A WHOLESALE DRUG HOUSE FOR NORFOLK, VIRGINIA

by

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Architecture is not merely an art, more or less well or more or less badly done; it is a social manifestation. If we would know why certain things are as they are in our architecture, we must look to the people; for our buildings as a whole are an image of our people as a whole, although superficially they are the individual images of those to whom, as a class, the public has delegated and entrusted its power to build. Therefore by this light, the critical study of architecture becomes ... in reality, a study of the social conditions producing it.

... Louis Sullivan

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CHAPTER I

PURPOSE

General

The general purpose of this thesis is twofold: (1) to present and analyze the characteristics of the environment which have evolved through the slowly changing aspects of man's social and communal living patterns; and (2) to design a building to be placed within the physical and human limits of this environment.

The culture of man must be understood in order for the architecture within its midst to have meaning and purpose. The architecture, in turn, has no significance if it is separated from the surrounding society of man and his works.

Culture and architecture are inseparable.

Specific

The specific purpose of this thesis is to design a wholesale drug house to be located in the City of Norfolk, Virginia, on an actual site to be made available through slum clearance projects now in progress.

Because of the notable growth in population, international importance and significance of Norfolk and the surrounding region both in Virginia and North Carolina during the last decade, adequate facilities for serving the health needs of the people within this critical area are of paramount importance.

CHAPTER II

OBJECTIVES

In conformity with the stated purpose, the following objectives will be pursued:

(1) to analyze and evaluate historical change and growth as expressed through communal living within a culture and the growth of cities;

(2) to study historical development and functions within the wholesale drug industry;

(3) to relate a specific wholesale drug house to a city and region which is experiencing great changes and growth;

(4) to propose an architectural solution for a new wholesale drug house for Norfolk, Virginia, which will best serve the health needs of the people of that city and adjacent region.

CHAPTER III

CHANGE AND GROWTH IN COMMUNAL LIVING

Communities

Man assembles at certain places for the purpose of common occupation and utilization of the earth. This natural occurance occasions the growth of communal living.

Communal living has been functionally significant throughout the host of cultures known to history. It is historically bound to the society of man.

Murdock and his associates say that "the maximal group of persons who normally reside in a face-to-face association"[1] comprise the basic communal structure.

The human interests of individuals provide the motivating forces for communal actions. These actions produce the basic social, political, and economic elements of communities. For some, interest lies in the realm of ideas. Their energies are directed toward structural analysis of social and economic relationships as produced in the functions of government and institutions such as church and school. For others it is in a tangible form: public health, social service, relief and rehabilitation. Some are concerned with the planning and development of projects which provide facilities for the establishment of new media as an aid to cultural advancement of the people.

However, all individual interests and actions come into common focus within the functioning and structure of communities. Communities mirror the aspirations, visions,

vitality, and ability of their inhabitants, and define the collective personality and the human factor of the culture in which they exist.

The personality of communities is based upon several inherent sociological characteristics: (1) they are local groups which are peace-seeking and which embody internal order, social solidarity, and common culture; (2) they contain a number of families which, in living patterns, create cultural form. This form stems from either of two principal living patterns: (a) group wanderings, resulting from pastoral habits; or (b) group stability, resulting from an agrarian life. 2/

Large local aggregations of population occur when, within a local region, there are intensive, integrated agriculture under particularly favorable conditions of climate, topography, and soil; a substantial amount of commerce and trade; and/or extensive industrial specialization. 3/ These conditions have been met in this country only in recent times, for as late as the nineteenth century the workshop was a family group wherein the members ate together at the same table, worked in the same rooms, slept in the same dormitory, joined in the family prayers, and participated in common amusements.

The significant fact about communities is that they are local groups within which informal mechanisms of social

control effectively operate. Public opinion and customs produce the social controls and restraints.

Cities

In recent centuries cities and large towns have become increasingly widespread phenomena. Their peculiar characteristics and functions have tended to obscure those of the small community.

The physical confusion and social complexities within the large urban areas has grown progressively with the size of the areas.

With the advent of the Industrial Revolution, local communities became primarily producing or consuming organisms -- economic opposites. In losing their autonomous, self-supporting qualities they, of necessity, were forced to rely upon their economic opposites for existance. Economic interests were consolidated within the centers for the purpose of obtaining maximum productivity and consumption of goods and products within regions reaching national and international proportions.

Population increased rapidly in these trade centers and formed the basis for the new metropolitan areas; the prerequisites previously noted on page 7 as necessary for large local aggregations were technically fulfilled.

In meeting these requirements, however, certain social and economic developments were utilized which precluded any possibility of maintaining the informal mechanisms of social control which were so characteristic

of the small local prototype.

The several major factors which were primarily responsible for this trend were: the continental railroad lines and automobiles which proved so flexible in moving people, ideas, and things over the face of the earth; world-wide lanes of ocean commerce which transformed every natural harbor into a potential port; and, the necessity for centralization of administrative organs within the centers. As Mumford says, "... all roads led to the capital." 4/

Accompanying the development of large urban centers was the necessity for lineal expansion of their limits. Peripheral elements were incorporated which were physically incoherent and socially unbalanced. The cities which embraced these elements had taken no part in their planning with regards to future union. The elements, therefore, could not become an integral part of the parent city but could only represent a numerical increase in urban population. It is strange that the term "community" has been retained and considered descriptive of such urban centers which, in reality, are multi-communities.

The unofficial reorganization plan for New York City based its proposals upon a 1965 population of twenty-one million people. The city was zoned so that the residential areas could have housed 344 million people, totaling more people than there are in the Western Hemisphere. 5/

The very size and rapid growth and expansion of the metropolitan centers testify to their technical superiority in the exploitation of the earth, yet their size and success may only measure their inability to provide satisfactory local environments.

Hallenbeck describes his reaction as an observer of metropolitan life,

> Everywhere there is congestion. Buildings in a solid mass, people crowded on the streets, automobiles and trucks so thick that they can scarcely move, hundreds waiting in line to enter the motion-picture theaters, people so closely packed in public conveyances that the doors will barely close. Every way you turn, things and people press in upon you. 6/

The physical and social scale of large urban centers in relation to the minute and complex specializations of the life of their inhabitants has become lost. The necessary organs of collective association and responsible social control are lacking.

When human beings, within the consequences of economic and technical advances, find themselves for the first time in local aggregations which are considerably larger than the local community, they discover that informal mechanisms of social control are no longer sufficient to maintain order.

Face-to-face relationships can no longer be maintained in the large metropolitan areas.

The anonymity which shrouds the individual in any large city fosters and protects the desire for freedom from the "oppression" of social control. As Mumford, a scientist of urban relations, pointedly writes,

> Indeed, the advantages of the metropolis as a hiding place... is not the least of its attractions to the visitors who swarm in from other parts of the country. If one has anything to conceal, the place to conceal it is among a million other people. The anonymity of the big city, its impersonality, is a positive encouragement to a-social or anti-social actions. Hence a professional form of surveillance, by an organized police, must take the place of neighborly scrutinty and pressure: a city of strangers lacks any other form of establishing check. The transformation of the town guard into the professional police... marks one of the critical changes from a town economy to a metropolitan economy. There is perhaps a moral in the fact that the Greek equivalent for policeman means citizen. 1/

The most significant characteristic of cities is that they are impersonal aggregations of population within which formal political institutions are set up with principal powers which implement informal social control with physical force.

The one fundamental weakness of political control based on physical force is that the possession of political power fatefully engenders a tendency for it to be used for selfish purposes. Man has been unable to avoid this tendency.

This notion does not foster automatic and spontaneous individual interests and actions which are essential in maintaining social order. It unavoidably condones lack of responsibility.

The Challenge

The local community within which informal procedures of social control may effectively operate is vanishing from the American scene.

Human relations, the medium upon which cultural change and growth thrive, have become more complex and vague with the intensive growth of centralized populations.

The commonly attempted solution to the problems related to the confusion and congestion within these areas has been the formation of political organizations armed with authority to implement informal social control with physical force. Modern society has become so inured to centralized government that many persons feel that it is the only mechanism for maintaining social order. To pass a law is the first thought when there arises a need for regulation.

These attempts for regulation have met with only partial success because they do not instill in the individual a desire for spontaneous self-control nor in the people a concept of common purpose.

The issues of war and peace, socialism and free-enterprise, cultural advance and social impotence rest in good part upon whether the solution to metropolitan order recognizes their causes.

The forces aiding metropolitan giganticism and congestion must be rechanneled so that their energies may

be concentrated upon restoring the social concepts upon which the small community thrives.

These concepts must, however, be greatly broadened so that they treat not only cities but whole regions as defined by the landscape; geographical and topographical features; natural resources; land use; methods of agriculture and industry -- their decentralization and integration; and by human activities, individual and social.

Any attempt towards reconstruction of metropolitan patterns along such regional concepts, must be based upon a pattern of life from which all results derived will reward the common efforts of the people. Such attempts, by necessity, will oppose the present-day pattern of metropolitan economy.

Such attempts must prevent human concentrations of such magnitude as would render impotent their social vitality and productivity. They must work against the congestion inherent in multiplication of mechanical facilities which have intensified that condition; against uncontrolled expansion into suburban areas -- primarily against unscaled bigness.

Professor Hilberseimer, in his study of urban relations, points to history to emphasize the seriousness

of the challenge. He notes that

> Throughout history the decay of civilization is always marked by the depopulation of the land and the overcrowding of cities, by the impoverishment of the common man, the rise of despotic government and the consequent spread of war and destruction. It is also marked by a declining birth rate, by the loss of individual freedom, and by the failure of hope in the future. Freedom which depends on responsibility can be created and maintained only by free work and independence. Man is more than a producing and consuming animal. Man has a creative spirit and must have a fair share in shaping his destiny. 8/

The big cities with all of their facility could be the motivating force behind the attempt to achieve metropolitan order. Notable examples of such efforts are the civic-sponsored settlement houses and community centers which have rendered valuable service to communal living.

History has also shown that the most appropriate and effective means through which man has made his most sound economic, political, and social advances have been through the application of political democracy. It reinstates into the governing principles and procedures automatic controls of social behavior based upon persuasion and reward, rather than physical restraint. Political democracy has proven to be a social concept which is capable of producing tangible means for peacefully satisfying the changing needs and opinions of the people.

These concepts of political democracy work well in autonomous local communities and fail only when cultural

evolution and technical developments bury them under the cloak of human anonymity and impersonality.

Lord Bryce describes the virtue of political democracy in the local community. He writes,

> One of the values of local self-government lies in the habit it forms among the inhabitants of a town or district of bringing their knowledge and capacities into common stock for the benefit of the whole community, maintaining those friendly personal relations which benefit neighbors, and not distracted by a desire for ulterior gains to their political party. 9/

Political democracy ... supplies a training-school for the making of first-class men. It is life's gymnasium, not of good only but of all. We try often, though we fall back often. A brave delight, fit for freedom's athletes, fills these arenas, and fully satisfies, out of the action in them, irrespective of success. Whatever we do not attain, we at any rate attain the experiences of the fight, the hardening of the strong campaign, and throb with currents of attempt at least. Time is ample. Let the victors come after us. Not for nothing does evil play its part among us. Judging from the main portions of the history of the world, so far, justice is always in jeopardy, peace walks amid hourly pitfalls, and of slavery, misery, meanness, the craft of tyrants and the credulity of the populace, ... no voice can at any time say, They are not. The clouds break a little, and the sun shines out -- but soon and certain the lowering darkness falls again, as if to last forever. Yet there is an immortal courage and prophecy in every sane soul that cannot, must not, under any circumstances, capitulate.

