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C.M.A.

CENTER FOR MARINE ARCHEOLOGY

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Thesis Proposal
Title: Center for Marine Archeology (C.M.A.)
Location: Seattle WA.
Date: 1-25-92
Name: Heidi Heckel
Advisor: Frank Son
Greg Tew
Purpose: CMA

The center for marine archeology is the project I have proposed for a site located in Seattle Washington. This facility will not only act as a reference point for incoming and out going vessels partaking in marine archeology investigations, but it is also a tool for which the public can become engaged in the unique process found in uncovering famous finds found in our oceans depths. The center would not only involve the public in process, but would allow for the public to view famous finds in marine archeology from around the world.

The center is an arrival and departure point for research ships that go from the center to a location of marine excavation. The ships purpose is to recover artifacts, do some documentation on site, retrieve artifacts, and then transport these artifacts back to the center for further documentation, reconstruction, dating, and display. If the dating and reconstruction of the found artifacts is successful then the artifacts as a whole collection might be shipped to other museums for display. the process of marine archeology itself is multifaceted, and because it has been done for many years it has developed a history of its own, from the techniques used for earlier expeditions, when the technology only allowed so much, to present day marine excavations , where technology has come so far that it has allowed for more extensive research at greater depths which previously could not be obtained. Therefore, the technology has its own history. The progress of this technology will be part of the exhibit. The center is not only an arrival and a departure point for incoming and outgoing ships but it is also a place where the general public is allowed the privilege of observing the scientists in the scientific process. Visitors will also be able to observe the reconstruction of artifacts and incidents that occurred from different periods of time. They will be able to fill in the gaps and in their own minds, and with the help of the scientists, the ability to reconstruct history, will be at hand.

thomas R Wood

THE CENTER IS CONCERNED WITH;

A. The public's awareness of C.M.A., and marine archeology; its significance and the role that it plays in the reconstruction of artifacts and events, therefore history.

B. Provide an opportunity for the public to learn and to understand not only marine archeology and what it uncovers and its history, but to provide information about the history of marine archeology itself.

C. To provide the public with viewing of the scientific process. (view of the lab area.) I didn't want to just show the finished products of research, documentation, and reconstruction, but wanted the public to view the process to which finality is obtained.

D. Wanted to provide the scientist with the facilities to reconstruct an underwater site and do reenactments of underwater recovery.

E. To provide an environment for scientists to be able to test new marine archeological equipment under controllable and predictable environments.

LOCATION
WHY SEATTLE?

The extension of pier 57 into the center for marine archeology transpired not only because of its prime waterfront location and its already high percentage of pedestrian, local, and tourist traffic, but also because of its adjacency to Seattle's aquarium; already a prime attraction.

Seattle is also in the progress of doing several things in order to improve the vicinity of the site: Seattle has not only proposed immediate improvements for the waterfront district, but a plan for continual improvement for years to come is in the process of being implemented, which would assure the areas continual success in attracting the kind of pedestrian traffic that already exists.

EXISTING SITE CONDITIONS

The center for marine archeology in Seattle is located in the central waterfront district. The urban character of the central waterfront area, generally located to the West of Post Alley, consists of six to eight story manufacturing, warehouse buildings built between 1890-1925, primarily constructed of brick with heavy timber or concrete frame construction. First avenue, which existing as a major thoroughfare near the development site is characterized by moderate building heights with street level retail use. Many of the structures were built in the early 1900's, and some newer construction of greater size is located in the immediate vicinity as well. These higher buildings serve as a backdrop for Seattle's proposed C.M.A.
The current appearance of the areas skyline Northwest of the site is horizontal (6-8 story buildings West of First avenue) as opposed to

the vertical character (11-50 stories East of First avenue)within the central business district (C.B.D.)

The Seattle Art Museum, Located directly across First Avenue now reaches five stories. Other projects within a two block radius include the Watermark Tower (22 stories), the Washington Mutual Tower (55 stories), 98 Union Condominium (13 stories), and Key Tower 41 stories). Proposed projects in the area include 1101 Second Avenue (22 stories), 1333 Third Avenue (35 stories), 1401 Second Avenue (23 stories). The existing buildings within the central waterfront area and the sloping topography from First to Western Avenue contribute to the greatest height increase in Seattle's skyline from the waterfront to the central business district. The site id located on the waterfront in the heart of the waterfront district with a backdrop of high-rise buildings and 6-8 story warehouse buildings to the rear. The site is locate in a building height transition area with low-rise buildings to the West, and high-rise within two blocks East of the site.

North of the site is Pike Place Market historical district. This area includes the renovated Pike Place public market and several renovated aar newly constructed buildings with compatible architectural design. Building height in the Pike Place market area is generally 3-4 stories with some residential developments rising to a greater height, including Market Place North (21 stories), 98 Union (13 stories), and continental place (33 stories).

Southeast of the site is the Pioneer Square historical district within average height of 4-8 stories. Renovation of the Pioneer Square area, or "Old Seattle," began in the 1960's and today many of the buildings have been restored, retaining the brick facades.
The heart of Seattle's waterfront district is the site's location. The waterfront area consists of mainly 4-8 story converted warehouse structures, and a series of piers extending out into Puget Sound, with tourist and retail activities along the shoreline. The SR-99 viaduct is located parallel to the waterfront and interferes with some views to the waterfront from certain upland areas.

FUTURE IMPROVEMENTS
(PLANNED FOR SURROUNDING AREAS IMPACTING THE SITE)
Harbor front improvement plan; March 1987, proposed and in progress

The proposed development is located one block from the urban harbor front zone, which is recommended for revitalization under the city of Seattle's Harbourfront Public Improvement plan. The plan encompasses the 1.5 mile area along the Alaskan Way between pier 48 and pier 70, and proposes new open space , moorage, and changes to vehicle, railroad, and pedestrian circulation for the area. Significant enhancement of the Seattle Aquarium and improvements to waterfront park were also included in the proposal. All of the proposed would enhance the attractiveness and the easy accessibility to the proposed C.M.A. Ample pedestrian and vehicular conditions would exist with the improvements to beable to support C.M.A. and surrounding developments.

The mayor of Seattle in recent years has recommended a Harbor front Improvement Plan, which started in 1987: it includes and continues to further the following goals for the area.:

A. Strengthen maritime use
B. Enhance public access
C. Discourage through traffic
D. Maintain local vehicular access
E. Emphasize historical and cultural significance

A. ENHANCE PUBLIC ACCESS

Streets shall be platted towards the harbor to maintain public access to the shoreline.

A series of harbor front street end parks of varied character shall be developed to link major pedestrian corridors to the downtown area.

Active gathering places shall be provided at the foot of University Street with a high visible landmark feature which would make a stronger connection with the waterfront district.

B. UNITE THE HARBOR FRONT WITH DOWNTOWN

Pedestrian corridors to downtown, through public and private improvements will be enhanced.

A street park from the convention center to the harbor front along University Street through a local improvement district will be created.

CONCLUSION FROM THE PROPOSED AND ONGOING FUTURE IMPROVEMENTS;

Seattle's proposed and present improvements in the waterfront district along with the improvements including Seattle's Aquarium, make the proposed C.M.A. even more attractive as a site selection.

PROCESS
PREPARING FOR AN OUTGOING VESSEL TO ENGAGE
IN THE PROCESS OF AN UNDERWATER EXCAVATION:

A. The boat or the ship must be prepared; these vessels usually range from 45-60 feet. The boats must be prepared thoroughly and packed to endure trips that go for as long as 4-6 months.

