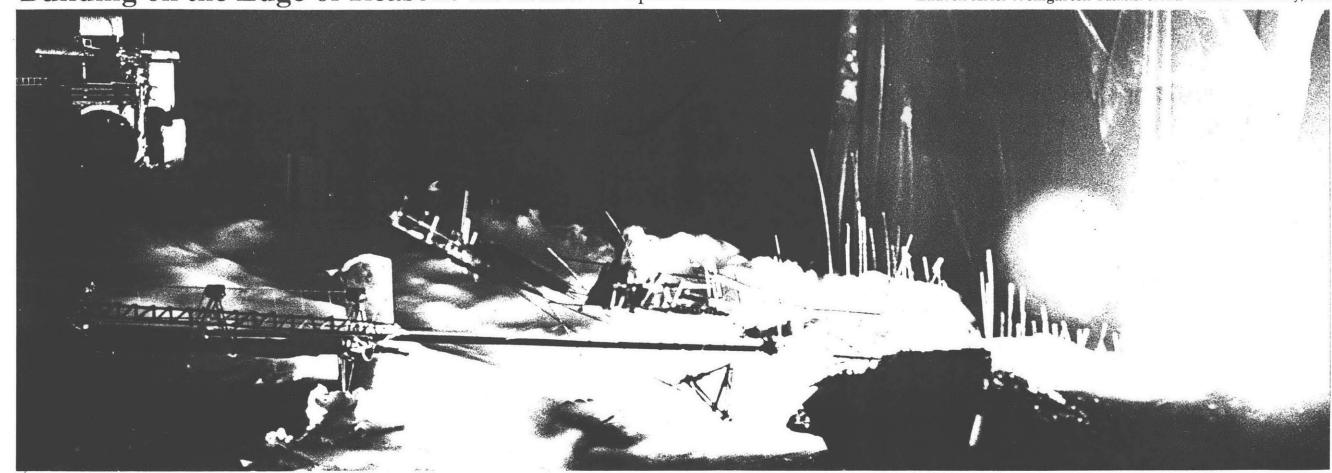
Building on the Edge of Reason: The Institute for Speculative Science: M.I.T.

Lauren Ariel Weingarten Bachelor of Arts Princeton University,1984



Submitted to the department of Architecture in partial fulfillment of the requirements for the Degree of Masters of Architecture at the Massachusetts Institute of Technology. February, 1989 Signature of the Author Lauren Ariel Weingarten January 20, 1989 Certified by Fernando Domeyko Lecturer, Department of Architecture Thesis Supervisor Accepted by

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Imre Halasz

Professor of Architecture

Chairman, Department Committee for Graduate Students



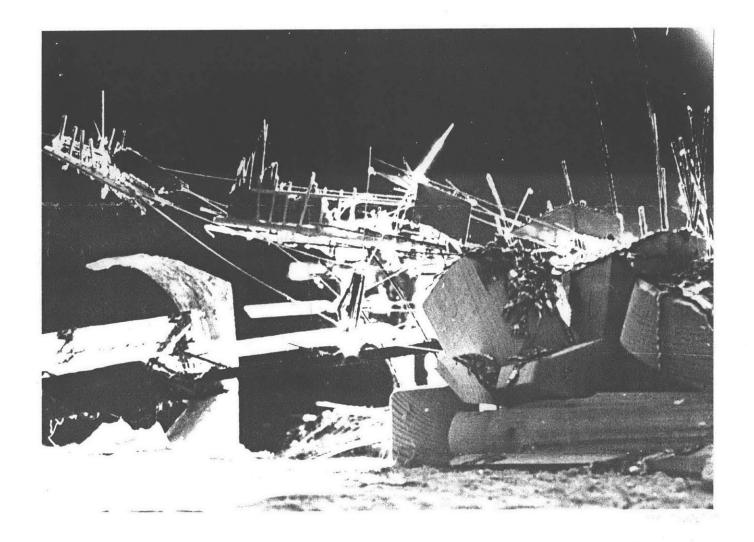
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Building on the Edge of Reason:

The Institute for Speculative Science: M.I.T.

by Lauren Ariel Weingarten

Submitted to the Department of Architecture on Jan. 20, 1989 in partial fulfillment of the requirements for the degree Master of Architecture at the Massachusetts Institute of Technology

Abstract

This thesis sprang from a fascination with and respect for speculative thought in science. One need walk no further than down the "infinite corridor" to feel the pulse of experimentation that has earned M.I.T. the reputation of being one of the principal research institutes of the world. But, even with the commitment to research found at M.I.T. market demands point toward specialization. This creates an environment where speculative science in its classic sense cannot occur.

It is the aim of this project to reconnect contemporary higher science with ancient ideas of a unified world view. To do this, the scientists at M.I.T. will be provided with a physically different environment from the everyday scientific workplace, with its gadgetry and budgetary constraints, if even for a short time. The site I propose to locate the Institute for Speculative Science is removed from Boston but is close enough to remain in the scientists' frame of reference.

Located between Quincy and Thompson Island in the Boston Harbor, the Institute for Speculative Science builds on the tension between built and natural states: urban to exurban; mainland to island; rock to water. This project will occupy the space between the mainland (Quincy) and surrounding islands, currently treated as an orphan of the big city. From the vantage point of the Institute for Speculative Science, you can see the Boston skyline but Boston cannot see you. You walk on a natural and wild beach, but this beach is littered with debris, relics of Boston's industrial recent past.

The models and drawings in this book are scaled representations of the proposed project, they are however drawn and made as worlds in their own right which the participant in this book can experience. To communicate the idea of a building on the edge of reason, I've looked to bring to light a project that you feel before you understand.

Thesis Advisor:

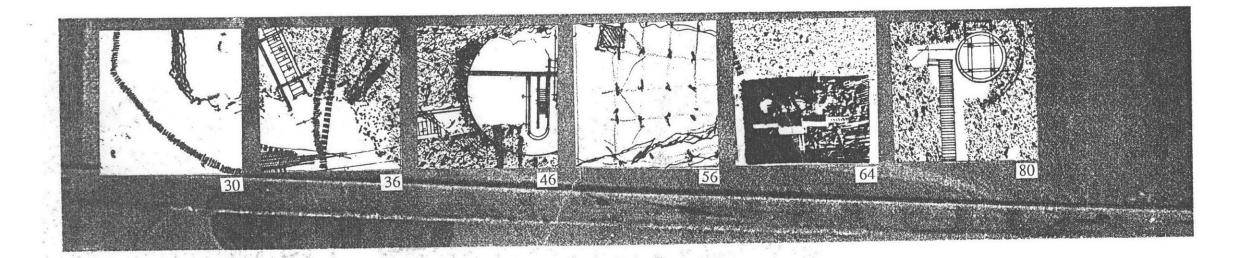
Fernando Domeyko Lecturer, Department of Architecture