... WALT WHITMAN

CHAPTER IV

HUMAN RELATIONS IN THE CULTURAL PATTERN AS EXPRESSED THROUGH ITS ECONOMIC LIFE

The economic life of a city or region is inextricably woven into its social and political structure. The promulgation of the concepts of political democracy and the scope of their application depend upon the mental and physical health of the people.

The analysis of the growth of cities illustrates the strategic part which individual attitude and human relations play in the cultural pattern. This attitude of the individual constitutes the source from which social concepts are derived -- concepts which are defined physically within the human relations of the social structure.

The facts by which man judges and evaluates his social worth are measured to a large degree by his productivity and creativeness. From this evaluation, man becomes the source from which human relations spring and defines the limits and direction through which common objectives may be achieved.

Thus, the cycles and function of the cultural life reflect and are reflected in the productivity and creativeness of man.

As the social and political patterns of metropolitan life have produced individual anonymity, lack of responsibility, and a cloak of impersonality, there has arisen a parallel characteristic in the economic pattern; an attitude of the individual which depicts a psychology of negligence

and a desperate search for security.

As the trends in the social and political patterns must be revitalized through the reapplication of political democracy, so must the trends in the economic patterns be rechanneled so as to develop a psychology of recollection and a search for opportunity. This must be done through the restoration of the individual as a symbol of a social, political, and economic attitude which proclaims the dignity of man.

The drug industry which serves the mental and physical health needs of the people is vitally interested in maintaining and promoting this concept of the individual.

The history of the drug industry illustrates many dynamic qualities which have enabled it to maintain desirable relations among its own personnel and between itself and those whom it serves. It has developed with the communities, cities and regions where it has consistently performed its functions of vital services.

CHAPTER V

CHANGE AND GROWTH IN THE WHOLESALE DRUG INDUSTRY

Yesterday

England provided most of the physicians who came to this country with the early settlers. In England the medical practioners were often apothecaries who not only diagnosed and prescribed but quite often would dispense their own medicines. This custom proved advantageous in a new and struggling culture, for it was often difficult if not impossible to obtain the services of a physician in the primitive stretches of early America.

Preachers who traveled on horseback among the towns and villages served both the physical and spiritual needs of the people, for they usually carried a limited amount of medicine in their saddlebags.

Household remedies were widely used. There were persons who gathered and sold herbs, and others who could cup and bleed and also pull aching teeth.

The first apothecary shops emerged in scattered areas of the United States during the seventeenth century -- over twelve hundred years after the first one appeared in Bagdad in 750 AD.[10] These first apothecary shops imported their botanical drugs and chemicals in bulk, mostly from Europe. They would then manufacture their medicines in their retail shops. From these early shops originated the wholesale drug and drug manufacturing industry.

The first historical mention of the manufacture of

drugs in this country occurs in the instructions from the Crown which were given to Sir Francis Wyatt, Governor of Virginia, in 1621. [11] In this document he was requested to invite attention to the industrial possibilities to be found in the preparation of oil of walnuts. He was authorized to employ such apothecaries as might be necessary to assure its proper production.

Gradually some of the apothecaries specialized as wholesalers in importing and supplying drugs and chemicals to other merchants, and some became primarily concerned with drug manufacturing. Others continued to function as merchants selling drugs and chemicals directly to the public. As the years went by, the separation among the functions of drug wholesaling, drug manufacturing, and drug retailing became positive.

During the Colonial days, merchandize which the drug wholesaler handled consisted chiefly of botanical drugs, medicines, chemicals, essential oils, fixed oils, toiletries, whiskies, wines, and soap; all bought by or manufactured by the wholesaler in bulk packages which were then subdivided, repackaged and sold in smaller amounts, primarily to retailers, partially to industrial users.

Today

The character of wholesale enterprise has varied immensely over the years since the Colonial period. It has changed progressively with the economic and social needs of the people which it serves. The functions of the general merchandize depot of the frontier days bear little resemblance to the wholesaling of today.

Today, the wholesale drug trade is a part of a national drug, chemical, and allied products industry which is composed of some forty-seven hundred establishments whose total sales in 1948 amounted to over two billion dollars and which employed over 56,400 persons.[12/]

The average wholesale drug house today handles over 25,000 different items at any given time out of more than 100,000 in use. These consist of packaged medicines, toiletry articles, surgical and other health supplies, all of which are ready for consumer use. A limited amount of bulk, packaged raw drugs and chemicals are sold by the wholesalers to industrial users. The type of products handled today are essentially the same as those handled during the Colonial days. The major difference is in quantity and manner of packaging.

TABLE NO. 1 PERCENTAGE OF SALES BY CLASS OF CUSTOMER -- 1948[13/]

	Percent
Retailers	95.0
Industrial Users	3.7
Wholesale Organizations	1.0
Household Consumers	0.3
For Export	Less 0.1

The Dynamic Aspect

A notable feature which is inherent in successful and efficient wholesaling principles is that wholesale operations may develop potentialities in certain retail operations to such an extent that the necessity for wholesale service may be circumvented.

In other words, wholesalers are often contracted by manufacturers to be exclusive agents for the distribution of a particular commodity and then, when retail sales are of sufficient volume, the manufacturer, on his own behalf, undertakes general distribution through retail outlets.

Thus, manufacturers who are today selling directly to retailers would never have reached the position in which they could do so without the service of the wholesaler.

All of these functions on the part of the manufacturer have led to increased potentialities and give vitality to the wholesale drug trade. The 2,000 manufacturers which today are supplying the average wholesale drug house depend upon the wholesaler for the sale and distribution of products through (1) selecting and establishing markets, (2) warehousing and maintaining reserves of merchandize in strategic areas, (3) breaking bulk, delivering, and invoicing smaller quantities of goods than they could afford to handle, and (4) furnishing merchandizing aids which have been developed through market research. 14/

A review of the primary functions of the drug manufacturers will afford a valuable insight into the reasons for these developments. They are sixfold: 15/ (1) the gathering of crude drugs; (2) the extraction of their active principles; (3) the manufacture of synthethic drug preparations; (4) the testing out for standardization; (5) the commercial distribution of their products; and (6) the search for new drugs by specially commissioned explorers in the most remote regions of the earth.

Further evidence of the dynamic quality and importance of wholesale operation as a function of any economic system is provided by the experience of Russia.

Under the first five year plan, when the great concern of the country was increased productive capacity, little or no attention was given to distribution in general and wholesaling in particular. The wastes resulting from the lack of coordination between production and distribution, from spoilage and deterioration of goods in transit, and from inadequate distribution depots forced the All-Union Council of National Economy to reorganize trade patterns and establish wholesaling institutions. 16/

The Service Aspect

There are 303 drug wholesalers in the United States who employ approximately 30,000 persons.[17] They carry inventories which are sufficient to discharge all of the daily needs of over 53,000 retail drug stores in the country.[18]

About 90 percent of the retail pharmacists served by wholesale druggists represent individually owned and operated drug stores. The remaining 10 percent of the wholesale druggists' retail drug store customers constitute the registered pharmacists serving over 5,000 drug stores as part of multiple units or so-called chain stores.[19]

In addition to over 6,000 hospitals, wholesale druggists also supply household remedies to a large number of consumers in small communities where there are no drug stores.[20]

The local merchant depends upon his wholesaler for (1) a constant and ever-dependable flow of goods, (2) credit extensions amounting to over 100 million dollars per year, (3) sales and merchandizing counsel, and (4) guidance in the proper selection and control of merchandize, especially seasonal goods.[21]

Over 3,000 salesmen are employed by wholesale drug houses in this country.[22] These salesmen supply their customers with information about new drugs, chemicals, and medicines, as well as information and guidance on merchandizing,

display, and drug store management.

The wholesale drug industry performs invaluable educational functions. In many of the areas in which wholesale drug houses are located wholesale drug salesmen and drug manufacturers' representatives hold conferences, lectures, seminars, and group discussions with doctors, pharmacists, nurses-in-training, and interested public groups.

The subjects discussed at these functions are related to medicine and the welfare of the people. They include such topics as technical characteristics and use of new drugs and chemicals; public health; civil defense and chemical decontamination; and modern sales techniques. These services promote group analysis and discussion of new techniques, processes, and advances relating to the medical profession and the general welfare.

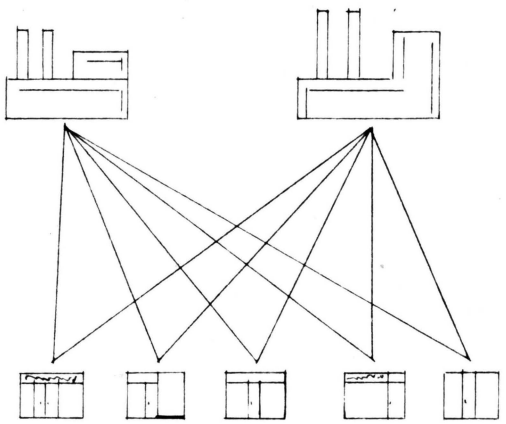
The wholesale drug industry is cooperating with a number of universities of the country in conducting scientific research into many fields of business. Such topics as operating costs, accounting methods, selection and training of salesmen, and handling-cost studies are considered. The wholesale drug industry was the first organized wholesale industry to establish graduate work at the Doctorate level. 23/

The essentiality of wholesale druggists is well shown by the continuous services which they provide. The

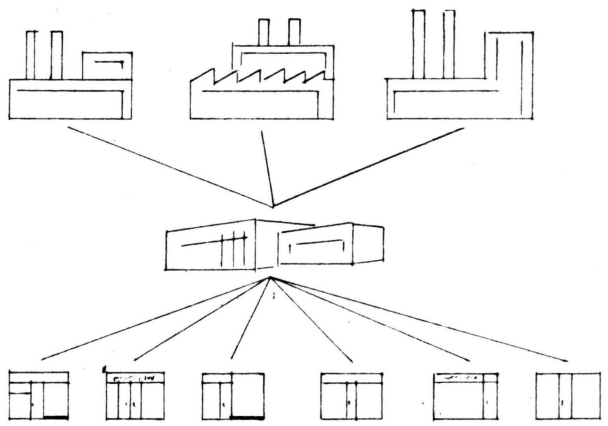
some 90,000 registered pharmacists of the country could not continue their important health service to the public by filling nearly 400 million prescriptions each year if it were not for the wholesale druggists who supply the necessary prescription items and ingredients. 24/

These services enable 150 million Americans to obtain the necessary drugs, medicines, and medical supplies which are necessary for maintaining and protecting the health of the nation.