1. barnacles must be scraped
2. must be anti fouled
3. exteriors painted from top to bottom
4. cordage removed and then renewed
5. rigging has to be examined and then replaced if necessary
6. the diving gear needs to be meticulously checked and replacements made to any faulty parts
7. all the rubber components must be packed in French caulk.
8. metal parts must be smeared in special lanolin pastes
9. food must be prepared (non perishable)

NOTE:

A. Diving boats that are carried by the main vessel must also be prepared

B. The main vessel normally takes a long time to prepare. (usually 2-4 months depending on the difficulty and the length of the expedition

C. The boat has to be prepared thoroughly enough to endure 4-6 months

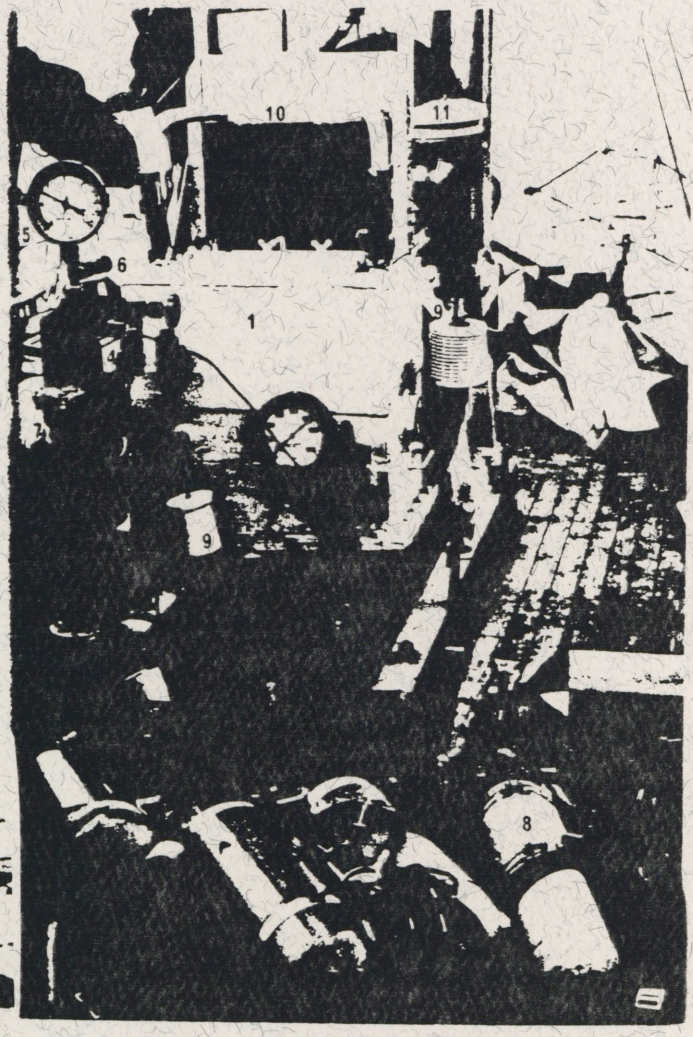
DIAGRAM AND LIST OF STANDARD EQUIPMENT

NOTE:

These diagrams are not only informative of the process once the boat has departed, but they they indicate the type of forms that were used as the driving elements of my design, at the commencement of the design process.



1. Normal air-regulating valve. The exhaled air also passes out through this valve.
2. Pressure gauge.
3. Speech diaphragm.
4. Connexion for snorkel.
5. Self-inflatable Beaufort life-jacket.
6. Weight belt with lead blocks and quick-release pin.
7. Air-bottle harness with quick-release device which is also designed to take a special weight such.
8. Emergency snorkel.
9. Diver's knife.
10. Depth gauge.
11. Work tool.
12. Protective gloves.
13. Compass.
14. Roman bronze nails.



1. Tank, filled with 50 gallons of fresh water to prevent overheating, in which the cylinders driven by the diesel engine in front are pumping air into the first stage at a pressure of about 400 lb. per sq. inch. (The first stage pressure gauge is hidden behind the left-hand side of the tank.)
2. 'Blow-off' safety valve in case of excessive pressure.
3. The second stage gauge showing approximately 1,200 lb. per sq. inch. The air from the second stage is now recompressed to its full 2,000 lb. per sq. inch, which is the maximum working pressure of the diving air bottles used on this particular expedition.
4. This cylinder acts as a water trap. The compressed air enters the bottom and passes out at the top into the air filter, leaving a high percentage of water at the base where it can later be drained off.
5. Final stage pressure gauge.
6. 'Blow-off' safety valve.
7. Air filter containing activated carbon to remove all oil or other impurities from the air which now passes into the diving bottles.
8. Diving bottles being filled through high-pressure flexible hoses from the air filter manifold.
9. Air intake filters.
10. Radiator for cooling the compressor.
11. Air intake for diesel engine.
12. Six-foot-high engine exhaust pipe.