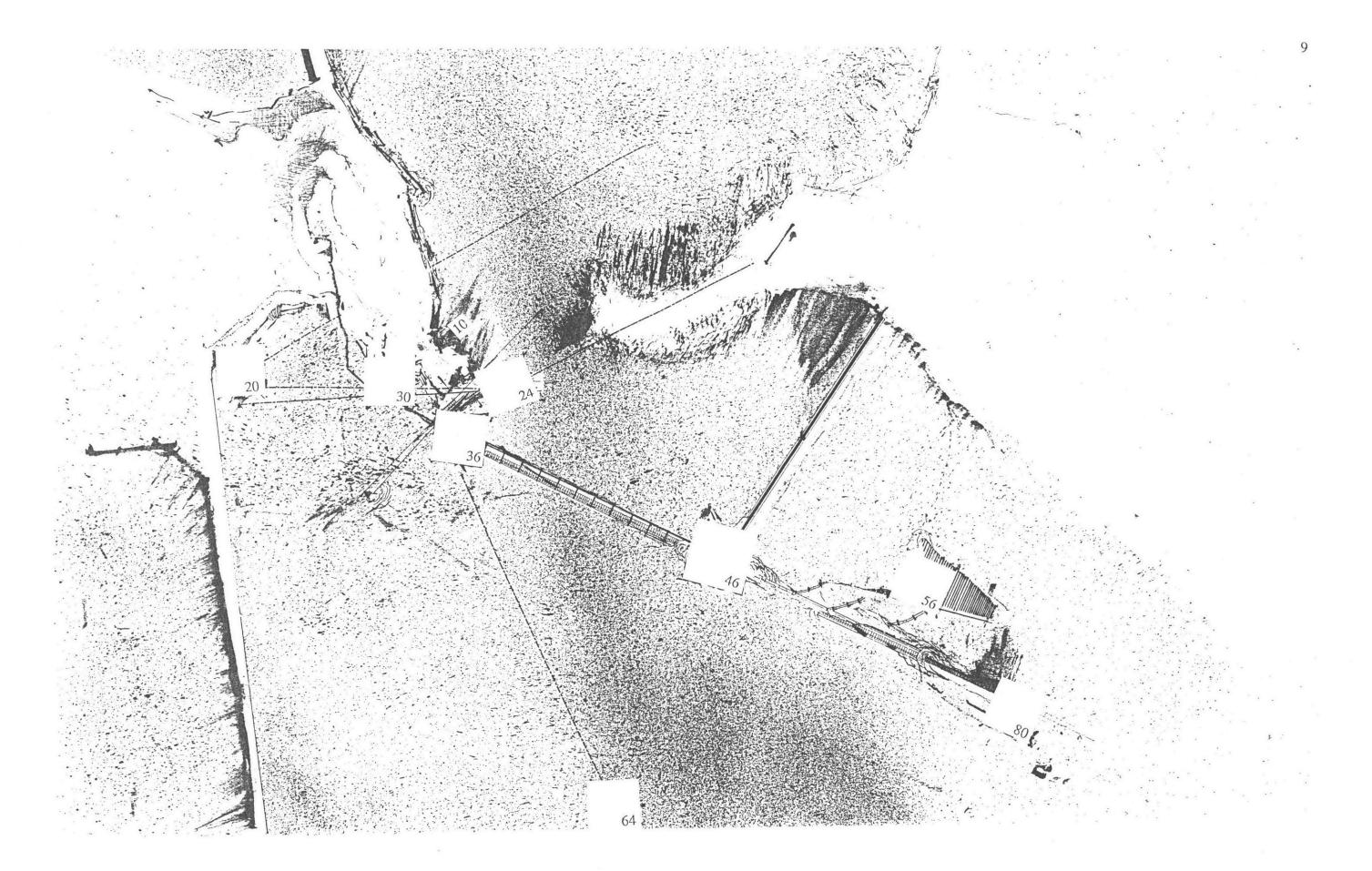
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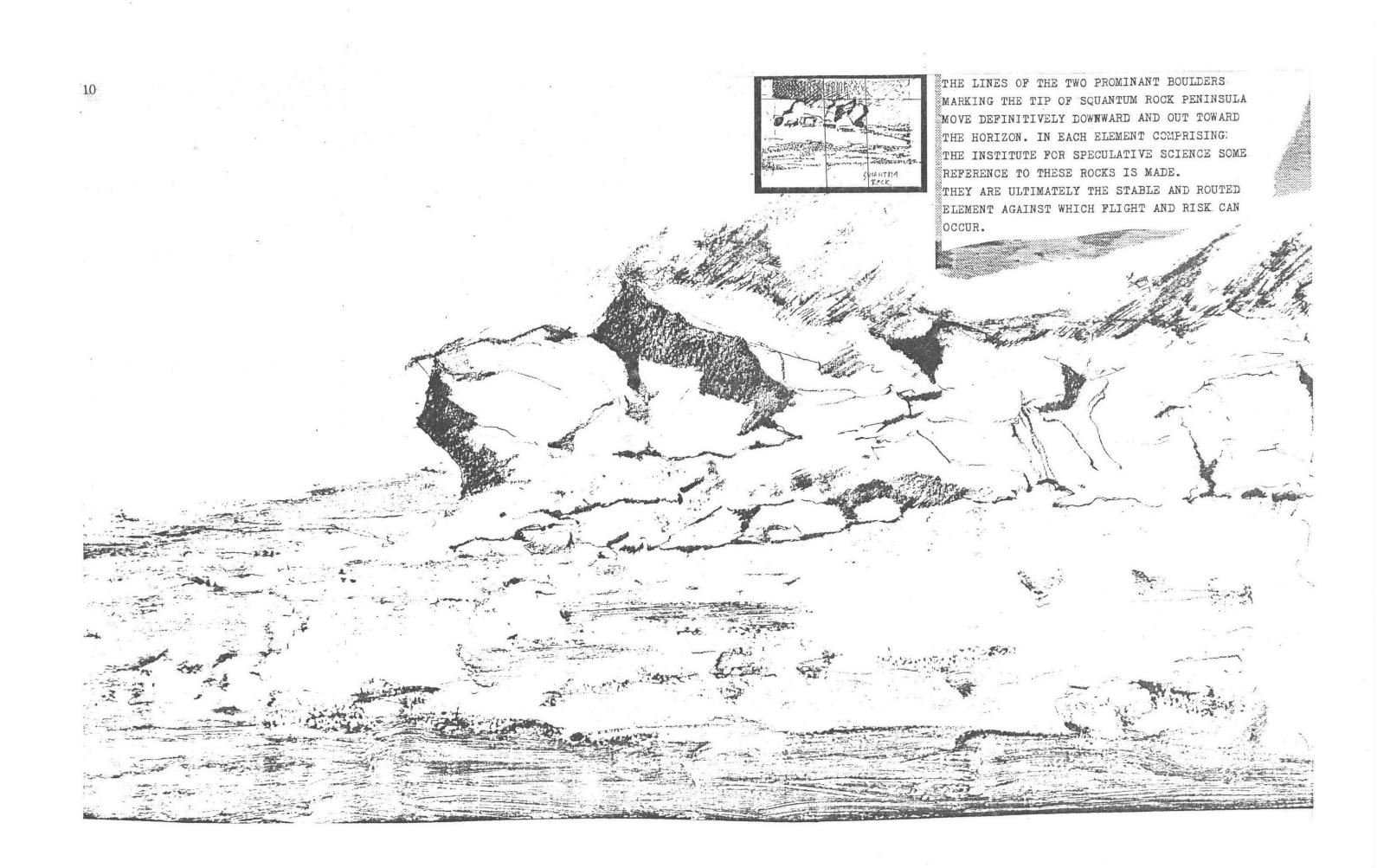
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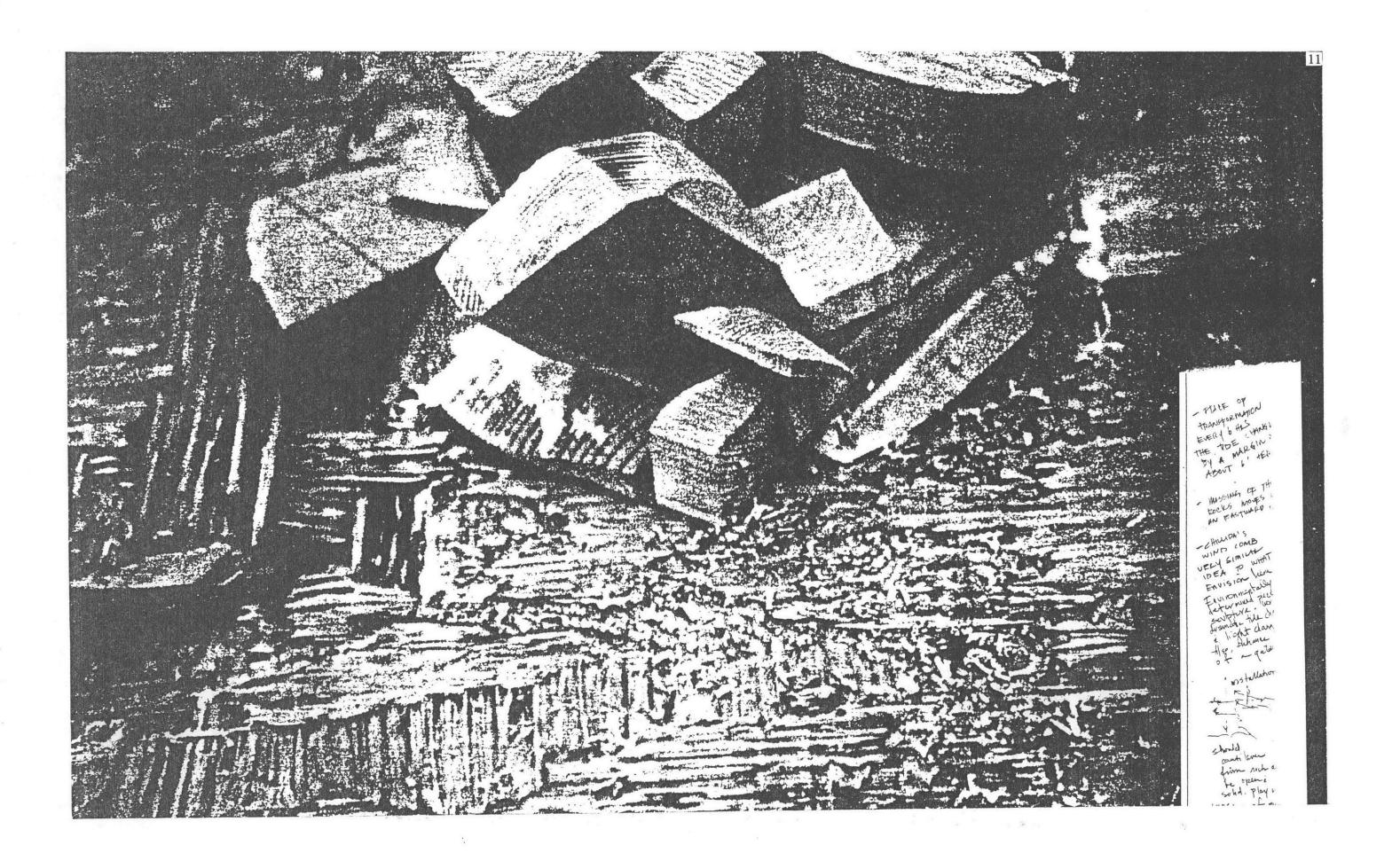


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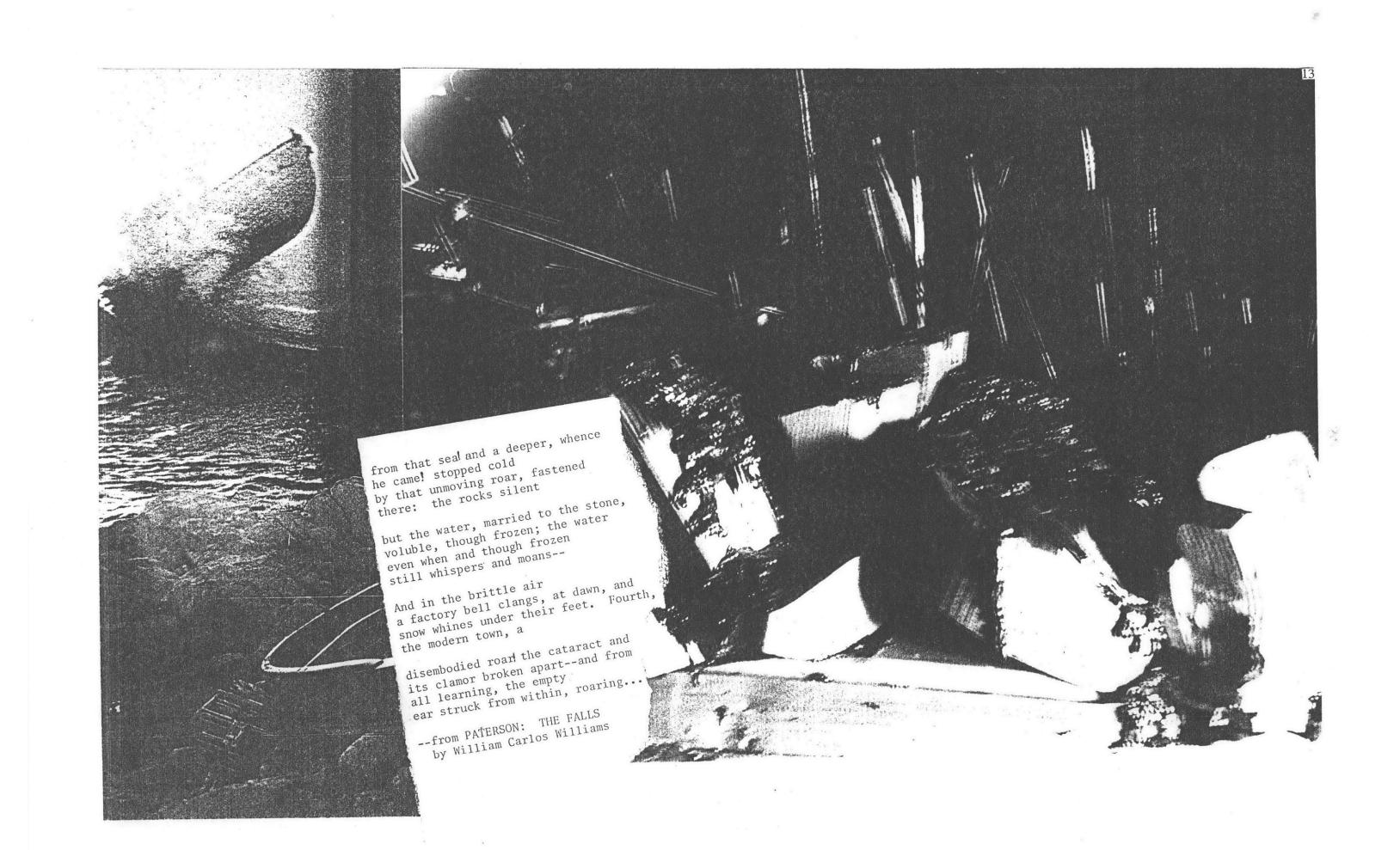