SIMPLIFIED DISTRIBUTION BY THE DRUG WHOLESALER 25/



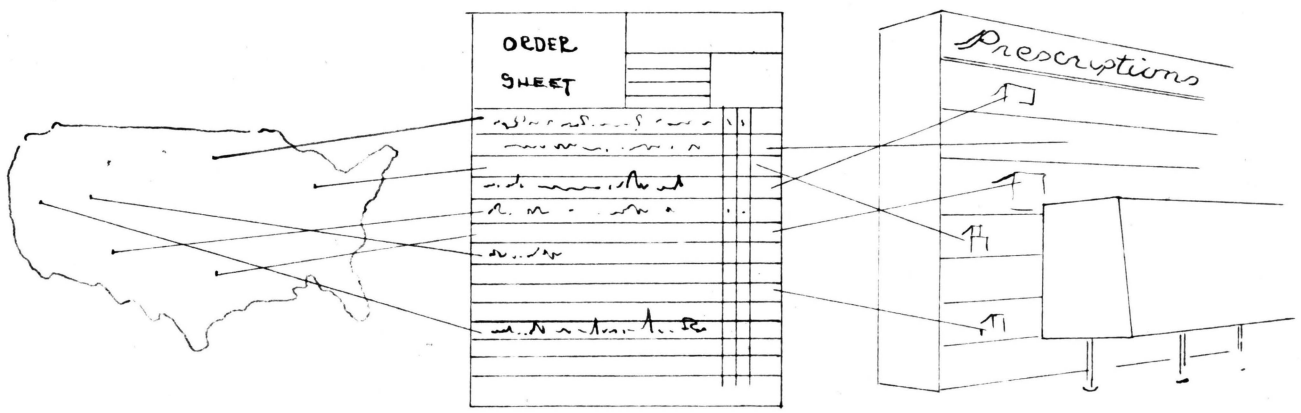
WITHOUT WHOLESALER



WITH WHOLESALER

ECONOMICAL DISTRIBUTION BY THE DRUG WHOLESALER

MANUFACTURERS · ——→ WHOLESALER · ——→ RETAILERS ·



CHAPTER VI

THE PRESENT WHOLESALE DRUG HOUSE

History*

The Henry B. Gilpin Company was established as a manufacturing drug wholesaler in Baltimore, Maryland, in 1845. Through the years, as the firm grew it came to serve a trade area which extended southward to include portions of Florida and westward to Texas.

By 1900, wholesaling operations were of such magnitude that it became necessary to separate the wholesale functions from the manufacturing processes. To meet the medical needs of the people within its service area the Norfolk Division was opened in 1925; followed in 1928 by another division located in Washington, D. C.

Notable among its many accomplishments and benefits to the medical profession and to the country is the fact that it was the first wholesale drug manufacturer to set up an assay standard for the making of crude drugs such as fluid extracts and tinctures. It also was the first wholesale drug manufacturer to use pyrethium in the manufacture of insect powder.

The Henry B. Gilpin Company has served the health needs of the people through 6 wars, two of them global in nature, and 7 depressions.

* This historical information was furnished by Mr. W. L. Skinner, Manager, Norfolk Division Henry B. Gilpin Company.

NORTH

HOPEWELL

PETERSBURG

WILLIAMSBURG

NEWPORT NEWS

NORFOLK

PORTSMOUTH

SUFFOLK

EMPORIA

VA.

No. C.

ELIZABETH CITY

ROCKY MOUNT

WILLIAMSTON

WILSON

GREENVILLE

WASHINGTON

GOLDSBORO

KINSTON

NEW BERN

REGIONAL SERVICE AREA OF THE HENRY B. GILPIN CO.

LEGEND.

BOUNDRY LINE

PRINCIPAL ROADS

RAILROADS

SCALE OF MILES.

5 0 5 10

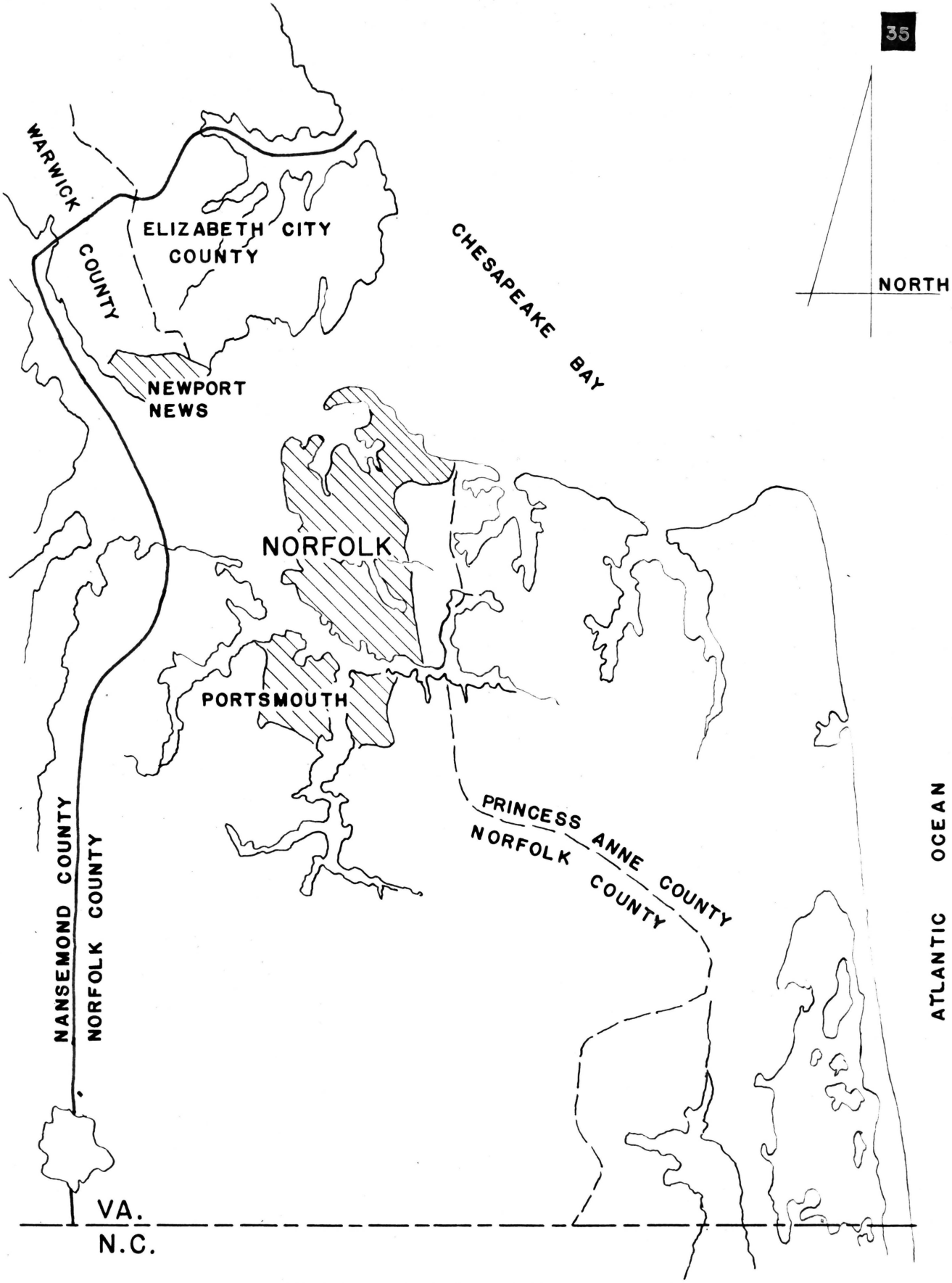
Service Areas

An analysis of the population serviced within the regional area as defined by Ill. No. II, reveals the following information:

TABLE NO. II POPULATION SERVED, VA. & N.C. 26/

	Va.		N.C.	
	No.	POP.	No.	POP.
Counties totally covered	13	385,000	20	458,000
Counties partially covered	3	20,000	3	80,000
Major urban areas serviced	10	423,000	5	91,000
TOTAL BY STATE		828,000		630,000
GRAND TOTAL	1,458,000			

It should be noted that in areas bordering the limits of the service area the population served would show increases because of the persons who travel into the area. Thus, the figures in TABLE NO. II are only indicative of stable population within the designated area and do not reflect fringe variables.



METROPOLITAN SERVICE AREA
OF THE
HENRY B. GILPIN CO.

SCALE OF MILES
0 1 2

In the urban areas as defined by the Norfolk Advertising Board, (See Ill. No. III), an analysis of population shows the following: 27/

TABLE III - POPULATION SERVED NORFOLK-PORTSMOUTH-NEWPORT NEWS METROPOLITAN DISTRICT

GREATER NORFOLK	1940	1950
Norfolk (city)	144,332	213,513
South Norfolk	8,038	10,434
Princess Anne Co.		
Kenpsville Dist.	7,609	20,914
Norfolk County		
Tanners Creek Dist.	7,493	39,092
Washington Dist.	6,948	17,280
	174,420	301,233
NORFOLK-PORTSMOUTH (Met. Area)		
Greater Norfolk	174,420	301,233
Bal. Norfolk Co.	21,387	43,565
Bal. Princess Anne Co.	12,375	21,363
Portsmouth (city)	50,745	80,039
	258,927	446,200
NORFOLK-PORTSMOUTH-NEWPORT NEWS (Met. Area)		
Norfolk-Portsmouth	258,927	446,200
Newport News (city)	37,067	42,358
Hampton (city)	5,898	5,966
Elizabeth City Co.	32,283	55,028
Warwick Co.		
Newport Dist.	7,388	31,739
Phoebus (town)	3,503	3,694
	345,066	584,985

TOTAL POPULATION CHANGE -- PERCENT CHANGE 1940-50

+ 239,919 -- + 69.5

It should be noted that these population figures do not represent population of armed services within the respective areas. The Norfolk Virginian-Pilot reports:[28/]

> The naval census of the district cannot at this time be stated for obvious reasons. But in 1940 the total number of uniformed men stationed in the whole Norfolk area (including Langley Field) was 28,000. In January, 1950, there were 102,000. That was six months before the invasion of South Korea in June, 1950. There have been no military population reports issued since that time.

The essentiality of the wholesale drug trade within these particular service areas is indicated by their character. This character has been emphasized by its designation as a critical region because of the wealth of essential military and civilian establishments and functions located therein. A total of 4 military and 20 civilian hospitals and clinics are served by the Norfolk Division of the Henry B. Gilpin Co.

It is especially realized within this vital region that a "cold war" as well as a "hot war" is now in progress between our form of economy and distorted philosophies. The private wholesale and retail system of distribution of commodities and materials constitutes the foundation upon which our economy must make its stand.

The contributions of the wholesale trades to the maintenance and propagation of the American way of life are greater and more important than the functional selling of goods.

CHAPTER VII

THE NEED FOR A NEW FACILITY

Background

The successful conduct of wholesale drug operations requires an ample warehouse for storing goods in case lots, and for maintaining a large supply of open stock in all items purchased. Also, adequate office space for personnel must be provided for the maintenance of warehouse records, buying and selling operations, and invoicing.

Multi-story warehouse construction has proven inadequate and restrictive in wholesale drug operations. Studies have shown that more energy is expended in lifting materials to a higher level (vertical transportation) than in moving them to another location at the same level; and all lifting equipment, of whatever kind, restricts flow.

Consequently, the most serious operational handicap which faces the Norfolk Division of the Henry B. Gilpin Co. today is the fact that operations must be carried on in a multi-story structure.

This defect results from several factors:

(1) The structure is located in an area which, years ago, was the market place. This location was then desirable because of the accessibility to communication and transportation facilities. Land values were high in this area as a result of intense land speculation and competition. Consequently, the height of buildings was the only physical dimension which could economically be expanded. Buildings "went up" in

order to provide desired floor space on a limited ground area.