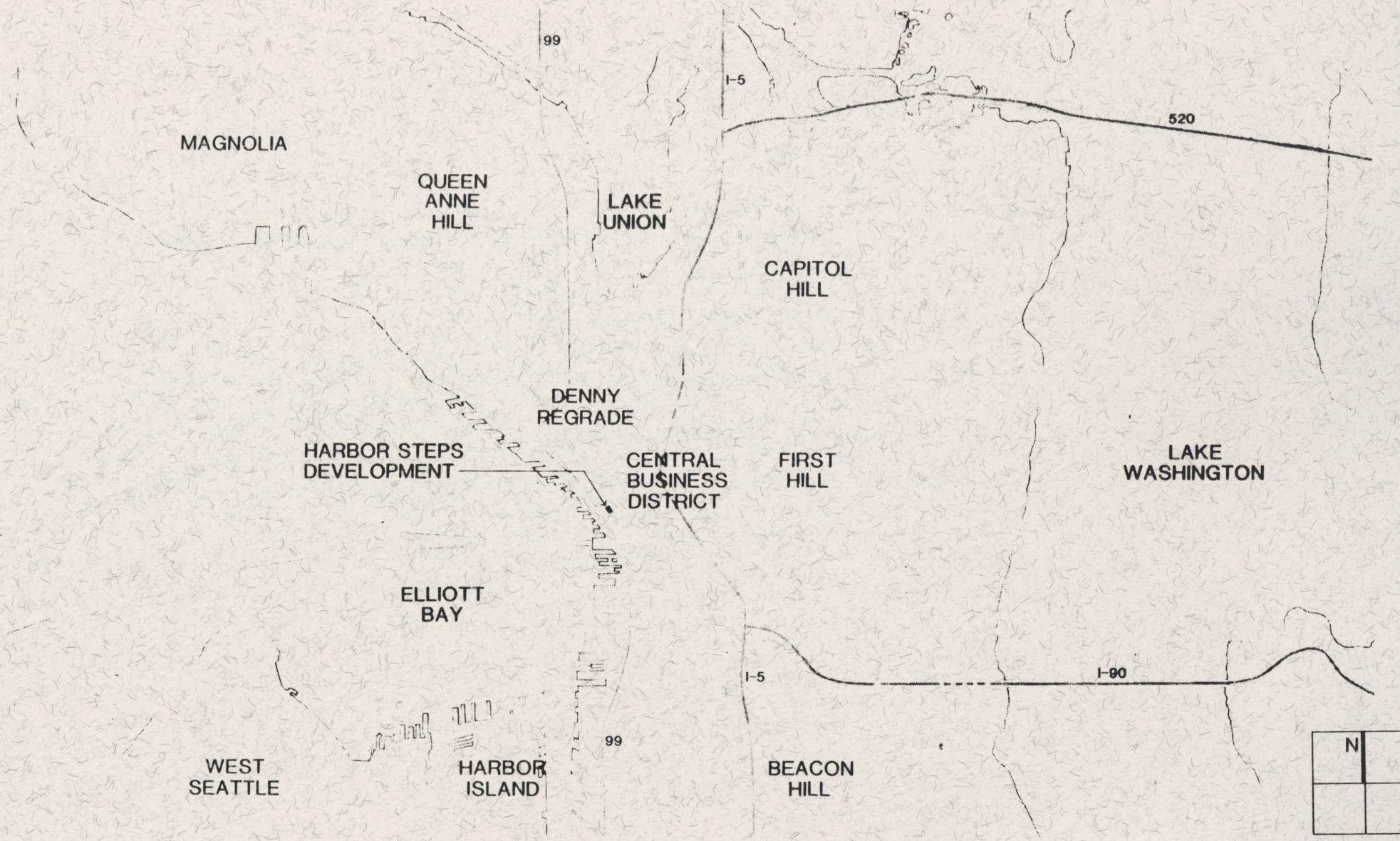
THE SEARCH

First a general site for a search is decided upon with precedents and information gathered to justify the dive. One of the easiest methods for discovering an irregularity on the sea bottom is to use an electronic echo sounder, which marks out on a graph tell-tale signs, such as a mound which could represent a vessel buried under the sand or mud. This device is mainly used in the fishing industry but at times can lead to effective and suprising results in the field of marine archeology.

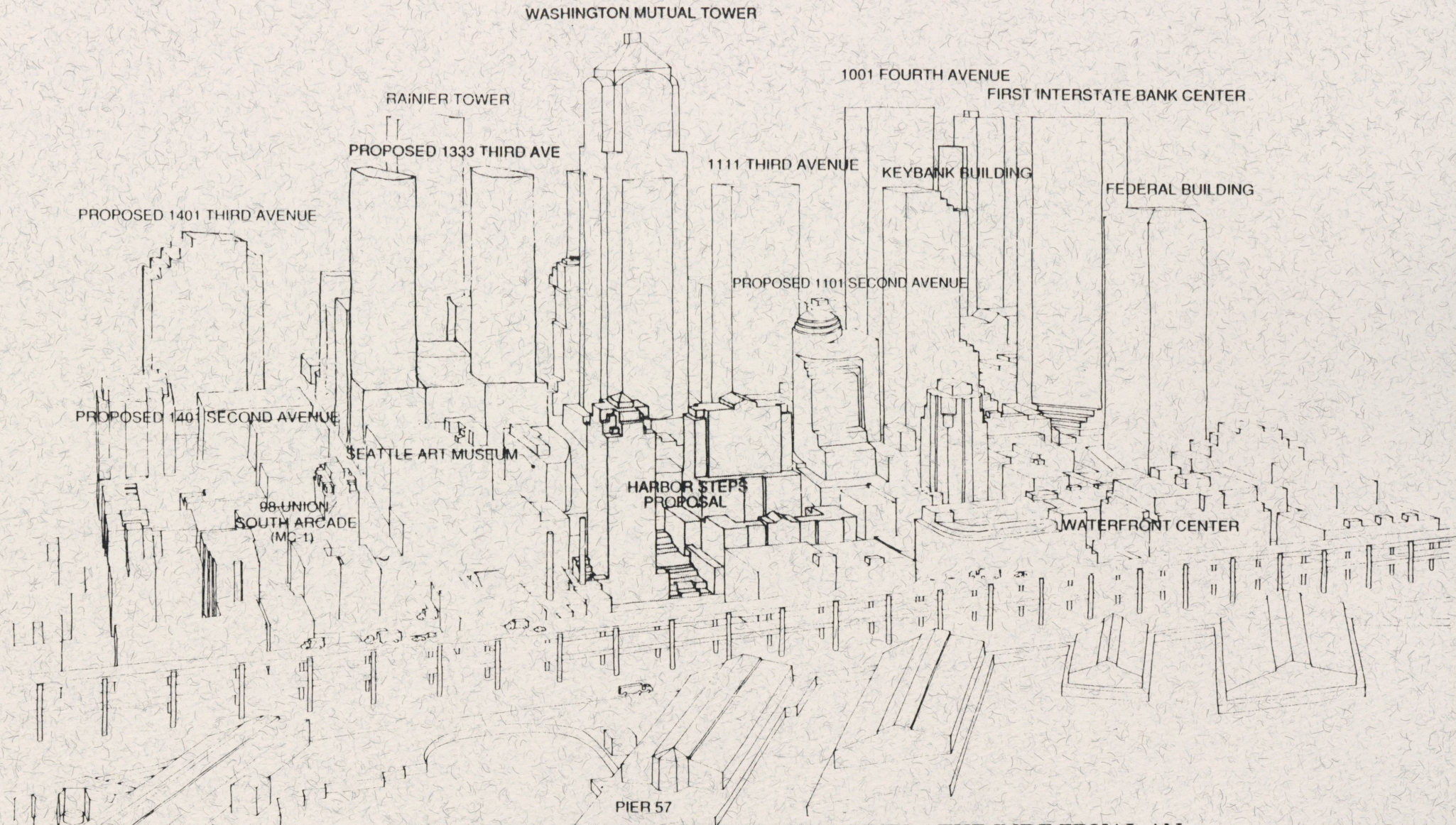
PICTURE OF THE ECHO SOUNDER

As the main vessel is steered up and down the inside of the reefs, divers watch the echo-sounder, and if the results from the echo sounder look promising and the person watching the device gives the word; then small weighted buoys are thrown into the water at points of interest. After an hour or so of searching, several bobbing markers will lay in the boats wake. An inflatable boat is then prepared to dive and investigate the marked points of interest. Echo sounding is good in some instances. Most of the time when it is used it conveys only unusual knolls or boulders on the ocean floor . Usually if a diving team is looking for a sunken ship , it is usually covered with sand and therefore would not show on the echo sounder- and if this is the case then an aqua board is used. This instrument is a simple piece of wood with two handles; a lead weight is sometimes attached in front which enables the board to be forced down at greater depths. Because a diver needs less effort to breathe, a diver holding onto the handles can get as much as twice the amount of air out of an air bottle. Skimming 20 or so feet above the bottom, a diver who is moving at 3 miles per hour can cover a greater area than is normally possible. He is equipped with several small buoys, so that if something of interest is seen he lets one go to mark the area visually from above the water. Divers are then sent to marked locations to search for any elements that might indicate wreakage. Once discovered, the unveiling process begins.