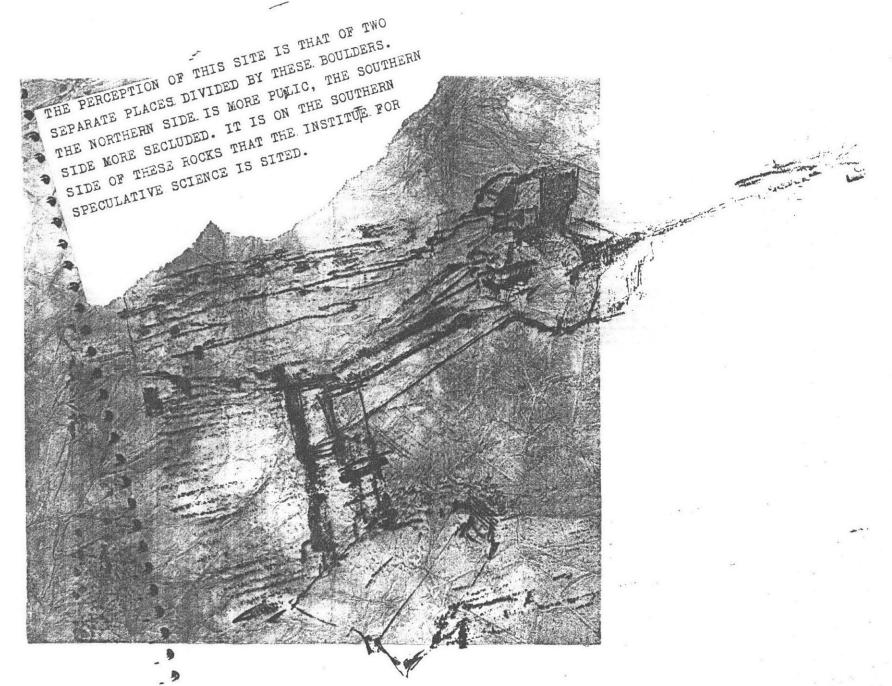


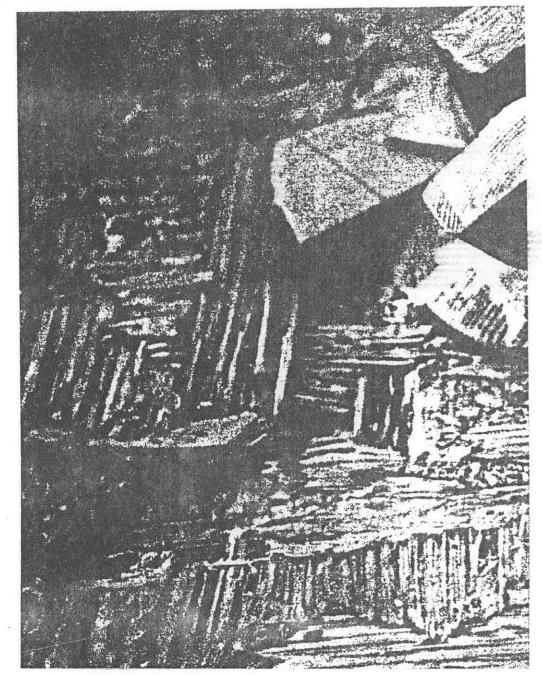


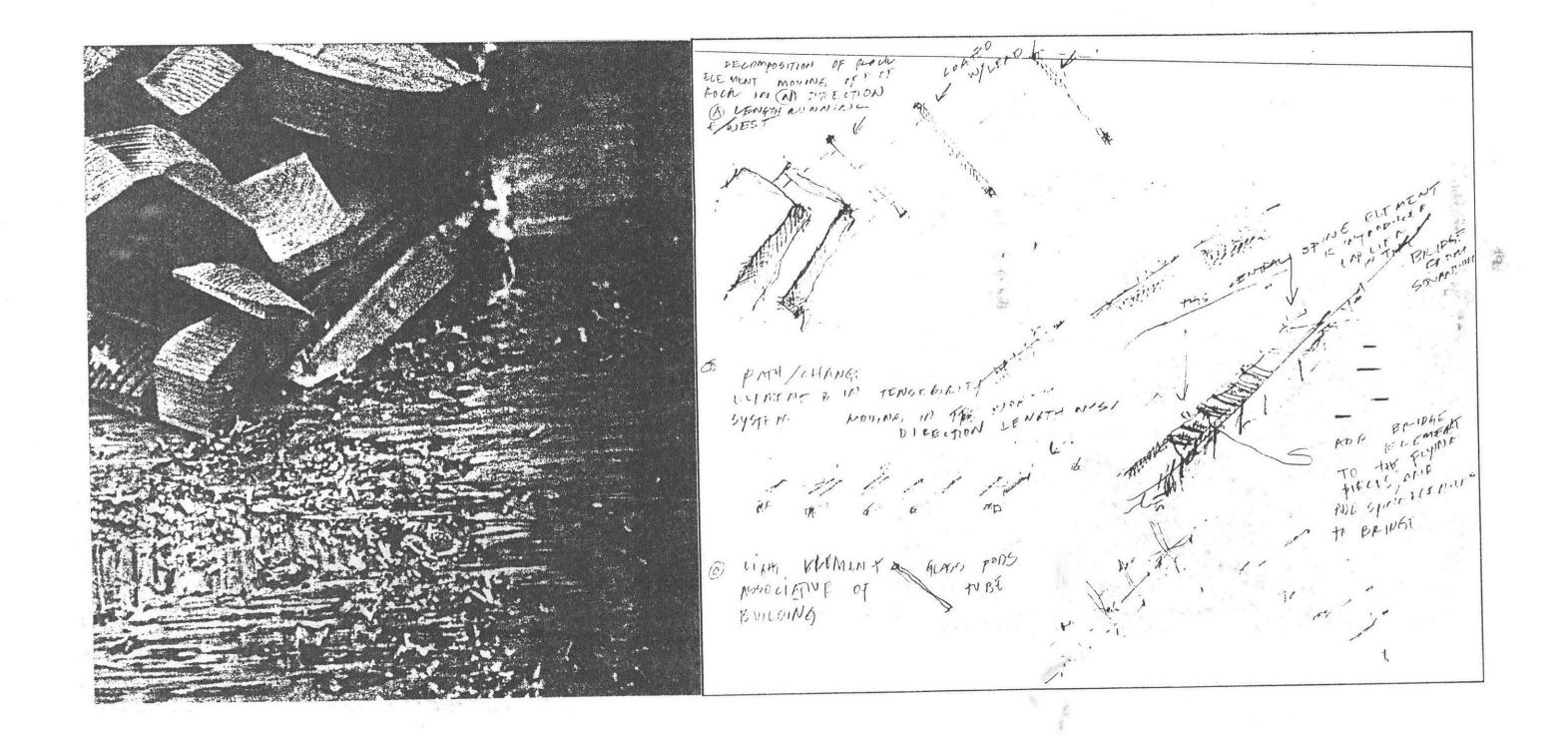


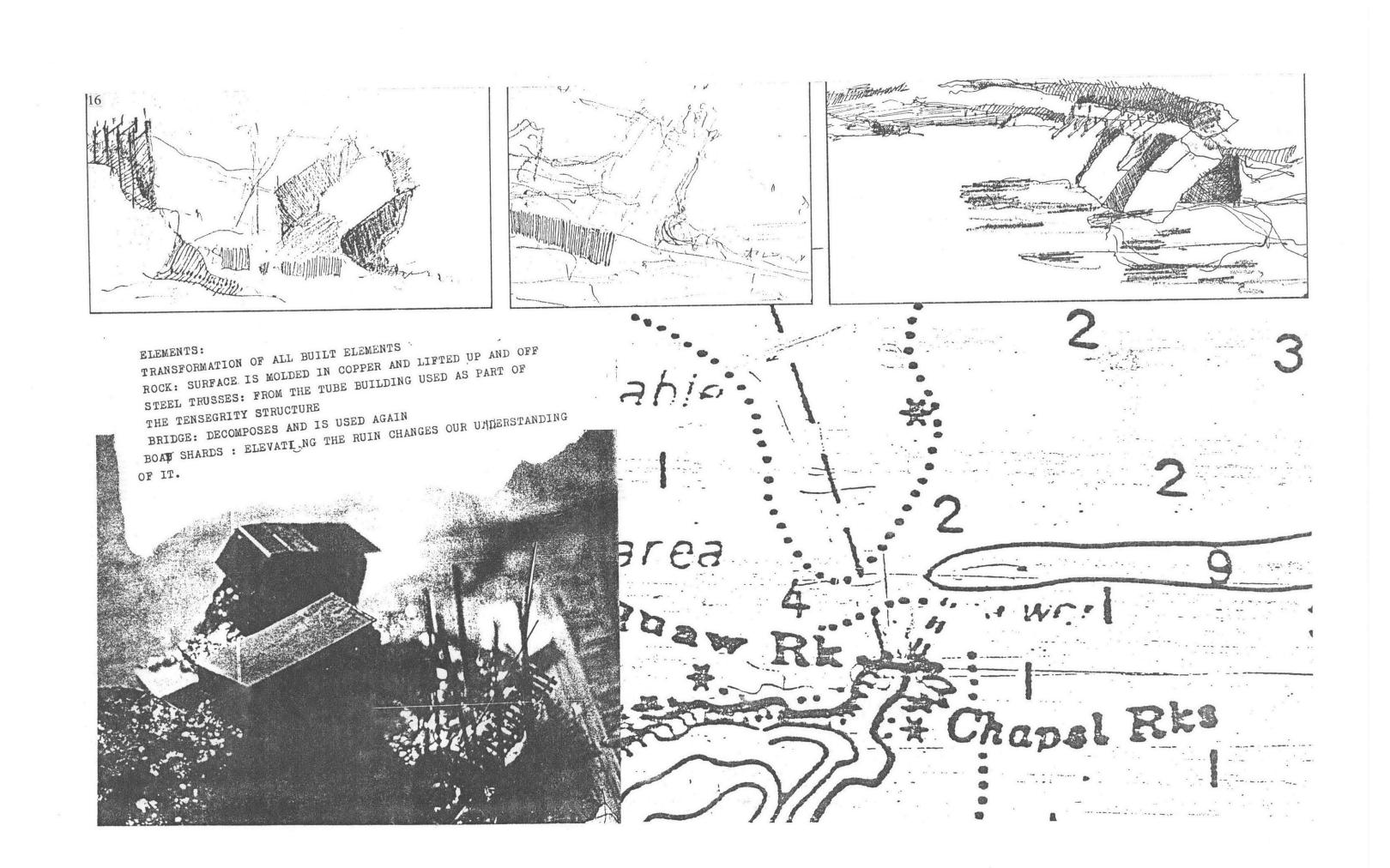


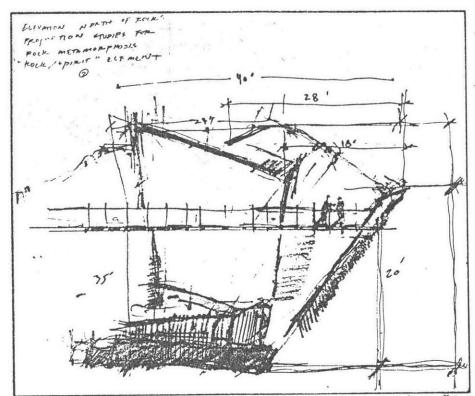


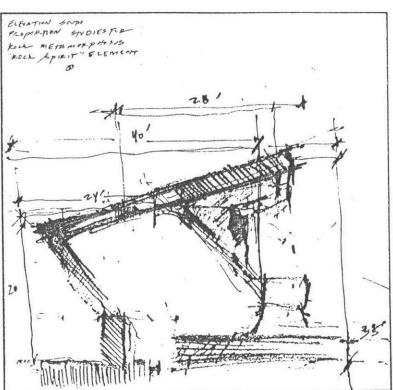


