

BUILDING PLANNING SERVICE

NATIONAL ASSOCIATION OF BUILDING OWNERS AND MANAGERS

~~RESTRICTED
SECURITY INFORMATION~~

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Copy for

Lt. Gen. Ralph J. Canine, ~~Jr.~~

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TABLE OF CONTENTS

* * * *

Personnel

Architect's Drawing of Proposed Building

Basic Outlines of Basement and First Floor

Preliminary Data

General Site Plan

Basement Floor Plan

Key Plan - First Floor

Key Plan - Second Floor

Key Plan - Third Floor

Order of Procedure

* * * *

NATIONAL ASSOCIATION OF BUILDING OWNERS AND MANAGERS

BUILDING PLANNING SERVICE

Administration Building - National Security Agency

Washington, D. C. - May 17 - 19, 1953

COMMITTEE

George R. Bailey - Albert H. Wetten & Co., Chicago
E. H. Cary, Jr. - Medical Arts Building, Dallas
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New York
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New York

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of Building Owners and Managers)

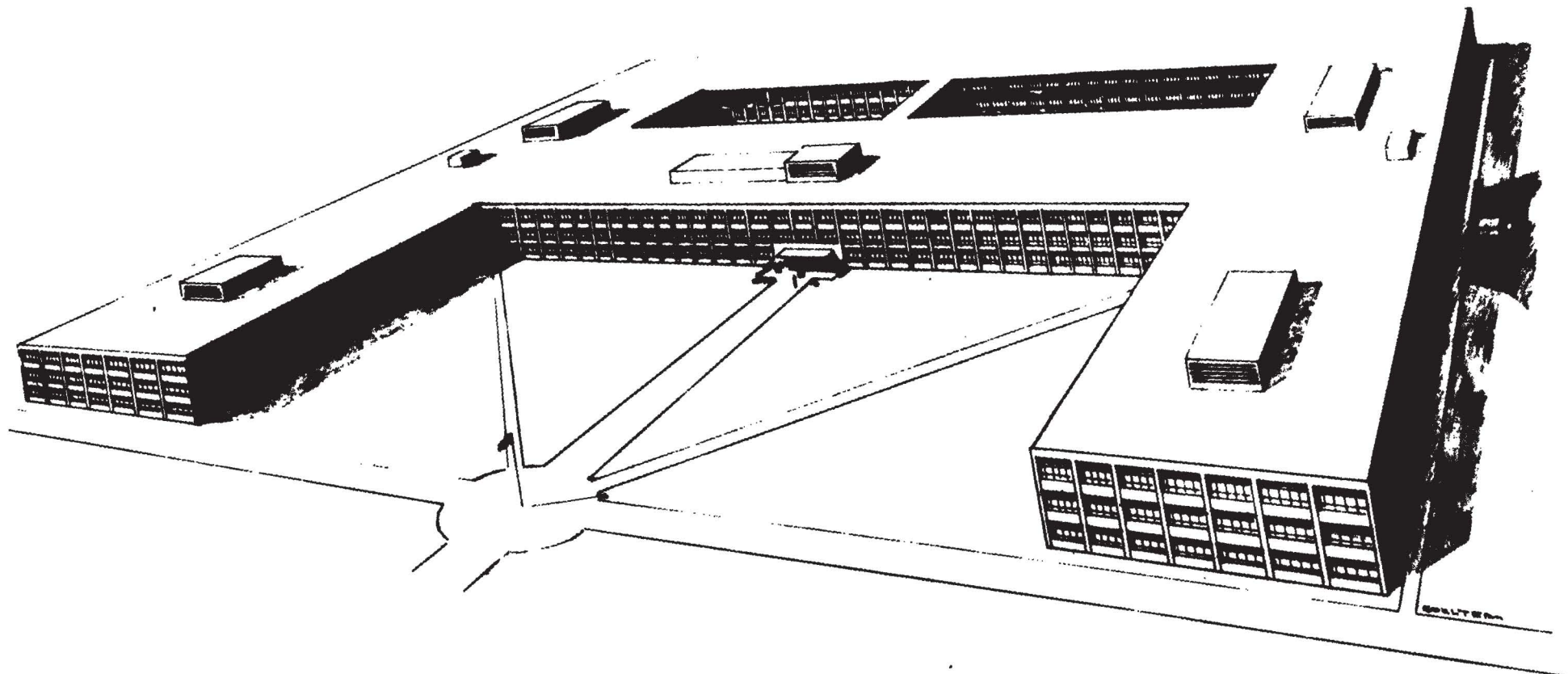
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CLIENT REPRESENTATIONI. Representing N.S.A.

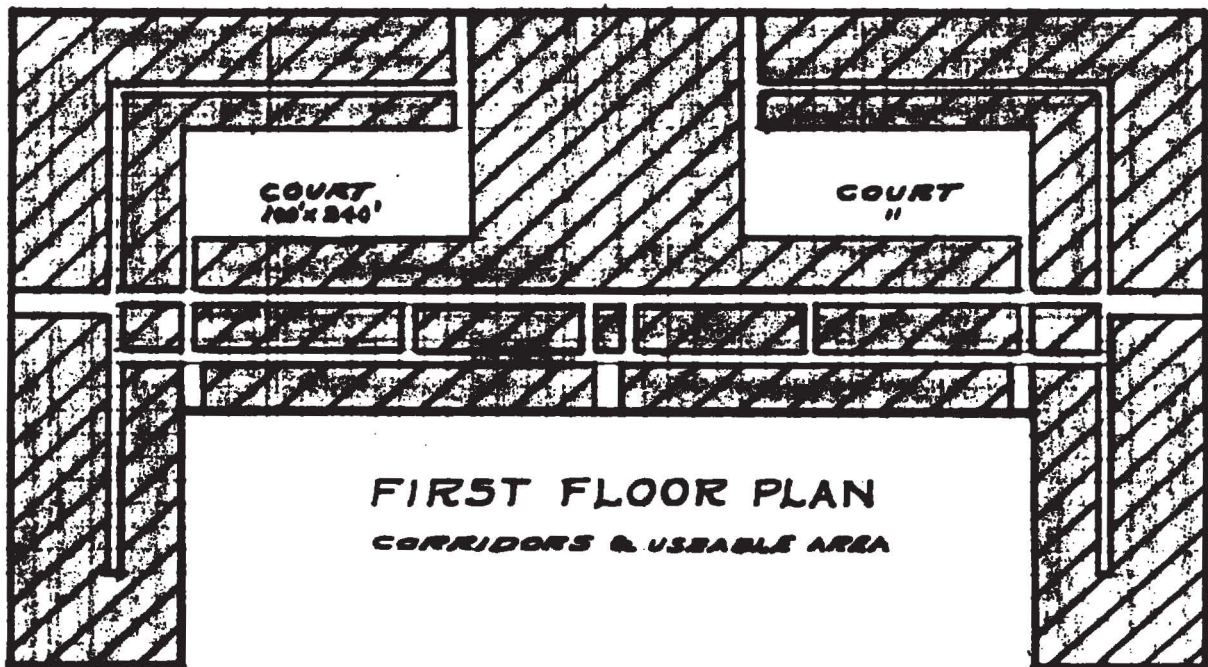
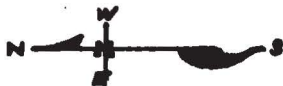
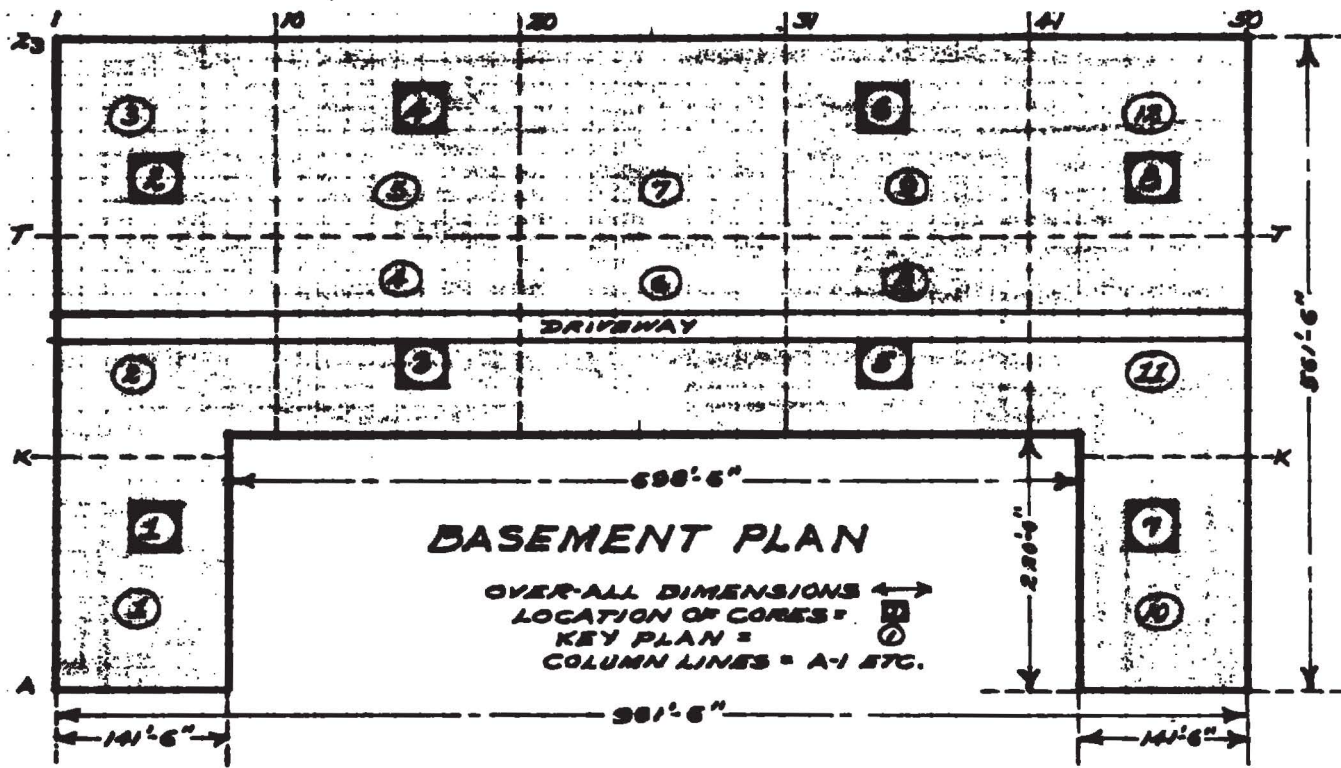
1. Director
Lt. Gen. Ralph J. Canine, Jr. USA
2. Executive Deputy Director (Chief of Staff)
Col. A. R. Marcy, USA
3. Comptroller
Col. C. A. Clark, Jr., USAF
Col. Edwin B. Cooper, USAF
Major G. T. Grottle, USAF
H. J. Brown (Anderson and Nichols,
Management Consultants)
4. Movement Group
(b) (3) - P.L. 86-36
Col. A. C. Cunkle, USA
5. Assistant Director (Office #1)
Capt. J. S. Harper, USN
Col. J. E. Condron, USAF
6. Assistant Director (Office #2)
Col. F. E. Herrelko, USAF
7. Assistant Director (Office #3)
Dr. S. Kullback
8. Security Division
Col. Leslie H. Wyman, USA
9. Logistics Division
Col. W. A. Shaw, USA
10. Communications Division
Lt. Col. W. B. Campbell, USA
11. Headquarters Commandant
Cdr. R. W. Mindte, USN