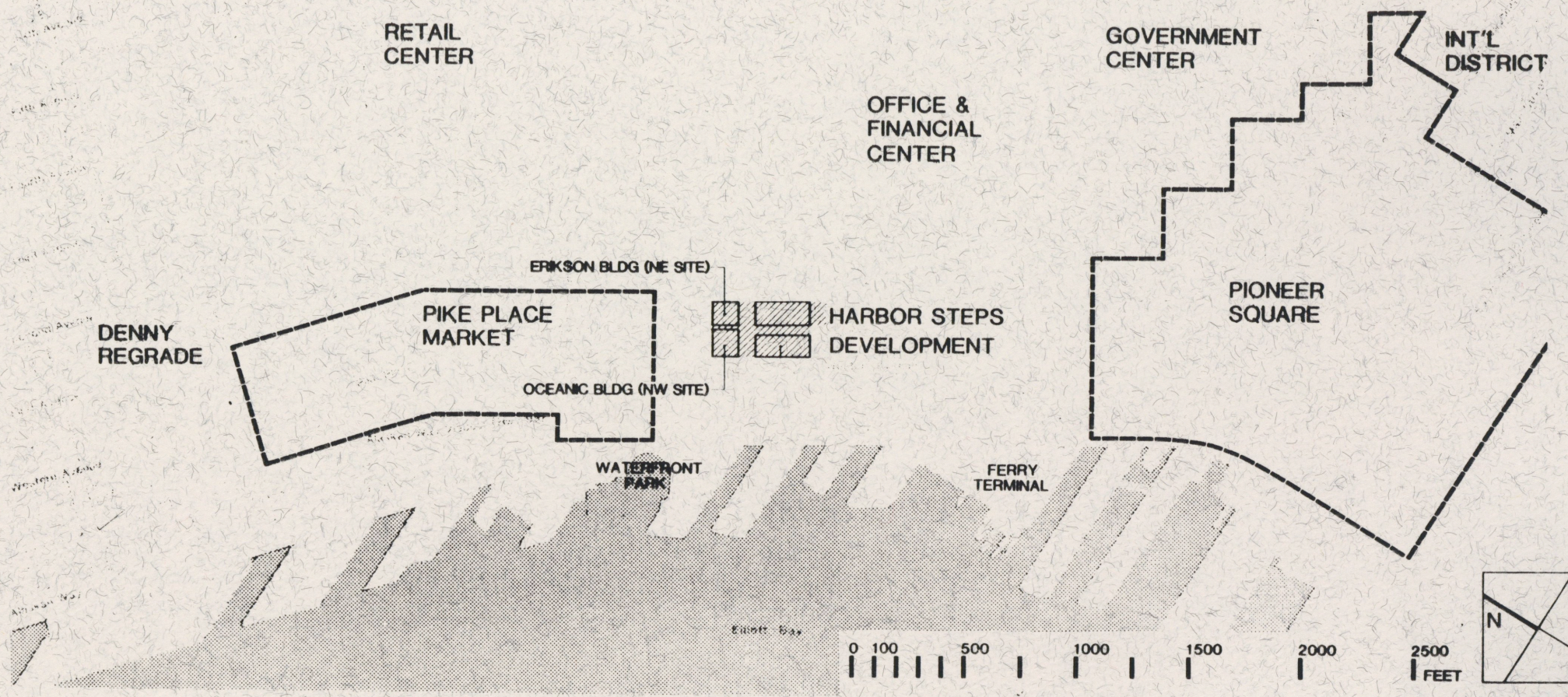
VICINITY MAPS



VICINITY MAP

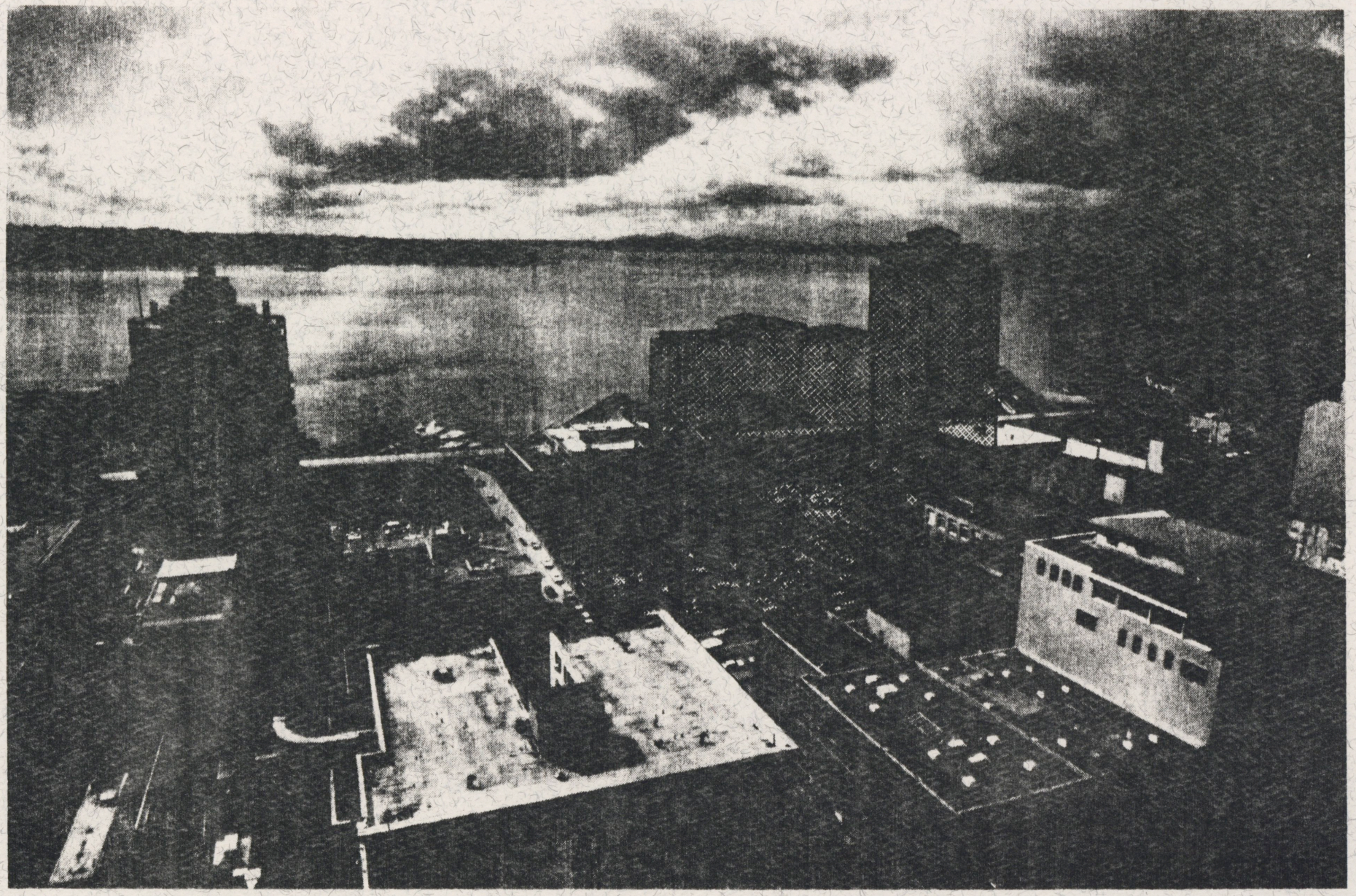


C.M.A. EXTENDS OFF OF PIER 57: THIS GIVES ATHE INDIVIDUAL AN IDEA OF WHAT THE SITE LOOKS LIKE IN RELATIONSHIP TO THE SURROUNDING ELEMENTS OF THE SITE IN THREE DIMENSION: HEIGHT AND VOLUME RELATIONSHIPS