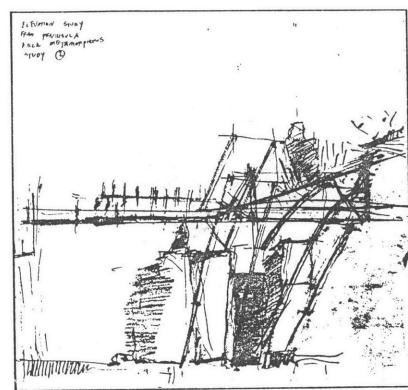


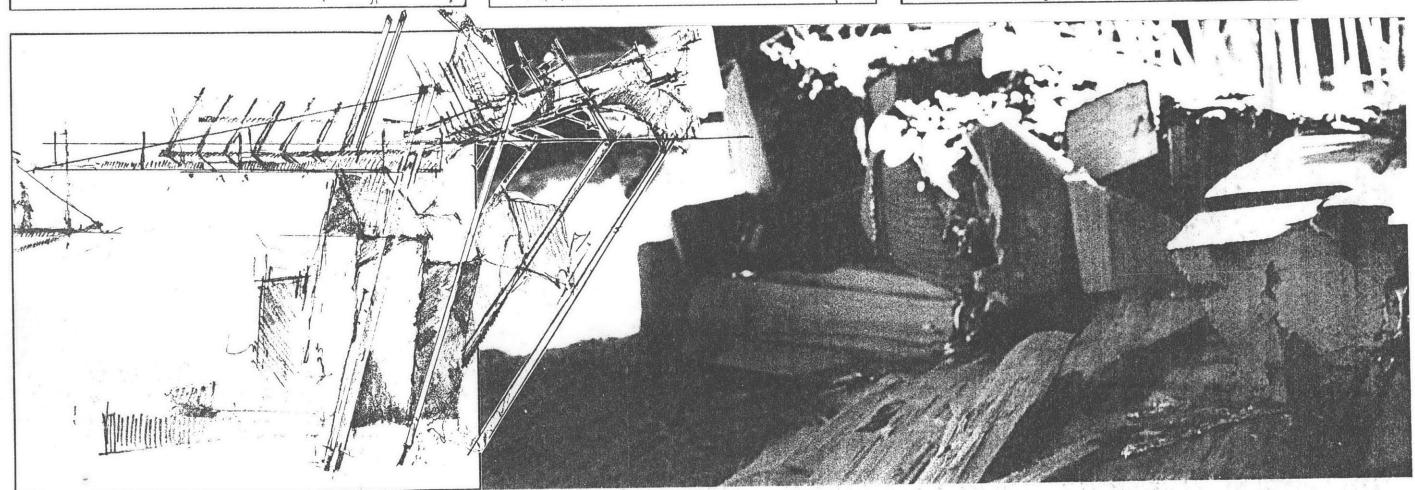


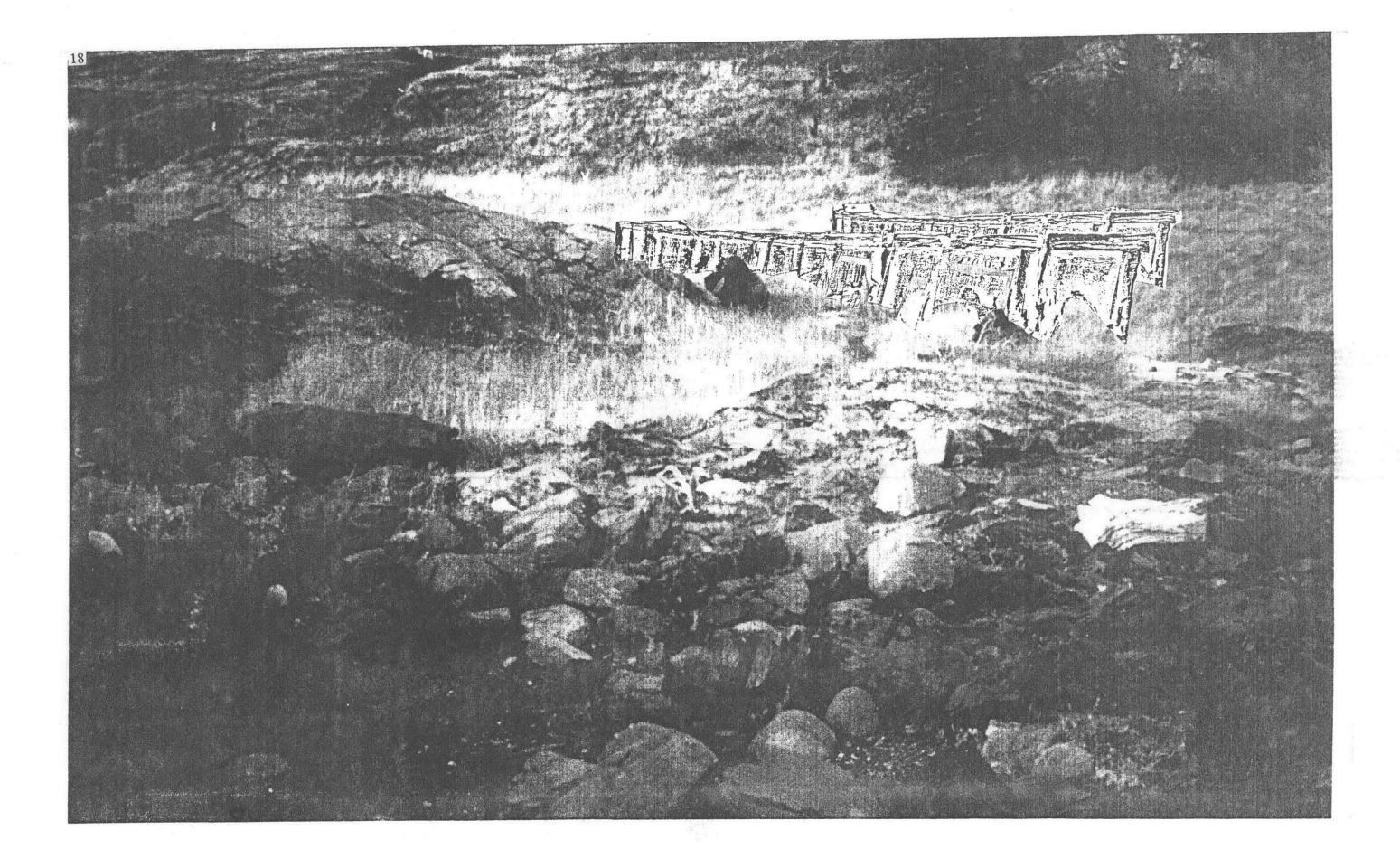


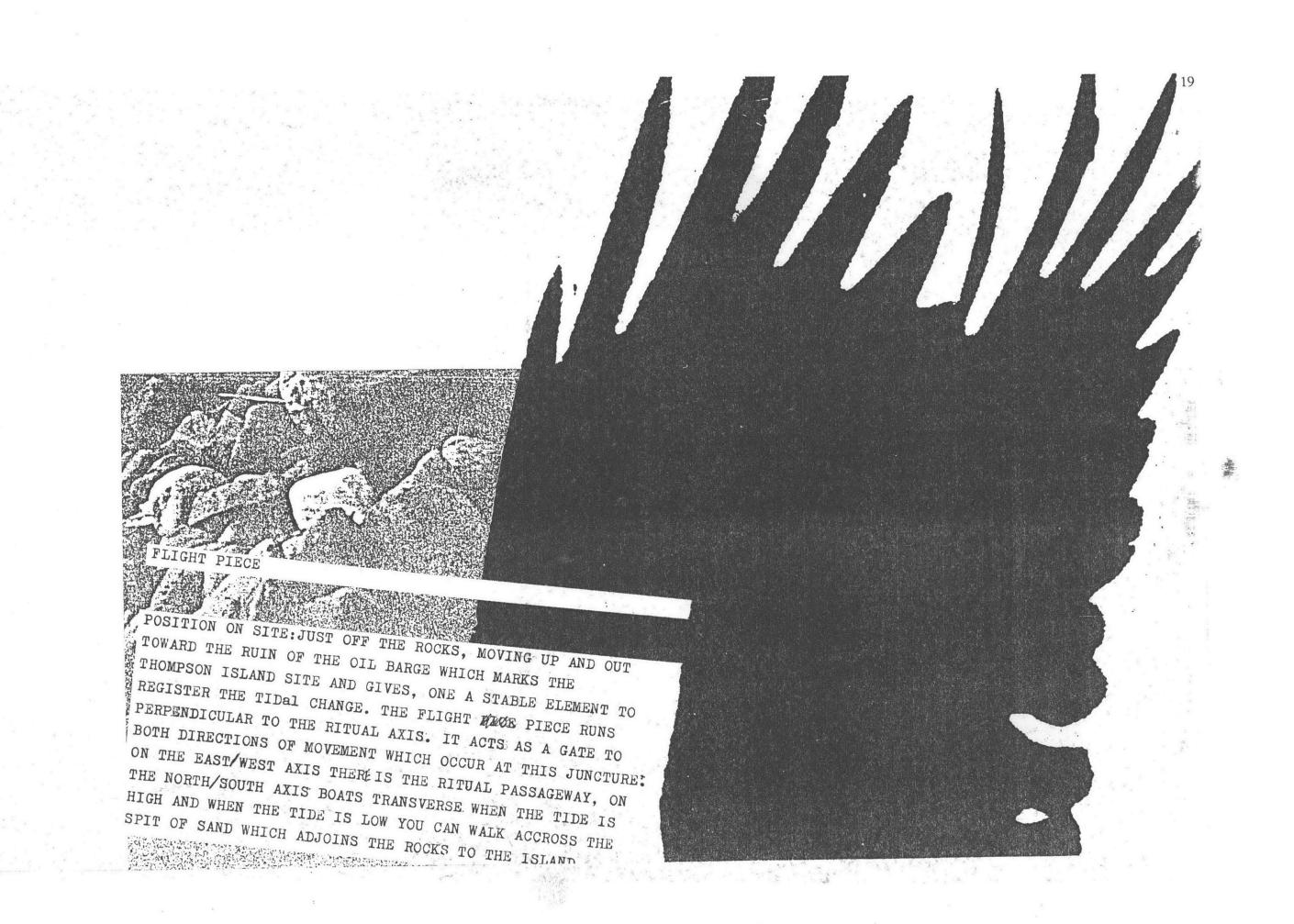


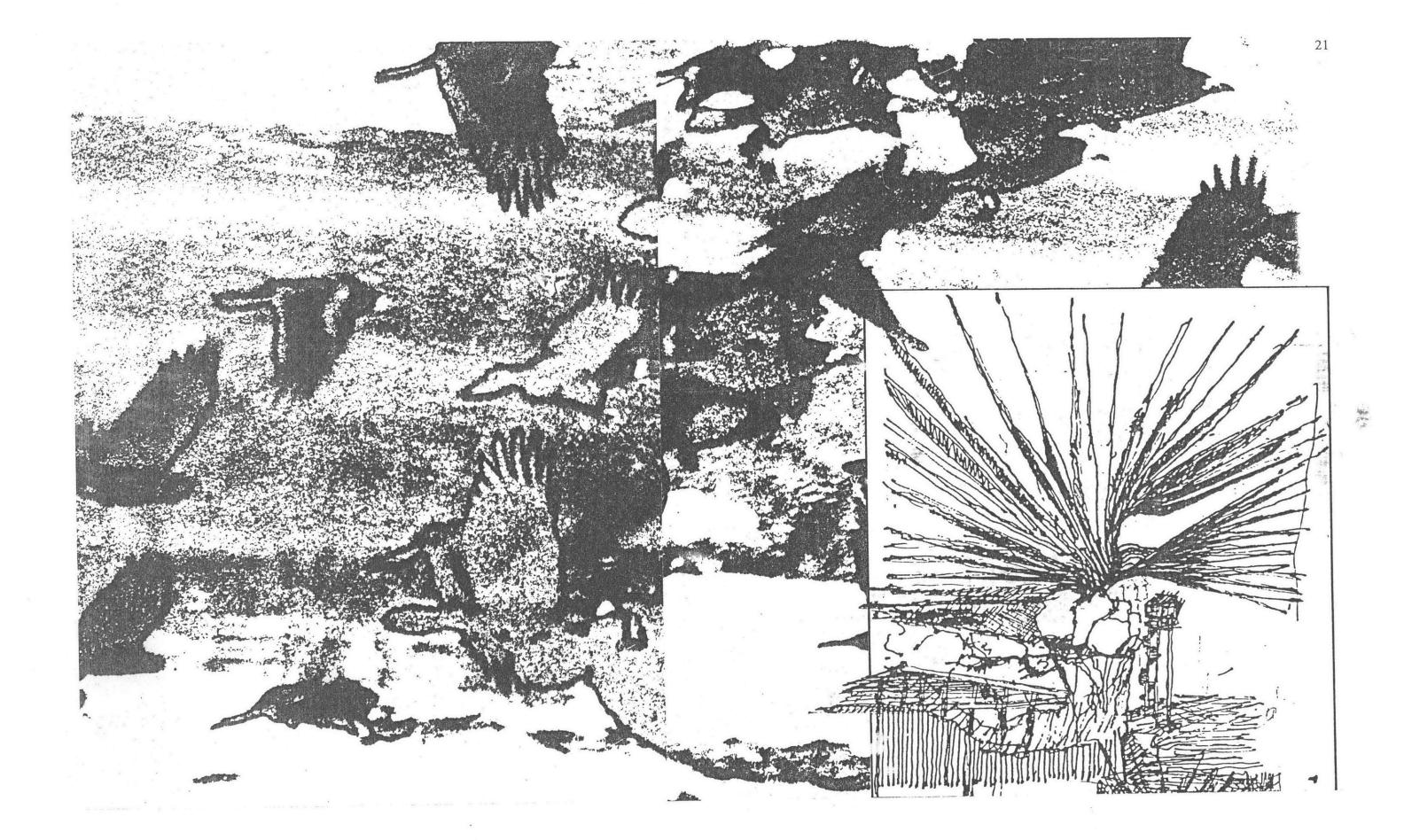












MODEL

I/8"=I ft.