II. Representing Army Engineers
(District Engineer, Baltimore District)
Capt. D. P. Tollis, USAIII. Representing Architectural Engineers
(Anderson and Nichols Company)

1. Evan R. Anderson
2. Harold B. Foshier
3. George Stoner
4. John Burrows



SOLTYER



NOTES:
 DIMENSIONS, COLUMN LINES,
 KEY PLAN & CORRIDOR SCHEME
 ARE TRUE FOR 1ST, 2ND + 3RD FLOORS.
 BAYS ARE 20' x 20'.

NATIONAL ASSN BLDG. OWNERS & MGRS.
 CHICAGO, ILLINOIS

~~Restricted~~PRELIMINARY DATA

Among the special features involved in this assignment is the fact that it deals with "classified" information. Plans and applicable data are alike "restricted." Certain background material, normally available, has necessarily been withheld.

Essential physical details follow:

Project: Administration Building of National Security Agency to be erected at Fort Meade, Maryland.

Site: Approximately one mile square, enclosed on all sides which, in addition to extensive parking facilities, will contain an electrical substation, storage warehouse and other supplemental structures.

Administration Building: Three stories and basement, of concrete and slab construction, containing approximately 1,400,000 square feet, gross, 1,150,000 square feet of net usable area and a volume of 19,328,000 cubic feet.

Estimated cost: \$32,336,000 overall, of which \$23,858,000 is for the building itself.

This building will house the executive offices and administrative departments of the Agency and will also accommodate certain related activities of a specialized nature.

There will be a laboratory installation extending upward through one wing, and a workshop development extending upward through the opposite wing.

An off-set printing plant will be located in one portion of the basement. A first floor cafeteria will meet an obvious need in the absence of restaurant facilities in the immediate neighborhood.

The plans provide for an auditorium, a dispensary and a museum, and provision is made for the usual requirements of a large establishment, such as filing space which in this instance is extensive.

The floor area is laid out on a 4-foot module. The column spacing is 20-foot. Each office floor is divided into 12 areas.

Escalators, of which there are four (two reversibles and one double run), take the place of elevators, except for freight elevators, of which there are two, plus two smaller installations serving special purposes, and two hydraulic lifts.

The building, as planned, has 7 entrances, the main entrance being at the center of the west exposure. There is a carefully prepared exit schedule relating to the width of corridors and entrances.

The exterior, as specified, consists of concrete columns with dark green wired glass spandrels and fixed clear glass windows set in galvanized iron frames.

Floor to floor basement height is 15 feet; first and second floors 13 feet; third floor 12 feet 8 inches.

Interior layout is designed for flexibility with a high proportion of movable partitions - even in part for corridors. Flexibility is one of the primary aims to provide for unpredictable future requirements.

There are 8 service cores which contain toilet rooms and air conditioning equipment. Distribution of mechanical facilities to the surrounding area is from these cores.

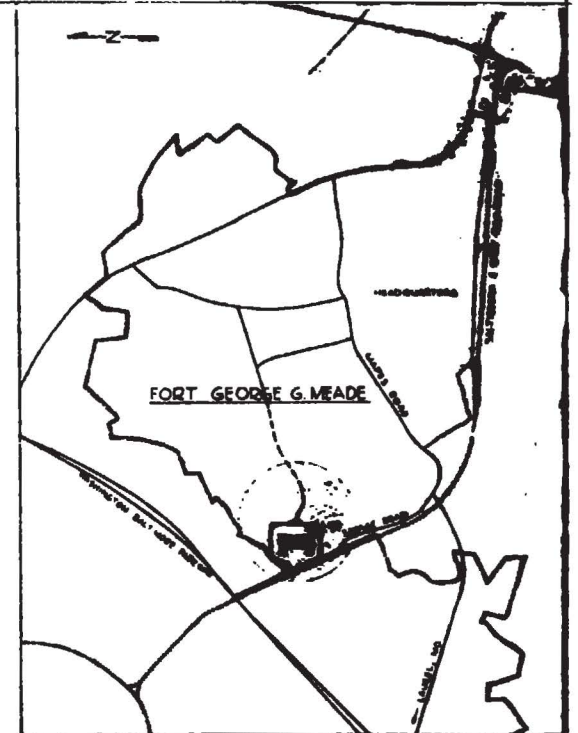
The building will be fully air conditioned. Plans call for a high percentage of acoustical ceiling treatment. Fluorescent lighting predominates. There is a substantial distribution of power to different areas.

Types of floor treatment specified for varying purposes include terrazzo, concrete cement finish, asphalt tile, ceramic tile, quarry tile, rubber tile and wood block. More asphalt tile is contemplated than anything else.

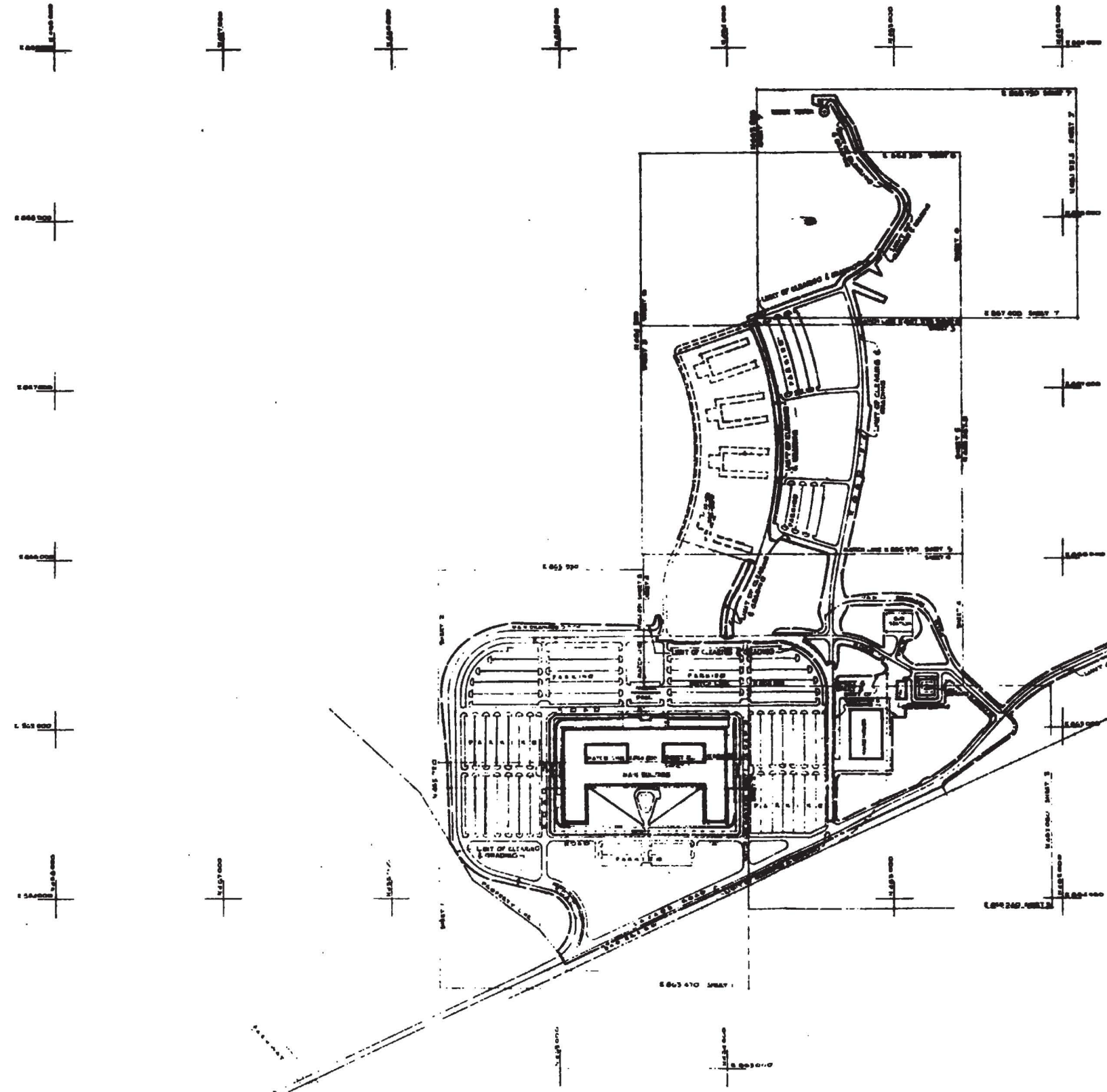
A 16-foot roadway runs lengthwise through the basement to facilitate receipt and dispatch of freight. There is also a recessed 2-truck loading dock.

An important problem which applies to all departments is that of inter-communication, the facilities including vertical and overhead conveyors, a pneumatic tube installation, teletype equipment and a public address system.

Along with flexibility and communication, the client is especially interested in provisions that make for economical operation and materials that will stand up under heavy usage.



