oglethorpe bay landing

a model shrimping facility

Special Report No. 1
Georgia Sea Grant Program
June 1975

DESIGN FOR A MODEL COMMERCIAL SHRIMP FACILITY: BRUNSWICK, GEORGIA

Preface

This report is the result of a project conducted by a graduate class in the School of Environmental Design at the University of Georgia at the suggestion of the Georgia Sea Grant Program. The study is based on the plausible premise that the Georgia shrimp industry needs modern docking and unloading facilities, marketing outlets, and supporting services.

The report should be regarded strictly as an exercise in environmental design. As such, it is a thoroughly commendable and credible piece of work. But it must not be construed by the reader to be either a definitive report in regard to a thorough assessment of need, nor a recommendation of a particular site.

As a class project, the study was carried out under the usual constraints of time. In the interest of completing the project in the spring quarter, no time was expended in investigating all potential sites. The selection of Andrews Island as a study site was based on its accessibility, its proximity to the University of Georgia's Fishery Extension Station in Brunswick, and the willingness of John Stubbs, Manager of the Brunswick Port Authority, to permit the class to explore the island and to use it as the theoretical site for the project.

Time did not permit a study to determine the actual need for such a facility and the degree to which such a facility, if established, would affect socio-economic patterns of those involved with the seafood industry. These problems and the problem of site selection, in the event such a facility is deemed feasible, will be part of a comprehensive study by Georgia's Coastal Area Planning and Development Commission in Brunswick with support from the Coastal Plains Regional Commission.

It is important to emphasize, therefore, that this report is the result of a class exercise focusing primarily on function and design and in no way duplicates nor does it cover other aspects which will be included in the study to be initiated by the Coastal APDC.

Edward Chin, Director
Georgia Sea Grant Program
University of Georgia
110 Riverbend Road
Athens, Georgia 30602

DESIGN FOR A MODEL COMMERCIAL SHRIMPING FACILITY: BRUNSWICK, GEORGIA

by

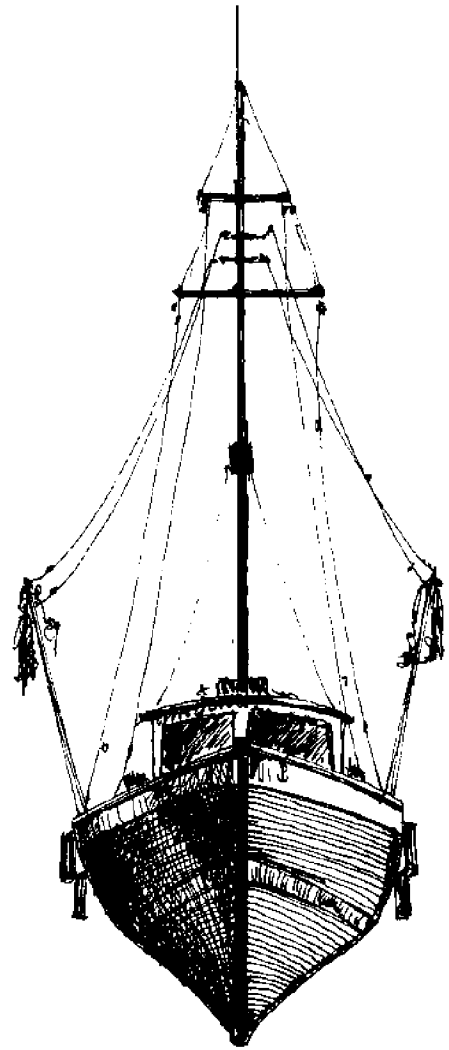
Peter Cummin
Richard Foster
Catherine Howett
Robert Parsley
Jean Perrin
Susan Turner

Professor Eckhardt Below

School of Environmental Design
University of Georgia

June, 1975

In cooperation with the Georgia Sea Grant Program



As part of the continuing effort to discover ways of improving the efficiency and productivity of industries utilizing marine resources, the Georgia Sea Grant Program asked a graduate class from the University of Georgia School of Environmental Design to produce a model for a commercial fishing harbor on Georgia's coast. The impetus for this study came from the increasingly serious inadequacy of existing dock facilities for the state's shrimp fleet, and from the effort to discover viable alternatives to certain established methods of operation within the industry.

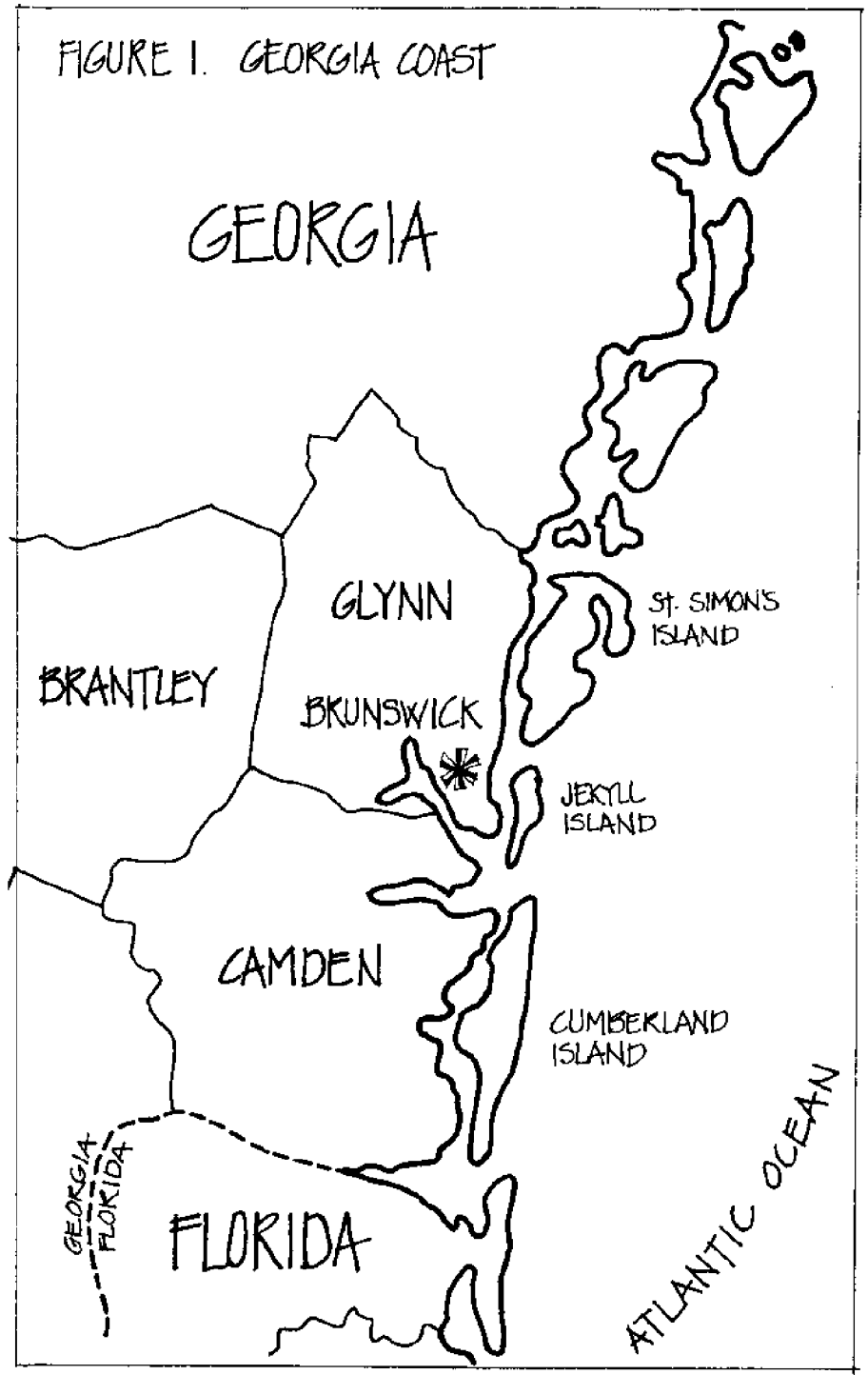
As a design problem, the project offered a unique challenge to the students involved, not only because of the complexity of the factors which must be brought to bear on the design solution, but primarily because the design of any actual facility is so intimately linked to the contingencies of the particular site chosen for it. Thus in choosing a sample site, we have necessarily included or omitted or adjusted design features to suit a specific location; to that extent, our proposal is limited as a model. On the other hand, a purely abstract model which attempted to establish rigid standards and "ideal" structures would contribute much less to our understanding of what some of the real possibilities and real limitations in the development of a commercial fishing harbor are going to be like.

The ideal is useful, however, as a springboard for concrete solutions, and the following description of a model facility provides a useful summary of the major elements with which we have been concerned:

> A concept is evolving which offers several advantages over existing facilities. The concept, which might be termed the "Commercial Fishing Harbor Concept" or "Marine Industrial Park," offers a centralized

> facility encompassing dock space, fuel sales, ice sales, boat and engine sales and repair, other services, and outlets for sale of product to handlers and processors who locate within the facility, usually for the sole purpose of larger exposure to raw product. Provisions are made for unloading several boats simultaneously. In addition, fuel is made available at virtually every docking location and several boats may be supplied with ice simultaneously. Wastes are collected and treated or disposed of through a common treatment facility.[1]

The design proposal which will be submitted here attempts to address itself to this generalized conception of a new physical layout and a new operational infrastructure, using the Andrews Island site as a prototype to show how this initial concept may be broadened to include other, equally valid elements (e.g. tourism, aesthetic enhancement, etc.) and also how it will have to be modified by the exigencies of a real situation.



[1] "Economic and Financial Analysis of Commercial Fishing Harbors on the Georgia Coast," Proposal to Office of Sea Grant, Georgia Sea Grant Program 1975-1976, Vol. II, p. 98.

THE ANDREWS ISLAND SITE

The actual selection of a site for a new commercial harbor in Georgia would of course be preceded by intensive physical and economic investigations preliminary to a choice among alternative possibilities. These would range from topographic and hydrographic surveys of the proposed harbor and shore development areas, through vital soil mechanics studies of foundation conditions, sand drift, etc., to analyses of the various economic, political, sociological, and environmental factors that are peculiar to each prospective location. Consider, for example, the significant part that a skilled labor-pool plays in the still very labor-intensive harvesting and processing of Georgia's shrimp and crab; or the vital road, rail, and air links that an industry with such a perishable product requires. Computer simulation techniques have frequently been used to study the complex system interrelationships affecting fishing ports, their location and configuration, and might be used to advantage in future studies of Georgia's coast.

The choice of the eastern side of Andrews Island in the harbor off Brunswick as the site for a working model of a commercial fishing facility was based, however, only on its being a reasonably plausible possibility for consideration among all the sites in Georgia. No claim is intended to be made for it by its selection, not even that it represents the optimum choice within the Brunswick area.

Andrews Island is owned by the Brunswick Port Authority and has been designated a "spoil" site by the Corps of Engineers; consequently most of the island has been formed by filling operations over the years, and a ring of marsh has developed around the central high ground. (See Figure 3). Its location is convenient to three major auto routes