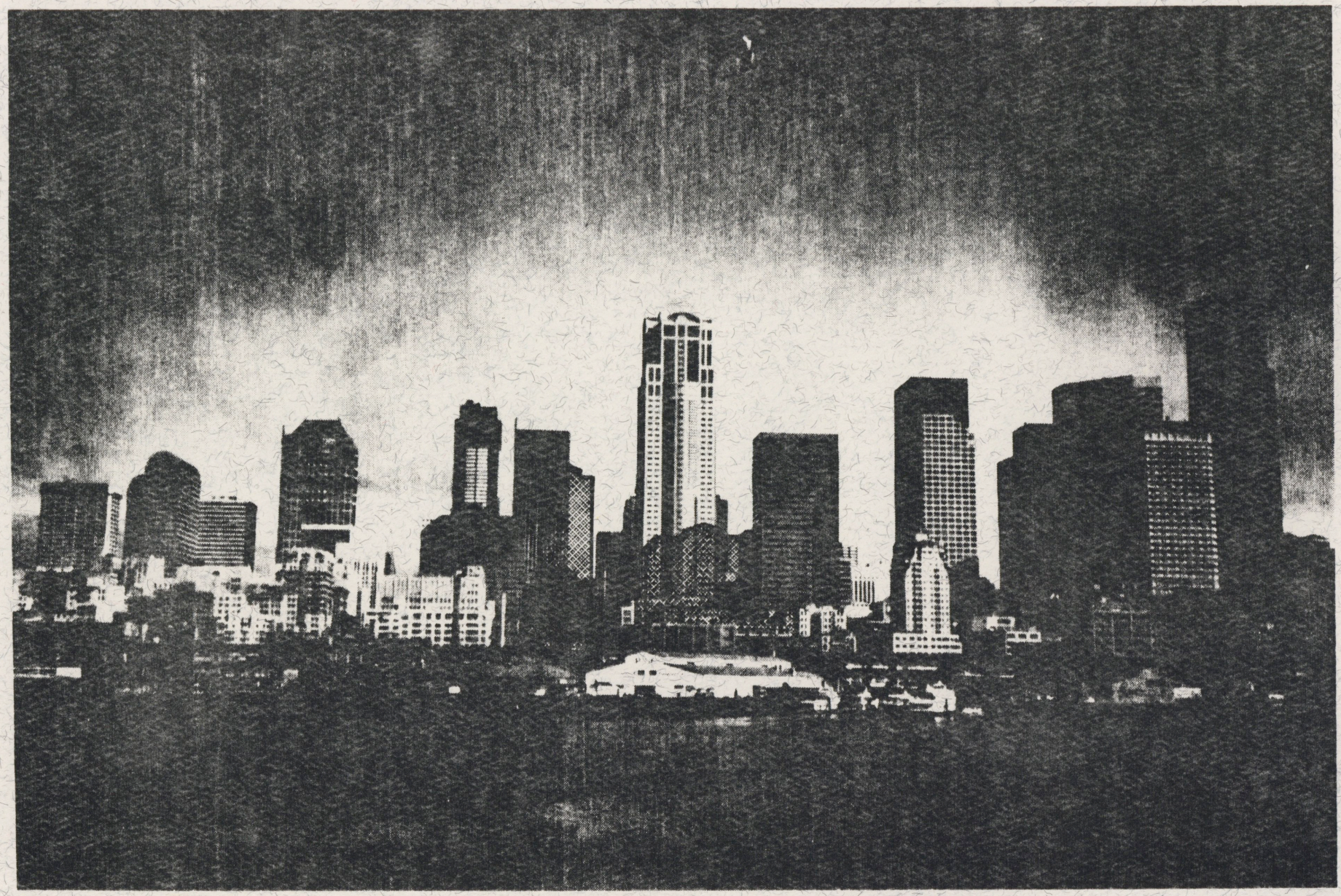


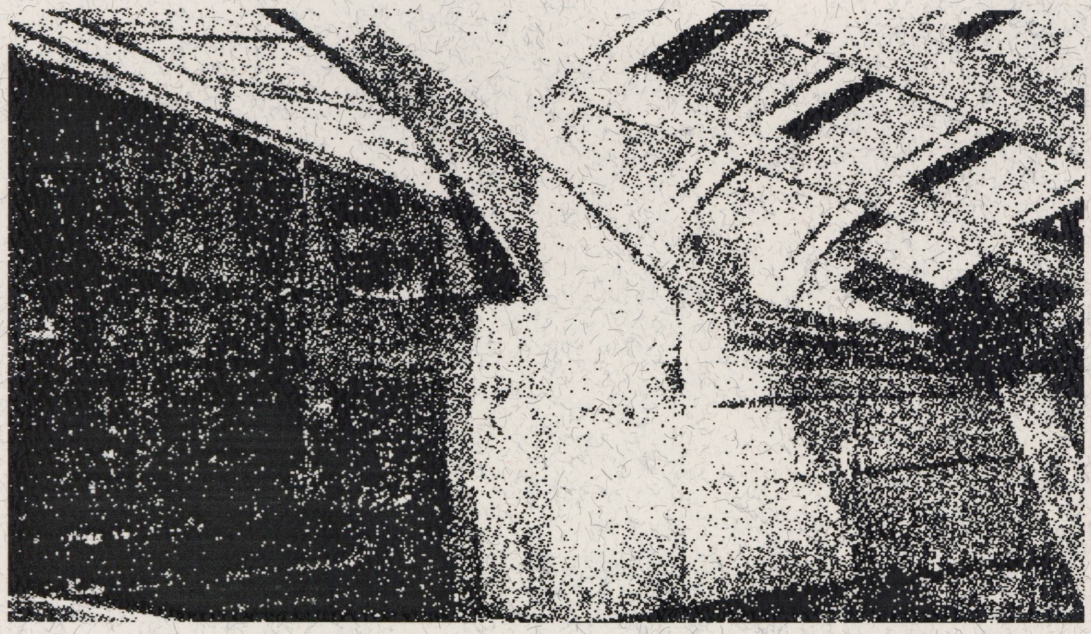
LOCATION OF SURROUNDING DISTRICTS IN RELATION TO C.M.A.

VIEW LOOKING ONTO SITE AND ITS LOCATION ON THE SOUND FROM DOWNTOWN SEATTLE



VIEW OF THE SITE LOOKING NORTH FROM PUDGET SOUND

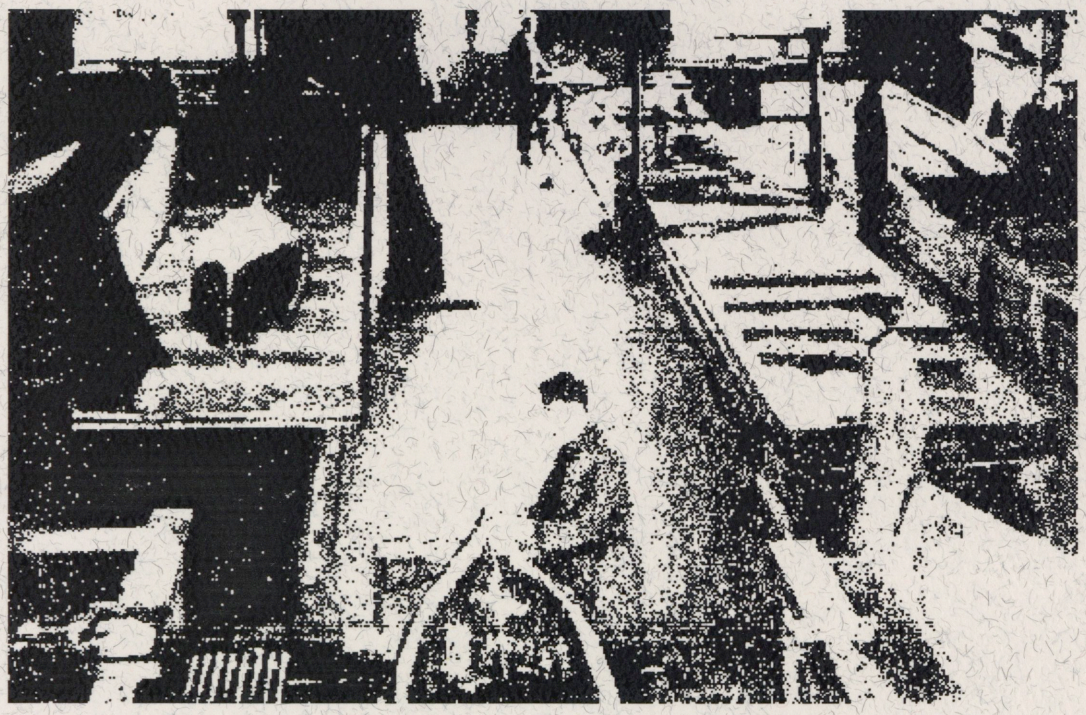




INTERIOR PERSPECTIVE
ENTRY CORRIDOR

THE ENTRY CORRIDOR TRANSPIRED AS A RESULT OF SEATTLE'S INCLEMENT AND OVERCAST WEATHER. WEATHER, THEREFORE LIGHTING CONDITIONS MADE THE LIGHT CONDITIONS COMING INTO THE SPACES A PRIORITY. THE LIGHTING, BECAUSE IT IS A MUSEUM SPACE HAS TO BE SOFT ENOUGH NOT TO BE OFFENSIVE IN RELATION TO THE ARTIFACTS BEING DISPLAYED, AND LIGHT ENOUGH TO PROVIDE FOR GOOD VISIBILITY. THE LIGHTING THAT IS PROVIDED IN THIS ENTRY CORRIDOR IS TYPICAL OF MOST OF THE LIGHTING THROUGHOUT THE BUILDING.