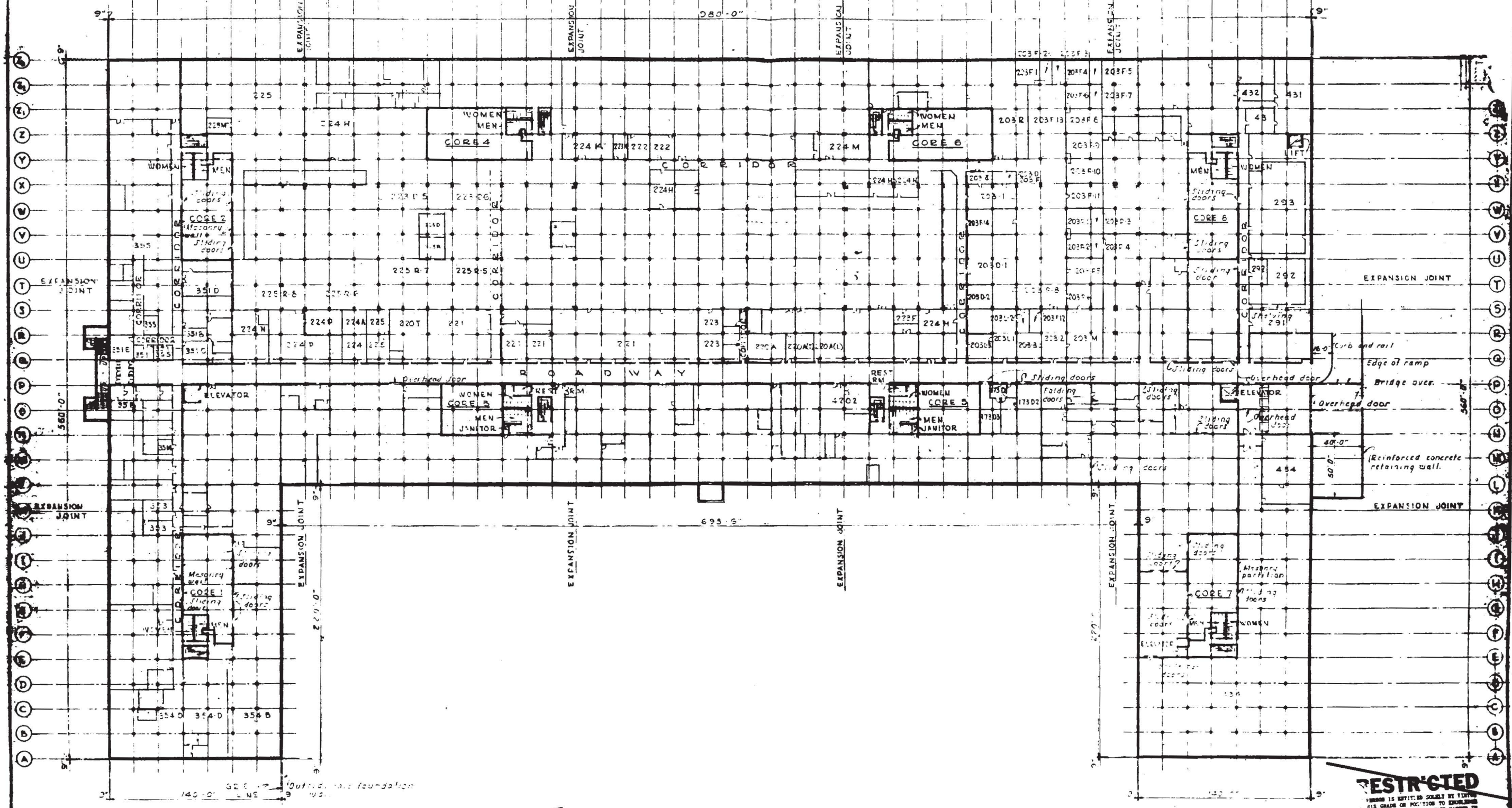
LOCATION PLAN
SCALE: 1" = 2000'



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DRAWN BY		N. S. A. CONSTRUCTION PROJECT MAIN BUILDING GENERAL SITE PLAN	
CHECKED BY		DATE	
APPROVED BY		DATE	
DATE		DATE	
DATE		DATE	

PRELIMINARY



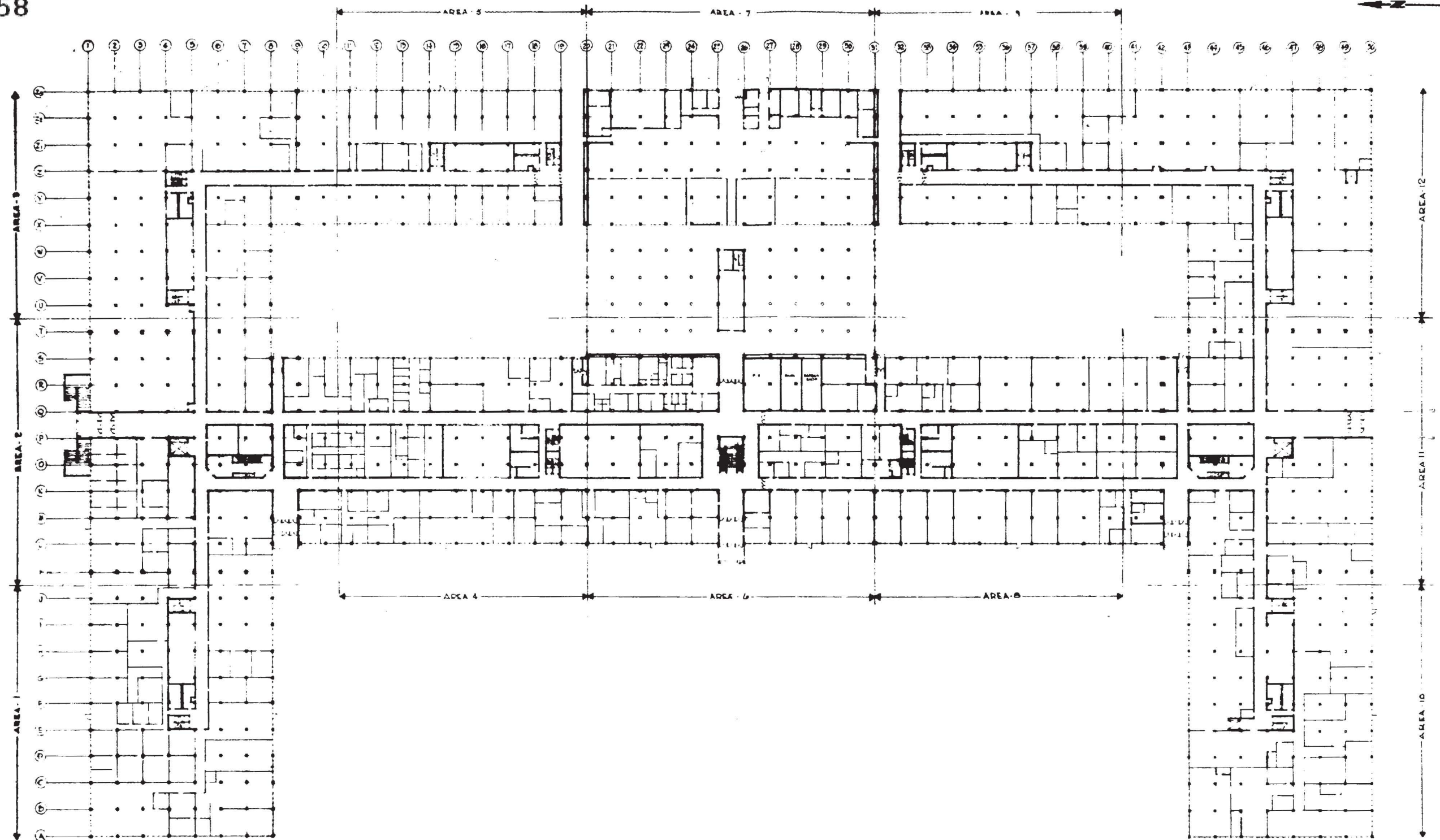
BASEMENT FLOOR PLAN

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N. S. A. CONSTRUCTION PROJECT MAIN BUILDING BASEMENT FLOOR PLAN		
DESIGNED BY	C. A. C.	
DRAWN BY	A. E. C.	
CHECKED BY	E. C. C.	
APPROVED	[Signature]	
SCALE	1/2" = 1'-0"	
DATE	2. 190	

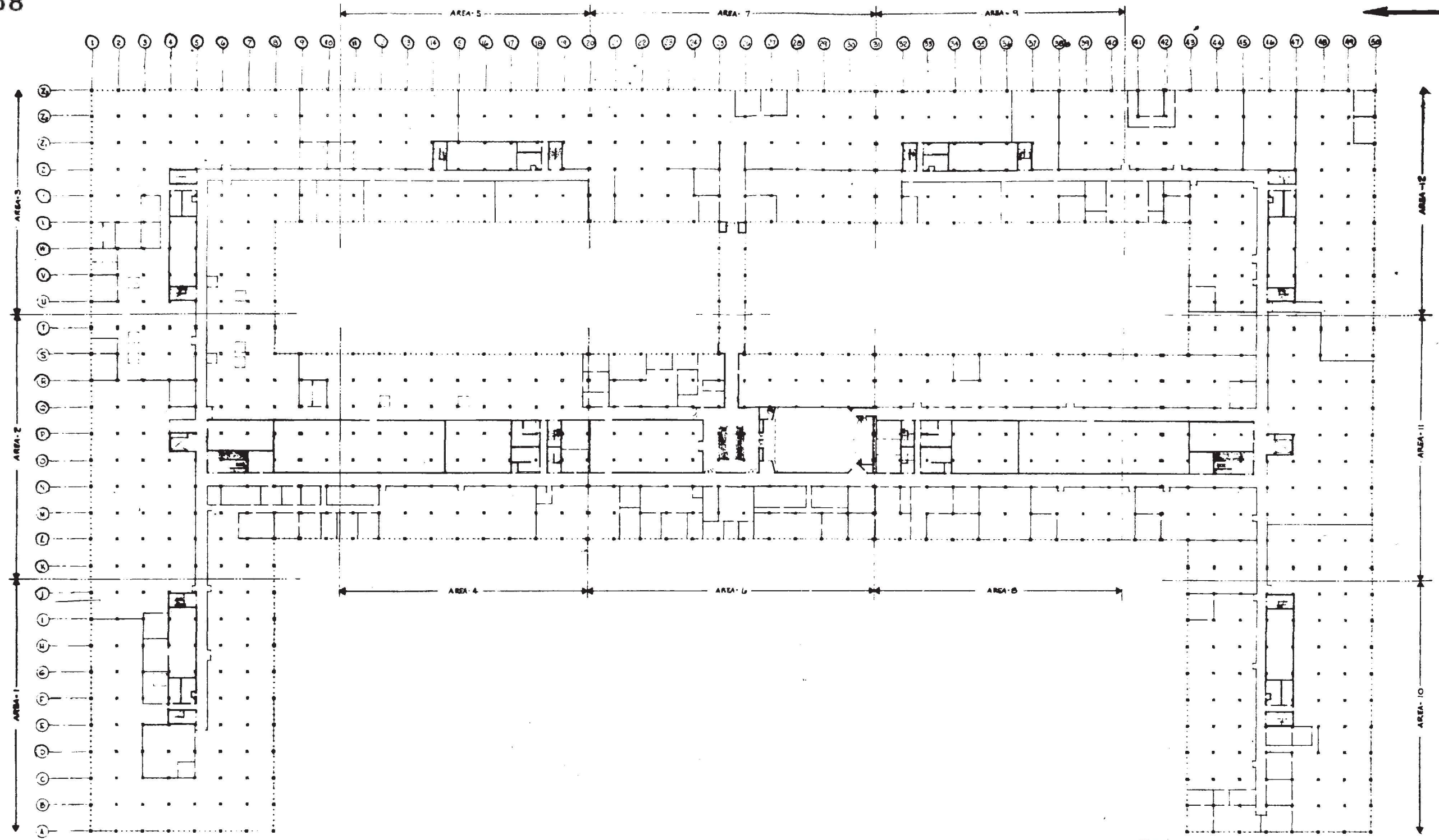
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U.S.A CONSTRUCTION PROJECT MAIN BUILDING KEY PLAN FIRST FLOOR	
APPROVED	SCALE 1/8" = 1'-0"
	SHEET 30-05