Materials:

CHISELED PLYWOOD BASE: OCEAN FLOOR

DRY ICE: WATER

PINE, CHERRY, OTHER WOODS: THE ROCKS
LEAD: ROCK, \$TUDY IN FIRE) CAST IRON
BEACH GLASS, BOAT SHARDS: INTEGRATION OF
SITE ELEMENTS

COPPER: TRANSFORMATION OF ROCK INTO ROOF (ROCK TO FIRE)

PLEXIGLASS: GLASS

MODELING WOOD: STEEL

HYDRO*CAL PLASTER: POURED IN PLACE CONCRETE
CYLINDRICAL WOODEN FORMS WITH METALLIC PAINT:

ROOFS OF HOUSE*

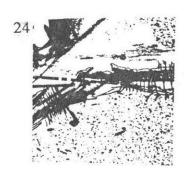
*SPECTACLE ISLAND IS UNDER CONSIDERATION AS:
THE NEW SEWAGE TREATMENT PLANT FOR BOSTON.
THE PIPES USED ARE SPLIT AND USED AS ROOFING
HERE. THEY ARE LAMINATED ON THE INTERIOR WITH
VAULTED PLYWOOD.

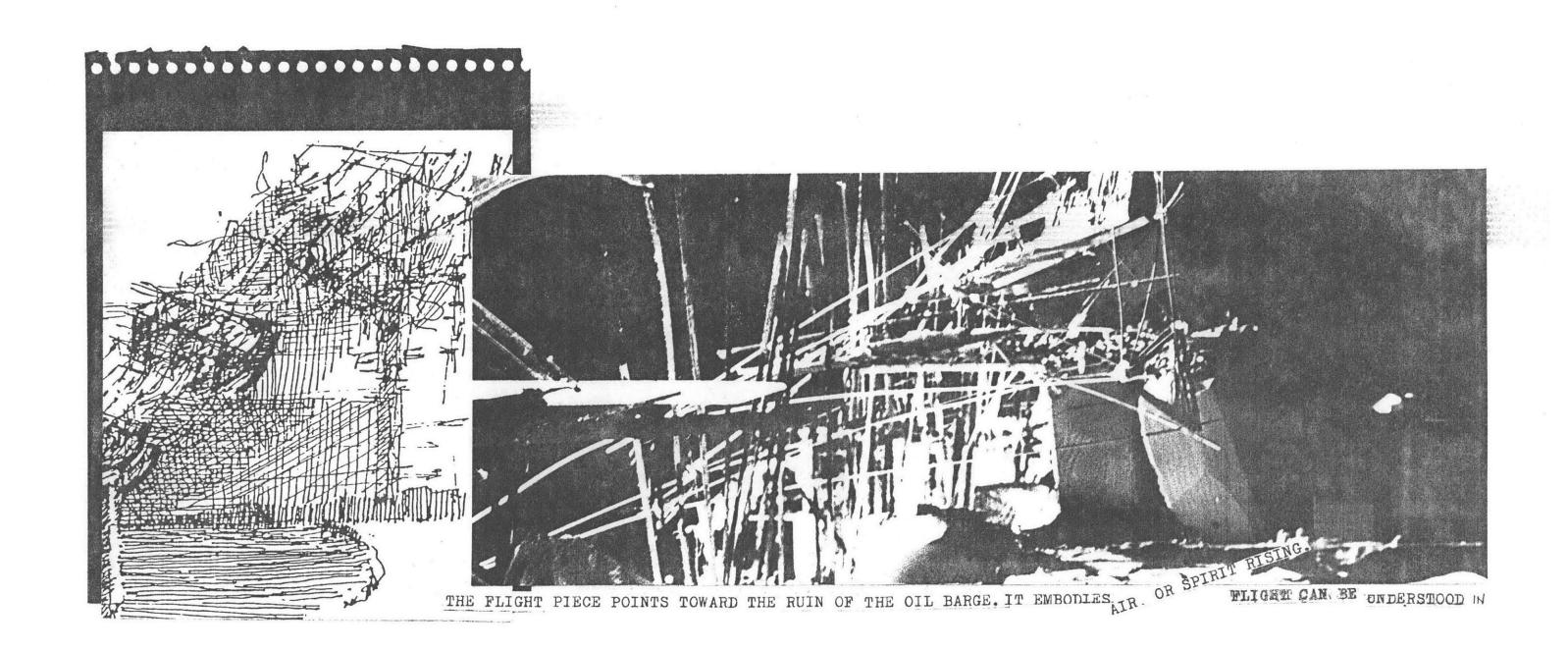
THE MODEL CONCENTRATES ON THE EXPERIENCE OF PASSAGE BETWEEN COMING TO THE INSTITUTE FROM THE CITY AND THE TRANSITION THAT IS NECESSARY TO ENTER A BUILDING "ON THE EDGE OF REASON".

SPECULATIVE SCIENCE, LIKE ALL CREATIVE PURSUIT, BEGINS AT WHAT IS KNOWN AND DELVES FROM THERE INTO THE UNKNOWN.

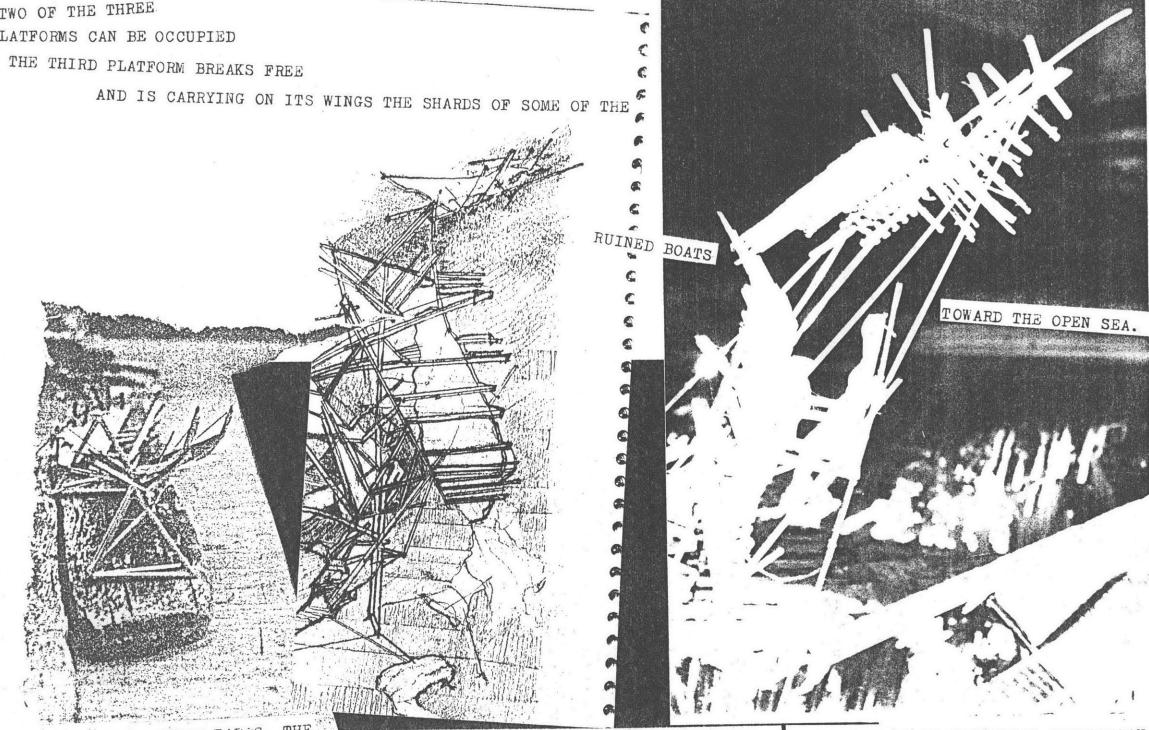




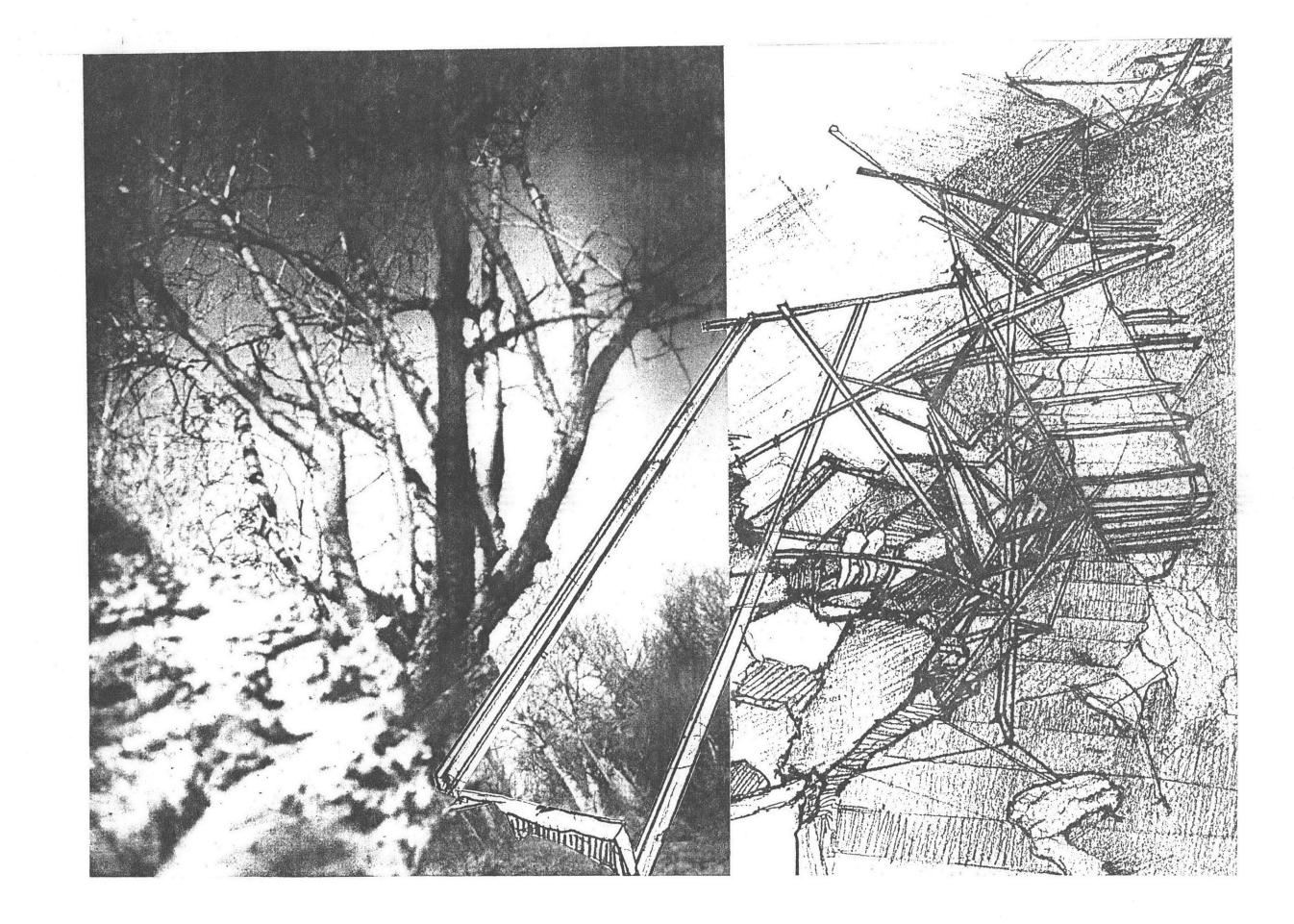




TWO OF THE THREE PLATFORMS CAN BE OCCUPIED



THIS ELEMENTAL OPPOSITION.