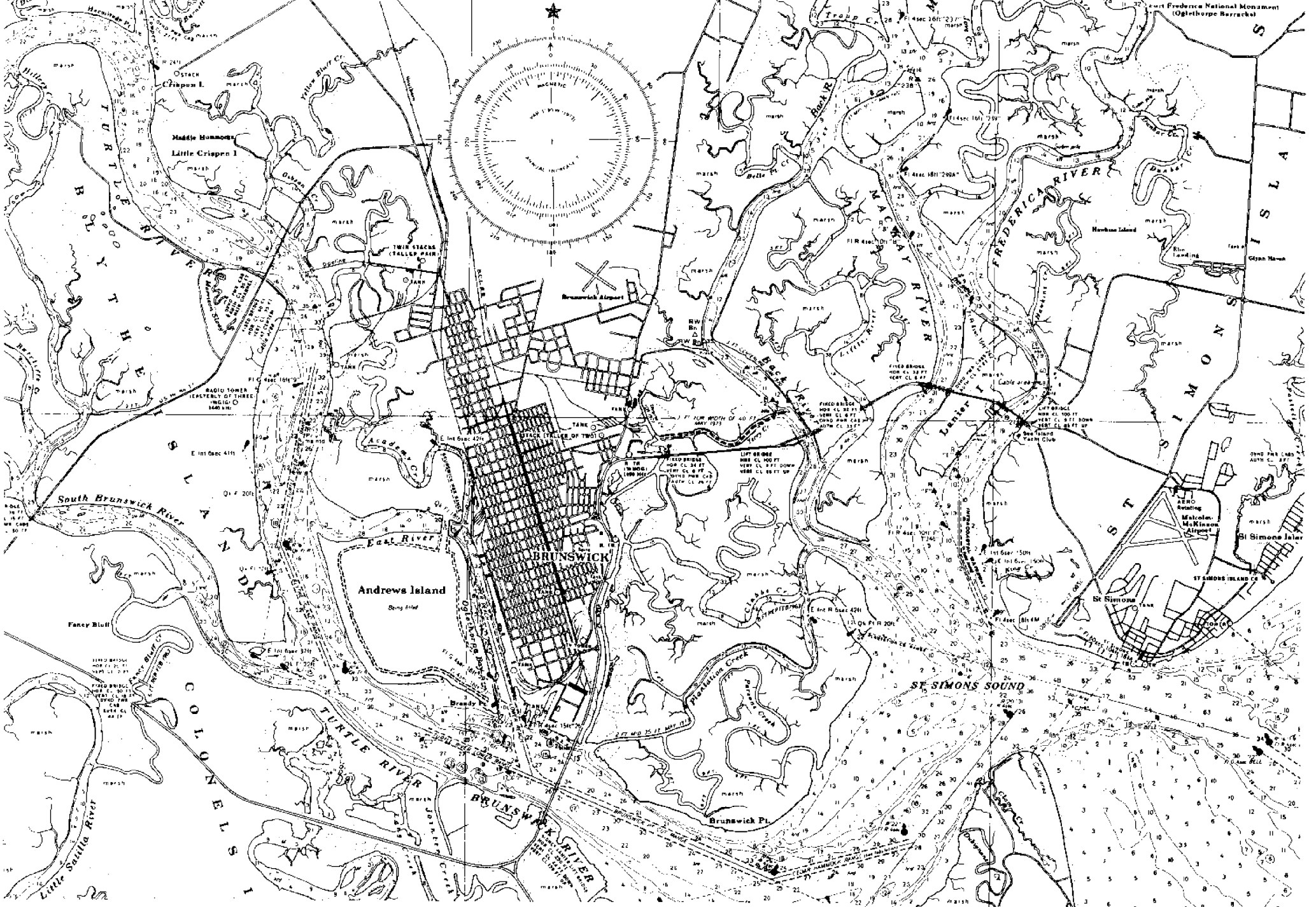


FIGURE 2 GREATER BRUNSWICK AREA

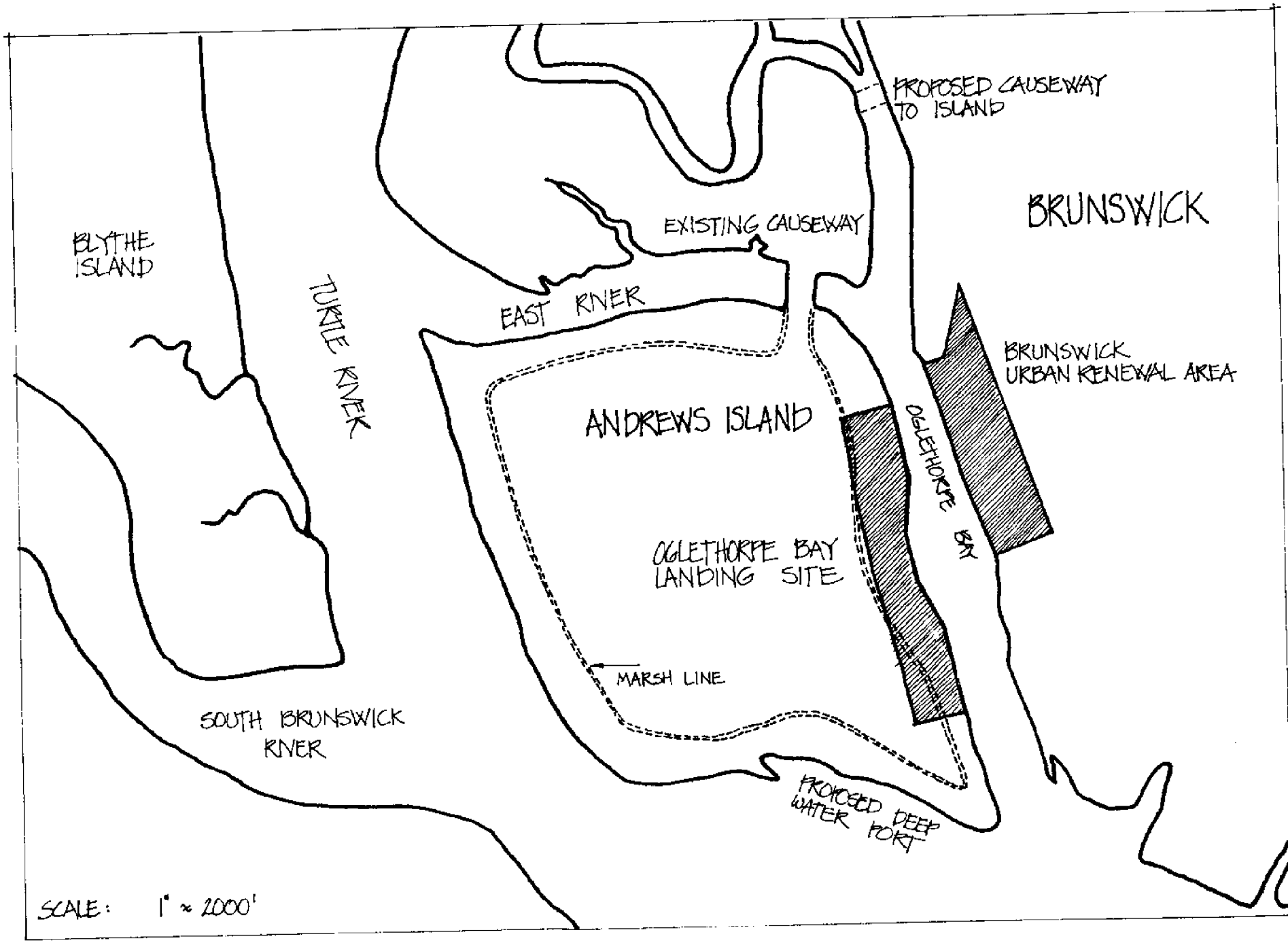


FIGURE 3 OGLETHORPE BAY LANDING SITE AND ENVIRONS

in Brunswick--95 and 17 going North-South, 341 going Northwest and 84 going West. Also there are railroad teamtracks very near the proposed crossing-point from the mainland to the island. All of these offer great accessibility to the island for the public and an easy staging-point for a trunk and air distribution system of fresh seafood, statewide and nationally. Furthermore, the Brunswick Port Authority has proposed developing an addition to the deep-water facilities on the southern end of St. Andrews, near Brandy Point. An additional asset in this location is its closeness to the proposed downtown redevelopment area in Brunswick, offering unique possibilities for tying the harbor design into a larger framework of physical, social, and commercial re-structuring. The fact that this same redevelopment project was responsible for eliminating up to fifty percent of available commercial dock space for boats operating out of Brunswick makes it seem appropriate to create a new facility in the same area.

The site would seem to offer suitable protection from wind and storms, and the East River can be maintained as a navigable channel; however the site does not lend itself to an enclosed harbor facility because of the requirements of frequent dredging. A linear dock would have the advantage of not interfering with tidal action in the river, thus helping to maintain the necessary navigable depth of water. The advantages to be derived from maintaining tidal flow cannot be overestimated if the sensitive estuarine environment is to be protected from possible harmful effects of development. A marine ecosystem, normally alkaline, will become acidic if drained or allowed to stagnate, with disastrous consequences to plant and animal life. Even the presence or absence of mosquitoes and other pests-- a not insignificant consideration if the facility is to succeed at all, much less if it is to be attractive to visitors--is related to this tidal movement of waters.

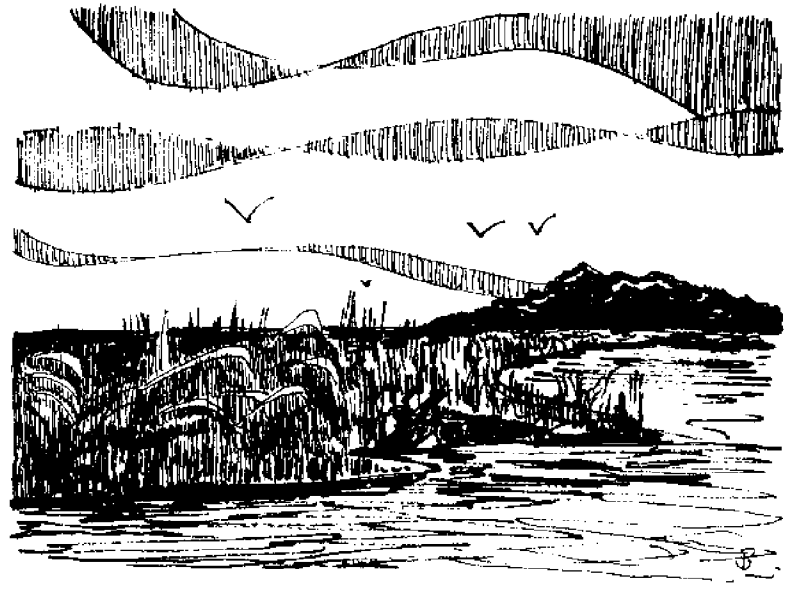
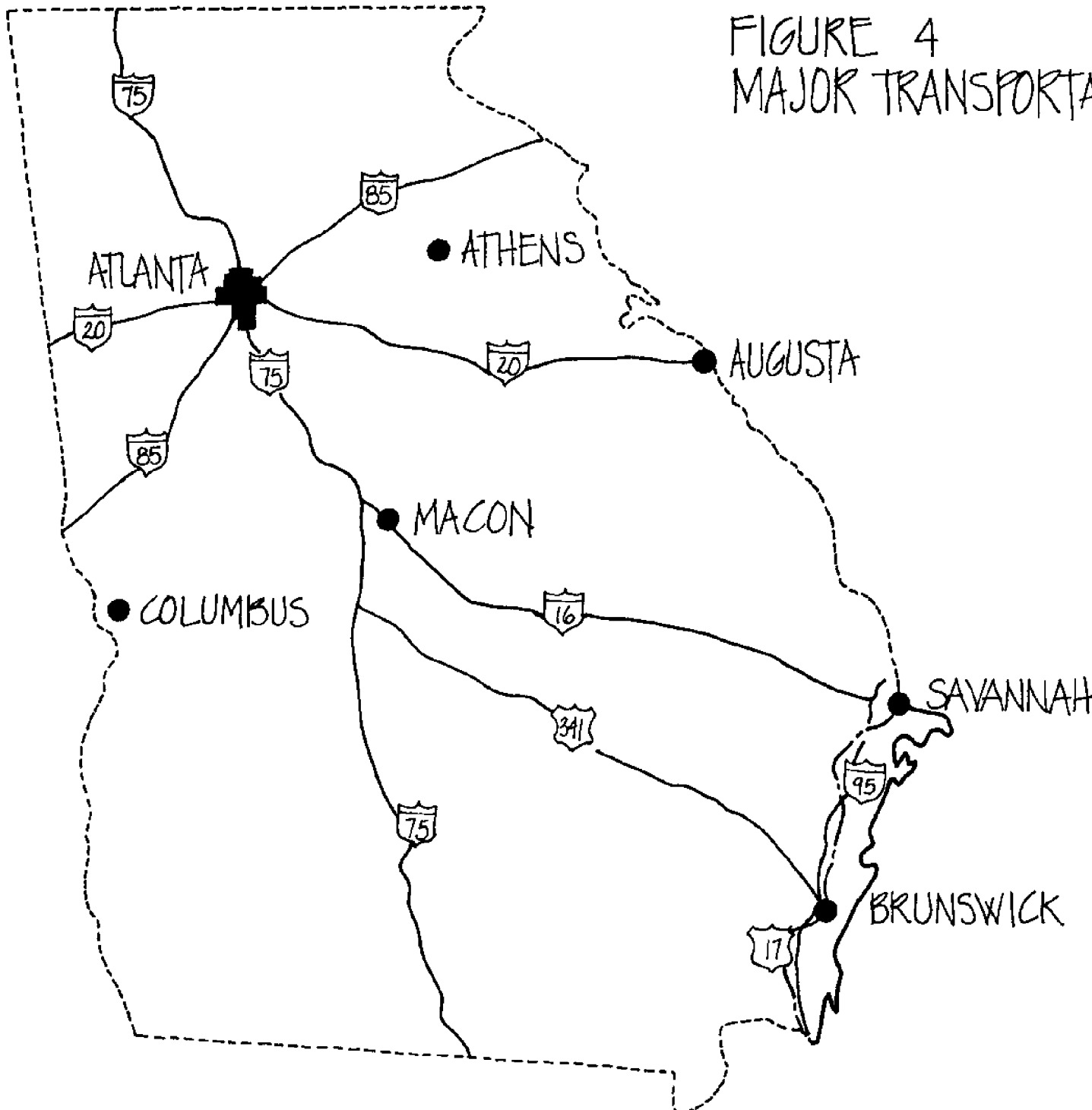
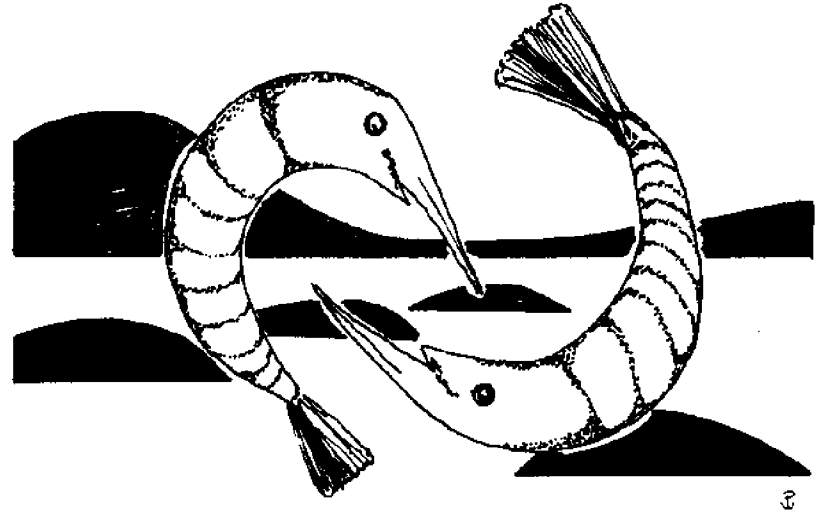


FIGURE 4
MAJOR TRANSPORTATION ROUTES



Assuming that it may be possible to develop Andrews Island without producing undesirable environmental alterations, accomodation could be provided for 100-125 boats; if berthed in pairs and some triples, about 5000 linear feet of dock would be required. At the present time there are 74 shrimp trawlers operating in Glynn County, using five different docks. The shrimping industry is used as an index for the commercial fishing industry in Georgia because shrimp comprise 88% of the total value of all fish taken, with shrimp, hard blue crab and oysters together comprising 98% of the total dollar value and 95% of the total weight of all species caught in 1973. Providing a new centralized fishing facility on Andrews Island would hopefully offer to interested members of the commercial fishing community more than a simple enlargement of existing space and present operating procedures; it ought to suggest instead a number of innovations in handling, marketing, and physical layout that would result in more efficient, equitable, and profitable ways of doing business, in a more pleasing environment. To understand the proposed changes it is first necessary to understand current practices.