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N. S. A CONSTRUCTION PROJECT MAIN BUILDING KEY PLAN THIRD FLOOR	
APPROVED	DATE
	SCALE

PRELIMINARY

BUILDING PLANNING SERVICE ORDER OF PROCEDURE

National Association of Building
Owners and Managers

Assignment: Administration Building,
National Security Agency,
Fort Meade, Maryland

Meeting Place: Washington, D. C.

Date: May 17 - 19, 1953

PART I. Definition of Project

A. CHAIRMAN:

- 1) Introduction of Committee Members and Clients' Representatives
- 2) Objectives of Building Planning Service
- 3) Special conditions of this assignment
- 4) Explanation of procedure

B. OWNER:

- 1) General statement of purpose and objectives sought in construction of project
- 2) Special conditions imposed by the fact that much of the information normally available rates as "classified" or "restricted."
- 3) General description of physical characteristics, covering -
 - Reason for building
 - Location
 - Site - size and facilities
 - Building - dimensions and elevations
 - Functional uses
 - Means of access (highway, etc.)
 - Collateral housing problems, if any
- 4) Particular problems on which recommendations of Planning Committee are expressly desired.

C. ARCHITECT:

Outline development of plans, site limitations (if any), special requirements, etc.

Local restrictions (if any) affecting type of construction, fire protection, traffic movement, etc.

Any governing conditions by owner

General description of -

Plans

Mechanical equipment

Special features

Ratio of square foot usable space developed to cubic content

Estimated cost of building

Cost of building per cubic foot

Cost of building per square foot of usable area produced

Cubic content and net usable area

Public utility facilities

Completion date

PART II. Construction DetailSECTION (1) - FLOOR PLANS(A) FLOOR PATTERN - TYPICAL FEATURES

General layout, modular characteristics

Light courts, size and location

Column spacing

Depth of space

Window treatment, glass area, division spacing

Escalators - number and location

Elevators - number and location

Corridors (permanent or flexible) - width and location

Core area locations - stairs, toilets, etc.

"Wet" columns - number and distribution

→ Service rooms, location

(B) BASEMENT FLOOR PLAN

Clear ceiling height

Stairs, width, location

Corridors

Storage facilities

Freight elevators

Facilities for receiving and discharging freight

Mechanical facilities

Engine room

Air conditioning equipment

Electrical equipment

Water

Gas

Conveyors

Specialized equipment

SECTION (1) - FLOOR PLANS(B) BASEMENT FLOOR PLAN (Continued)

Allocation of space to functional activity
Floor drains
Sewer connections and elevations
Telephone and telegraph room
Telephone booths
Sprinklers
Employee facilities

(C) FIRST FLOOR PLAN

Main entrance, ceiling height, treatment
Doors: revolving, swing, balanced
Other entrances and treatment
Lobby treatment: floors, walls, ceiling
Lobby facilities - telephones
Vestibules, mat treatment
Directory boards: type, location
Mail boxes, location, recessed
Lobby clocks, if any
Space assigned to specific functions - cafeterias,
laboratory, etc.
Space assigned for office use, clerical work space, etc.
Flexible features of first floor layout - as to
corridor arrangements, etc.

(D) SECOND FLOOR PLAN

General layout
Light wells
Core areas
Corridor locations
Administrative layout
Executive offices
Supplemental offices - modular design - areas
and depth of space
Clerical work space
Other functional areas
Inter-communication systems
Operational flow

(E) THIRD FLOOR PLAN

General layout
Light wells
Core areas
Corridors
Functional space allocation

SECTION (2) - DETAILED PLANS(A) FOUNDATION

Type: caisson, piling spread
Depth of excavation
Unit of excavation cost
Soil pressure factor
Local water table
Waterproofing and damp courses
Sub-drainage

(B) TYPICAL CORRIDORS

Width and height
Floor materials
Wall finish; wainscot, height, cap
Doors
Lighting and fixtures
Borrowed light, if any
Wall trim wire mold
Meter cabinets
Janitor closets
Floor directory
Mail chute
Hose cabinets
Stairs: treads, risers, handrails, newels

(C) OFFICE SPACE

Size: width, height, depth
Floor: type of finish or covering
Windows: size, style, reveal, stools, material
Doors; private, corridor, inter-communicating
Partitions - permanent, removable
Trim; base, chair rail, picture mold
Thresholds
Wardrobes, lavatory cabinets
Lavatories; type, size
Shades, blinds, awnings
Vaults, safes, cabinets
Soundproofing

(D) TOILET ROOMS (Also see Section 3-G)

Number and arrangement
Location and size, number of fixtures
Floor material and finish
Stalls and doors
Wall finish
Mirrors, location, size
Lighting
Ventilation
Soap and towels, electric drying machines
Rest room
Vending machine and waste receptacles

REPORT ON THE
USE OF DEEP OFFICE SPACE BY MEDIUM SIZED TENANTS

EARLE SHULTZ

REPORT ON THE USE OF DEEP OFFICE SPACE BY MEDIUM SIZED TENANTS

EARLE SHULTZ

With full air conditioning and high intensity lighting, it has been found practical for big companies to use deep office space in large full-floor areas. This is because they have large working departments in which a compact layout increases efficiency, and where windows have only a psychological value. With the modern trend toward reduction in the use of private offices and the substitution for them of bank screen or railing enclosures, such enclosures need not have windows. This makes it possible for them to be placed in the location most efficient for their departments.

Some of the values of large areas for big companies are:

1. The air conditioning and high intensity lighting provide more comfortable and efficient working conditions for their employees.

2. The large areas make possible a more efficient work flow pattern for their departments.

3. Supervision by management can be closer and more effective by putting management personnel in private offices or enclosures next to their people, without regard to windows.

4. The more compact arrangements possible in large areas enable these companies to use fewer square feet per employee, thus reducing their rent.

To date, the "full-floor" buildings that have been built have 25,000 square feet or more per floor, and are occupied almost exclusively by full-floor or multi-floor tenants. The number of

such large tenants is but a small percentage of the total number of tenants in a city, and in only the largest cities are there enough of such tenants to justify building full-floor buildings for them.

The problem thus arises whether it is possible to develop a floor layout such that smaller tenants can get the advantages now obtained by the largest tenants. This will depend upon the possibility of subdividing large open floors for medium size and smaller tenants.

It is evident that such subdivisions must extend from a corridor to the exterior walls. This dimension should be greater than the deepest practical office depth in standard office buildings depending upon windows for light and ventilation. This would be more than 30 feet. Its width will be determined by the most efficient module in which a compact layout of working desks can be arranged; or in which an adequate private office or enclosure can be accommodated.

The smallest office should be two modules in width, so as to allow private offices, where required, to be on one side with working space on the other (See Plan I). Also, the smallest office should be four modules long to allow working space between private offices, thereby permitting departmental separation (See Plan II). Also, to obtain the most intensive use of the space, it should be possible to put together four or more modules of working space (See Plans III, IV, V, and VI).

The module should also be of such size that when smaller private enclosures are installed, the unused space in the module

will be of sufficient size to effectively expand the adjoining module (See Plan V).

From a study of many layouts, it is found that the practical module size is 12 feet by 12 feet in the clear. To allow for partitions, 6 inches are added, making the actual module $12\frac{1}{2}$ feet square. A module of this size will be adequate for four employees seated at standard sized desks. This means that subdivisions of one-half module may be made in either direction.

Four of such modules will provide a column spacing of 25 feet by 25 feet. Eight modules give a minimum office 25 feet by 50 feet, with a net rentable area of 1,258.3 square feet (See Plan VII). Larger offices may be obtained by adding full or half modules to the width of the minimum layout. Also the building can be built with offices more than four modules deep. Corridors will be one-half module in width. For larger tenants they can be removed or relocated. The one-half module not used for corridors will fit efficiently to the adjoining module (See Plan VIII).

Plan IX shows a standard lighting layout for a minimum office. With the ceiling outlets as shown, fixtures can be hung either lengthwise or crosswise of the office, and additional fixtures may be installed as indicated. Also, subdivisions of whole or one-half modules may be made without changing circuits.

Plan X shows the standard duct layout that will serve all office subdivisions.

To offset, as much as possible, the loss of the psychological value of windows, two things must be done.

1. The high intensity lighting should be not less than

60 foot-candles, and could better be from 75 to 100 foot-candles.