THE LIGHT FILTERS THROUGH ONTO CONCRETE AND ONTO AGED ALUMINUM THAT IS RIVETED. WHETHER THE LIGHT IS COMING THROUGH HEAVY GLUE LAMINATED BEAMS OR THROUGH METAL FIRE RESISTANT TREATED TRUSSES USED TO SUSPEND ARTIFACTS, THE HULL LIKE SIMILARITIES OF THE OUTSIDE ARE ALSO PURPOSELY ARTICULATED WITHIN.

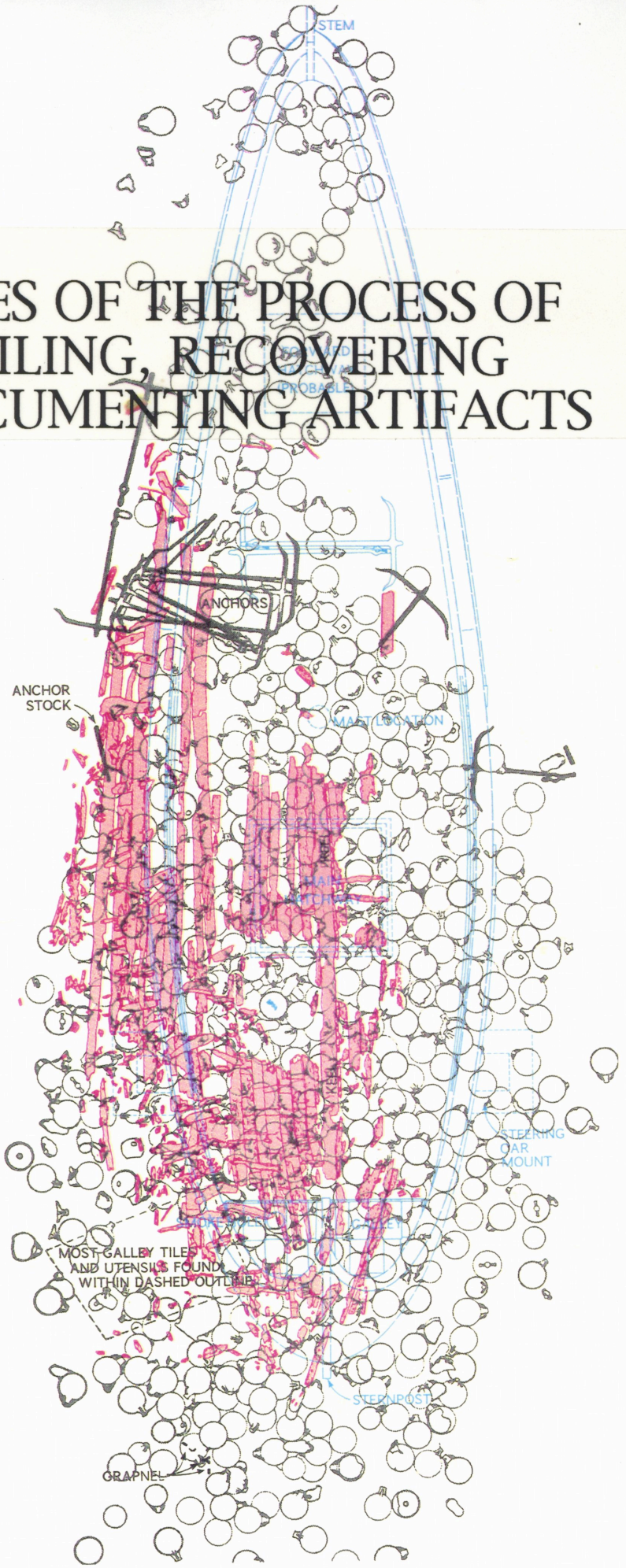


Interior perspective: common work space
FIRST FLOOR

The common work space was derived as a result of the need for interaction between researchers in their attempt to reconstruct artifacts. This area was placed to show the process of marine archeology and give the viewers the opportunity to experience it from beginning to the end.

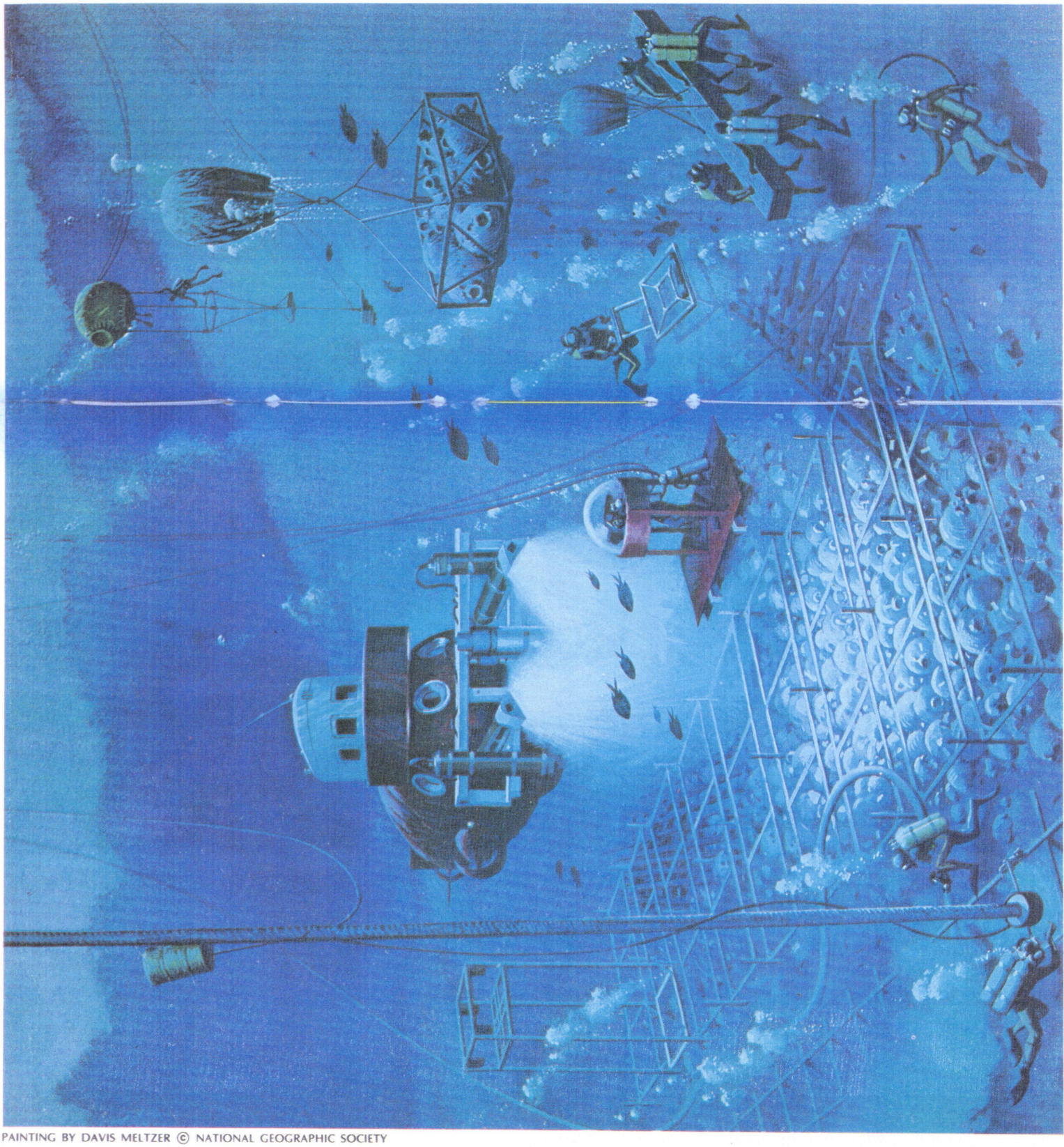
Only about 10 percent of the Byzantine ship's hull shown in red remained below its cargo of nearly a thousand globular wine jars, but careful study of these fragments (shown in red) over many years has allowed the accurate reconstruction of the ship (shown in blue) depicted in Chapter 9.