PROFILE OF THE COMMERCIAL FISHING OPERATION

Commercial fishing in Georgia employs more than 3,000 people in the production of a commodity valued at in excess of forty million dollars a year. As a whole the industry has exhibited considerable stability—the number of regular commercial fishermen and the amount of catch has remained fairly stable over the years, and there have been no major technological changes. The marketing channels from vessel to consumer are diagrammed in Figure 5. One of the most significant aspects of this marketing chain is that it is common practice for the primary wholesale dealer to provide dock space and unloading facilities. Wherever this situation exists the independent boat operator may find himself in a dependent position, especially since ice and fuel may be available only to those vessels whose catch is purchased by the boat owner. This serious inhibition of a free market situation has been intensified by the shortage of available dock space. Commercial fishermen have suffered additionally from an escalation in operating costs that has outstripped marginal profit increases.

The stability of the industry described earlier may actually represent a failure to capitalize on growth potential in all segments of the operation, even while sales of processed fish make respectable yearly increases. For some industry members it may even represent stagnation or the threat of failure to maintain a viable commercial enterprise. Crab processors, for example, who usually own their own docks and fleets, have to limit their catch even in peak season because of inadequate processing capacity. Shrimp fishermen, whose active season in Georgia is limited to six months, are forced to choose between no work and working out-of-state because alternative fishing possibilities in finfish have never been explored in a practical way, nor has shrimping on the Continental Shelf which would require larger boats and special equipment.

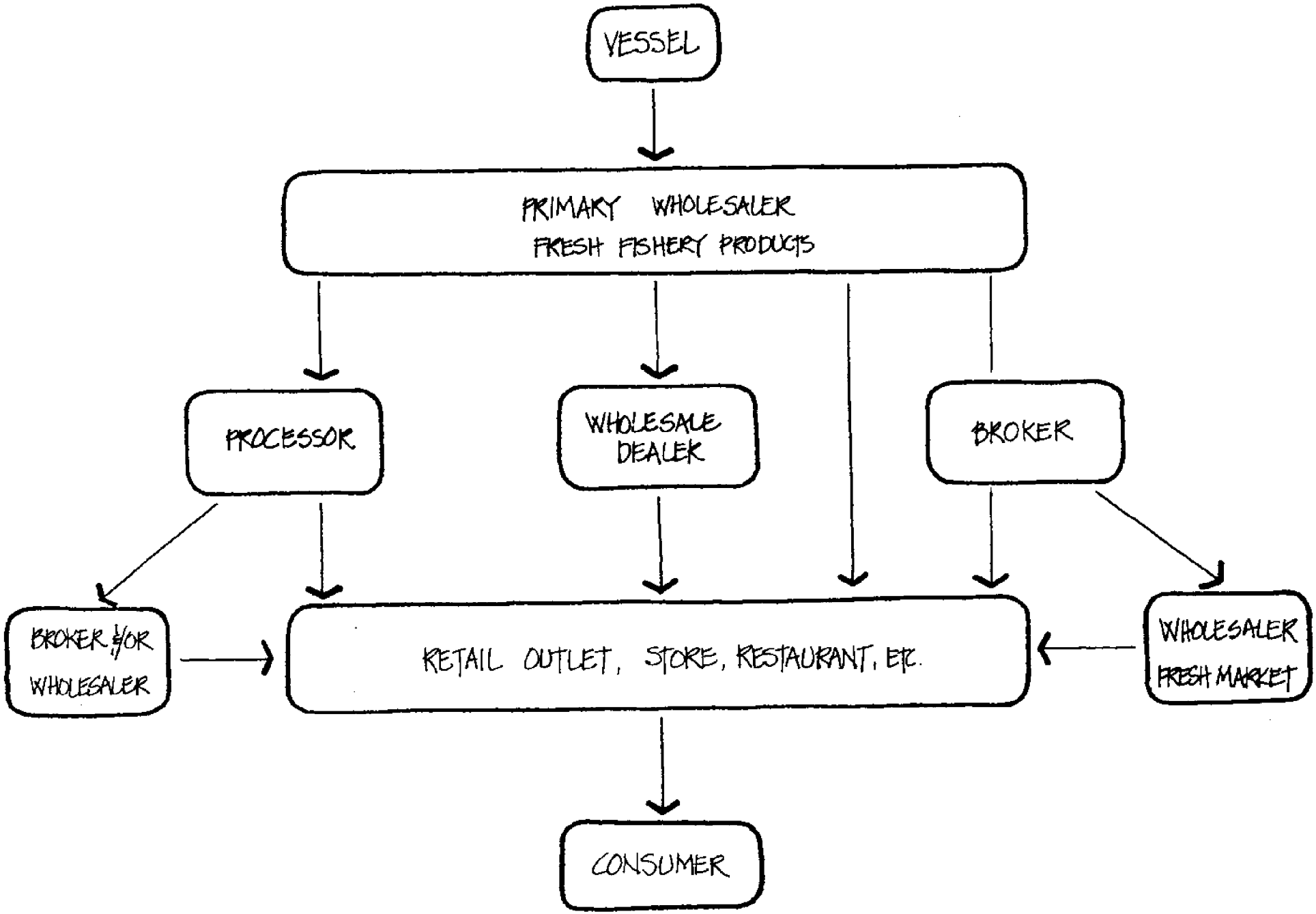


FIGURE 5. MARKETING CHANNELS FOR SHRIMP-GEORGIA

A good case can be made that the obsolescence of physical installations and operational systems characterizing a large part of Georgia's commercial fishing industry has created a vicious circle that perpetuates the status quo. The Brunswick complex provides a good illustration of much that is wrong: facilities are scattered, the provision of fuel and ice is totally inadequate, there is no boatyard or marine hardware supply, no community center, no local net repair yard, and no satisfactory methods for waste treatment. Consequently the "Oglethorpe Bay Landing," the project name for the Andrews Island model, offers an opportunity for demonstrating how the introduction of a new commercial harbor might dramatically improve the industry itself, the lives of its members, and the wider community as well.

DETERMINATION OF DESIGN CRITERIA

The "wider community" referred to here has been an important element in design considerations for this project. It seems fair to say that at the present time the only impact which the fishing industry has had on city or region or state is in the area of supplying shellfish and in employment. And yet in other parts of the country these same kinds of activities have functioned as a powerfully attractive force both for tourism and for other kinds of ancillary investment. One has only to think of Fisherman's Wharf in San Francisco or any of the dock-side hubs of many coastal cities. Coastal planning groups have for a number of years been concerned about the difficulty of getting people to "Stay and See Georgia;" only ten percent of all out-of-state vehicles travelling Georgia highways have destinations within the state. These "passing through" travellers have tended to regard Georgia as part of the journey rather than as part of the vacation. To increase an area's potential for stop-over tourist traffic, clustered attractions within a given area are very important. The development of Oglethorpe Bay Landing could be part of the effort to bring the "Golden Isles" tourist flow into the heart of Brunswick's central business district and the adjacent historic area currently being revitalized. The importance we have attached to this enlargement of the ordinary conception of a marine industrial park is fundamental to the design decisions we have had to make.

The most basic consideration affecting the design of the facility is that the dock is an edge between land and water; our primary task has been to maximize the functional as well as visual potential along and across that edge. In order to do this, we have determined the following objectives:

(1) to create an efficient circulation system of goods and people, on the island and in the harbor area;
(2) within that system, to cluster facilities which have compatible functions;
(3) to integrate these clusters in ways that maximize desirable interaction while respecting the special requirements of each.

THE DOCK

One of the first steps in developing the master plan for the facility was to determine the length of the dock. At the present time there are 75 boats operating out of Glynn County. During the season the numbers of boats rises to about 100, with boats from North Carolina, South Carolina, and Florida shrimping the waters. Of the 75 resident boats, approximately 45 now need permanent docking facilities. In the mid 1980's (probably the earliest commencement date for the project), we estimate approximately 100-125 resident boats with 40-60 visiting boats. Also, by 1985 shrimping procedures and boat design will have changed. The boats will be larger (70'-90' as compared to the present 65'-70' average) and will be staying out longer--up to three weeks, the maximum time for keeping shrimp on ice.

Each boat needs approximately 100' of dock to berth. The net shop, engine repair, ice house, and each fish house needs 200' of free dock to serve their customers, making a total of 1700' for all these facilities. The proposed dock is 5000'. This will handle up to 99 boats docked three abreast, the most intensive use. As much as half of the 1700' of open dock could be available in the late evening at the leasee's discretion in order to handle an overflow condition.

While docking three abreast is not an entirely satisfactory option, the use of finger piers to alleviate this situation would create an even greater dredging problem. A lineal dock of 5000'--even with triple berthing--seemed preferable to the tremendous expenditure involved in providing dock and supporting utilities for individual berths (11,700' for 100 boats).

Several alternatives were considered in determining the configuration of the 5000' dock (see Figure 6). A linear design was found to be the best choice for a development of this size because of dredging and circulation considerations, and also because of the visual link to the Brunswick shoreline.

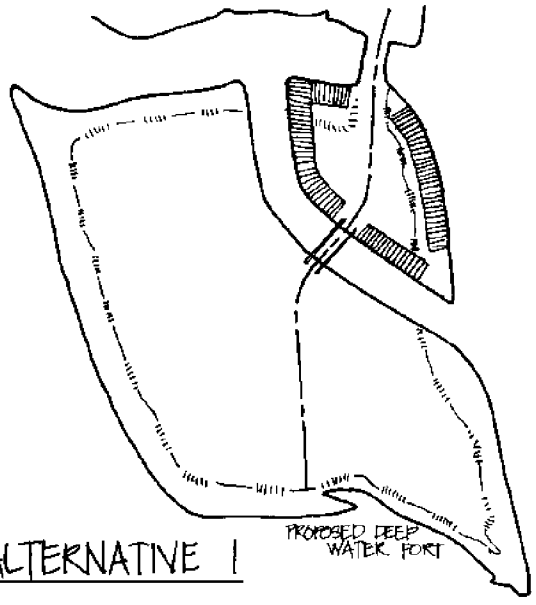
In order to avoid the monotony of nearly a mile of straight dock, we have proposed a modified U-shape. This would give a greater sense of the traditional enclosed harbor, create better visual definition, and also correspond to a natural indentation in the shoreline.

THE FACILITIES

The following list represents a description of the structures and spaces which we determined to be desirable components of a comprehensive harbor plan:

FISH HOUSE

The fish houses are central to the facility. The boats unload; the shrimp are separated from the ice, weighed, and graded; the shrimper is paid for his catch. After being weighed and graded, the shrimp are deheaded, packed in ice and are either frozen and stored or immediately sold to processors, wholesalers, or retailers (see Figure 7). Each fish house should have 200' of dock space under its authority.



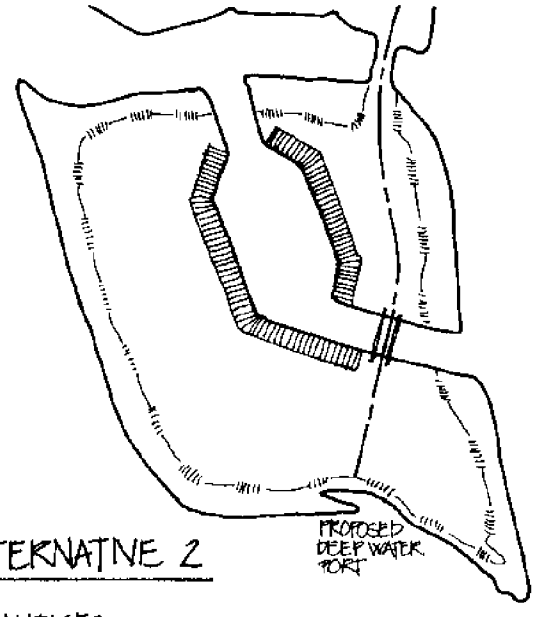
ALTERNATIVE 1

ADVANTAGES

1. FAIR TIDAL FLOW -- SOME DREDGING PROBLEMS.
2. CENTRALIZATION OF FACILITIES REDUCES UTILITY REQUIREMENTS.

DISADVANTAGES

1. TRANSPORTATION ROUTE TO DEEP WATER PORT A PROBLEM.
2. HIGH INITIAL COSTS, PARTICULARLY DREDGING.
3. SOME DESTRUCTION OF MARSHLAND
4. LIMITED EXPANSION POTENTIAL



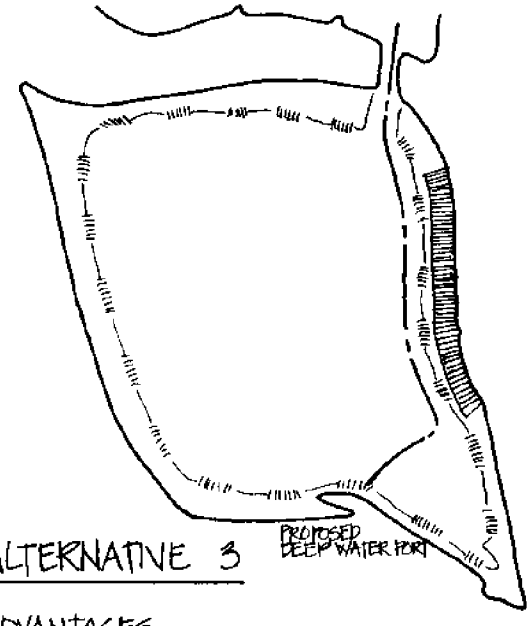
ALTERNATIVE 2

ADVANTAGES

1. TRADITIONAL ENCLOSED HARBOR
2. VISUAL UNITY
3. PRESERVATION OF THE MARSH

DISADVANTAGES

1. TRANSPORTATION ROUTE TO DEEP WATER PORT A PROBLEM
2. EXTENSIVE INITIAL DREDGING - DISRUPTION OF ISLAND INTERIOR
3. POOR TIDAL FLOW - FREQUENT DREDGING
4. HIGHER COST OF LINEAR DISTRIBUTION OF FACILITIES & UTILITIES.
5. LIMITED EXPANSION POTENTIAL