2. The offices should be decorated in bright cheerful colors and designs.

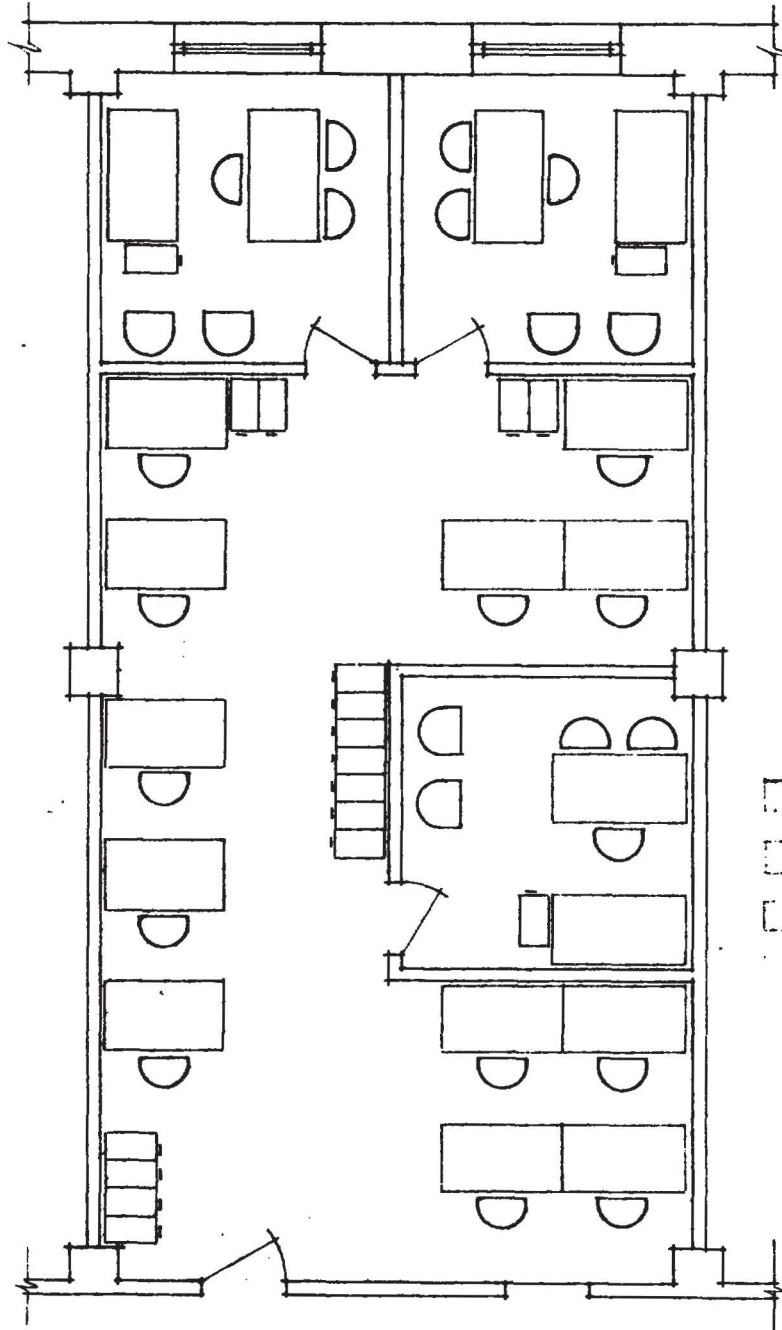
So far the value of full-floor space to the tenants has been discussed. It also has important values to the building owner.

1. Such a building costs less per square foot of rentable area to build. This is due to obtaining more square feet of rentable area per foot of expensive exterior wall, and also to requiring fewer cubic feet of volume per rentable square foot. Fewer and cheaper (fixed) windows can be used.

2. A study of layouts, Plans III, IV, V, and VI, shows tenants can be housed in 75 square feet or less per person. In the standard shallow-space office building, 100 to 125 or more square feet per person are required. This means that a tenant now paying \$3.00 per square foot in an old style building, where he is using 100 square feet per person, could pay \$4.00 in this type of building without increasing his monthly rent. Or, at the same \$3.00 per square foot, he could reduce his monthly rent 25%. Thus the full-floor building can charge higher rates per square foot and still compete with the older building.

3. The air conditioning and high intensity lighting, with modernistic decorations, create such efficient, comfortable and attractive offices that they will pull tenants from the older buildings, even at higher rents.

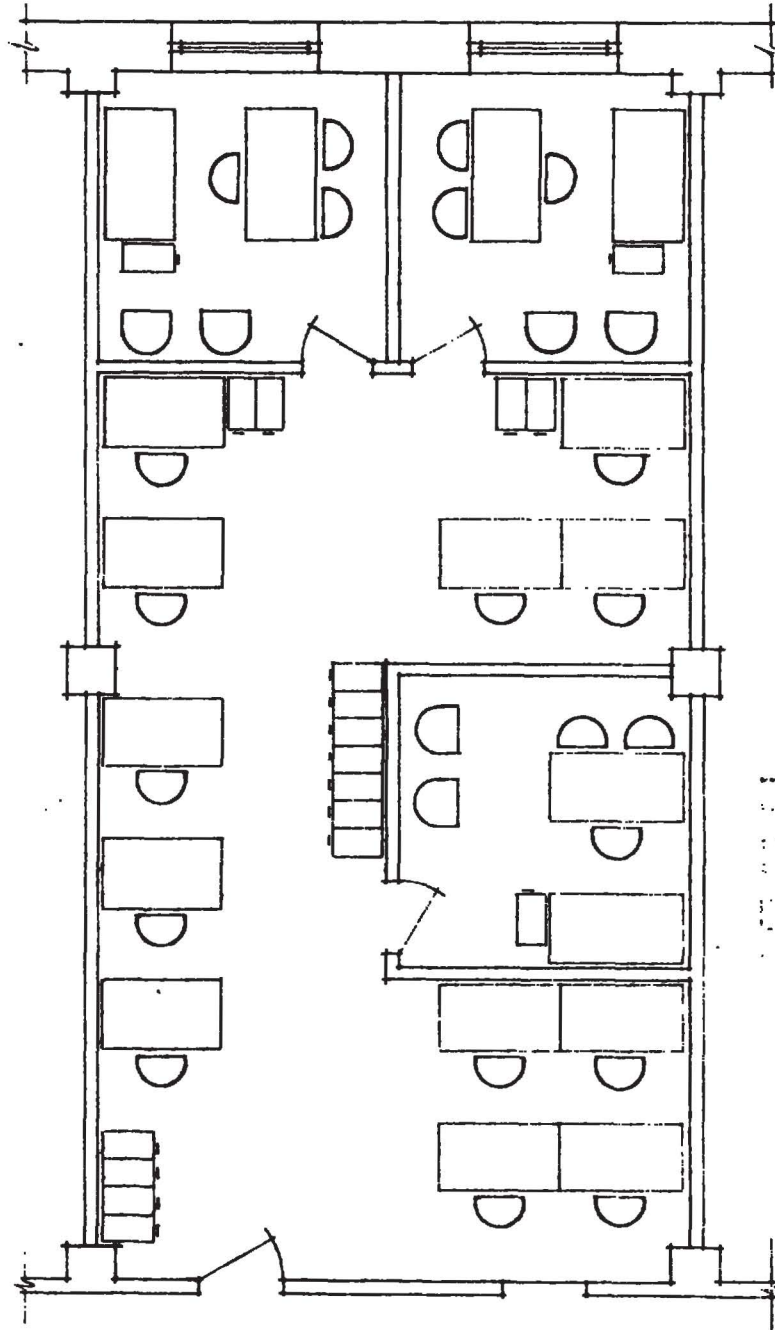
November 10, 1952.



- DEPT. "A"
- DEPT. "B"
- DEPT. "C"

PLAN No. II

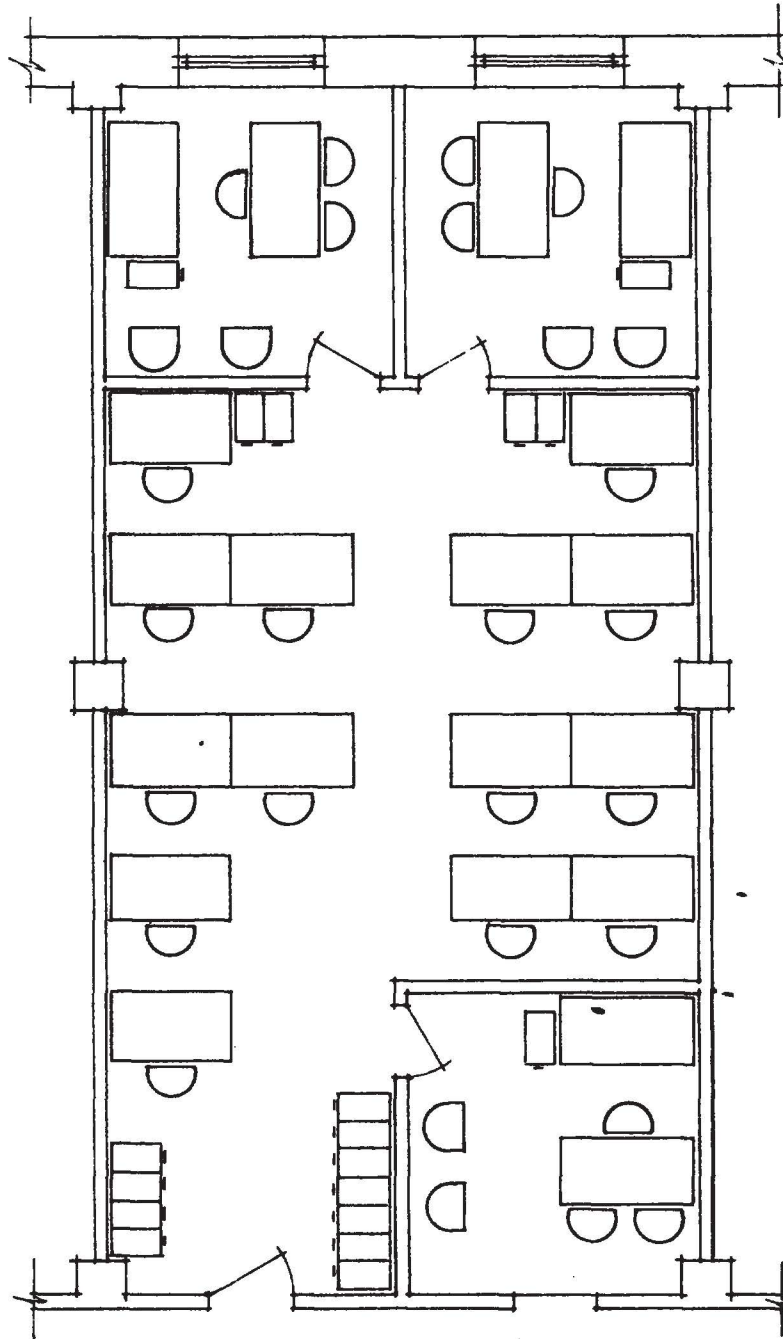
Three Private Offices
Three Departments
Fifteen People
84 Sq. Ft. Per Person