PICTURES OF THE PROCESS OF UNVEILING, RECOVERING AND DOCUMENTING ARTIFACTS

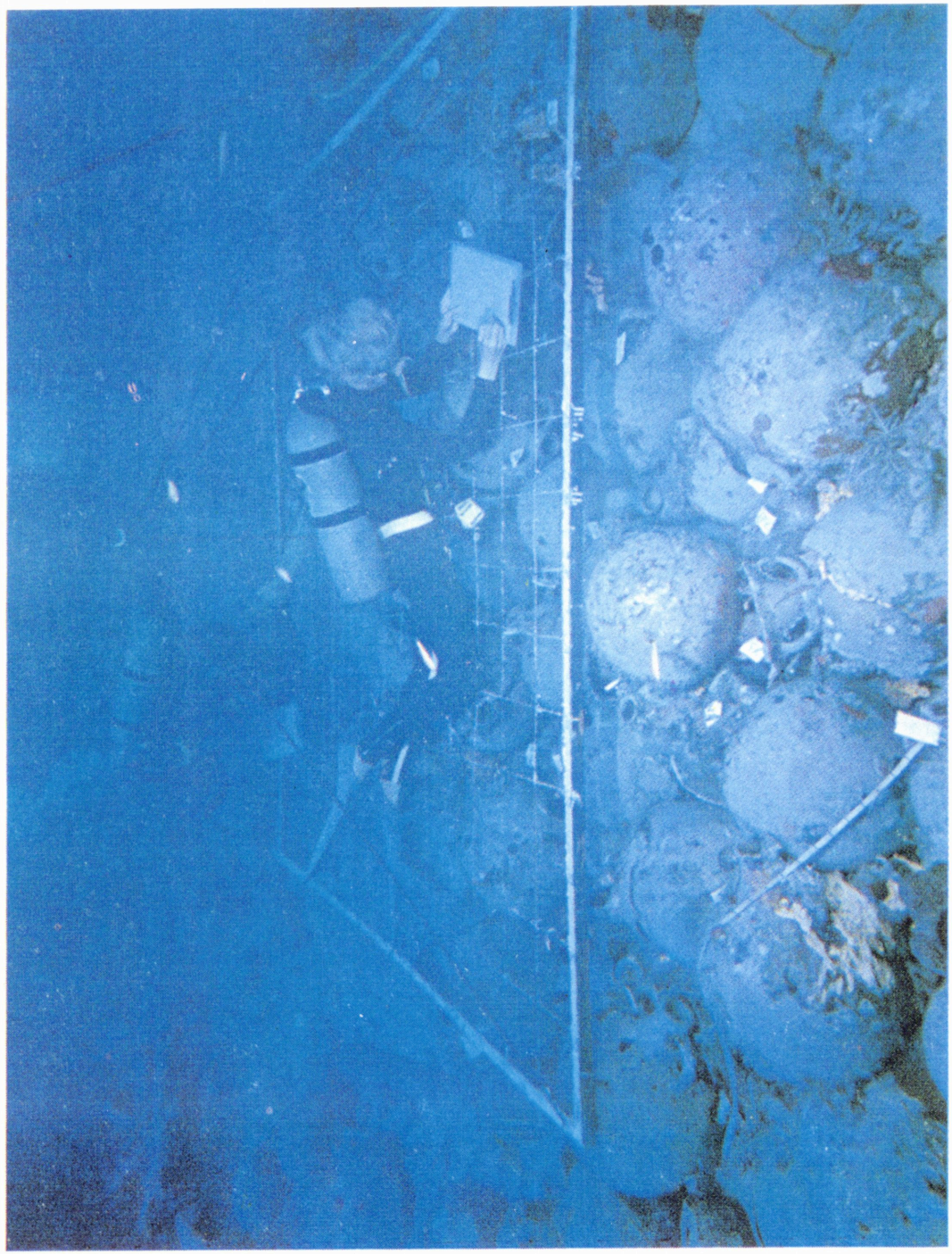


PREPARED FROM DRAWINGS BY FREDERICK H. VAN DOORNINCK, JR., BY THE GEOGRAPHIC ART DIVISION,
© NATIONAL GEOGRAPHIC SOCIETY.

THIS PICTURE DENOTES THE DIFFERENT PROCESSES USED IN UNDER WATER RECOVERY AND DOCUMENTATION-THESE WERE ALSO DRIVING ELEMENTS IN THE PRELIMINARY STAGES OF MY DESIGN.



