-5.107) as revised in January 1968 and based on an ENR of 1170.

Although we believe that the Master Plan concept offers the opportunity for cost reductions in several areas (low rise, compactness, like spaces grouped together, standardized building elements, etc.) we are hesitant at this time to deviate from existing average costs as listed in CO-4.102 (and shown in the column, "Project Cost Per ASF") with one exception: By grouping all lecture space into the multi-use universal structure, we are assuming a per-square-foot cost reduction of $2. Since this building is not yet designed, there is no assurance that this reduction will be achieved, but it seems to be a reasonable expectation. Similar reductions might be forthcoming in other elements but until actual design takes place, they cannot be foreseen. It is the intent of the Master Plan that areas of possible capital savings will be pointed out to project architects and that a part of all architectural assignments will list an investigation of this potential in the scope of services.

Central plant assumptions are based on a separate study (to be submitted in September 1968) and are therefore tentative. However, the pricing is already quite well developed and the issues remaining relate mainly to energy costs and details rather than capital costs.

Site development costs are based on conceptual plans as shown in this report and are, therefore, subject to modification throughout the development period. However, the unit costs used have been tested against protytype areas within the campus and found acceptable. The great uncertainty of these site development figures exists in the realm of paving and landscaping. Within the three scales considered (high, medium and low), we chose a medium-low figure. This was not by choice, but was instead an attempt to recognize the priority of dollars and the special efforts of the Kern College to interest the community in college development. This site development estimate will require substantial assistance from the community. Since this seems to be forthcoming, we have counted on it.

The residential costs come directly from the college document, "Residence Halls and Dining Facilities, Phase I - Village I (non-state funded)" dated June 1968. This report outlines in detail the academic philosophy of the Live and Learn Village and the seminal idea of incorporating the commuting student into the college society.[1]

Student unions are always a special situation depending totally upon shifting criteria. We have not attempted to name the year or size of the union. The plan does, nevertheless, hold its location and allow it to tie with supporting and fortifying facilities. Its size has been estimated, but even this must be subject to change and the plan allows for considerable deviation. It is quite possible that with the importance placed in the residential villages, both live and learn (lower division) and live and study (upper division) plus decentralized dining, and the commuter student's facilities in the villages, that the historical role of the student union will be lessened, or it might be strengthened. In either event, the plan can accommodate the shift.

---

1. This document has implications far beyond the capital costs involved. It states the need to find and offers a solution to a better way. We consider it an integral part of the Master Plan Report.

3. *COST SUMMARY*

Table III lists direct instructional capital costs and Table IV details instructional support capital costs for both state funded and non-state funded projects. Derivations from these tables are of interest.

A. *Capital Cost Per FTE (8-5), State Funded Facilities*

3,000 FTE = $ 8,696,000 (Table III)
9,479,000 (Table IV)
$18,175,000/3000 = $6,060 per FTE

6,000 FTE = $17,669,000 (Table III)
18,243,000 (Table IV)
$35,912,000/6000 = $5,985 per FTE

12,000 FTE = $36,226,000 (Table III)
29,292,000 (Table IV)
$65,518,000/12,000 = $5,459 per FTE

B. *Total Capital Costs by Increments, Combined Funding*

3,000 FTE (8-5) State Funded = $18,175,000 (see Summary A)
Non-State Funded = $ 9,954,000 (Table IV)
$28,129,000
or $9,376 per FTE

6,000 FTE (8-5) State Funded = $35,912,000 (see Summary A)
Non-State Funded = $21,809,000 (Table IV)
$57,721,000
or $9,620 per FTE

12,000 FTE (8-5) State Funded = $65,518,000
Non-State Funded = $25,057,000 (Housing stays at 2350 units same as 6000 FTE level)
$80,575,000
or $6,714 per FTE

or, if housing expands to 5,040 units, then non-state funding rises to $46,765,000, the combined total goes to $112,283,000, and the expenditure per FTE becomes $9,356.

It is not surprising that the first summary (A) shows a decline in state funded costs per FTE as the college grows, but it is interesting that the total drop from 3,000 to 12,000 FTE is only about 10 percent with most of this reduction occurring beyond 6,000 FTE. Probably a sharper decline would show in operating costs per FTE as enrollment increases but so far as capital costs are concerned, no significant decrease is indicated until beyond the 6,000 FTE level.