ALTERNATIVE 3

ADVANTAGES

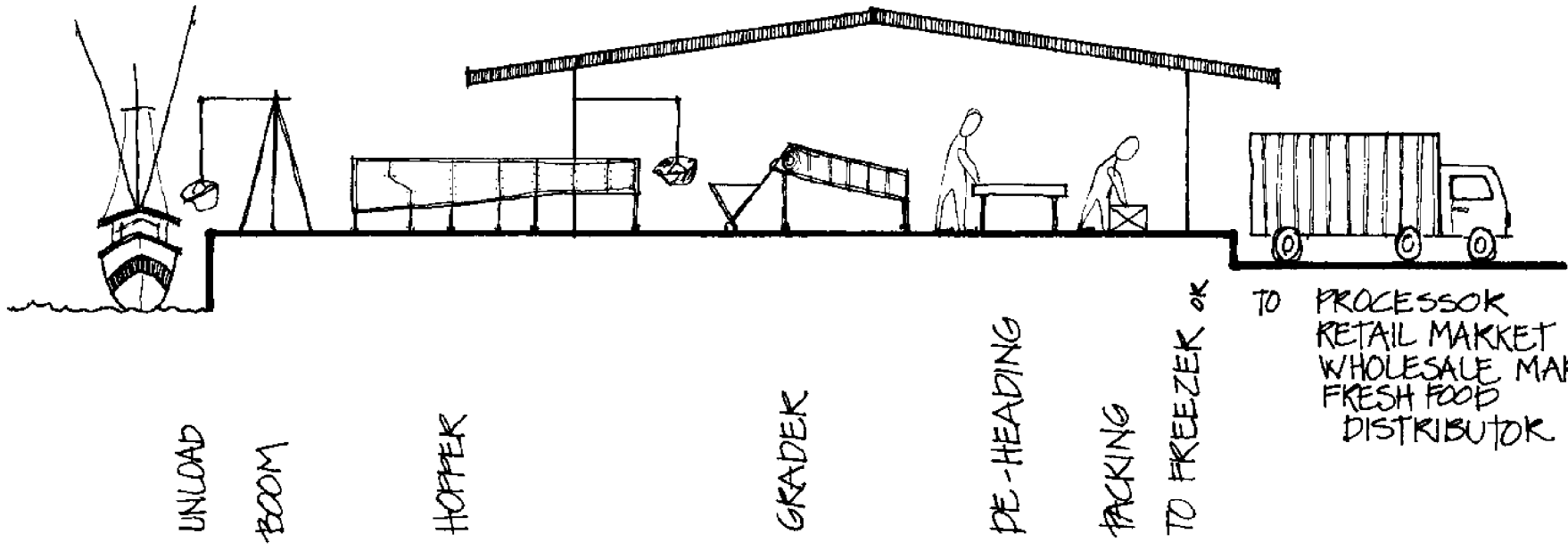
1. GOOD TIDAL FLOW - LEAST INITIAL & SUBSEQUENT DREDGING
2. VISUAL LINK TO BRUNSWICK CBD & PRESENT DOCK
3. MOST ECONOMICAL TRANSPORTATION THROUGH ISLAND
4. LEAST ALTERATION TO ISLAND INTERIOR.
5. GREATEST POTENTIAL FOR EXPANSION

DISADVANTAGES

1. HIGHER COST OF LINEAR DISTRIBUTION OF FACILITIES & UTILITIES.
2. DESTRUCTION OF MARSH UNDER DOCK

FIGURE 6. ALTERNATIVES FOR DOCK CONFIGURATION

FIGURE 7. FISH HOUSE OPERATIONS



FUEL

Boats refill on an average of every week to two weeks. In order to serve the expected 100-125 boats in the mid-1980's, we feel that fuel lines should be placed every 100' minimum - 500' maximum, each with a meter connection to a central fuel area with a tank and a monitor. This would enable boats to refuel in their individual berths, avoiding long waits and traffic problems at a central fuel area. A tank and meter room will be located away from the docks.

WATER

A fresh water outlet will be provided every 100'.

ICE

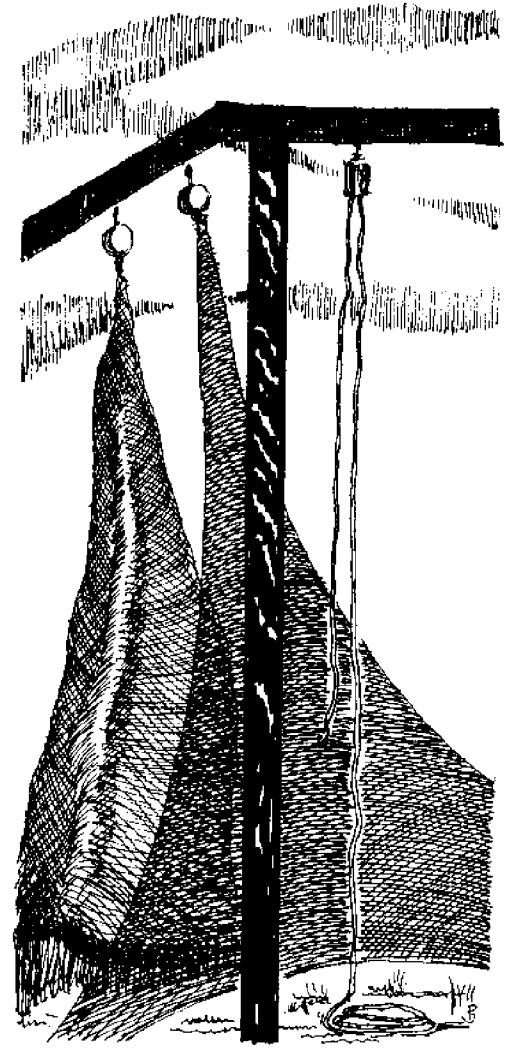
By the mid-1980's two conveniently located ice machines to make, shave, and blow the ice into the hold of the ship in one operation will be required to serve the needs of the fleet.

ENGINE REPAIR

The engine repair shop will have a hoist on the dock and a covered shed area.

NET SHOP

The net shop repairs and sells both nets and doors, and requires dipping and drying facilities in the yard and a covered area for mending. Because of the picturesque quality of the hanging nets, this facility should be located near the public area.



BOAT YARD

The boat yard will require a railed slipway and a covered working area, dock space for boats not in dry dock, and a capacity for boat building.

PUMP-OUT STATION

The pump-out station will be capable of receiving human waste, oily bilge water, and oil directly from the engine through a vacuum hose. The oil will be collected and sent to an oil recycling plant. The human waste will be transferred to city sewage lines.

CRAB PROCESSOR

The crab processor will not only act as a wholesale dealer in fresh crabs, but will also process and package crab meat for distribution. Fresh crabs come primarily from small crabbing vessels that either deliver their catch to dockside or truck them to the crab house. An additional source of fresh crabs is shrimping vessels that either trawl for crabs during the non-shrimping months or net both shrimp and crabs during the shrimping season.

MARINE HARDWARE

The marine hardware store would supply the basic hardware needs of the shrimper, boatyard, engine repair, etc. It should be able to serve a large area of the Georgia coast.

MARINE ELECTRONIC SALES AND SERVICE

This facility specializes in navigational and communications equipment.

GROCERY STORE

The grocery store would be a small convenience store catering to the shrimper's special needs for supplies for day long to 3-week long cruises.

SHRIMPER'S HALL

The Shrimper's Hall would include a meeting room, recreation room, beer hall, showers, lockers, and laundry machines. This building will serve resident and transient shrimpers. A Fishermen's Cooperative Association could operate this building.

WAREHOUSE

A building with large individual bins would be available for rental to individuals who require storage space for equipment used seasonally.

THE RESTAURANTS

Oglethorpe Bay Landing will have at least two sea-food restaurants with outdoor cafe areas, located so that diners may enjoy watching the unloading of the boats and the net shop activities.

SHOPS

A shopping arcade will be situated on either side of the main plaza to attract tourists and Brunswick

residents to The Landing. These specialty shops might include a shell shop, bookstore, local crafts, nautical curios and antiques, ice cream parlor, art gallery, gift shop, etc.

OFFICES

The second floor of the buildings housing these stores will be available for retail expansion and for the offices of professions supporting the shrimping industry--e.g. maritime law offices, C.P.A.'s, banking, etc.

PORT AUTHORITY BUILDING

This building will house government offices connected with the harbor and the industry, and will also serve as the main information center for visitors, offering an audio-visual presentation introducing them to the shrimping industry.

THE MARKET

The market is designed to house a variety of activities, all centering around the retail sale of fresh Georgia products, especially seafood. The facade of the structure is glass, a design element which retains some of the feeling of the traditional open-air market; the building can also open onto the plaza when weather permits. It should serve the Brunswick community by providing the best possible selection of fresh foods (seafood, meat, vegetables, and fruits) at reasonable prices, all under one roof. The market will be set up so that dealers and farmers may rent and operate individual stalls, creating a shopping environment that is more lively, colorful, and human in scale than the familiar supermarket.

A fresh seafood bar will be included, at which customers may select freshly boiled shrimp and crab to peel and eat in an informal atmosphere.

THE PLAZA

The market and shopping arcade frame and define the central open space of the master plan, the Plaza. This large area is covered with a continuous canopy of shade trees, providing visual and physical relief from the hot coastal sun. The Plaza has been designed as an unstructured space, providing maximum ease of circulation and flexibility, to allow for a wide variety of spontaneous activity and differing seasonal patterns of use. On special occasions, such as the blessing of the shrimp fleet, the entire plaza might be transformed into an open-air festival area, with games, entertainment, dining, and sales. Several seating areas are provided, and the Plaza promises good vantage points for viewing the activities on the river, as well as picnicking spots for both visitors and employees.

The plaza is paved with oyster shells set in concrete, with extensions of the wooden board-walk of the shopping arcade winding through the space. The major visual element of this area will be a 60 - 70 foot corten steel sculpture, which will serve as the focal point of the dock, visible from across the river in Brunswick.

ARRIVAL POINTS

The visitor has two options for getting to The Landing; he may either drive over via the causeway to be constructed, or he may park in a central parking facility near the Brunswick CBD, and ride a ferry from the city's urban renewal area to the dock of The Landing. The ferry will dock at the Authority Building,

so that the visitor is led directly to the information center. If the necessary parking facility could be developed in Brunswick, and the ferry service provided free or at minimal cost, the number of vehicles coming onto the island would be tremendously reduced. Downtown Brunswick workers could take a quick ferry ride over to The Landing for a fine seafood lunch, without the inconvenience of driving and parking. And keeping large numbers of automobiles off the island would be important in preserving something of the experience of "island"--an environment separate, different, and special.

PARKING

There will, of course, have to be provision made for those who choose to drive to the island and park; 250 parking places have been provided near the central commercial area, 125 for the projected number of employees, and 125 for the projected average number of daily tourists.

The visitor parking lot is conveniently located, with walkways leading directly to an entrance courtyard in front of the Authority Building, guiding the visitor to the Information Center. The Authority Building has glass facades on two sides, providing a strong visual link from the entrance court through the lobby and out onto the docks and the ferry landing. This courtyard provides another shaded area, with space for relaxing out-of-doors convenient to the Shrimper's Hall. It might be used as well by restaurant employees and shopkeepers.

From this outline of the facilities to be provided, it becomes apparent that there are two basic types of buildings and activities--those dealing with the shrimping industry and those geared to public use. A major objective of this study has been to integrate these

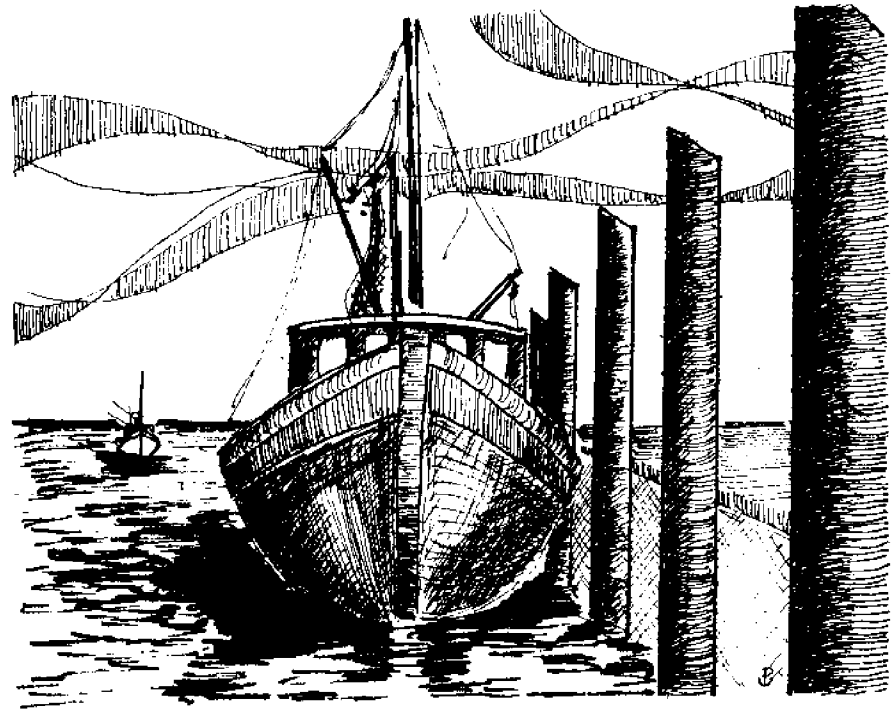
different and conflicting uses in a way that would give the public a sense of participation in the processes of the industry without interfering in those processes. It became very necessary for us as design students to familiarize ourselves with the operations of the industry, in order to best determine how it might serve--and be served by--design innovations whose purpose was to create a radically new and satisfying environment.