To behold the day-break!

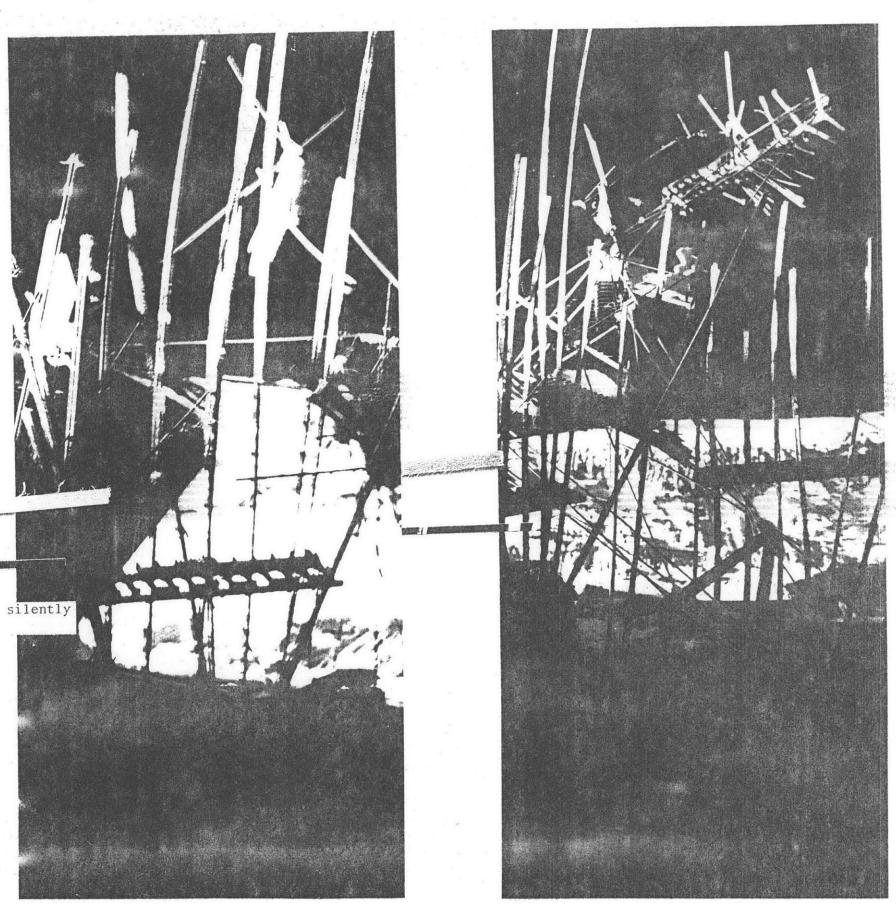
The little light fades the immense and diaphanous shadow-s;

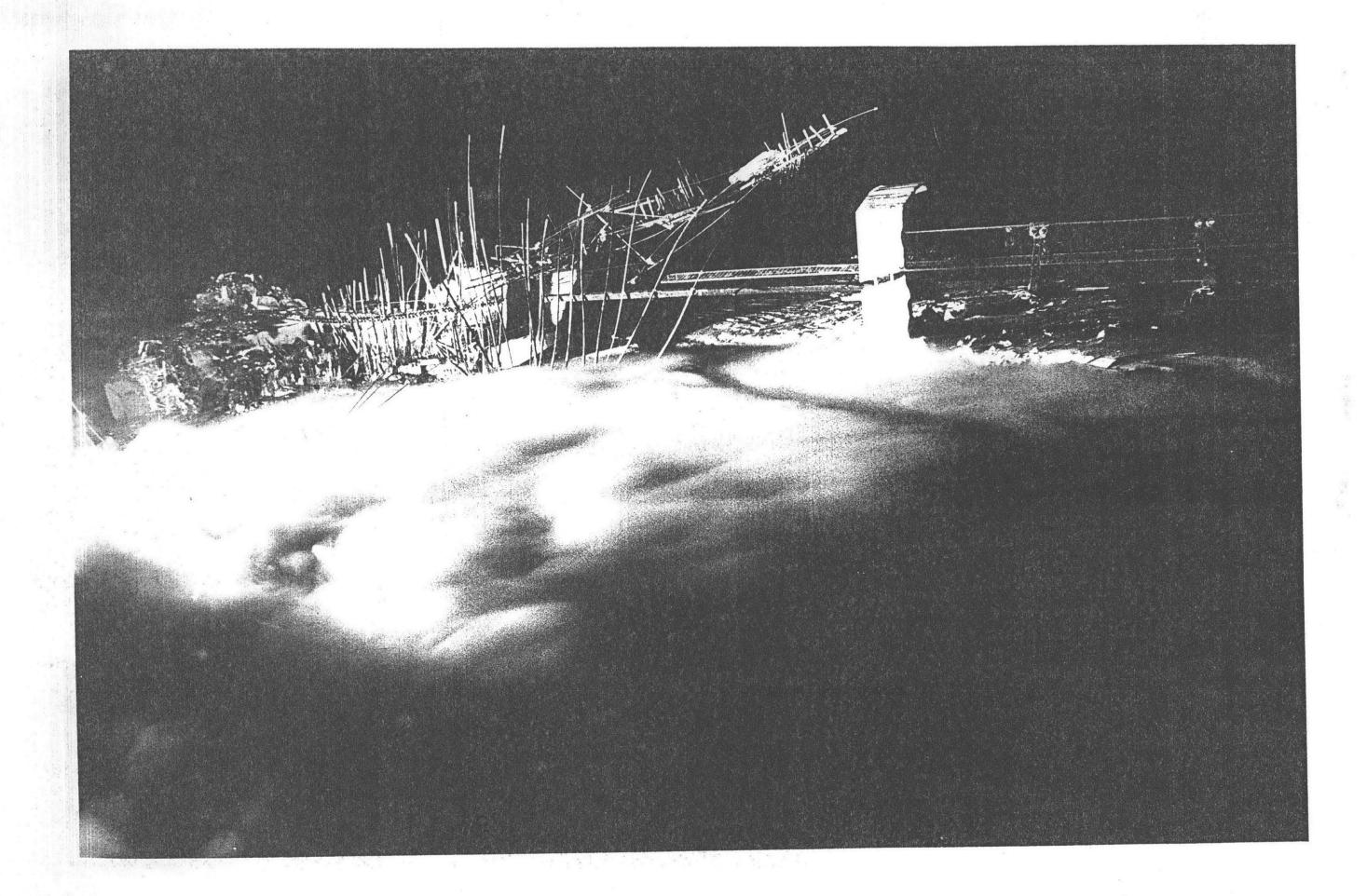
The air tastes good to my palate.

Hefts of the moving world, at innocent gambols, silently rising, freshly exuding,

Scooting obliquely high and low.

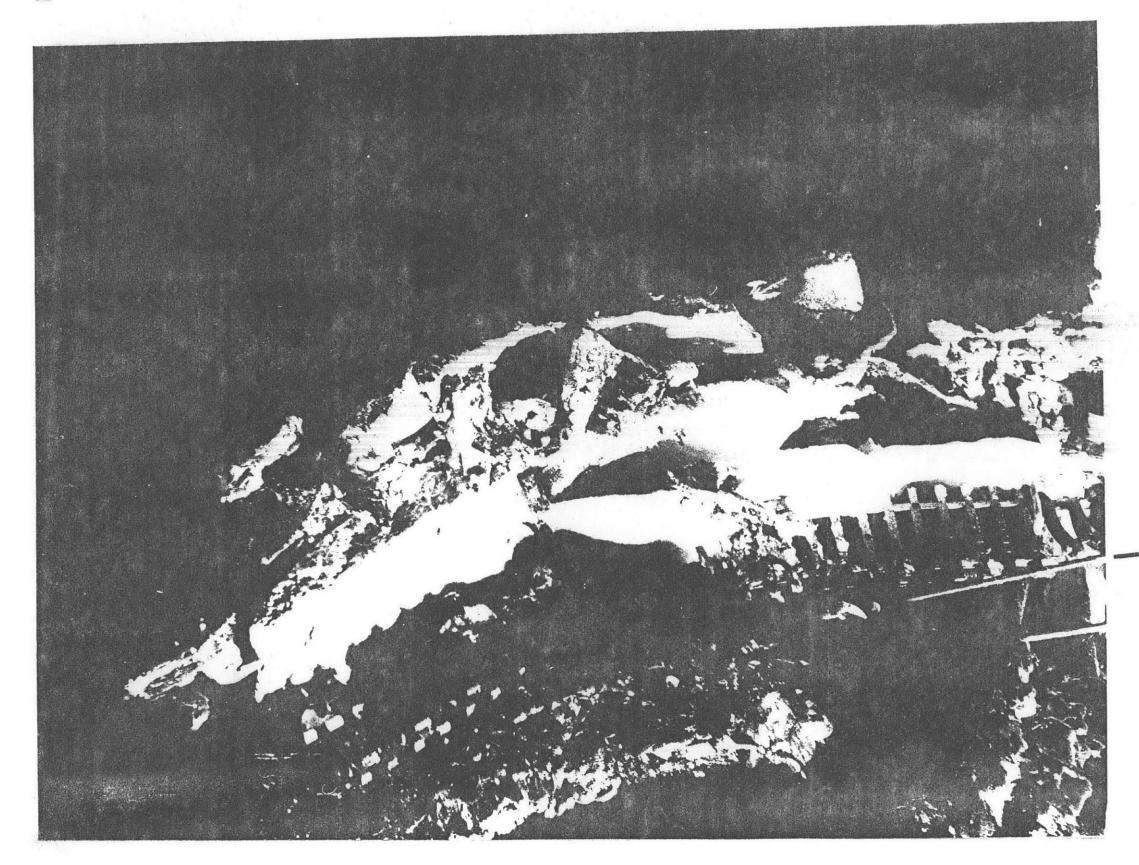
Walt Whitman





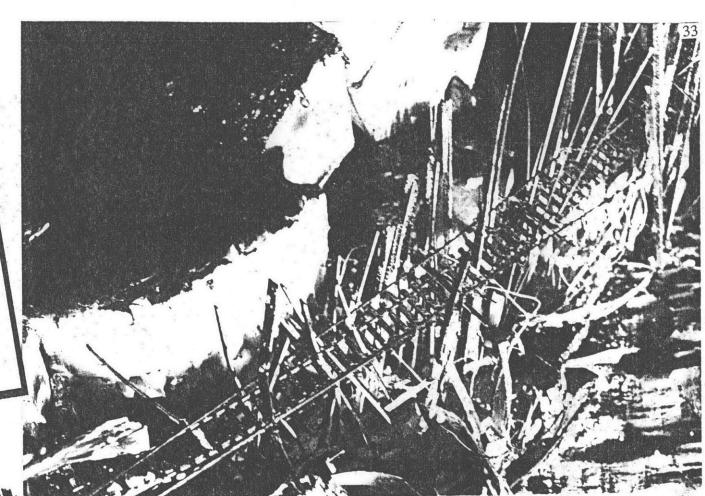






All fire afire
So be
So be it. Swallowing the fire. So be
it. Torqued to laughter by the fire,
the very fire. So be it. Chortling at flames
sucked in, a multiformity of laughter, a
flaming gravity surpassing the sobriety
flames, a chastity of annihilation. Recreant,
flames, a chastity of fire-blasted sand
calling it good. Calling the fire good.
So be it. The beauty of fire-blasted sumbottled.
The beauty of fire-blasted sumbottled.
An old bottle, mauled by the fire
An old bottle, mauled by the glass warped
a new glaze, the glass warped
to a new distinction, reclaiming the
undefined. A hot stone, reached
by the tide, crackled over by fine
by the tide, crackled over by fine
lines, the glaze unspoiled
lines, the glaze unspoiled
lines, the glaze unspoiled.
Annihilation ameliorated:

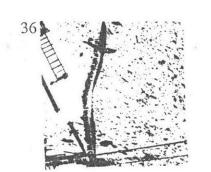
--from PATERSON
by William Carlos Williams