DEPT. "A"
DEPT. "B"
DEPT. "C"

PLAN No. II

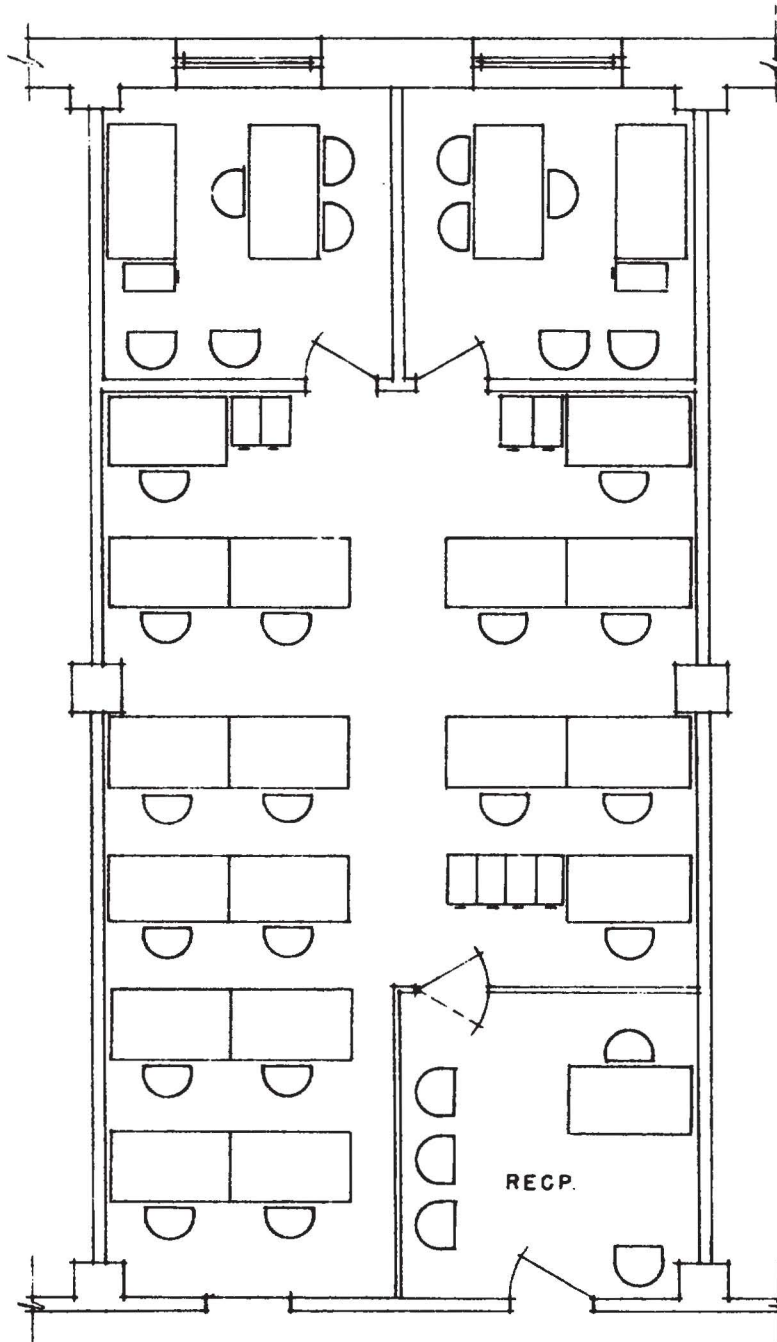
Three Private Offices
Three Departments
Fifteen People
84 Sq. Ft. Per Person