(2) The structure was designed for non-wholesaling purposes. The type of construction (wall-bearing: heavy-mill) prevents flexible rearrangements for more efficient operations.

External Factors

(1) The number of customers have steadily increased with the population growth and increased military activities in the area served.

(2) New drugs and chemicals have been developed which require rapid distribution.

(3) The number of items requiring refrigeration have increased.

(4) New manufacturers have entered the field.

(5) Transportation and communication facilities have shown remarkable growth and change, resulting in customer demands for faster services.

(6) Pedestrian and vehicular traffic congestion in the area surrounding the present site is acute and impairs the receiving and shipping of goods.

Internal Factors

(1) Accompanying the increase of items which are handled there have been floor loads placed on a structure which was not designed for such loading. The structure has, so far, proven adequate, but its physical features modify efficient operations and limit future expansion.

(2) Necessary spatial expansion of administration and warehouse functions has necessitated make-shift arrangements because of structural inflexibilities.

(3) Operating expenses have increased because of inflationary pressures requiring streamlining of operations as much as possible. Structural considerations have retarded satisfactory efficiency measures.

(4) Desirable technical devices for aiding administrative and warehouse operations either cannot be incorporated or cannot be fully utilized because of the limiting characteristics of the building.

CHAPTER VIII

PROGRAM

General Development

A program for a new wholesale drug house for Norfolk, Virginia, is based upon the following considerations:

(1) A survey made of the present spatial utilization and operational functions of the Norfolk Division of the Henry B. Gilpin Company and wholesale drug houses in Washington, Baltimore, and Philadelphia.

(2) Consultation with officials and personnel of the Henry B. Gilpin Company as to desirable spatial and operational relationships within the proposed structure.

(3) Analysis of the latest technical publications relating to plant layout and materials handling.

Design Elements and Spatial Requirements

Warehouse Adjuncts (administration, office, and sales areas)	Area (sq.ft.) Present*	Recommended
RECEPTION AREA	252	475
1. Switchboard operator-receptionist		
2. Waiting and will-call order counter		
3. Lounge		
DISPLAY AREA	1100	950
1. Floor display cases		
2. Wall display cases		
ASSEMBLY ROOM (seating approximately 150 persons	---	1900
1. Level floor with movable chairs		
2. Facilities for projecting slides and movies		
3. Speaker's stand with illustration board		
TWO SALES CLOSING ROOMS (80 sq. ft. each)	---	160
1. Desk w/ 2 chairs		
2. Filing cabinets		
MEN AND WOMEN'S LAVOTORIES FOR CUSTOMERS	---	88
GENERAL OFFICE	944	2110
1. Order receiving area (10 telephone operators)		
a. Continuous belt conveyor for carrying orders to gen. office		
2. Clerical office (20 persons)		
a. Desks and office equipment		
b. Combination vault for valuables		

	Area (sq.ft.) Present*	Recommended
3. Fireproof File and Office Supply room		
PRIVATE OFFICES.		
1. President	90	415
a. Adjacent conference room with chalk board, 10 persons	--	385
b. Storage closet		
2. Vice-President	--	225
a. Storage closet		
3. Sales Manager	95	385
a. Secretary-stenographer		
b. Storage closet		
c. Filing cabinets		
4. Manager	151	385
a. Secretary-stenographer		
b. Storage closet		
c. Filing cabinets		
5. Salesmen	--	160
PRIVATE LAVATORY FOR EXECUTIVES AND SALESMEN.	--	54
EMPLOYEES LUNCH AREA (seating approx. 75 persons).	--	1000
1. Collapsable tables and benches		
2. Table and bench storage area		

Note: This area is adaptable for recreational purposes

	Area (sq. ft.) Present*	Recommended
MEN'S TOILET AND LOCKER ROOM (office force only -- 6 men)	--	195
WOMEN'S TOILET, LOCKER, AND POWDER ROOM (24 women)	120	455
AIR CONDITIONING ROOM	--	185
JANITOR'S CLOSET WITH SLOP SINK	--	25

*Areas not given under Present are either non-existant or negligible.

	Area (sq. ft.) Present*	Recommended
Warehouse		
RECEIVING AREA		650
1. Docks; truck and railroad		
2. Check-in station	1926	
SHIPPING AREA		4685
1. Docks, truck		
2. Delivery layout area		
3. Check-out station		
FULL CASE BULK STORAGE	17557	25000
OPEN-STOCK STORAGE - Floor Area	6160	7560
Shelf Area	13906	14364
1. Less-than-case item shelving		
2. Full-case storage for fast moving items		
ORDER ASSEMBLY AREA	172	2820
INDIVIDUAL PACKING STATION AREA		
6 PACKERS	562	288
DAMAGED GOODS AND GOODS CREDIT AREA	209	280
1. Area for checking damaged goods and items returned for credit		
2. Shelving for storage of damaged goods		

	Area (sq. ft.) Present*	Recommended
FIREPROOF COMBINATION NARCOTICS VAULT EQUIPPED WITH BURGULAR PROTECTION	35	125
GENERAL STROAGE & SUPPLY	--	360
1. Packing Material Storage -- Paper shreders, etc.		
2. Warehouse equipment storage		
REFRIGERATORS		
1. Reach-in cold storage for biologicals, tray type with glass door	32	32
2. Walk-in cool storage for items in case lots	77	77
FIREPROOF INFLAMABLE AND ACID STORAGE AREA	--	670
MEN'S TOILET AND LOCKER ROOM (warehouse only - 45 men)	120	575
BOILER ROOM	333	575
1. Heating and sprinkler equip.		
2. Water pump		
3. Transformers and electrical control panels		
TRASH STORAGE	--	320
LAVATORY FOR TRUCKERS	25	55

	Area (sq. ft.) Present*	Recommended
TOTAL UTILIZED PLANT AREA.	29,594.	. . 65,084. .

TOTAL AREA OF PROPOSED PLANT -- Sq.Ft.

Enclosed Gound Floor Area -- 57,220

Mezzanine Floor -- 7,864

---

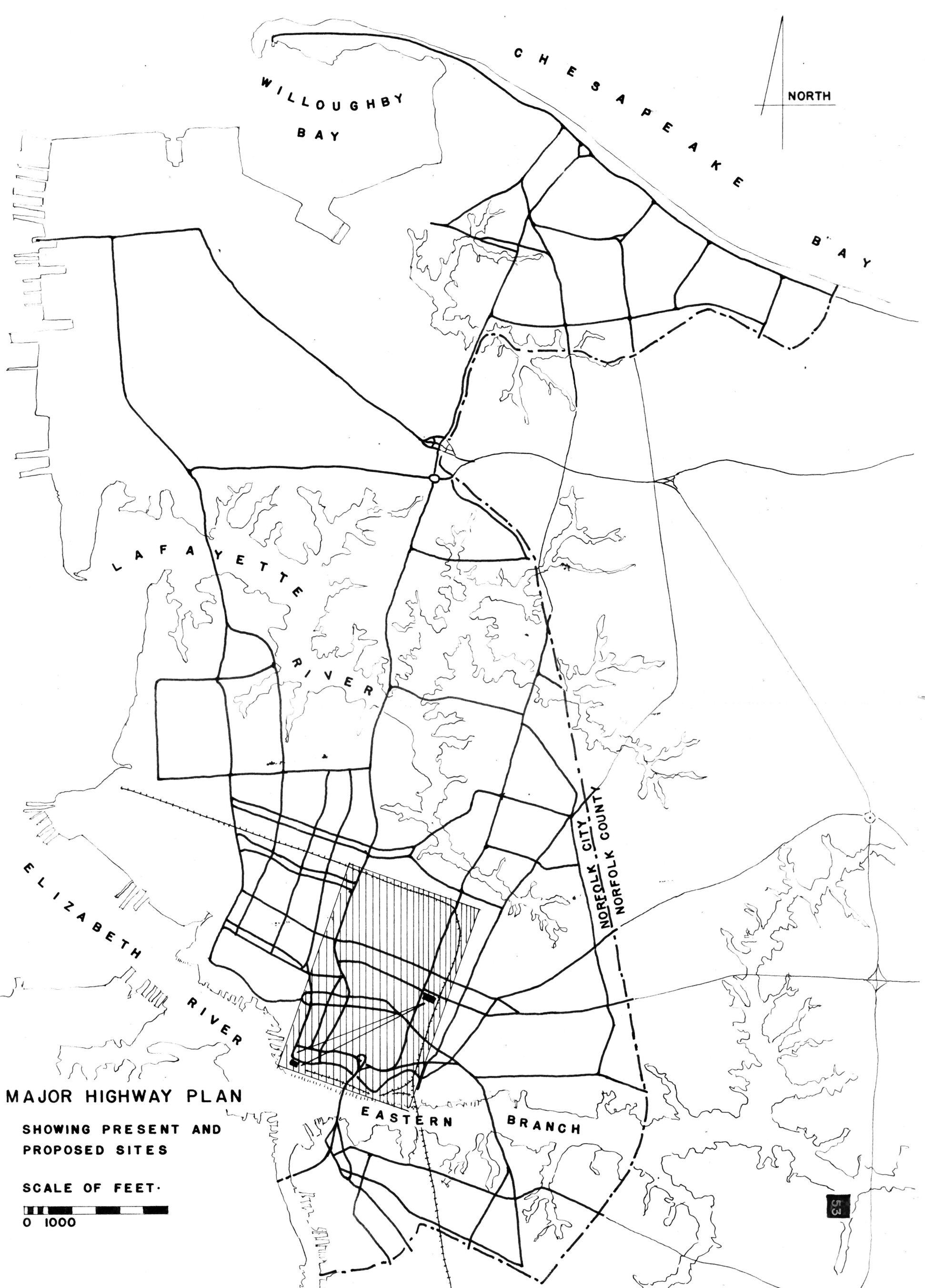
* Areas not given under Present are either non-existant or negligible.