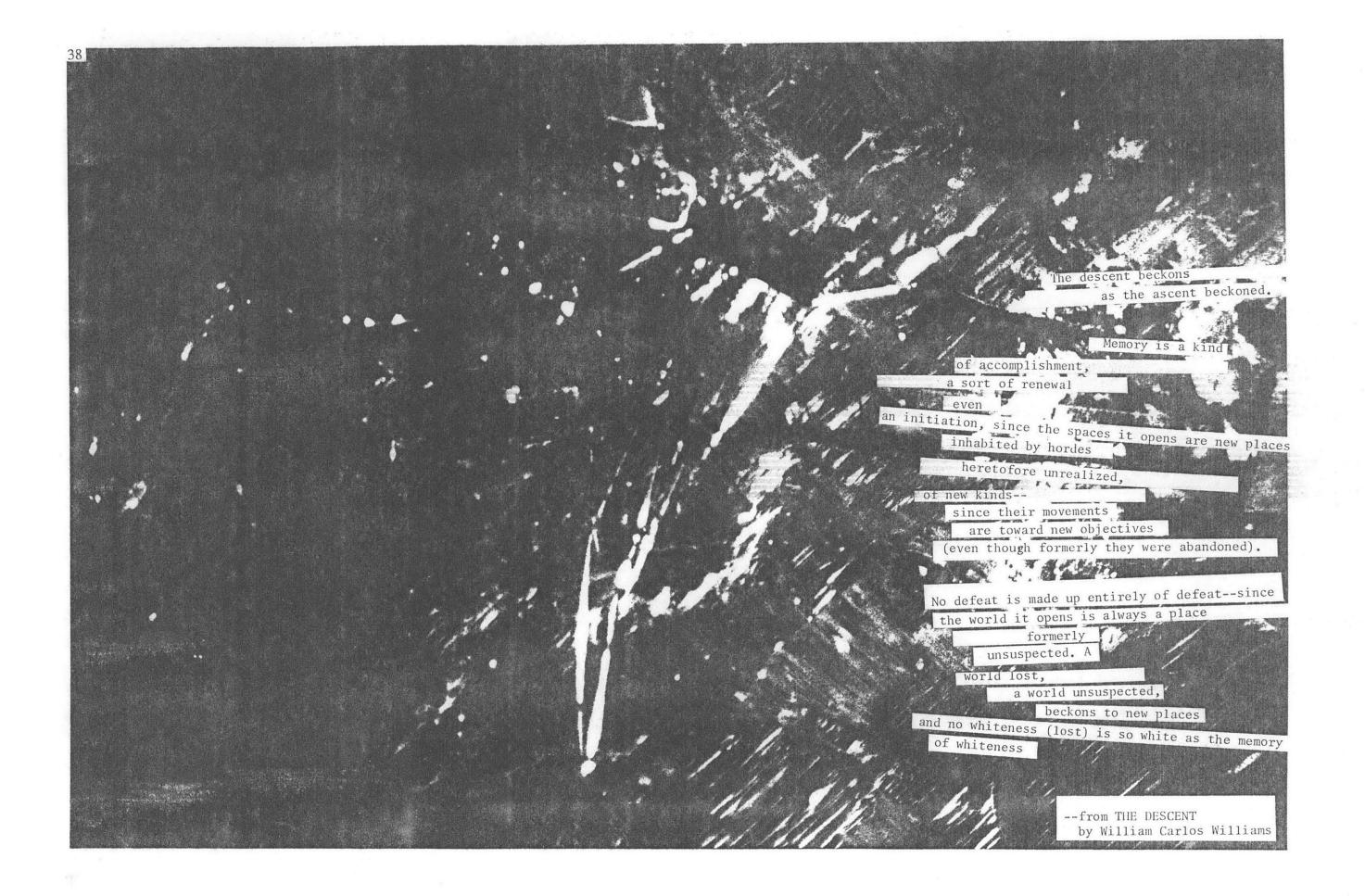




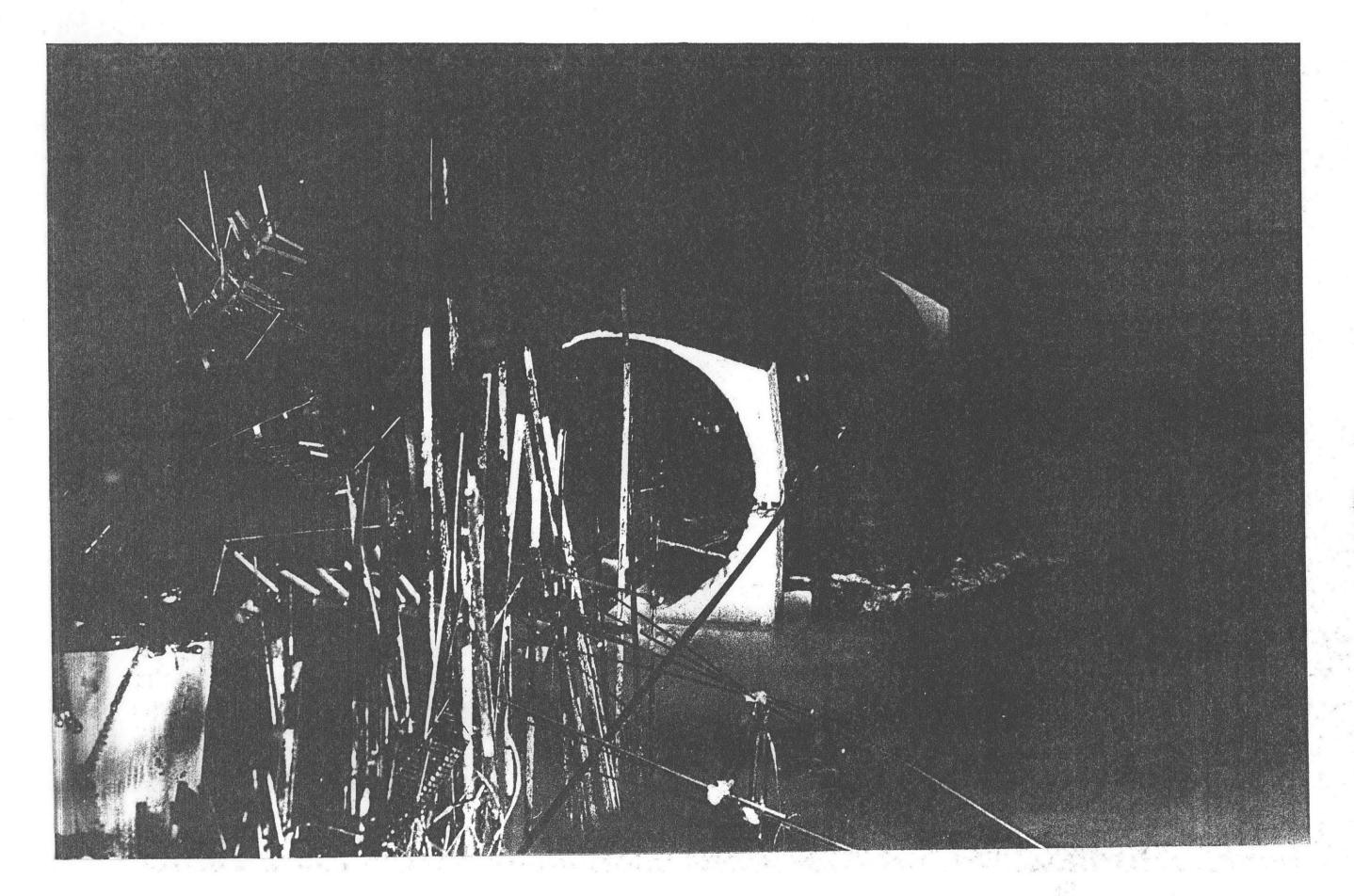
MADE IN STEEL RODS IT IS FIXED IN THE GROUND: THE SLENDERNESS OF THE MEMBERS AND ELASTICITY OF THE STEEL ALLOW THE BRIDGE TO SWAY IN THE WIND, MIMICKING THE TALL GRASSES BELOW.