Within the industry-related facilities there are two main activity groups--those serving boats at dockside, and those supporting seamen and boats indirectly. The former group requires a larger amount of dock frontage under their control, in order to serve their customers. This frontage, of course, may also be used as berth space at the leasee's discretion. These dockside service facilities are the following:

Facility	Minimum linear footage
Fish houses (5)	200' each
Crab processor	200'
Net Shop	200'
Engine Repair	200'
Boat Yard	300'
Ice blowers (2)	200' each
Waste Pump-out	100'
Storage Warehouse	100'

The support facilities are the following.

Marine hardware
Electronic Sales and Service
Grocery
Shrimper's Recreation Hall and Co-op
Port Authority Building
Offices (tax specialists, accountants, etc.)



The public facilities were designed as a unit and were chosen to complement each other by creating a varied multipurpose center for retail trade as well as for the pursuit of recreation and relaxation. The public facilities are the following:

Market for seafood and fresh produce
Seafood Restaurants (2)
Shops
Information Center (in Authority Building)
Ferry Landing
Plaza

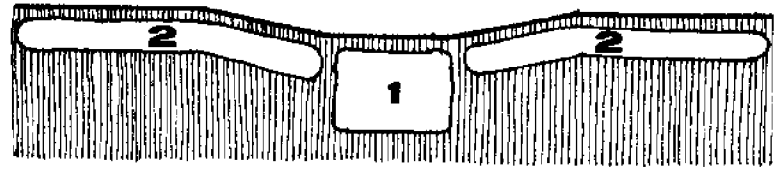
Those industry buildings not requiring dock frontage have been clustered adjacent to the public facilities. There are two basic alternatives in their arrangement (see Figure); the second alternative was chosen because these non-docking industries serve the needs of the total complex and should be centrally located. Furthermore, this central location offers the public a greater sense of the entire harbor and its functions. The two dockside facilities which have the greatest public appeal have been placed on either side of the central area; these are the fish house with its interesting unloading operation, and the net shop, with its hanging nets and dipping pots.

The facilities requiring docking frontage extend from either side of the central plaza; in a real situation, the amount of frontage would relate to specific needs. We have assessed the spatial needs of fish houses, ice houses, net shops, etc., as being similar, and have chosen 200' as a working dimension, except for a 300' boatyard. This 200' figure is sufficient for two boats—one being serviced, one waiting. This pattern should ease traffic in the river. After servicing, the boats will find nightly berthing either in the central area or toward the ends of the dock.

ALTERNATIVE 1

1 NON-DOCKING FACILITIES AT END.
2 DOCKSIDE FACILITIES IN CONTINUOUS BAND.

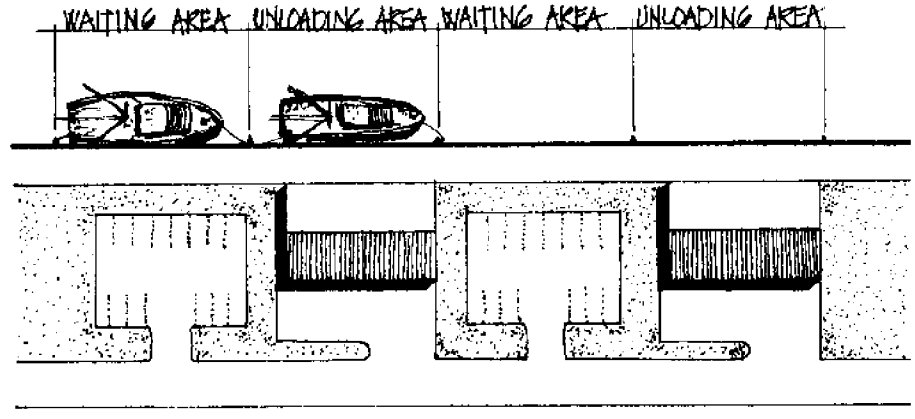
ALTERNATIVE 2



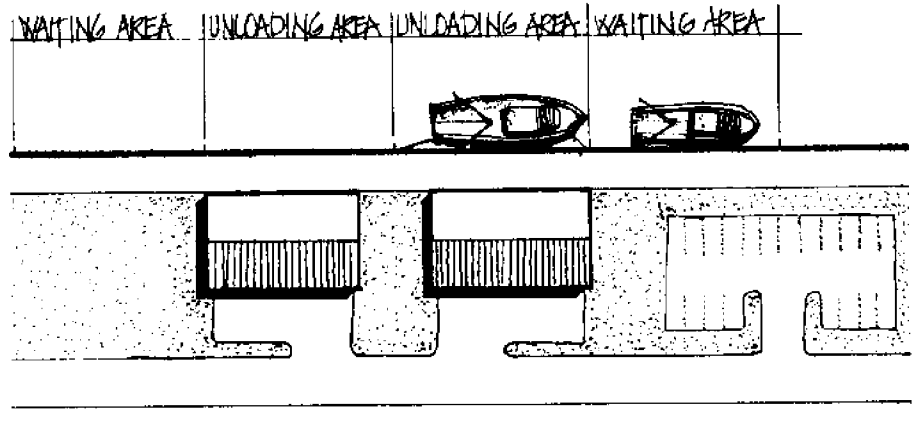
1 NON-DOCKING FACILITIES CENTRALLY LOCATED.
2 DOCKSIDE FACILITIES SPLIT.

The alternatives for arranging these dockside facilities are illustrated in the Figure. In the first alternative the buildings are over 100' apart; the buildings in the second alternative would be separated by less than 30 feet, with waiting areas on opposite sides of the buildings. Pairs of buildings in this second alternative would be separated by 200 feet, creating a more visually interesting rhythm than the regularly spaced buildings of the first proposal. In either plan the areas between buildings could accomodate parking for employees and fishermen, but the second offers the additional possibility of developing small natural areas of green space between the buildings. In either case, a planted berm will be installed to screen the parking lot from the dock and from Brunswick. The lots themselves will be located about every 400 feet on center, allowing a maximum walking distance of 200 feet between auto and boat.

The large area between the main road and the dock service road will be planted with pine seedlings, cabbage palms, live oaks, etc. to produce a dense naturalized area.



ALTERNATIVE 1



ALTERNATIVE 2

AESTHETIC CONSIDERATIONS

The interest of landscape architects in the design of a model of this type is in the challenge to describe a solution which not only arranges the different elements in an efficient plan, but produces as well a synthesis of all environmental, aesthetic, and practical considerations. Aesthetic values may no longer be viewed as an unnecessary luxury in planning an industrial operation, since they may have as real and immediate an impact upon the investment of development capital as the more generally acknowledged functional factors. If one looks at historic examples of ports of this sort—Annapolis, Nantucket, Boston—it becomes obvious that these maritime centers are still viable operations precisely because they are much more than merely efficient vehicles for trade. Beginning as small ports with fishing docks, communities settled around the wharves, supporting businesses developed, a commercial center grew up and eventually tourists were attracted by the possibility of experiencing the flavor, the local color, the excitement of the day-to-day operations of a marine industry. People gravitate to harbors for the pleasure of seeing boats and their marvelous rigging at close hand, for the chance to share in the centuries-old pleasure in a good catch, to eat seafood fresh from the boat, to experience the whole gamut of sights and sounds and movement that is unique to the world of water and wharf.

Oglethorpe Bay Landing will emulate these historic examples not in their specific design composition, but in their motivating principles: forthright simplicity in plan, giving primacy to the central processes upon which everything else depends; simplicity and integrity as well in the choice of structure and material; harmony with the landscape and seascape. Traditionally, structures at dockside have been of simple, shed-type design, often of weathered lumber, with tin roofs. These were the most available and appropriate materials at the time. Wood is still a very available material, and will always be appropriate for seaside structures.

New technologies, of course, ought to be reflected in the architecture of the buildings as surely as they are in the industrial processes that take place within them. Each building needs to express its own function while being clearly related to the architecture of the entire facility. Thus a natural distinction of operation will lend a certain variety to the appearance of the different buildings at the same time that the entire complex is unified by elements in common: materials, roof line, graphics, etc. But the preeminent force producing visual unity is the linear wharf itself, and the design ought to derive its strength from focusing there, so that the buildings serve as a somewhat neutral backdrop to the basic aesthetic appeal of shrimpboats, nets, masts, shrimper and shrimp.

Attention must be paid to the importance of views from within the buildings as well as from the docks. Interesting open spaces will provide a pleasant working environment, encouraging people to spend time out-of-doors, strolling and sitting along the waterfront.

Materials will need to suit a semi-tropical coastal climate and the corrosive effects of salt air, hot sun, heavy rains, etc. Suggestive materials are weathered cypress, corten steel, and anodized aluminum roofing. These materials in combination are excellent expressions of coastal color and texture, have the advantage of being somewhat neutral in the landscape, and can hold up to severe weathering conditions.

Although all structures will not be the same height, it is suggested that a standard roof pitch be maintained. Because the Andrews Island site has an east-west orientation, overhangs should shield the structures from early morning and late evening sun.

In order for the entire design to be well integrated with the surrounding environment, a master plan will be required which will coordinate boat, vehicular, and

pedestrian circulation and specify appropriate paving, earthwork, and planting. The provision of adequate shade and visual relief will be an important consideration of the planting plan; only plant materials native to the Georgia coast should be introduced, and the overall effect should be harmonious with the marsh-like appearance of the rest of the island.

These goals of unity, variety, and harmony with the landscape can only be achieved if firm architectural standards are established and enforced with regard to the following design elements:

(1) building material
(2) paving
(3) basic building lines, especially rooflines
(4) graphics
(5) utilities
(6) street furniture
(7) lighting

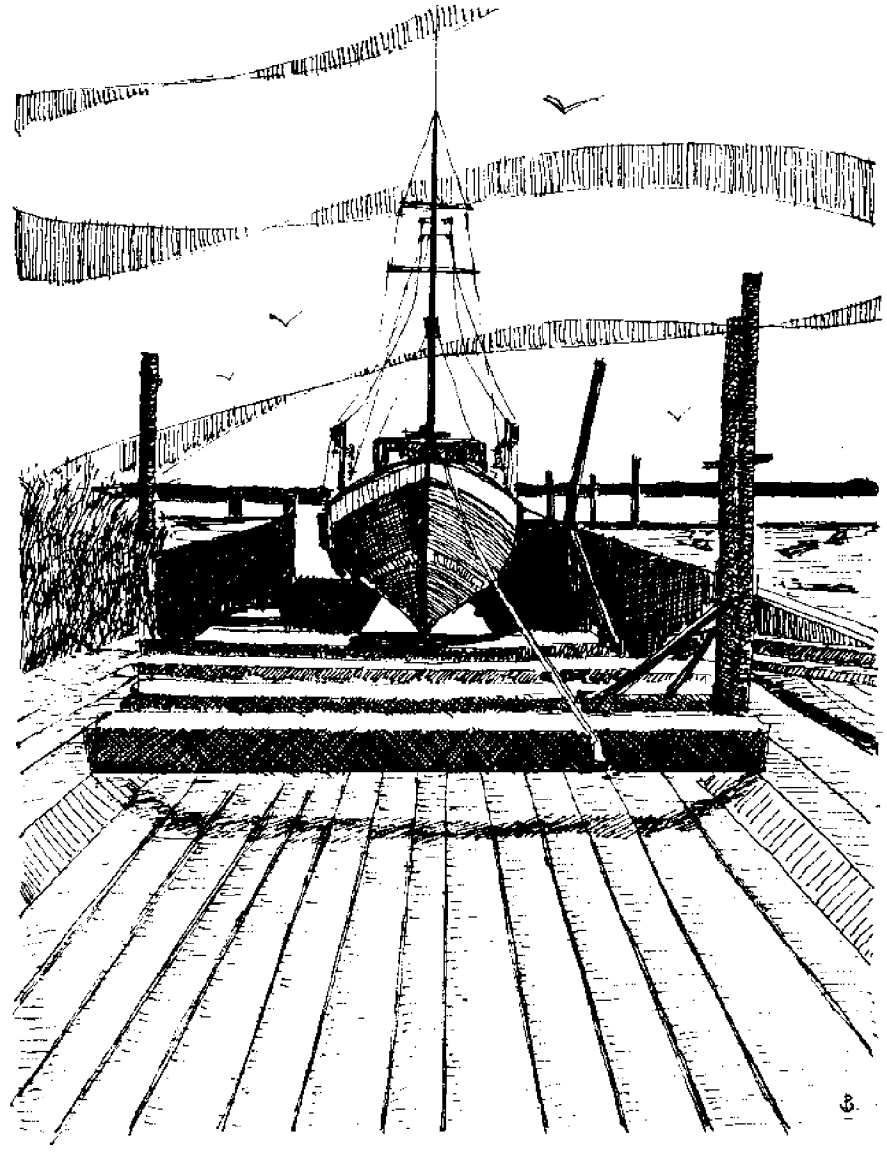
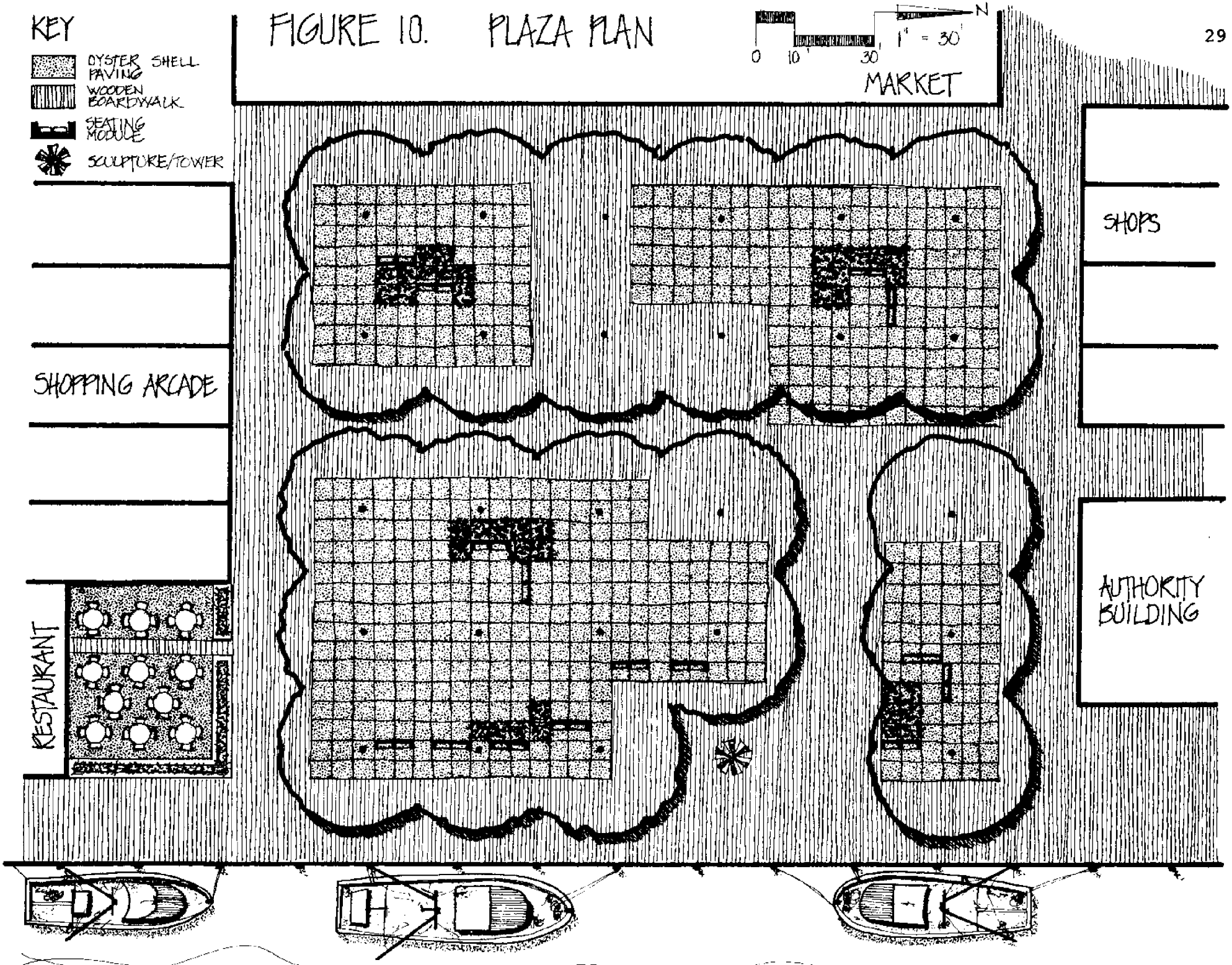