EXTERIOR SITE PLANNING

1. Vehicular Parking facilities
   a. Employees -- 40 spaces
   b. Customers -- 3 spaces
   c. Manufacturers' salesmen -- 3 spaces
2. Truck parking facilities
   a. Shipping - Drug house trucks -- 6 spaces
   b. Receiving -- other -- 3 spaces
3. Railroad spur siding
4. Automobile and truck access roads
5. Landscaped grounds

CHAPTER IX

SITE

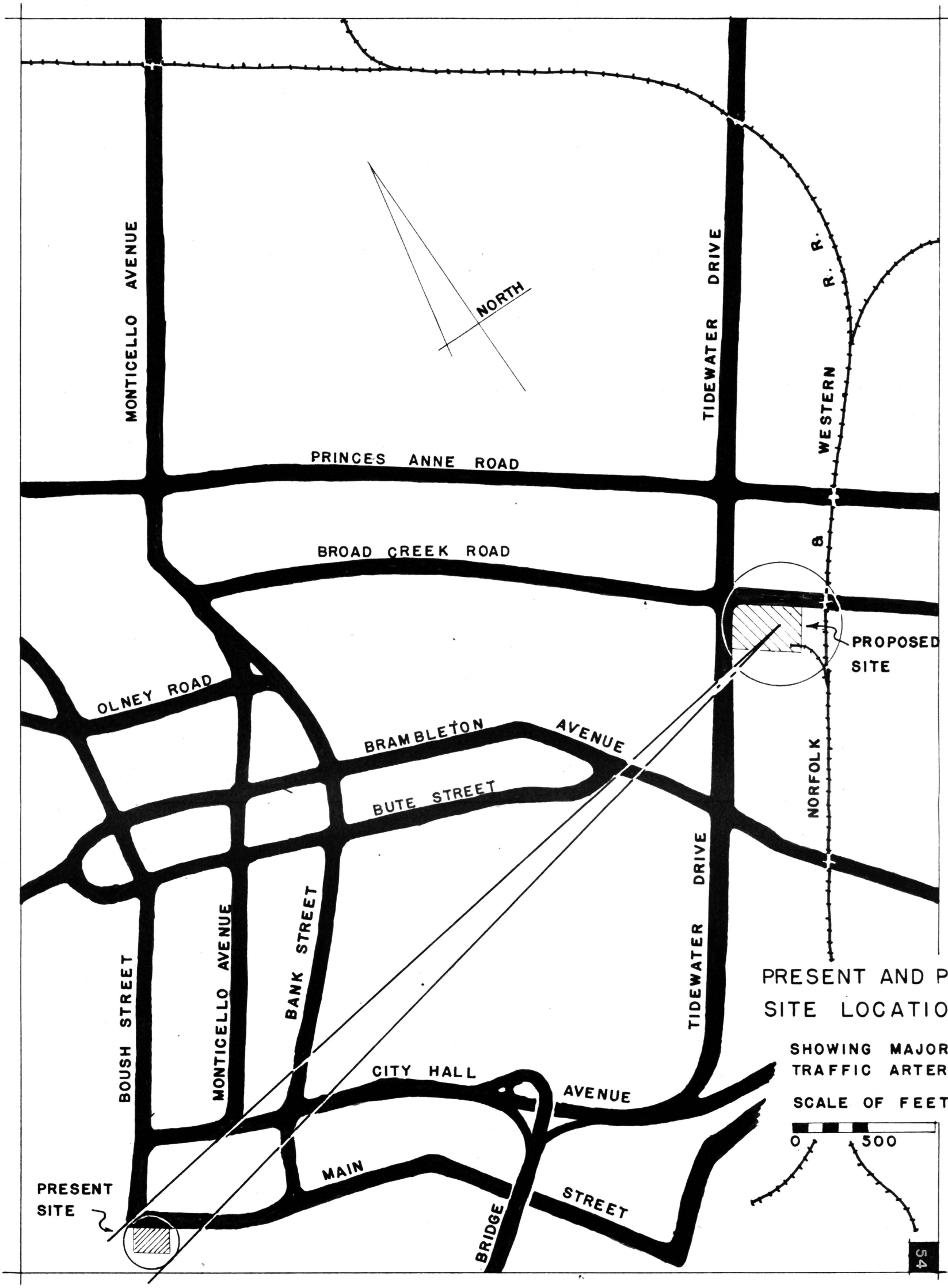


MAJOR HIGHWAY PLAN

SHOWING PRESENT AND
PROPOSED SITES

SCALE OF FEET.

0 1000


MONTICELLO AVENUE
NORTH
TIDEWATER DRIVE
R. R.
WESTERN
PRINCES ANNE ROAD
BROAD CREEK ROAD
&
PROPOSED
SITE
OLNEY ROAD
BRAMBLETON
AVENUE
BUTE STREET
NORFOLK
BOUSH STREET
MONTICELLO AVENUE
BANK STREET
TIDEWATER DRIVE
CITY HALL
AVENUE
MAIN
STREET
BRIDGE
PRESENT
SITE
PRESENT AND PROPOSED
SITE LOCATION
SHOWING MAJOR
TRAFFIC ARTERIES
SCALE OF FEET.
0
500

Present

The present site is located within the waterfront area bordering upon the Eastern Branch of the Elizabeth River. This area is primarily the wholesale district of the city. Operations in this area are carried on in similar, densely clustered, multi-story, heavy-mill, wall-bearing structures which are characteristic of the majority of American wholesale districts.

The disadvantages of the present location parallel those factors enumerated in the section of Chapter VII treating the External Factors, page 41.

Proposed

The primary factors which influenced the selection of a new site are as follows:

1. Accessibility by truck and railroad.
2. Efficient servicibility of the trade area from the site.
3. Ability of the site to handle off-street parking.
4. Accessibility and travel time required for employees and customers to reach site from outlying area.
5. Economic factors influencing initial cost, maintenance and protection, and taxation.

6. Consideration of utilities which must be provided by public organizations, such as police and fire protection, trash disposal, and adequate street lighting at the site.

On the basis of these considerations, a site was chosen in a strip within the City of Norfolk which is bound on the northeast by Broad Creek Road (extended), on the northwest by Tidewater Drive, and on the southeast by the Norfolk & Western Railroad tracks. The area within which this site lay is now being cleared under Project I of the slum clearance program. This project will transform 80 acres of slums into sites for industrial use and over 200 acres into residential and commercial use. Tidewater Drive, the principal route of access to the site, is to be created by this program and is to be a dual-lane, limited access highway with a right-of-way of 135 feet.

Because of the service and distribution factors in the operations of drug wholesaling, the site chosen is fundamentally desirable due to its centralized position within the immediate area served. It also provides adequate avenues of approach and exit to the outlying region by rail and major highways.

Under the new Major Highway Plan (see Ill. No. IV) vehicular congestion, which is so acute in the area of the present site, will be vastly reduced. Because many of the

employees live in adjacent areas to Norfolk proper, unrestricted vehicular circulation to and from the site is vital.

The site selected which is zoned for M-3, heavy manufacturing, permits the location of a wholesale drug house (M-1, limited manufacturing) thereon. A railroad spur will be provided to connect the facility with the Norfolk & Western track to the immediate rear of the site.

The site is located within an area which can be afforded adequate police and fire protection. This factor is of major importance because of the hazardous character of the materials handled.

CHAPTER X

THE DESIGN

RECEIVING

A

TRASH STO.

TRANS.

PUMP

BOILER

DN.

BULK STO.

BULK STO.

DAMAGED GOODS & CREDIT STO.

RAILROAD SPUR

B

B

BULK STORAGE

BULK STORAGE

ASSEMBLY LINE

BULK STORAGE

BULK STORAGE

SHELVING

SHELVING

B'LK STO.

B'LK STO.

B'LK STO.

NARCOTICS

MEN

J.

REF.

PACKING

GEN. STORAGE & SUPPLY

INFLAM. & ACID STO.

SHIPPING

C

ST.

SNACK

U.

O.

O.

W.

M.

M.

U.

U.