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ROBERT GOODMAN © NATIONAL GEOGRAPHIC SOCIETY

PRECEDENTS

MONTEREY BAY AQUARIUM



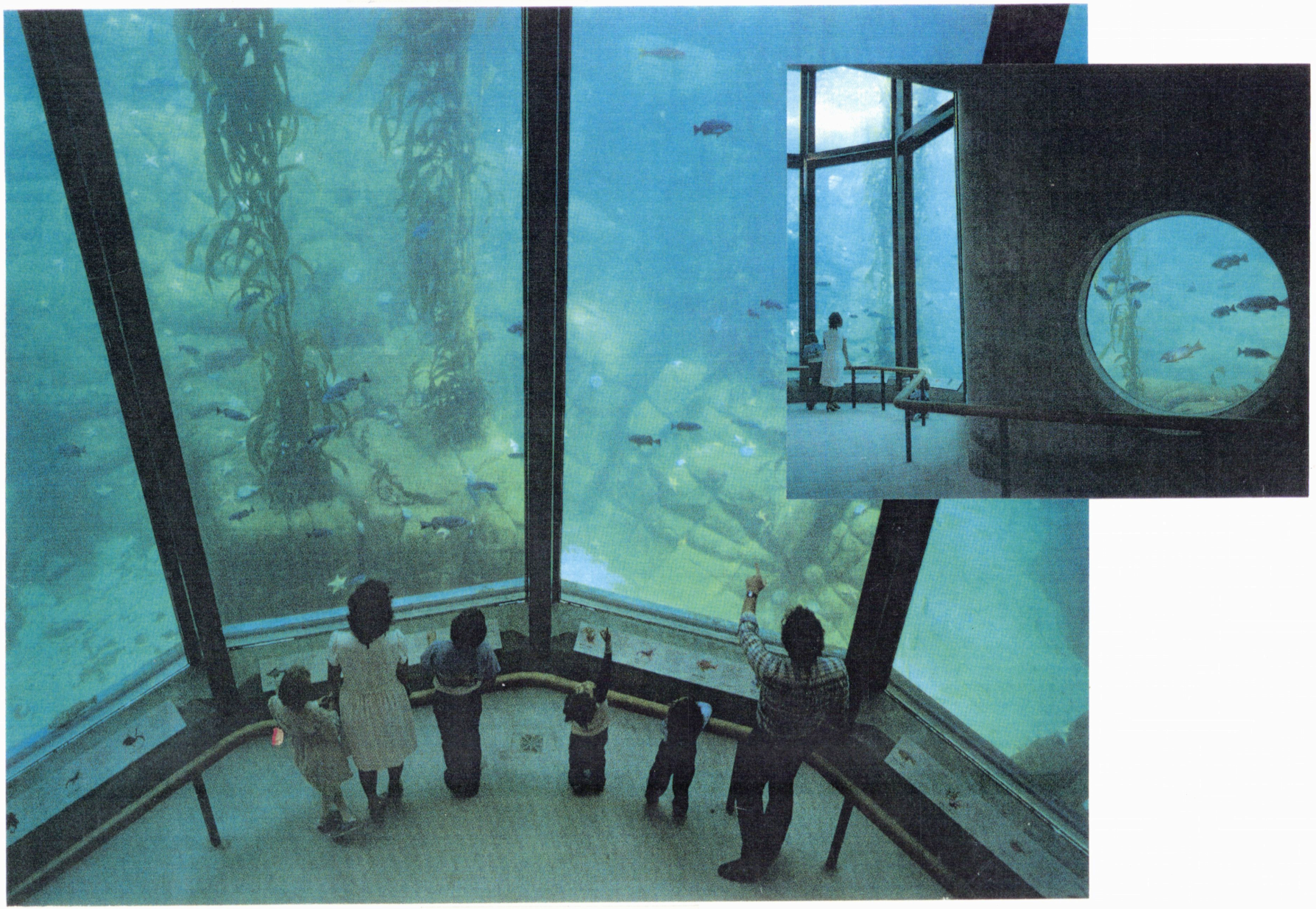
PRECEDENTS

MONTEREY BAY AQUARIUM



PRECEDENT

MONTEREY BAY AQUARIUM



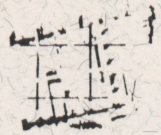
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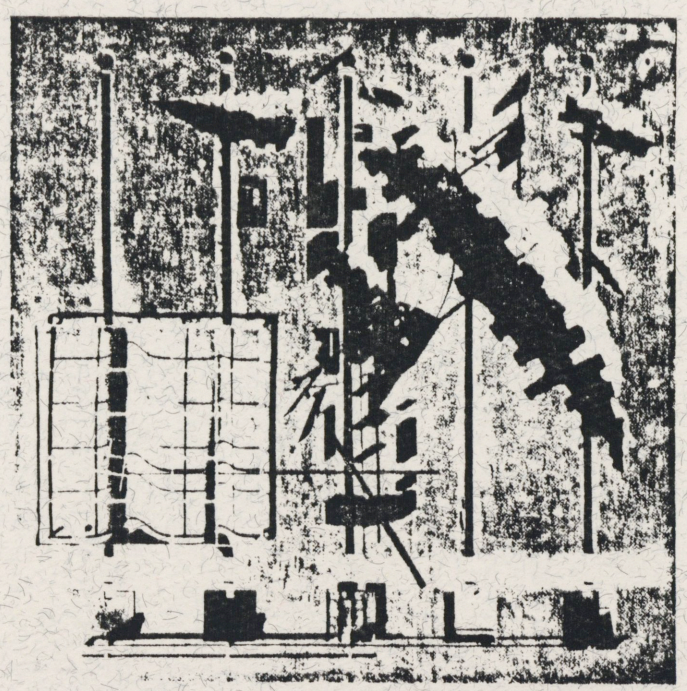
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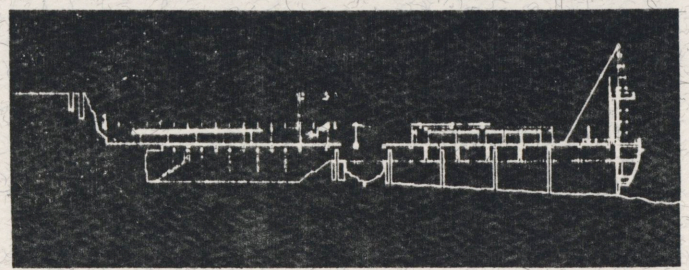
Christopher P. Fultz
University of Texas at Arlington
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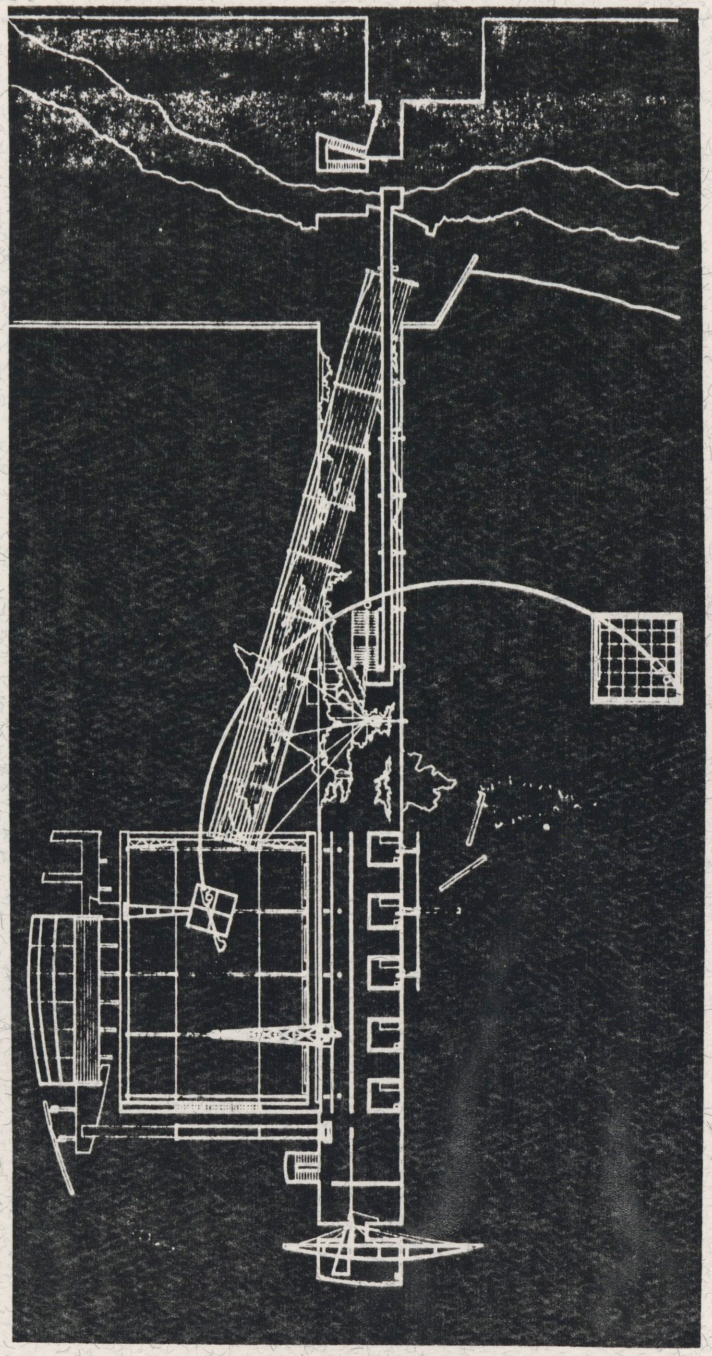


Nautical Recovery: A Diving Training Center

PRECEDENT







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