FIGURE 10. PLAZA PLAN



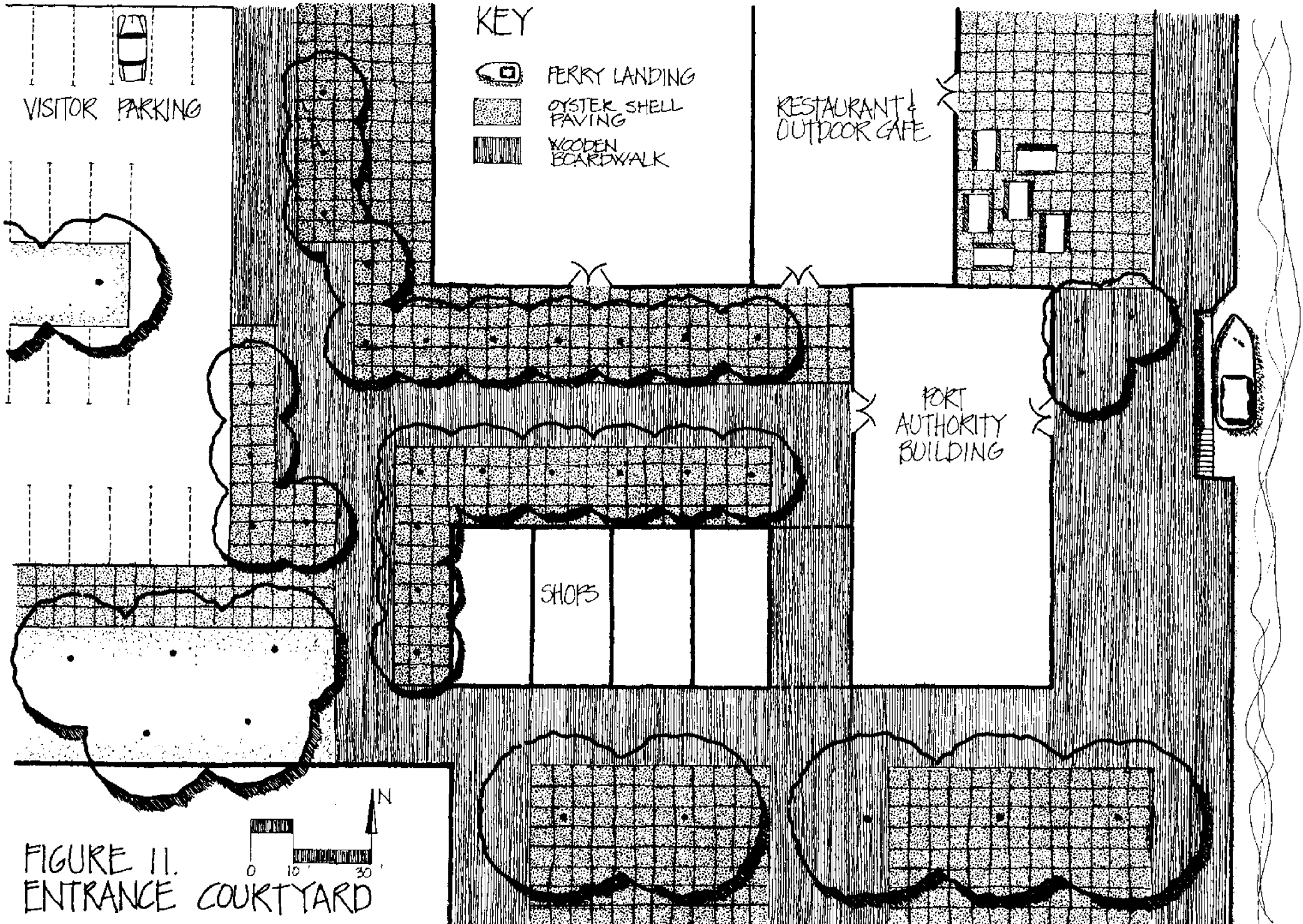
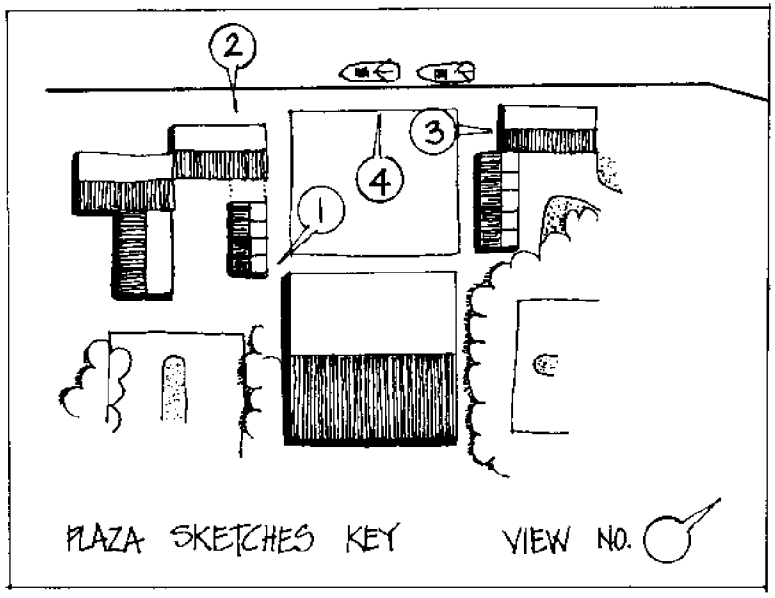
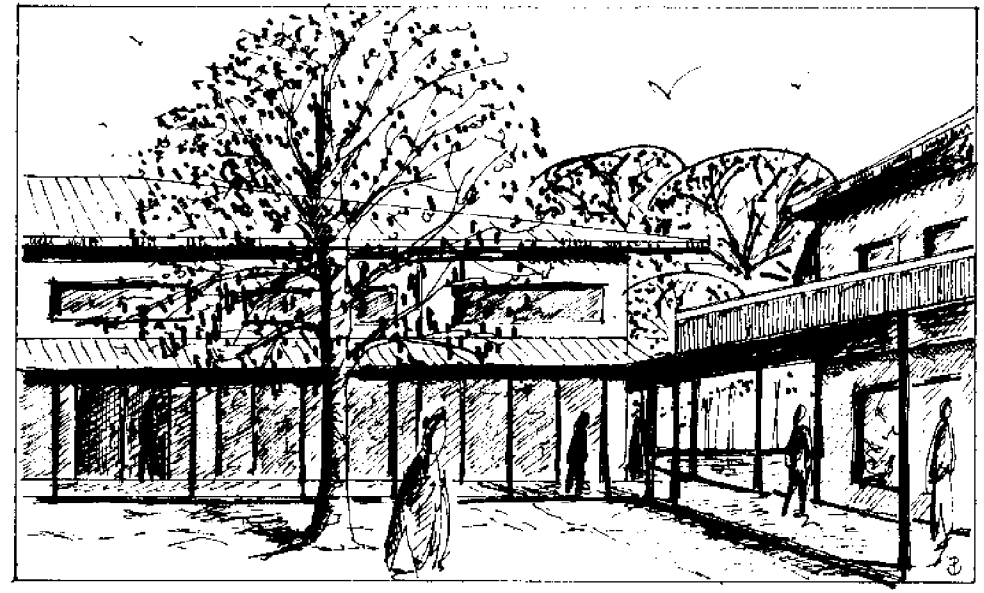