Summary (B) is not relevant to cost-size ratio because the differences here are primarily reflections of the amount of on-campus housing provided. However, it does indicate the proportion between state and non-state funds and shows that the ultimate (12,000 FTE) combined funding will be between $80 and $110 million.

If the Chancellor's study on enrollment is continued on a straight line basis, *combined* capital expenditures on this campus will be about as follows:

By 1980 - $28 million (3,000 FTE)
By 1990 - $58 million (6,000 FTE)
By 2010 - $81 to $112 million (12,000 FTE)

TABLE III SUMMARY OF ESTIMATED INSTRUCTIONAL SPACE PROJECT COSTS* (By Discipline and Type of Space) ENR 1170

A = Lecture Space
B = Laboratory
C = Instructional Support

Academic Area	Type Space	Project Cost Per ASF	ACCUMULATED COSTS 3,000 FTE (8-5) Total Project Cost	(1)	(2)	(3)	Universal	Special	ACCUMULATED COSTS 6,000 FTE (8-5) Total Project Cost	(1)	(2)	(3)	Universal	Special	ACCUMULATED COSTS 12,000 FTE (8-5) Total Project Cost	(1)	(2)	(3)	Universal	Special
Behavioral Sciences	A	$ 49.08	$ 393,000	$ 211,000	$ -	$-	$ 182,000	$ -	$ 761,000	$ 211,000	$ 211,000	$ -	$ 339,000	$ -	$ 1,536,000	$ 211,000	$ 211,000	$ 211,000	$ 903,000	$ -
	B	86.45	761,000	173,000	-	-	588,000	-	1,453,000	173,000	173,000	-	1,107,000	-	2,862,000	173,000	173,000	173,000	2,343,000	-
	C	59.38	546,000	154,000	-	-	24,000	368,000	1,045,000	154,000	154,000	-	42,000	695,000	1,983,000	154,000	154,000	154,000	83,000	1,438,000
			$1,700,000	$ 538,000	-	-	$ 794,000	$ 368,000	$ 3,259,000	$ 538,000	$ 538,000	-	$1,488,000	$ 695,000	$ 6,381,000	$ 538,000	$ 538,000	$ 538,000	$3,329,000	$ 1,438,000
Fine Arts	A	$ 49.08	$ 59,000	$ 20,000	$ -	-	$ 39,000	$ -	$ 122,000	$ 39,000	$ -	$ -	$ 83,000	$ -	$ 266,000	$ 79,000	$ -	$ -	$ 187,000	$ -
	B	72.25	693,000	455,000	-	-	-	238,000	1,423,000	708,000	-	-	-	715,000	2,991,000	708,000	-	-	-	2,283,000
	C	59.38	119,000	-	-	-	-	119,000	261,000	-	-	-	-	261,000	582,000	-	-	-	-	582,000
		$	$ 871,000	$ 475,000	-	-	$ 39,000	$ 357,000	$ 1,806,000	$ 747,000	-	-	$ 83,000	$ 976,000	$ 3,839,000	$ 787,000	-	-	$ 187,000	$ 2,865,000
Humanities	A	$ 44.08	$ 388,000	$ 211,000	$177,000	$-	$ -	$ -	$ 702,000	$ 211,000	$ 211,000	$206,000	$ 64,000	$ 10,000	$ 1,217,000	$ 211,000	$ 211,000	$ 206,000	$ 589,000	$ -
	B	56.23	180,000	157,000	6,000	-	-	17,000	320,000	157,000	129,000	-	-	34,000	533,000	157,000	157,000	157,000	-	62,000
	C	59.38	469,000	226,000	77,000	-	-	166,000	873,000	238,000	107,000	77,000	-	451,000	1,527,000	238,000	107,000	107,000	-	1,075,000
			$1,037,000	$ 594,000	$260,000	-	-	$ 183,000	$ 1,895,000	$ 606,000	$ 447,000	$283,000	$ 64,000	$ 495,000	$ 3,277,000	$ 606,000	$ 475,000	$ 470,000	$ 589,000	$ 1,137,000
Natural Sciences	A	$ 49.08	$ 226,000	$ 108,000	$ 34,000	$-	$ 84,000	$ -	$ 486,000	$ 108,000	$ 108,000	$ 49,000	$ 187,000	$ 34,000	$ 942,000	$ 108,000	$ 108,000	$ 108,000	$ 554,000	$ 64,000