PLAN No. III

Three Private Offices

Seventeen People
74 Sq. Ft. Per Person

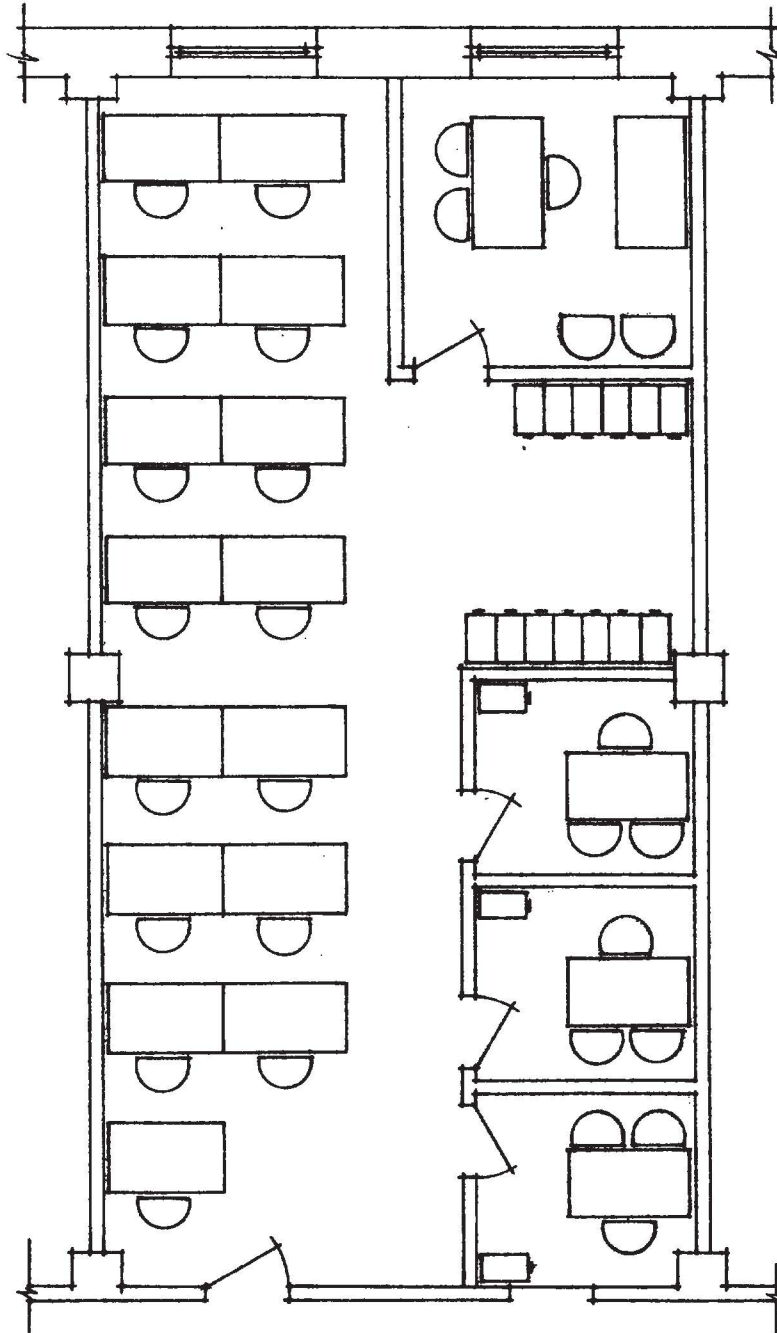


PLAN No. IV

Two Private Offices

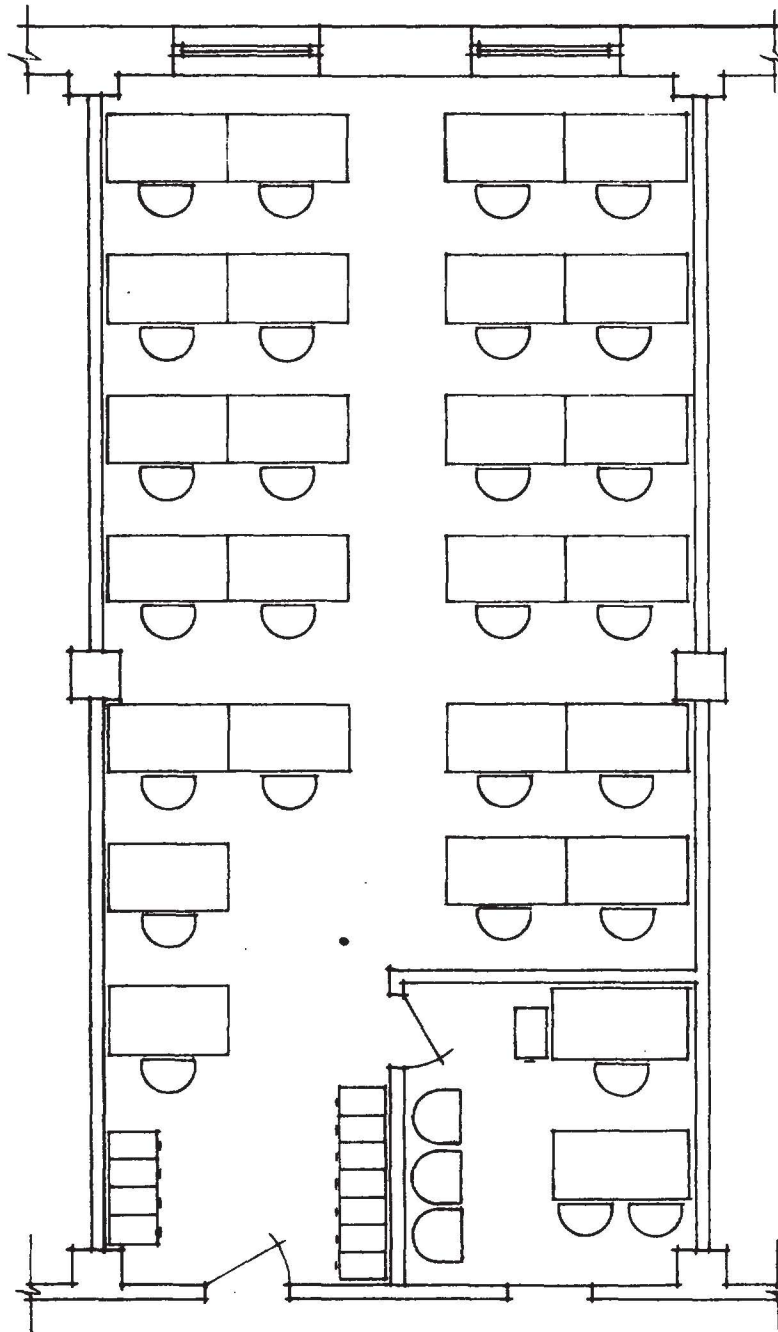
Twenty People

63 Sq. Ft. Per Person



PLAN No. V

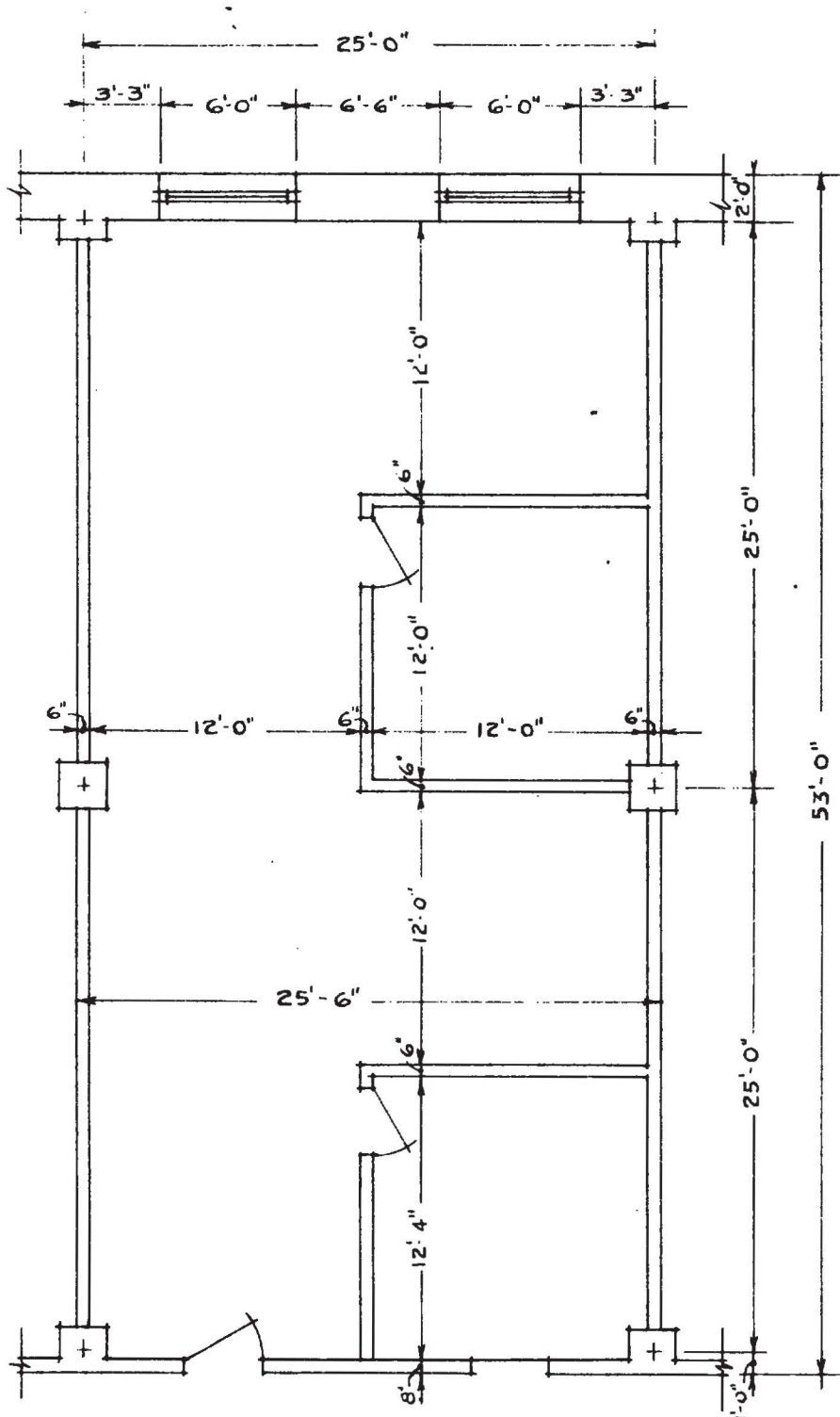
One Large and Three Small Private Offices
Twenty People
63 Sq. Ft. Per Person
Compare with PLAN No. I



PLAN No. VI

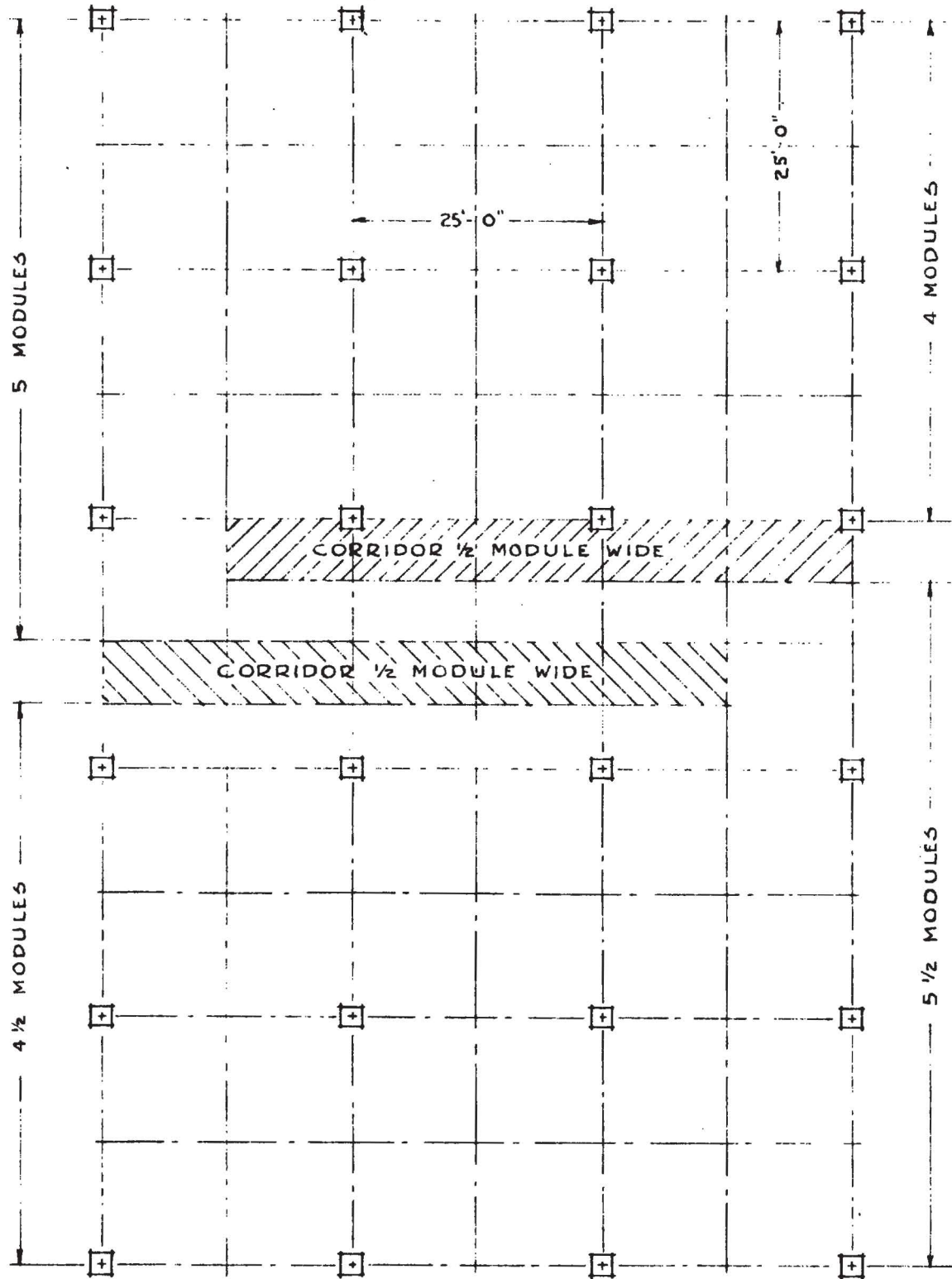
One Private Office
Twenty-five People
50 Sq. Ft. Per Person

With no Private Office can accommodate Twenty-nine People
or
43 Sq. Ft. Per Person