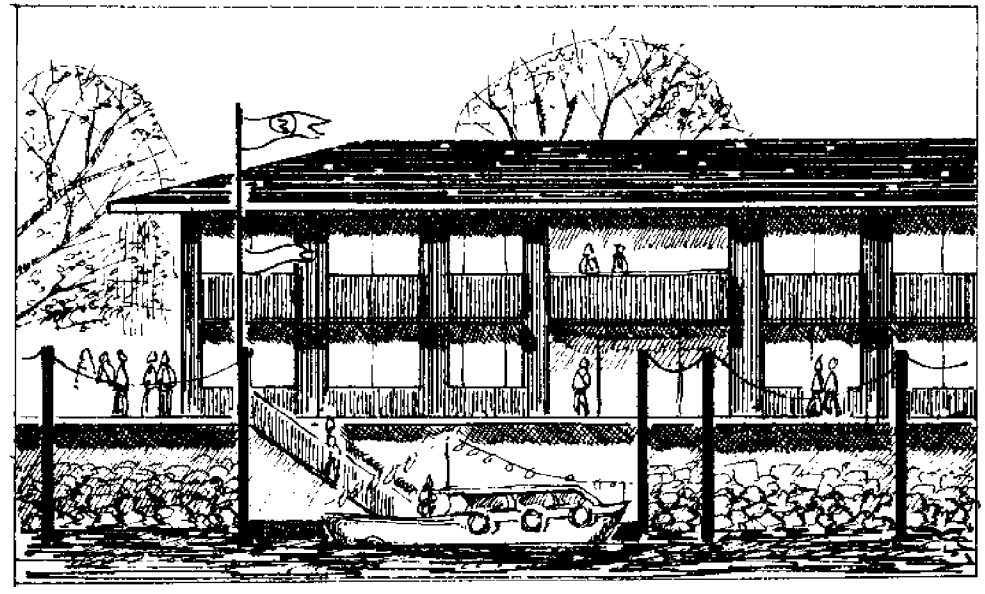
FIGURE 11.
ENTRANCE COURTYARD

FIGURE 12. PLAZA SKETCHES

1. SHOPS & MARKET

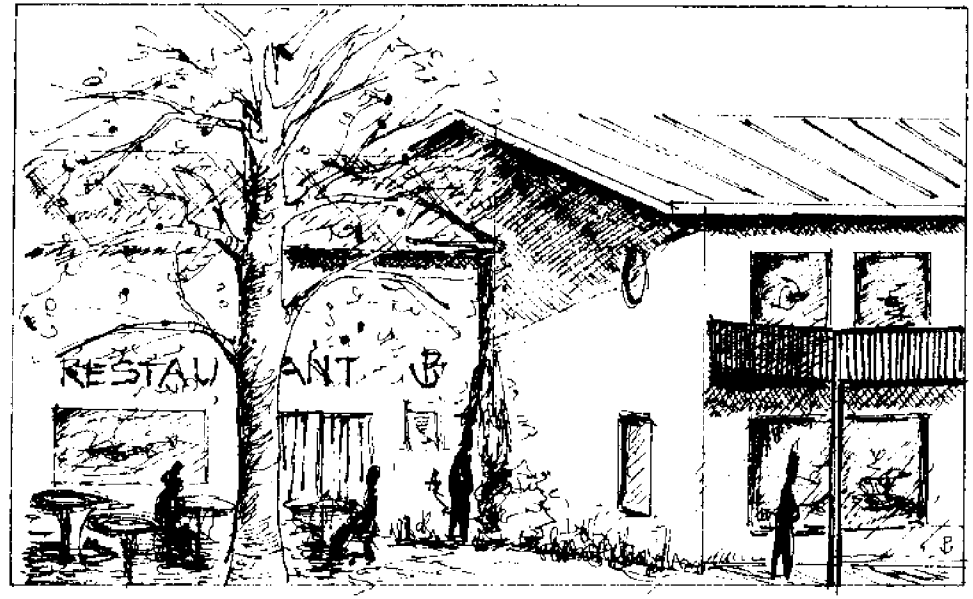




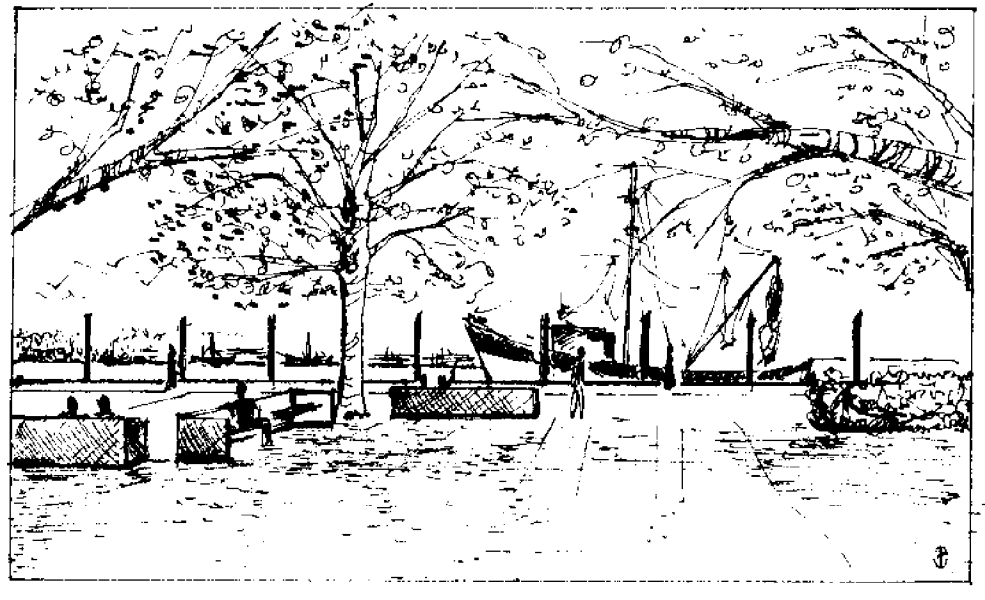


2. FERRY BOAT LANDING & AUTHORITY BUILDING

FIGURE 13. PLAZA SKETCHES

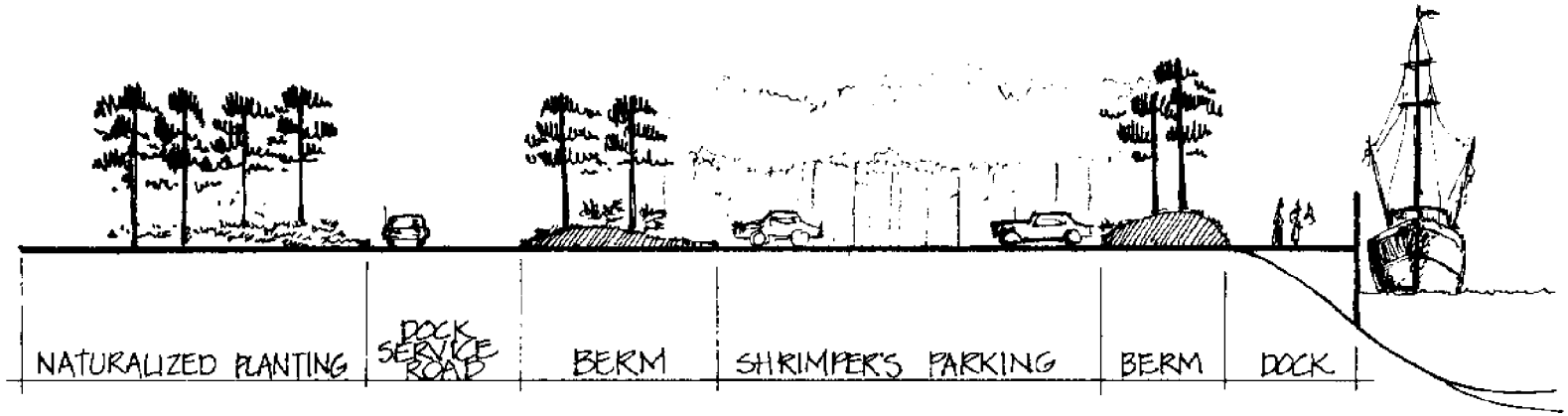


SKETCH 3. RESTAURANT & SHOPS



SKETCH 4. MODULAR SEATING UNITS IN CENTRAL PLAZA

FIGURE 14. TYPICAL DOCKSIDE SECTIONS



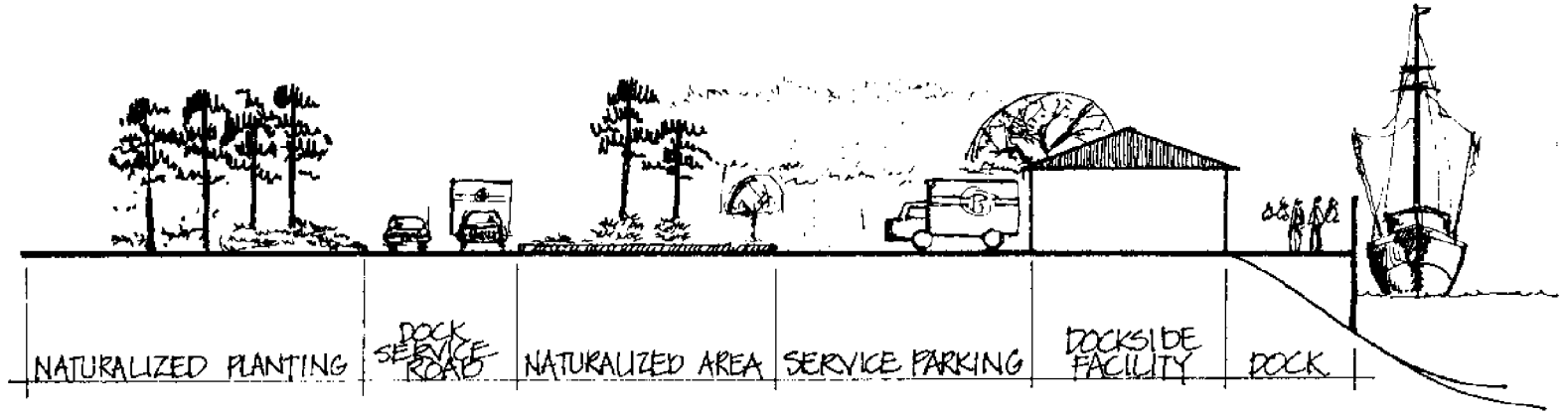
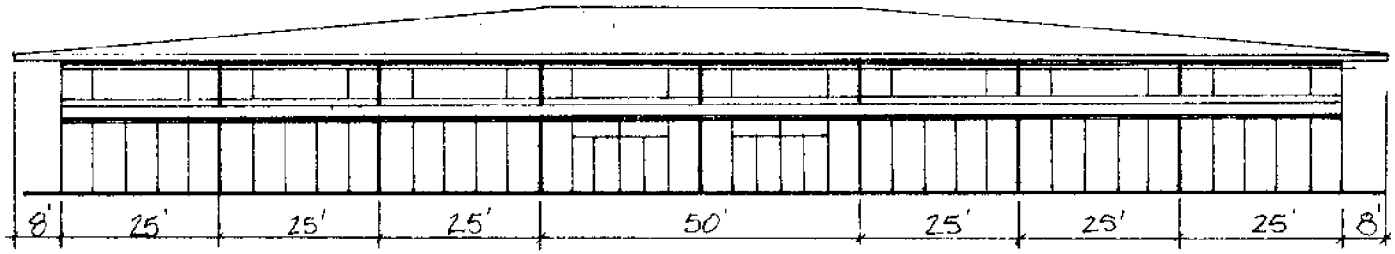
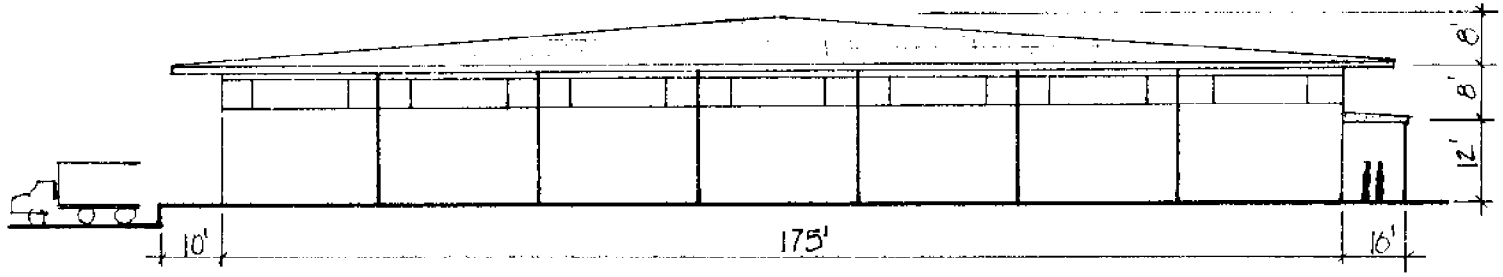


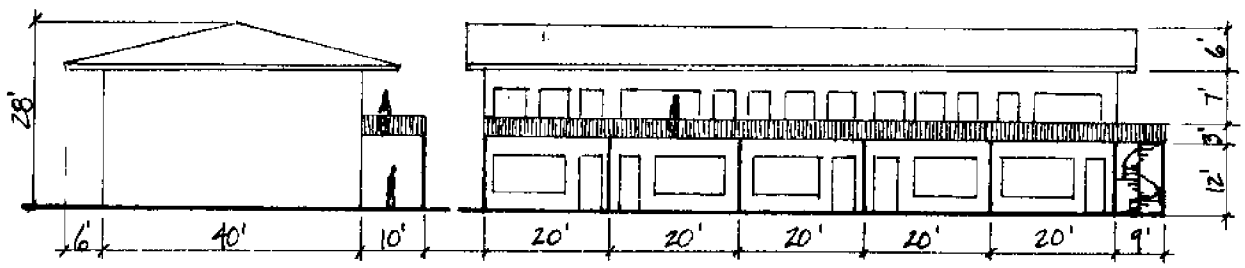
FIGURE 15. ELEVATIONS



MARKET EAST (FRONT) ELEVATION



MARKET SOUTH (SIDE) ELEVATION



SHOPPING ARCADE. SIDE & FRONT ELEVATIONS

WASTE TREATMENT

Solid and liquid waste disposal is an important consideration in a commercial fishing facility, and one that has produced serious environmental problems. Federal and state agencies will no longer tolerate certain of the dumping practices common in the past. The fish houses and the shrimp and crab processors create the greatest amount of waste, and hence represent the greatest potential pollution problem. There are two separate waste products: solid wastes--heads, hulls, crab shells--which can be removed with adequate filters; and liquid waste-water, which at the present time is being added to the municipal sewage system. It will be necessary to enforce filtering standards to prohibit untreated solids from being dumped in the river; the model provides a central collection facility from which these solid wastes may be transported to inland plants where they are recycled as high protein animal feed. The wastewater could be handled in a treatment facility on the interior of the island itself, using simple and efficient "trickling" systems or a rotating disc biological system.

BIBLIOGRAPHY

Carley, D. H. Economic Analysis of the Commercial Fishery Industry of Georgia, Georgia Game and Fish Commission, June, 1968.

Keeling, Clement, Hein, and Beck. Economic Impact of the Proposed Cumberland Island National Seashore, Bureau of Business and Economic Research, University of Georgia, Athens, 1968.

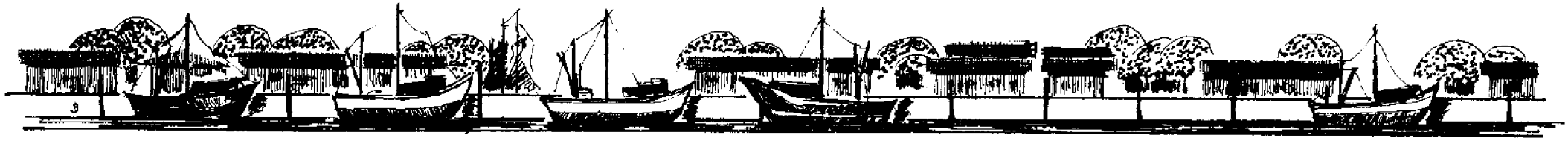
Marine Resource Utilization in Georgia: Project Proposal to The Office of Sea Grant, NOAA, U. S. Dept. of Commerce, 2 vols., University of Georgia, Athens, 1975.

Soderquist, Williamson, Blanton, Phillips, Law, and Crawford. Current Practice in Seafoods Processing Waste Treatment, Environmental Protection Agency, Water Quality Office, Oregon State University, Corvallis, Oregon, 1970.

Special thanks to Dr. Edward Chin, Fred Lyda, Dr. Harold Nix, David Harrington, Jack Rivers, and Jim Whitted of the Marine Extension Service; Professor Jack Seay of the School of Architecture of the Georgia Institute of Technology, and Professor Eckhardt Below of the School of Environmental Design of the University of Georgia.