	B	102.26	2,761,000	20,000	-	-	20,000	2,721,000	5,287,000	20,000	20,000	-	31,000	5,216,000	10,277,000	20,000	20,000	20,000	82,000	10,135,000
	C	59.38	404,000	65,000	-	-	-	339,000	814,000	65,000	30,000	-	-	719,000	1,556,000	65,000	30,000	30,000	-	1,431,000
			$3,391,000	$ 193,000	$ 34,000	-	$ 104,000	$3,060,000	$ 6,587,000	$ 193,000	$ 158,000	$ 49,000	$ 218,000	$ 5,969,000	$12,775,000	$ 193,000	$ 158,000	$ 158,000	$ 636,000	$11,630,000
Business	A	$ 49.08	$ 74,000	$ -	$ -	$-	$ 74,000	$ -	$ 211,000	$ -	$ -	$ -	$ 211,000	$ -	$ 388,000	$ -	$ -	$ -	$ 388,000	$ -
	B	63.48	76,000	-	-	-	76,000	-	159,000	-	-	-	146,000	13,000	400,000	-	-	-	146,000	254,000
	C	59.38	95,000	-	-	-	-	95,000	238,000	-	-	-	-	238,000	540,000	-	-	-	-	540,000
			$ 245,000	-	-	-	$ 150,000	$ 95,000	$ 608,000	$ -	-	-	$ 357,000	$ 251,000	$ 1,328,000	-	-	-	$ 534,000	$ 794,000
Education	A	$ 49.08	$ 103,000	$ 93,000	$ -	$-	$ -	$ 10,000	$ 221,000	$ 201,000	$ -	$ -	$ -	$ 20,000	$ 432,000	$ 378,000	$ -	$ -	$ -	$ 54,000
	B	59.51	315,000	124,000	-	-	-	191,000	786,000	351,000	-	-	-	435,000	1,678,000	541,000	-	-	-	1,137,000
	C	59.38	222,000	178,000	-	-	-	42,000	481,000	374,000	-	-	-	107,000	926,000	689,000	-	-	-	237,000
		$	$ 638,000	$ 395,000	-	-	-	$ 243,000	$ 1,488,000	$ 926,000	-	-	-	$ 562,000	$ 3,036,000	$1,608,000	-	-	-	$ 1,428,000
Nursing	A	$ 49.08	$ 5,000	$ -	$ -	$-	$ -	$ 5,000	$ 15,000	$ -	$ -	$ -	$ -	$ 15,000	$ 44,000	$ -	$ -	$ -	$ -	$ 44,000
	B	102.26	102,000	-	-	-	-	102,000	276,000	-	-	-	-	276,000	869,000	-	-	-	-	869,000
	C	59.38	24,000	-	-	-	-	24,000	65,000	-	-	-	-	65,000	166,000	-	-	-	-	166,000
		$	$ 131,000	-	-	-	-	$ 131,000	$ 356,000	-	-	-	-	$ 356,000	$ 1,079,000	-	-	-	-	$ 1,079,000
Industrial Technology & Applied Sciences	A	$ 49.08	$ 29,000	$ -	$ -	$-	$ 19,000	$ 10,000	$ 74,000	$ -	$ -	$ -	$ 44,000	$ 30,000	$ 177,000	$ -	$ -	$ -	$ 113,000	$ 64,000
	B	72.88	612,000	-	-	-	-	612,000	1,436,000	-	-	-	-	1,436,000	3,936,000	-	-	-	-	3,936,000
	C	59.38	42,000	-	-	-	-	42,000	160,000	-	-	-	-	160,000	398,000	-	-	-	-	398,000
			$ 683,000	-	-	-	$ 19,000	$ 664,000	$ 1,670,000	-	-	-	$ 44,000	$ 1,626,000	$ 4,511,000	-	-	-	$ 113,000	$ 4,393,000
Sub-Totals	A		$1,277,000	$ 643,000	$211,000	-	$ 398,000	$ 25,000	$ 2,592,000	$ 770,000	$ 530,000	$255,000	$ 928,000	$ 109,000	$ 5,002,000	$ 987,000	$ 530,000	$ 525,000	$2,734,000	$ 226,000
	B		5,500,000	929,000	60,000	-	684,000	3,881,000	11,140,000	1,409,000	322,000	-	1,284,000	8,125,000	23,546,000	1,599,000	350,000	350,000	2,571,000	18,676,000
	C		1,919,000	623,000	77,000	-	24,000	1,195,000	3,937,000	831,000	291,000	77,000	42,000	2,696,000	7,678,000	1,146,000	291,000	291,000	83,000	5,867,000
TOTALS			$8,696,000	$2,195,000	$294,000	-	$1,106,000	$5,101,000	$17,669,000	$3,010,000	$1,143,000	$332,000	$2,254,000	$10,930,000	$36,226,000	$3,732,000	$1,171,000	$1,166,000	$5,388,000	$24,769,000