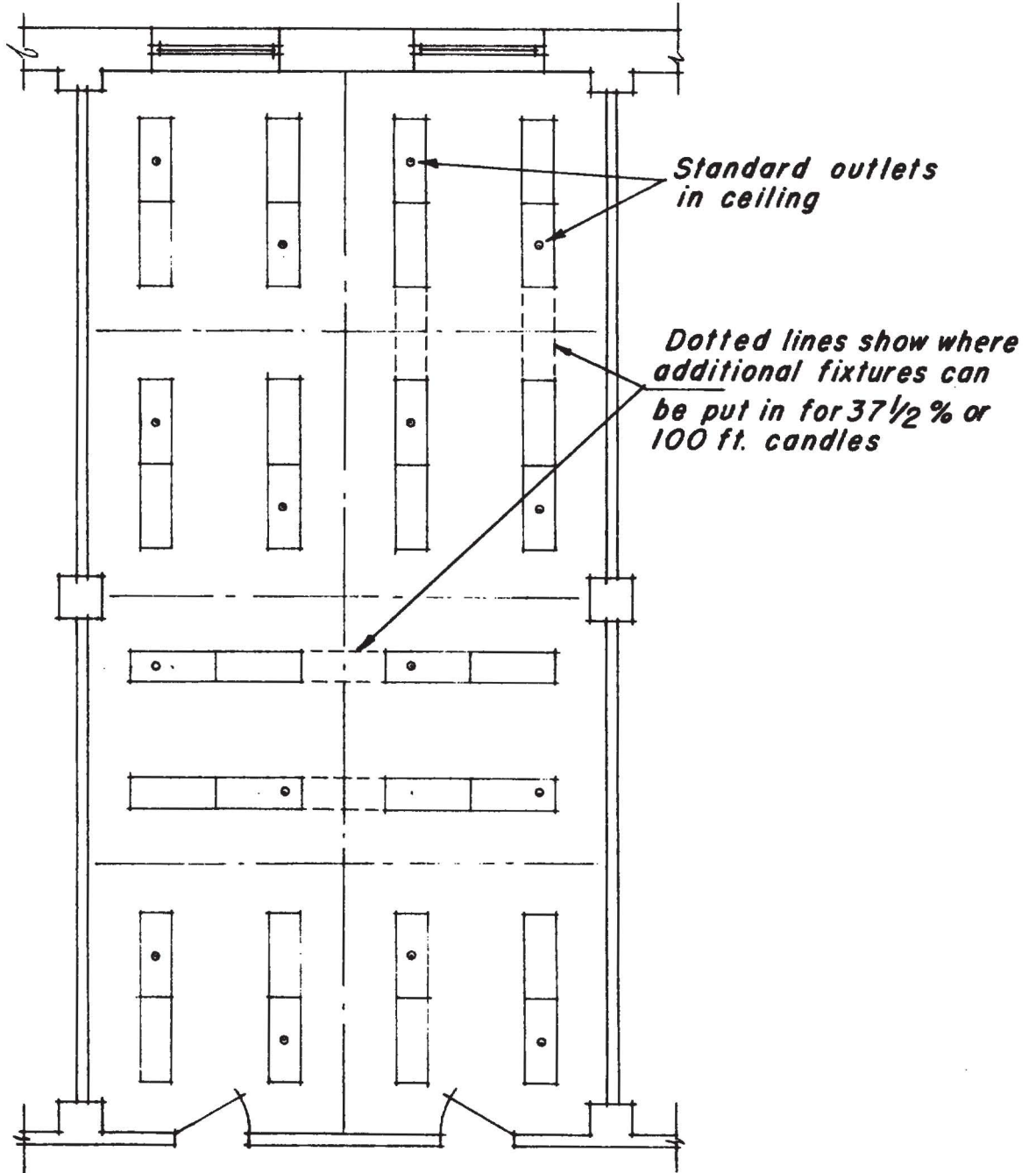


PLAN No. VII

Modules 12' X 12' Inside of Partitions
Modules 12'6" X 12'6" Overall.
Column Spacing 25' X 25'
Rentable Area 25'0" X 50'4" = 1258.3 Sq. Ft.

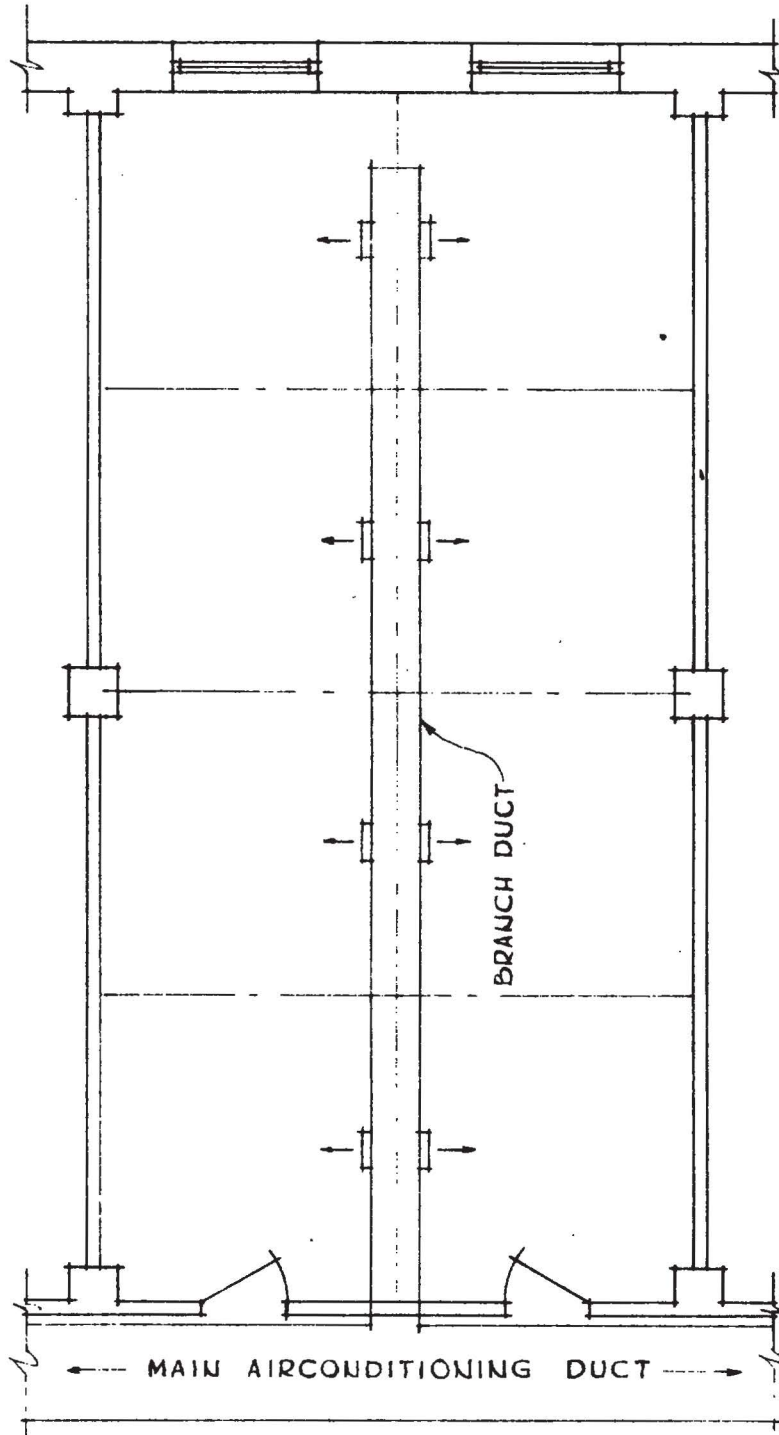


PLAN VIII
COLUMN SPACING
and
CORRIDOR LOCATIONS



PLAN No. IX

STANDARD LIGHTING LAYOUT
ST'D. U.R.C. Fluorescent
4-Lite 200Watt Ceiling Fixture
Approx. 65 - 75 ft. candles



PLAN X
STANDARD DUCT LAYOUT

SECTION (2) - DETAILED PLANS (Continued)(E) ROOF

Access
Type - material
Cornices
Parapet wall construction
Coping
Flashing
Heat insulation
Skylights
Smoke stack
Ventilating ducts
Down spouts
Flag pole
Signs, radio towers, etc.

(F) CONSTRUCTION

Type
Height of building
Floor to floor heights
Slabs; tile arch, concrete joist, etc.
Drop ceilings
Expansion joints
Floor load design
Fireproofing
Clear ceiling and soffit of beam heights
Economics of column spacing

(G) BUILDING EXTERIOR

Nature of treatment, basis of design
Materials: granite, stone, brick, terra cotta, concrete
Trim: base course, belt courses, cornices
Window spacing
Light court, size, finish
Sidewalks, areaways, drives, etc.
Fire escapes
Entrance lamps
Boiler plate and cast iron wheel guards

SECTION (3) - MECHANICAL ITEMS(A) ELEVATORS AND ESCALATORS

Location
Type, capacity, speed
Number of escalators - reversible, double run
Number of elevators - passenger, freight
Size of cabs: width, depth, height
Material: wood, metal, finish
Floor covering
Lighting
Cab doors: type and dimensions
Construction of top
Emergency access panels

SECTION (3) - MECHANICAL ITEMS (Continued)(B) HEATING, VENTILATING, AIR CONDITIONING

Type of system
Distribution system
Zoning; heat economy
Control; central, thermostatic, hand valves, orifice plate
Risers and returns, material
Concealed versus exposed pipes
Insulation of piping
Radiation
Condensation meters, recording thermometers
Air conditioning - space considered - period considered
Exterior, interior zones
Type of refrigerant used
Capacity of plant or plants
Method of conveyance
Area served - square feet - cubic feet
Cooling towers
Exhaust systems

(C) PLUMBING

Hot water lines; pipe material
Cold water piping; material
Compressed air piping
Gas; piping, meters, drips
Ice water system; refrigeration, outlets
Vent stacks, material
Water softener, de-aerator, de-activator
Slop sinks, drains
House tank; type, capacity
Rodding basins, bilge ejectors
Pumps; feed water, house tank
Pipe reaming, straight runs
Expansion joints

(D) TOILET ROOM EQUIPMENT

Faucets; self closing
Lavatories; wall or floor type, material stoppers
Toilets; type, wall hung, floor type, material
Urinals - wall hung, floor type
Flush valves - toilets, urinals
Access panels - shut offs, cleanouts
Floor drains
Soap lines

(E) ELECTRIC WORK

Requirements - wattage
Power wiring - lighting installation
Service access to basement
Switchboard and service mains
Distribution panels, feeders
Under-floor ducts
Transformers

SECTION (3) - MECHANICAL ITEMS(E) ELECTRIC WORK (Continued)

Meters
Conduits, oval duct, oval flex, B.X.
Switches; toggle, push, canopy
Base receptacles
Lighting fixtures
Low tension wiring
Outside lighting

(F) FIRE PROTECTION

Fire towers, fire escapes, exit signs
Sprinkler systems
Wire glass - use of
Metal trim
Fire doors, pullbars
Shutters, water curtains
Hose cabinets, connections
Extinguishers
Alarm systems
Insurance rating
Water pressure
Siamese and sill cock

(G) HARDWARE

Doors: locks, checks, butts, mail slots
Windows
Window cleaner bolts
Toilet - marble hardware

SECTION (4) - SPECIAL FEATURES

Auditorium
Dispensary
Cafeteria and kitchen
Museum
Laboratory facilities
Work shop facilities
Print shop facilities
Public address system
Inter-communication
Waste paper disposal