LOUNGE

DISPLAY

ASSEMBLY

A

C

UP

N

EMPLOYEES' PARKING

ERS' PARKING

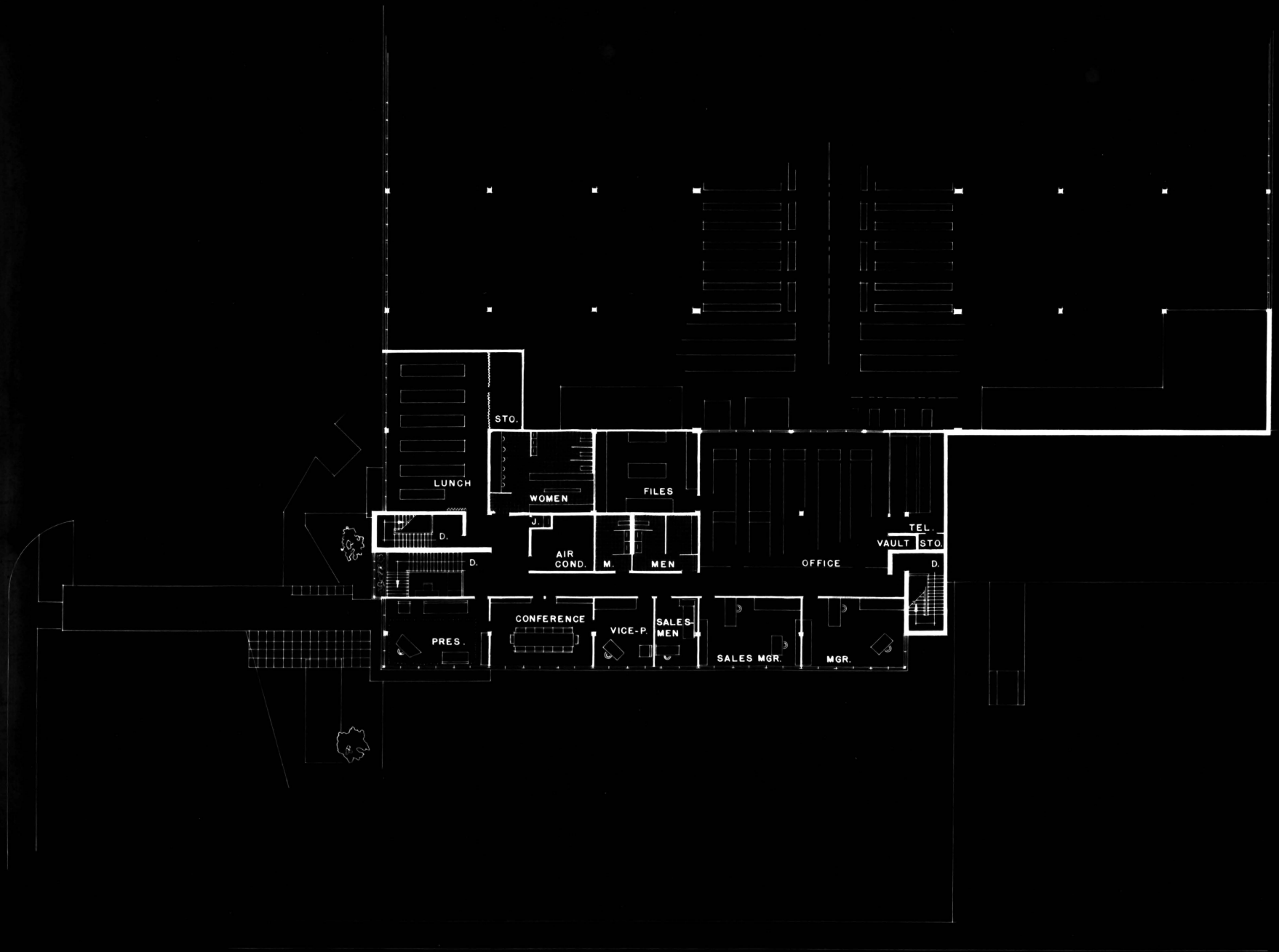
RIVE

CARROLTON STREET

GROUND FLOOR PLAN

SCALE OF FEET: 0 5 10 20 30

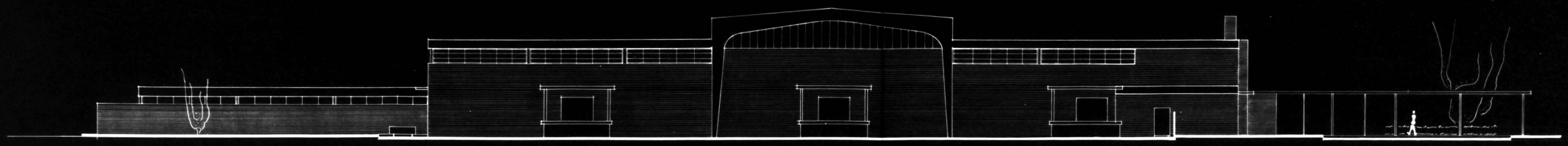
59



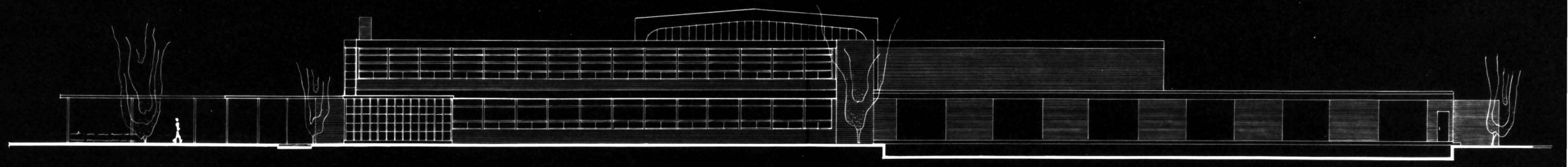
MEZZANINE FLOOR PLAN

SCALE OF FEET 0 5 10 20 30

60



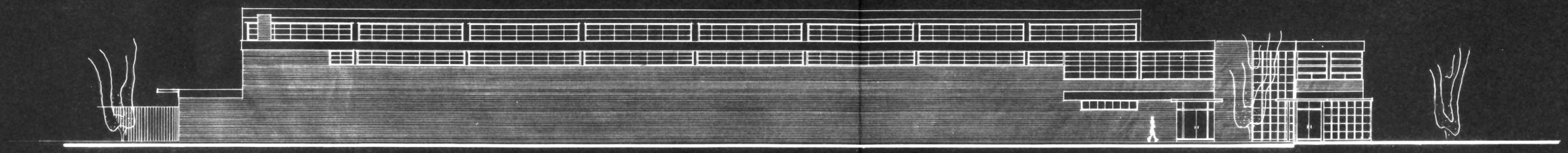
SOUTHEAST ELEVATION



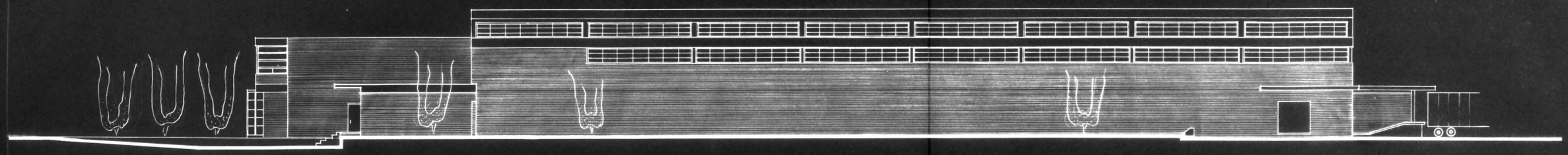
NORTHWEST ELEVATION

SCALE OF FEET

0 5 10 20 30

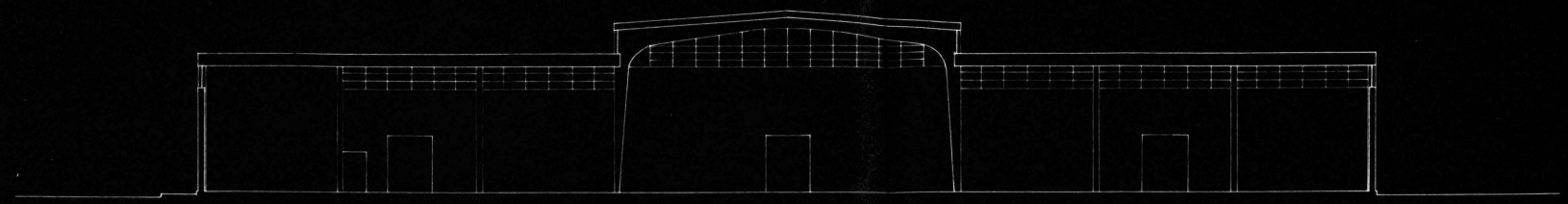


NORTHEAST ELEVATION

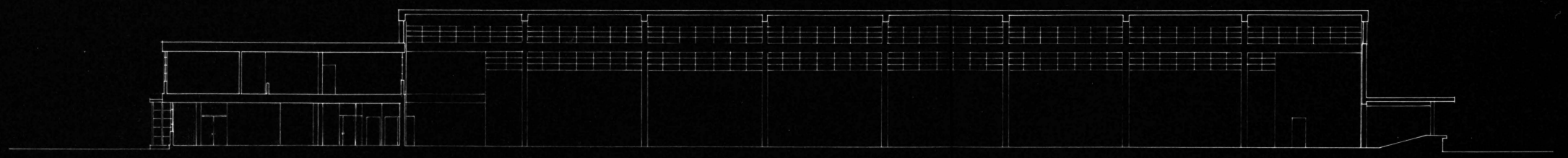


SOUTHWEST ELEVATION

SCALE OF FEET · 0 5 10 20 30

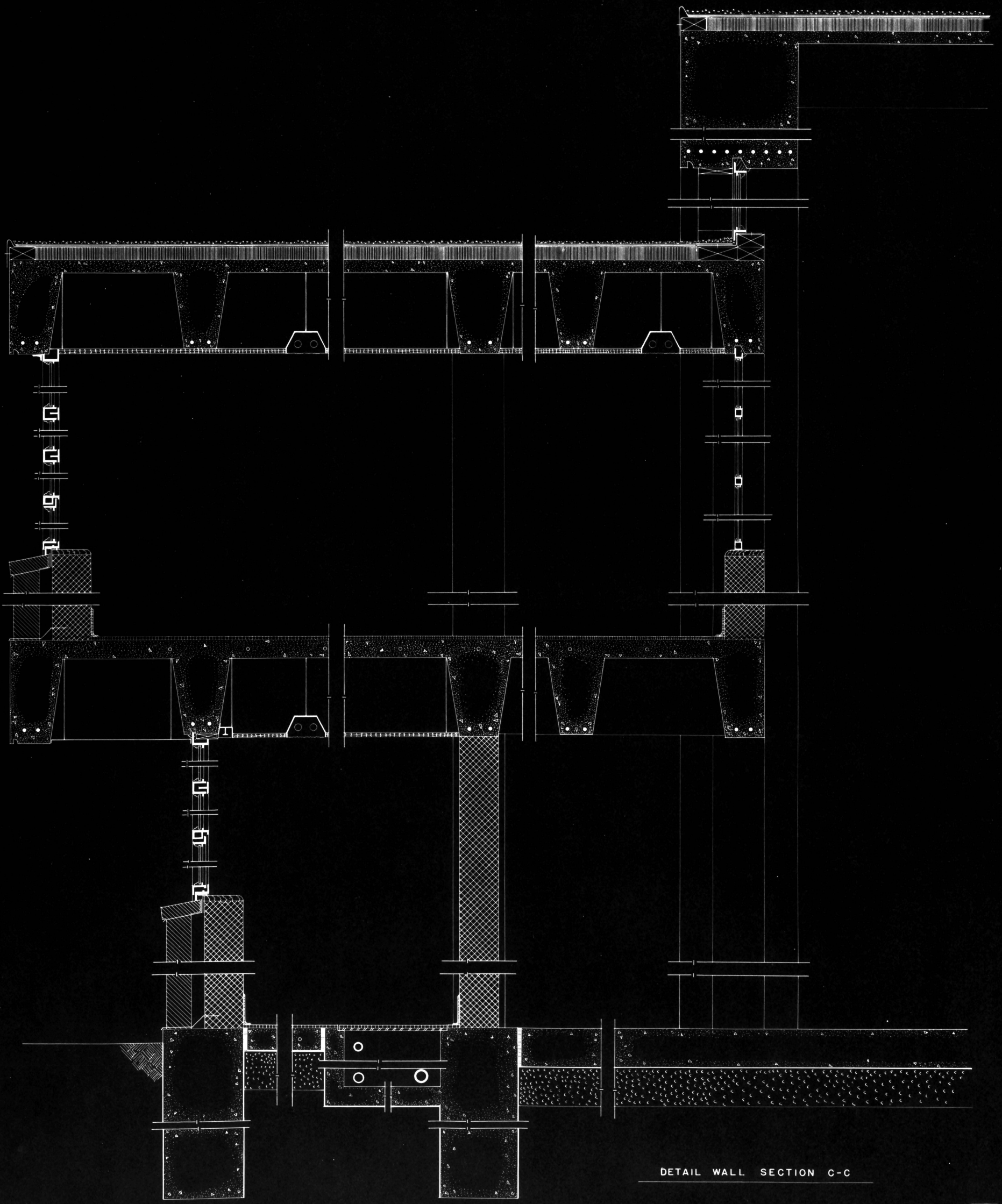


SECTION B-B



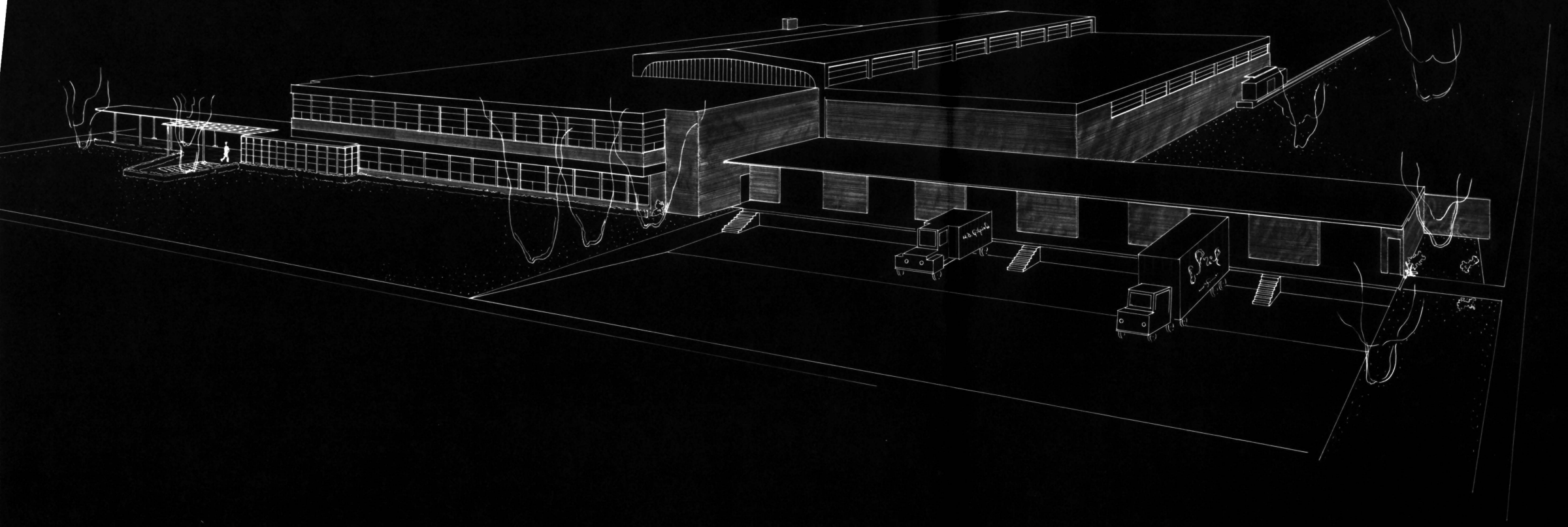