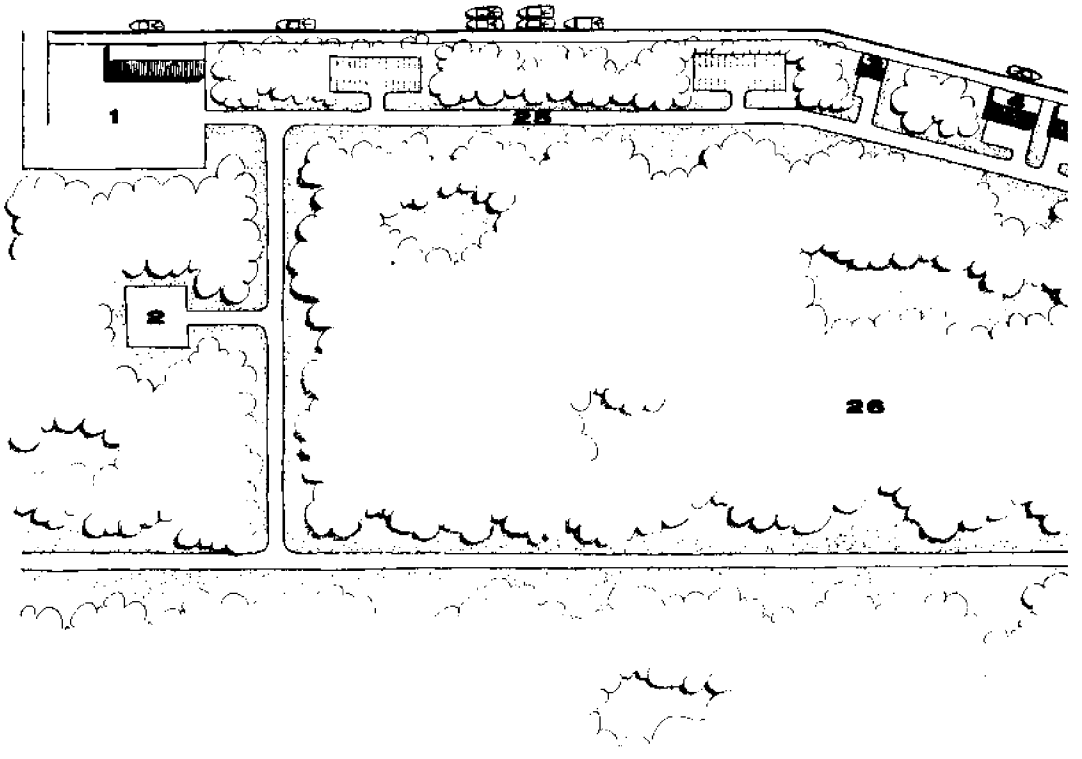
ACKNOWLEDGEMENTS

This work is a result of research sponsored by the Georgia Sea Grant Program with support from the N.O.A.A. Office of Sea Grant, Department of Commerce, under Grant No. 04-5-158-4



KEY

NO	FACILITY	DIMENSIONS
1	BOATYARD	300' x 200'
2	FUEL	100' x 100
3	ICE	40 x 30
4	FISH HOUSE	80 x 50
5	STORAGE FACILITY	80 x 50
6	ENGINE REPAIR SHOP	100 x 40
7	GROCERY	60 x 40
8	MARINE HARDWARE	150 x 70
9	ELECTRONIC SALES & REPAIR	30 x 40
10	NET & DOOR SHOP	200 x 100
11	EMPLOYEE PARKING	63 SPACES EACH
12	VISITOR PARKING	125 SPACES
13	RESTAURANTS	100 x 60
14	SHRIMPER'S HALL	60 x 80
15	PORT AUTHORITY	100 x 60
16	ENTRANCE COURTYARD	60 x 100
17	SHOPS-ARCADE	20 x 40 EACH
18	PLAZA	175 x 150
19	MARKET	175 x 175
20	CRAB PROCESSOR	80 x 50
21	PUMPOUT STATION	50 x 30
22	WASTE COLLECTION FACILITY	80 x 60
23	PROCESSOR (BLDG. & PARKING)	300 x 250
24	MAJOR ACCESS ROAD	
25	DOCK SERVICE ROAD	
26	NATURALIZED PLANTING	



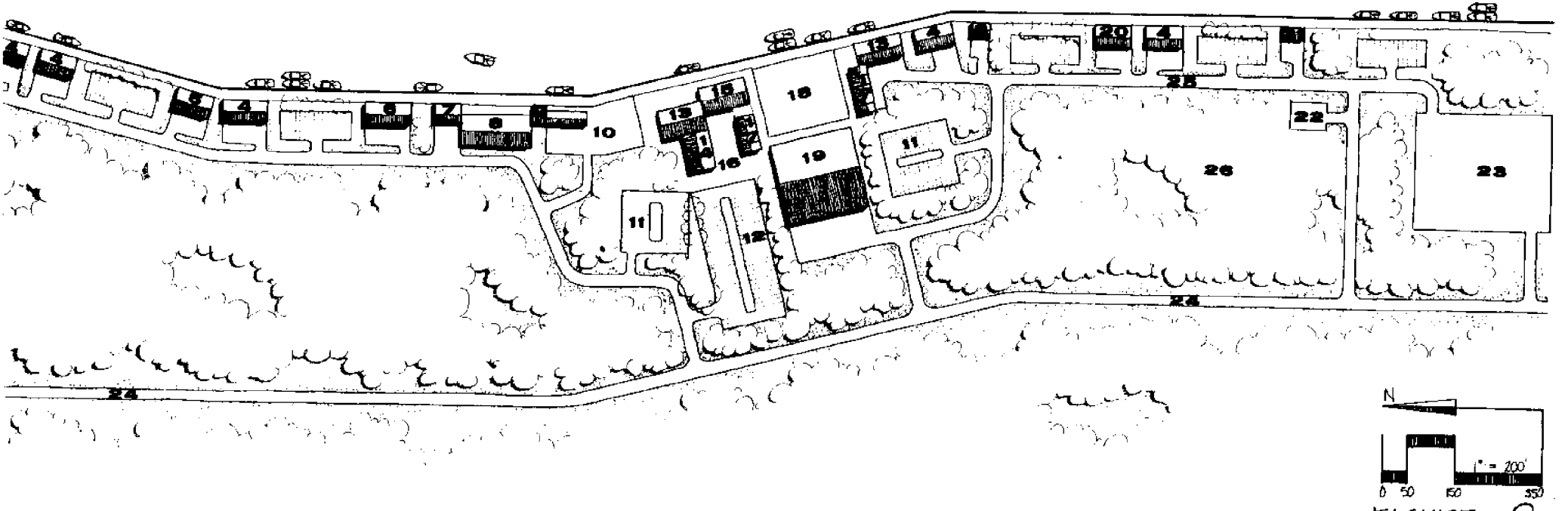
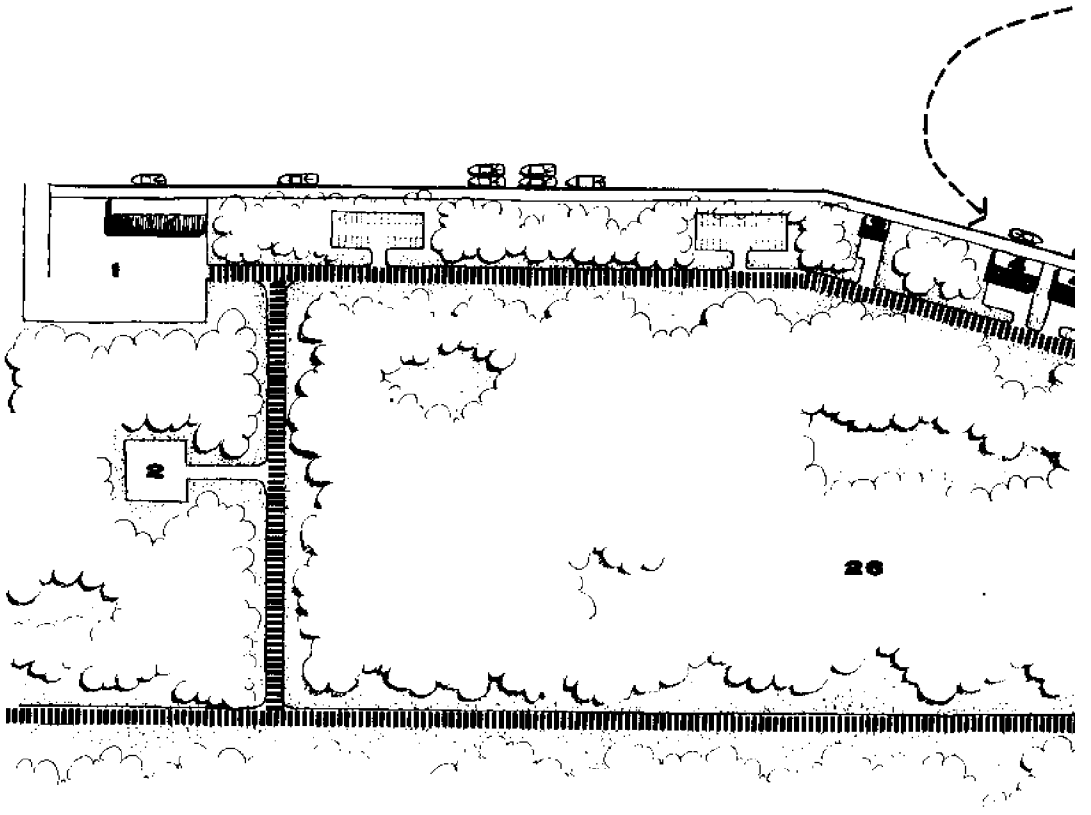


FIGURE 8

MASTER PLAN

KEY

NO	FACILITY	DIMENSIONS
1	BOATYARD	300' x 200'
2	FUEL	100' x 100
3	ICE	40 x 30
4	FISH HOUSE	80 x 50
5	STORAGE FACILITY	80 x 50
6	ENGINE REPAIR SHOP	100 x 40
7	GROCERY	60 x 40
8	MARINE HARDWARE	150 x 70
9	ELECTRONIC SALES & REPAIR	30 x 40
10	NET & DOOR SHOP	200 x 100
11	EMPLOYEE PARKING	63 SPACES EACH
12	VISITOR PARKING	125 SPACES
13	RESTAURANTS	100 x 60
14	SHRIMPER'S HALL	60 x 80
15	PORT AUTHORITY	100 x 60
16	ENTRANCE COURTYARD	60 x 100
17	SHOPS-ARCADE	20 x 40 EACH
18	PLAZA	175 x 150
19	MARKET	175 x 175
20	CRAB PROCESSOR	80 x 50
21	PUMPOUT STATION	50 x 30
22	WASTE COLLECTION FACILITY	80 x 60
23	PROCESSOR (BLDG & PARKING)	500 x 250
24	MAJOR ACCESS ROAD	
25	DOCK SERVICE ROAD	
26	NATURALIZED PLANTING	



CIRCULATION KEY

..... PEDESTRIAN

▮▮▮▮▮▮▮▮ AUTOMOBILE

– – – – BOAT

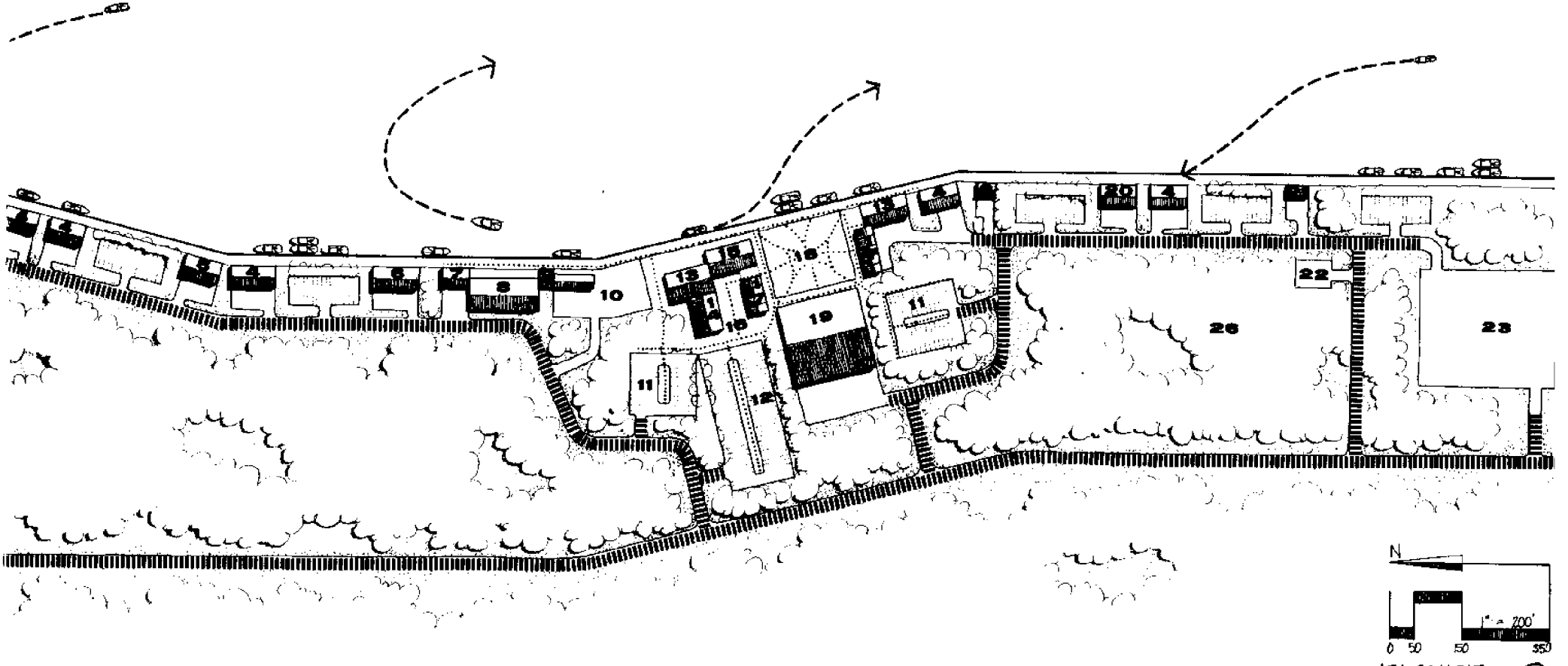


FIGURE 9

CIRCULATION ANALYSIS