*Includes building, Type I and Type II equipment, landscape and site work in immediate building area, fees and contingencies.

CALIFORNIA STATE COLLEGE - KERN COUNTY
VICTOR GRUEN ASSOCIATES - MASTER PLAN ARCHITECTS

TABLE IV - SUMMARY OF ESTIMATED COSTS FOR SUPPORT SPACE (BY TYPE) 1170 ENR[1]

State Funded	Project Cost Per ASF[2]	Accumulated Cost at 3000 FTE	Accumulated Cost at 6000 FTE	Accumulated Cost at 12,000 FTE
Library and Audio-Visual	$56.24	$2,418,000	$ 4,893,000	$ 9,989,000
Admin. and Student Services	$59.20	$1,420,000	$ 2,072,000	$ 3,730,000
Gymnasium	$46.40	$1,276,000	$ 2,274,000	$ 2,274,000
Little Theatre (18,000 ASF)	$73.14	-	$ 1,316,000	$ 1,316,000
Corporation Yard	$24.64 bldg. .65 yard	$ 201,000	$ 386,000	$ 1,511,000
Cafeteria (5,000 - 10,000 - 20,000 ASF)	$67.97	$ 340,000	$ 680,000	$ 1,360,000
Central Plants and Elec. Transformation (Not Incl. Residential)	NA	$1,056,000	$ 1,860,000	$ 2,646,000
Site Develop. (Not Incl. Res.)	NA	$2,768,000	$ 4,762,000	$ 6,557,000
TOTAL STATE FUNDED		$9,479,000	$18,243,000	$29,292,000
Non-State Funded				
Residential and Dining	$8070/Res. Student	$9,482,000 (1175 units)	$18,965,000 (2350 units)	$18,965,000 (2350 units) to $40,673,000 (5040 units) as required.
Parking	$350/stall	$ 472,000 (1350)	$ 997,000 (2850)	$ 2,397,000 (6850)
Student Union	$61.59	-	$ 1,847,000 (30,000 net)	$ 3,695,000 (60,000 net)

1. Costs include buildings, Type I and Type II equipment, site preparation and landscaping in immediate building area, fees and contingencies.
2. Calculated in accordance with the "Estimating Cost Guide for the 5-year Capital Outlay Program", Calif. State Colleges.

CONTINUING STUDIES

Space, relationship, campus configuration and costs of the Master Plan are complete and included in this interim report. Additional studies are still in progress and will be submitted with the final plan in September 1968. These are the following:

1. The Architectural Vocabulary

   This section will set forth the criteria for individual building design considering such factors as area, form, orientation, height, relationship to other buildings, color, texture, materials, adaptability to standardized systems, other environmental elements, and areas of potential capital cost savings.

2. Universal Space

   An investigation of the flexibility, structure, efficiency, physical character and phasing possibilities of this multi-use, interdisciplinary space.

3. Central Plant

   A detailed comparison between a single plant and separate automated plants considering both capital and operating costs.

4. Building Systems

   A summary of the findings of an investigation of standardized systems and their applicability to the college structures.

5. Zone of Influence Planning

   A progress report on the master planning of the area surrounding the campus.

6. Appendix

   Back up and documentation on space requirements, costs, traffic, parking and utilities. Also, a listing of significant studies by the college and others pertinent to the Master Plan.