SECTION A-A

SCALE OF FEET 0 5 10 20 30

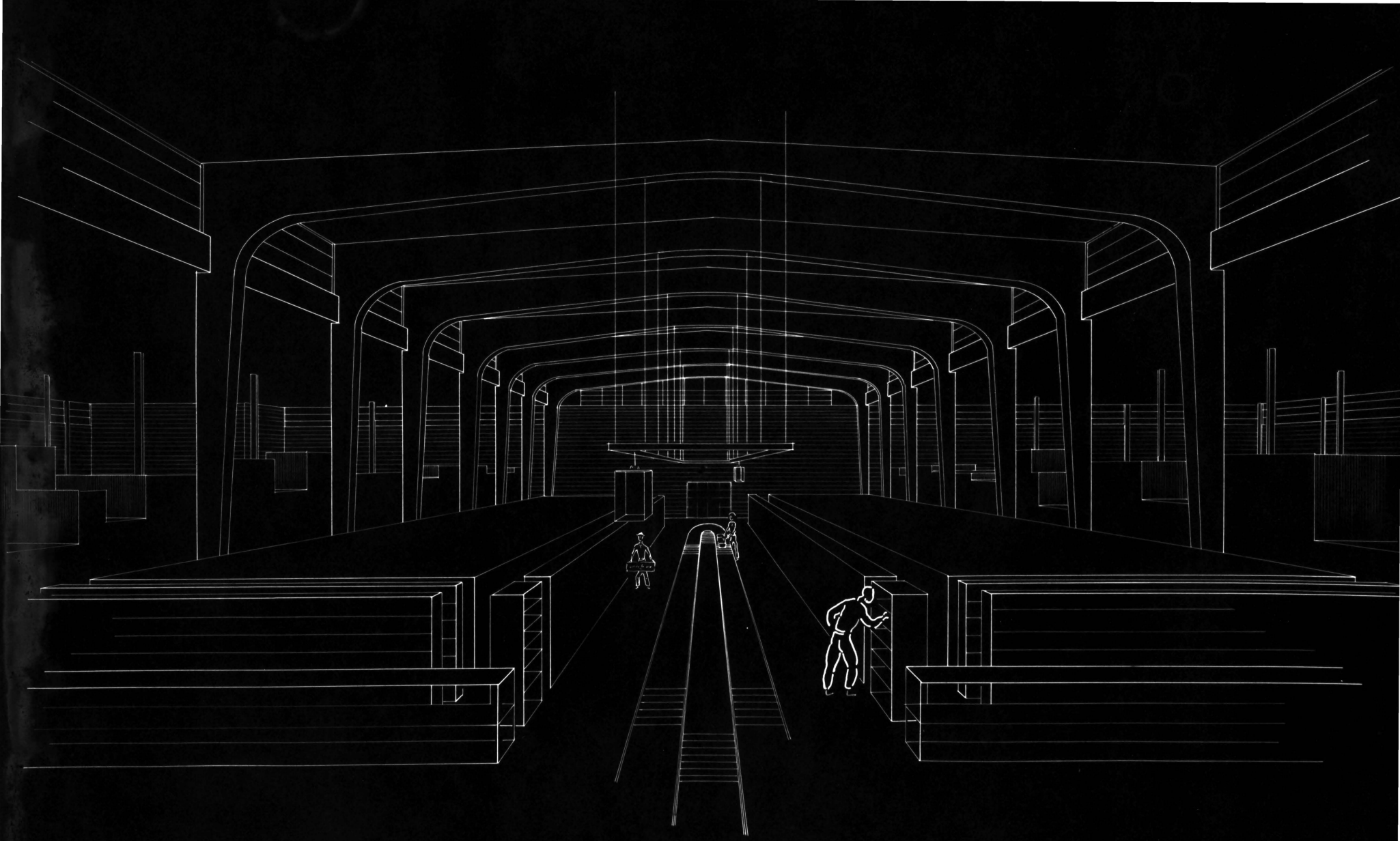


DETAIL WALL SECTION C-C

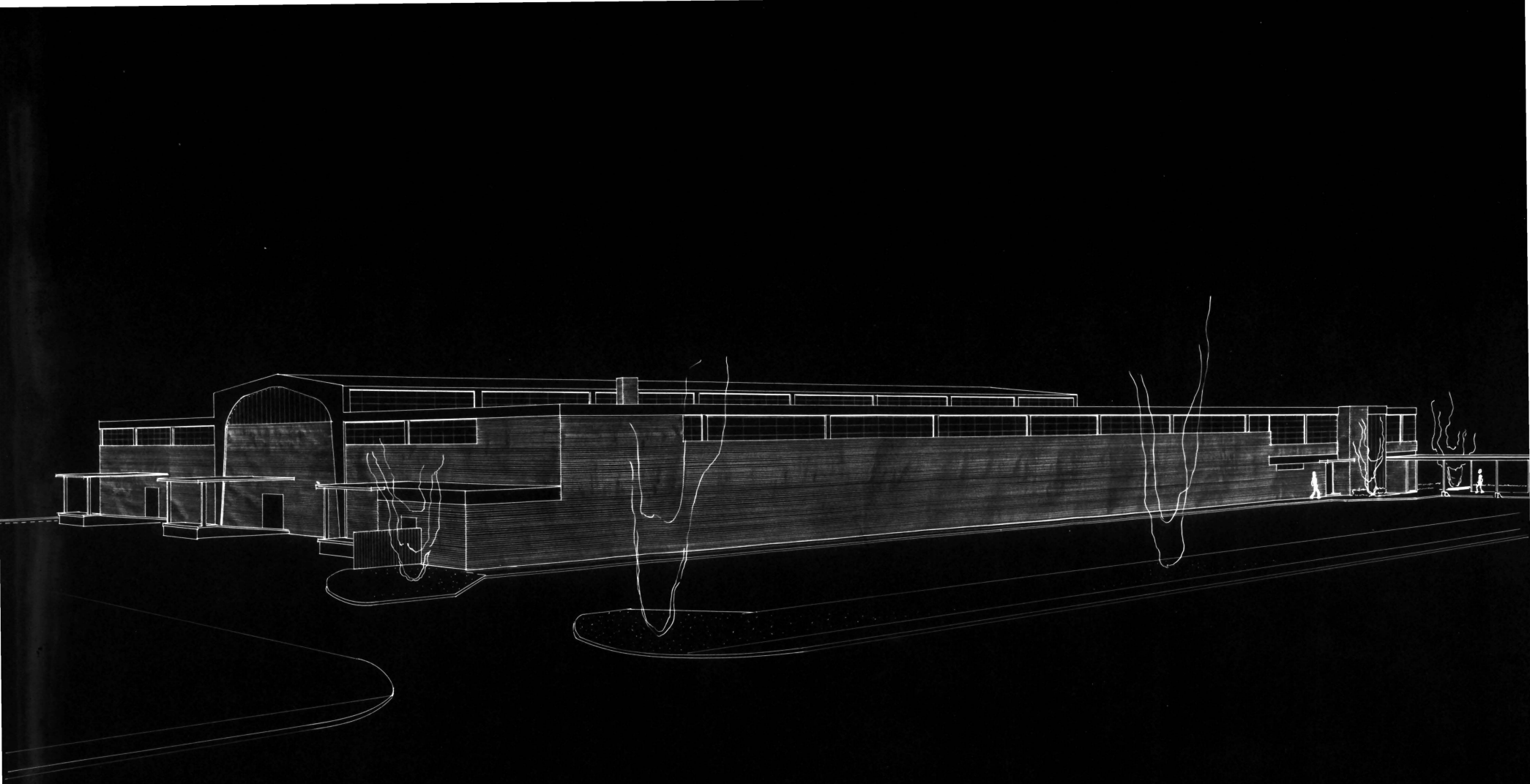
SCALE OF FEET 0 1/2 1 2



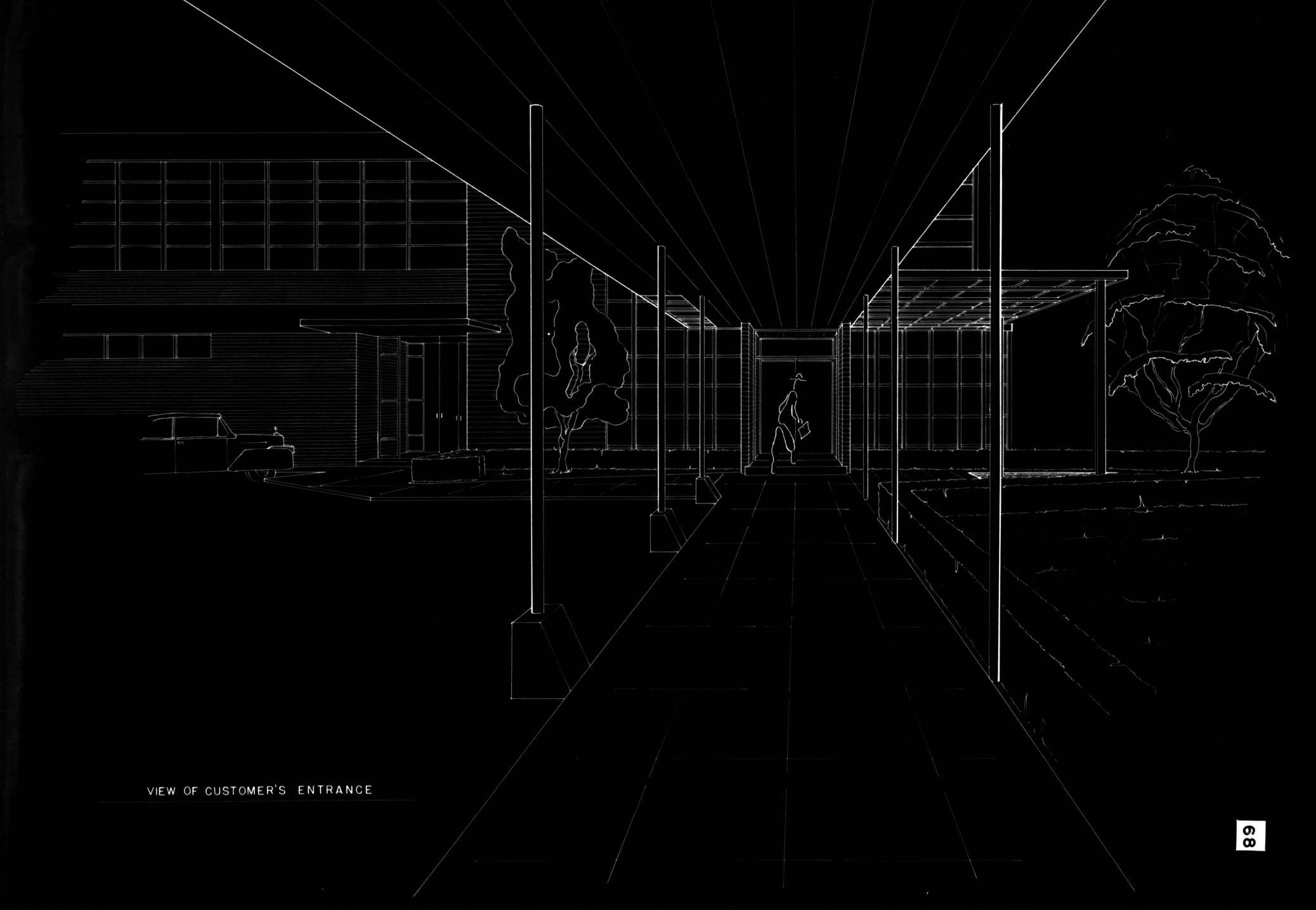
VIEW FROM NORTHWEST



VIEW OF STOCK FLOOR FROM MEZZANINE



VIEW FROM SOUTHEAST



VIEW OF CUSTOMER'S ENTRANCE

CHAPTER XI

STRUCTURAL ANALYSIS

The building code of the City of Norfolk places a wholesale drug house in a "hazardous" classification. This classification requires complete fireproofing of the structural system. Within a fireproofed skeleton steel structure which is equipped with sprinklers and which contains an open-floor area of over 45,000 square feet the code also requires fire-walls.

Since the building encloses a ground floor area of over 45,000 square feet and since the required fire-walls would prevent efficient operations, fireproofed structural steel could not be used.

The code places no limitations upon open-floor area which is contained within a concrete structural system. Consequently, a skeleton, reinforced concrete structural system with two-way concrete floor and roof joists is utilized. This system fulfills both of the stated prerequisites, viz.; (1) complete fireproofness, and (2) the necessary floor area unrestricted by fire-walls.

The basic structural module consists of bays twenty-four by twenty-eight feet, center to center. This bay size was selected after consideration of other bay sizes for the following reasons:

(1) It permits the use of stock size shelving units along the assembly line.

(2) It provides the optimum area required for peripherial bulk storage by the use of a practical bay size.

(3) It provides adequate areas for immediate operations and also allows for the future utilization of mobil power equipment for bulk material handling.

(4) The openness of this structural system increases the possibilities for future utilization of the structure by other industries. This is an important consideration, and one which is generally overlooked in industrial plant design.

In the central aisle or order assembly area, where maximum unrestricted operations are required, two-hinged concrete arches are used. This central aisle construction also provides natural clerestory lighting over the entire order picking area.

Administration and office areas, located on the mezzanine level, are enclosed by the basic warehouse structural system.

CHAPTER XII

DESIGN ANALYSIS

The general design attempts to promote several basic concepts:

(1) Aesthetically, it attempts to provide a structure which will instill a feeling of satisfied pride in employer, employee, and the casual observer.

An attempt was made to create an environment which provides pleasant working conditions for all persons within the plant. Thus, an intangible value is created which is more important to the success of the operations than all of the solid economics of plant location, layout, and equipment. Indeed, as it has been said, the best buildings bring the best workers.

(2) Functionally, the design attempts to emphasize the movement of goods rather than storage as the principal warehouse function.

Most wholesale operations are based upon a production line technique but, unlike manufacturers who produce goods and products which are alike, the wholesaler turns out goods which are seldom alike.

Therefore, wholesale drug warehouse design must incorporate flexible routines so that no special adjustments must be made to handle the various combinations and assortments

which are required for assembly.

A straight-line flow plant with receiving department at one end, and shipping department at the other with processing operations in between was selected as the most desirable basic arrangement.

By not combining shipping and receiving operations as would be the case in a return-flow plant, confusion and congestion is minimized.

The physical function of the wholesale drug house is to receive, store, and deliver commodities to retail consumers in various combinations as ordered. Certain basic activities are required to achieve this mission. They are:

A. Warehouse

Receiving

Individual truck receiving platforms are utilized at each of the three receiving doors. These platforms, which are at truck tail-gate height are connected to the building by a ramp. Thus, portable roll conveyors may be run directly from the truck to the point of storage within the building. This arrangement permits a gravity, straight-line flow of incoming materials in the floor plan.

Unloading from the railroad car at the spur track at the receiving end of the building is achieved by like methods.

Check-in

Portable check-in stations may be set up at the most desirable position along the receiving conveyor.

Storage, case lots

The bulk storage areas around the perimeter of the assembly area provides the following benefits:

(1) Efficient utilization of floor space because of ease of replenishment of bulk stock.

(2) Quick accessibility to bulk materials for replenishment of open-stock shelves.

(3) Desirable stock control is provided by the facilitation of the physical turn-over of goods and by the ease of taking physical inventory.

(4) Maximum flexibility within storage areas is provided which permits changes and physical expansion of the bulk storage area when necessary.

Storage, open-stock

A horse-shoe arrangement of shelving units is used. Items may be picked from the perimeter of these units and stock may be replenished from within the central core. This arrangement is desirable for efficient drug stock picking because many drugs become ineffective

and some medical commodities may deteriorate within a short time. Thus, the latest materials received are stored behind the old materials and are not issued until the old material on hand is depleted.

Order-picking

A central assembly line is provided which permits a straight-line flow of goods from processing to shipping department. Picker stations are recommended whereby a picker would pick from a certain number of shelving units along the assembly line. Fast-selling items which are left in their cases and not placed on shelves are stacked along the assembly line at the head of each shelving unit. Thus, the distance which a picker must walk to reach the various items in his station is kept to a minimum.

Order Checking

Space is provided for terminal checking at the end of the assembly line. However, line checkers are recommended. The line checking system would place order checkers at critical points along the assembly line. Each checker would check items which are assembled in a predetermined number of picker stations. Then, when an order is filled it would be checked and sent directly to the packers.

Packing

Individual packing stations are provided at the terminal end of the assembly line. Each station is equipped with all of the materials needed to pack any order (wire, excelsior or shredded paper, glue, packing boxes, etc.). The packing materials for these stations will be supplied from the adjacent storage and supply room.

Check-out

Packed orders are checked for shipment by the shipping supervisor. His station would be maintained at the entrance to the shipping platform.

Shipping or Delivery

As the checked orders are delivered by conveyor from the packers, they are laid out in front of the appropriate door to the loading dock. These lay-outs or "runs" are loaded upon trucks by means of portable roll conveyors.

B. Administration

Administration functions are all located on a mezzanine level for three reasons:

(1) To utilize the valuable ground floor areas for essential warehouse operations.

(2) To achieve privacy, and to create an atmosphere which is necessarily different from that of the

warehouse proper.

(3) To provide the facility for overall supervision of the warehouse operations. This is achieved through the use of window partitions on the mezzanine level which overlook the entire stock room area.

CHAPTER XIII

MECHANICAL EQUIPMENT

Stock Handling

The use of low-cost, portable, gravity conveyors in the shipping and receiving departments is suggested as an economical and efficient method of bulk materials handling. The structural arrangement and stock layout, however, will permit the use of hand fork trucks or electric fork-lift vehicles in the receiving department if desired.

The assembly line consists of a system of roller conveyors which function in the following manner:

(1) The processing of orders is accomplished through the use of order baskets which travel on a peripheral, U-shaped, "dead" conveyor which runs down and back the central aisle. This conveyor covers all stock-picking stations.

(2) Each basket is filled as it travels from station to station. If additional empty baskets are needed, they are easily procured from an overhead continuous track which circulates empty baskets along the central aisle.

(3) As the order is completed, the baskets are pushed to the nearest line checker who checks the order for quantity and correctness of items specified.

(4) When the order is checked, the basket is placed on an inset "live" conveyor which transports the basket to the packing stations. This inset "live" conveyor can also be utilized for the replenishment of shelving units by placing full-cases on the conveyor and transporting them to the proper shelving section.

Heating and Ventilating

Heating:

A hot water heating system is suggested. The warehouse portion is heated by unit heaters, and the administration, sales, and office areas are heated by zoned radiant heating panels located in the floor slab. Thus, any portion of the administration, sales, and office areas which are not used for any appreciable time may be shut off from the system.

The radiant heating system also offers the added advantage of being an integral part of the floor slab construction. Hence, no added pipe sleeve installation or chipping is necessary once the slab is poured. The ceiling construction for the ground floor is also simplified because no additional expense is incurred by the necessity for repairs and maintenance.

All major piping mains -- heating, sewage, and water --

are carried in a readily accessible pipe trench below the ground floor slab. This also simplifies installation and maintenance factors because of its central position and accessibility.

Ventilating:

Ventilation is provided in the warehouse through the use of exhaust fans located in the central bay. They are placed in the clerestory at intervals along the full length of the building. The high adjustable windows surrounding the bulk storage areas provide fresh air inlets. Thus, complete circulation of fresh air within the warehouse is accomplished.

Air-conditioning of the administration, sales, and office areas is recommended. This would be accomplished through installation of a major duct which is located between the hung ceiling of the corridor and the ceiling joists. Branches would be connected to the various areas served. Area for a central equipment installation is provided on the mezzanine level.

Lighting:

Adequate lighting in allwork areas is of paramount importance. A minimum lighting intensity of 50 foot-candles is recommended for general illumination in the order assembly areas, and 10 foot-candles in the bulk storage areas. This

lighting is provided by direct fluorescent fixtures which is supplemented by natural clerestory lighting. The floors of the warehouse should be of white concrete finish so as to provide maximum utilization of all available reflectance surfaces.

The administration, sales and office areas are lighted by recessed flourescent troffers which are placed between the concrete ceiling joists. A general illumination in these areas of 50 foot-candles (considering a minimum of supplementry natural lighting) should be provided.

Sound System

It is recommended that music be played softly throughout the warehouse stock floor area. This installation is installed by a commercial firm which specializes in the distribution of "wired" classical and semi-classical music. The author has witnessed such an installation which played at fifteen minute intervals. The author suggests that this installation is very desirable for pleasant working conditions, and it aids in the reduction of fatigue -- thereby increasing productive capacity. A public address system may be installed as an integral part of this facility.

Safety and Protection

Safety promotion through color selection:

A general color scheme should be carefully considered for various areas. For example, rest areas should

be treated in restful tones and similarly, danger areas should be of such a color as to give instantaneous visual notice and thereby promote caution.

Fire Protection:

An automatic sprinkler system is recommended throughout the plant. It should be noted, however, that in certain storage areas, depending upon the type and combination of material stored, fluids other than water will be required for adequate protection.

Systems employing foam liquids or CO_2 tend to smother a fire but do not cause great water damage to goods. This is an important factor when considering selection of sprinkler systems.

Burglar protection:

A full-time night watchman for the plant is advisable. An electric eye alarm system is recommended for protection of the mezzanine level. This would be placed at the end of the central corridor and operated by a time clock. Thus, while it is in operation, any movement in the corridor will set off the alarm. All protective devices are connected directly to a central police bureau.

CHAPTER XIV

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Science is an invention -- an instrument with which man reaches his objectives, the goals he may set for himself. The force that moves mankind in the selection of these goals is Morality, not science; it is a Morality rooted deep in his culture and sharpened by his intuitive capacity. Man has the power to control his environment; he can mold it to his purpose. He can observe trends, determine their direction, then reverse or shift them to suit his purpose. The course of human events is not some inevitable fate to which the people are destined; it is the subject of their will. They can examine the facts and from them they can select their course. This is the power of man and it is the purpose of planning. Guided by a high moral sense, and acting with freedom, the people can plan their cities of tomorrow. And in the words of John Ruskin, "Let it be as such work that our descendants will thank us for, ... and that men will say, as they look upon the labor and the wrought substance of them, 'See this our fathers did for us'".

-- A. B. GALLION