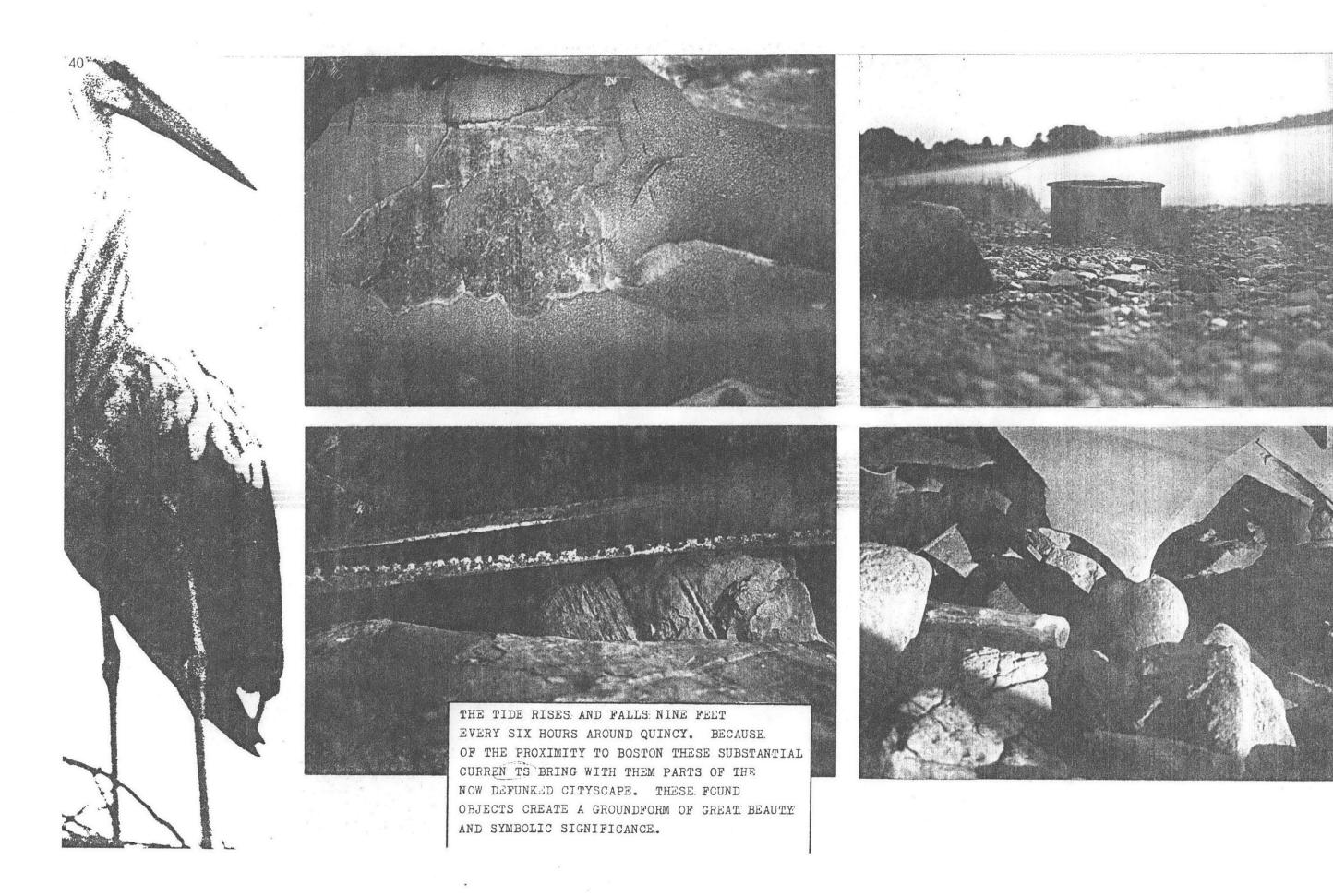




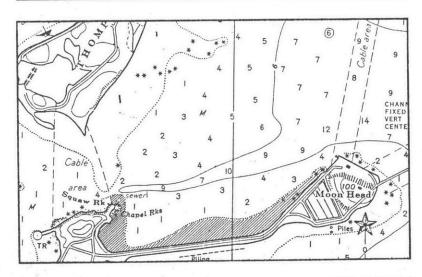






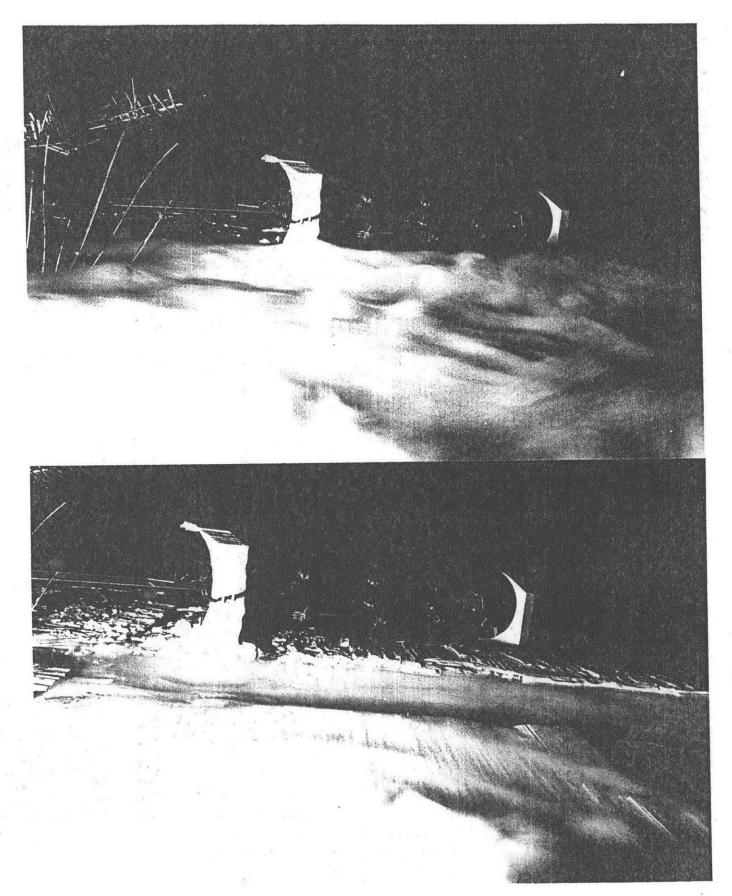


HIGH TIDE: SAND SPIT BETWEEN ISLAND AND ROCK DISAPPEARS. BOATS CAN ACCESS THE . DEEPEST AREA. THE PASSAGEWAY EXTENDS PERPENDICULAR TO THE SPIT. FLOATING WALKWAY RUNS BETWEEN THE ISLAND AND THE URBAN BUILDING OF THE INSTITUTE. THE MARKET AND CARETAKERS COTTAGE ARE AT ISLAND STATUS.



Place	Height referred to datum of soundings (MLW)				The state of the s
	Mean High Water	Mean Tide Level	Mean Low Water	Extreme Low Water	A7213
	feet	feet	feet	feet	1.3
Boston Light	9.0	4.5	0.0	-3.0	23250
Charlestown Weymouth Fore	9.5	4.7	0.0	-3.5	
River Bridge	9.5	4.7	0.0	-3.5	
Cohasset Harbor (White Head)	8.8	4.4	0.0	-3.5	

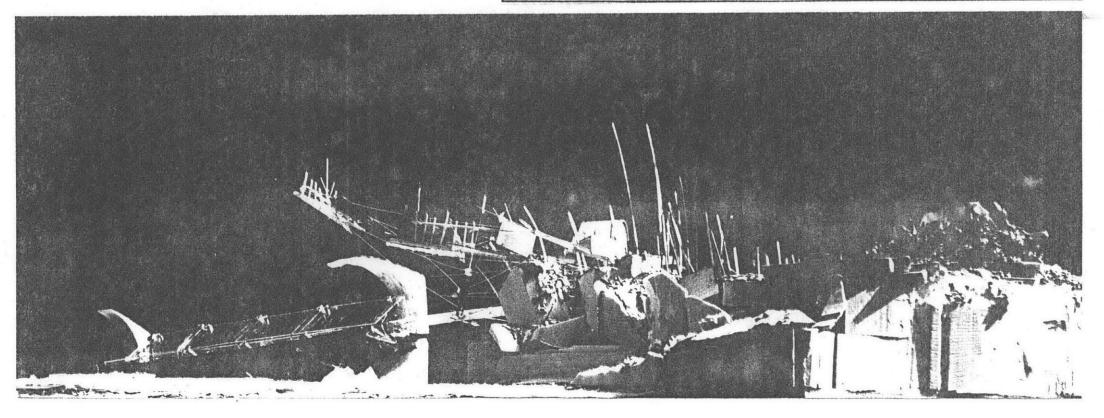
LOW TIDE: SAND SPIT CONNECTS ISLAND AND MAINLAND. PEDESTRIANS CAN WALK ACCROSS.
FLOATING PASSAGE HUGS THE ISLAND CONTOUR.
THE MARKET AND CARETAKERS COTTAGE MARK
THE EDGE OF THE AREA BETWEEN LAND AND WATER.



TUBE BUILDING

POSITION ON SITE: RUNS THE WHOLE LENGTH OF THE BUILT SITE.

(APPROXIMATELY 2500 FT) IT IS THE PRINCIPAL ACCESS BETWEEN
THE BUILDINGS THE MARKET AND THE ROCKS.



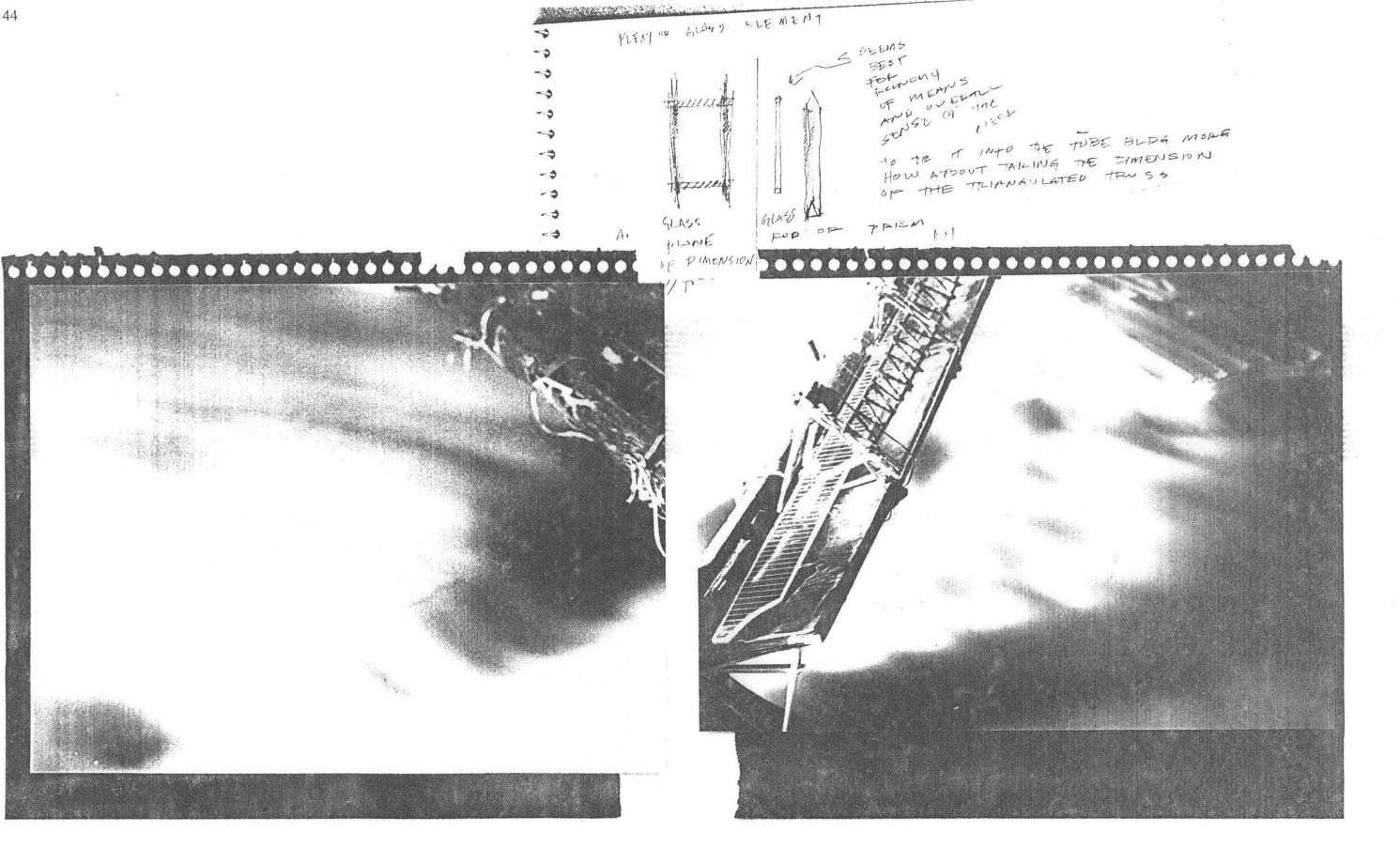


ORIENTATION: THE PASSAGE GRADUALLY SLOPES DOWNWARD ON A TRAJECTORY THAT STARTS JUST BEYOND THE ROCKS AND CONTINUES UNTIL IT REACHES THE OCEAN FLOOR (15 FEET).

BELOW LAND). AT THIS POINT IT FRAGMENTS SAFE WITHIN THE ENVELOPE OF THE URBAN BUILDING. VISUAL CONTINUITY IS MAINTAINED ALL THE WAY ALONG THE 2500 FEET OF THIS PASSAGE. FROM THE URBAN BUILDING THE SLOPE IS ONE OF GRADUAL INCLINE, WHICH REACHES ITS APEX AT THE BASE.

OF THE MASSIVE STEPS WHICH LEAD ON TO THE LIGHTHOUSE.





ELEMENTS:

SERIES OF REPETITIVE STRUCTURAL ELEMENTS: STEEL TRUSS REPEATED EVERY 40 FT., LANDSCAPE SIZE STRUCTURAL SUPPORT: POURED CONC. RETE. CURVED FORM FOCUSES. VIEW ON ROCKS. LOAD OF TUBE BUILDING CARRIED ON BOTTOM, SO A CRACK IS MADE WHERE THE MATERIAL IS WEAKEST TO PROVIDE A WINDOW OUT AS YOU DESCEND, REBARS EXPOSED TO FRAME VIEW OF THE HOUSE. TUBE BUILDING RESTS ON A TRIANGULAR TRUSS WHICH IS FIXED TO THE BURED CONCRETE BASE.

TRANSPARENT OBSERVATORY- THE PASSAGEWAY IS ALL GLASS,
MAKING THE JOURNEY ONE THAT REVEALS THE LANDSCAPE IN
A NEW DIMENSION. THE PENINSULA CONNECTING THOMPSON
ISLAND TO SQUANTUM ROCK IS VIEWED FIRST FROM ABOVE THEN
AT SEAGULL EYE VIEW AND FINALLY JUST BELOW THE SURFACE OF
WATER.

THE FLOOR- THE SCIENTIST WALKS ON A FLOOR OF GLASS, BELOW HIM IS A COPPER FLOOR. LIGHT WHICH COMES IN CREATES THE IMPRESSION CF A FLOOR AFIRE. UNDER A BLANKET OF WATER FIRE IN WATER. SEALED WITHIN THE GLASS, THE COPPER SURFACE IS AT ONE PHASE, EXPOSED TO WATER AND AIR, THE UNDERSIDE

IS AT ONE PHASE, EXPOSED TO WATER AND AIR, THE UNDERSIDE

LONG PHASE, EXPOSED TO WATER AND AIR, THE UNDERSIDE

LONG PHASE, EXPOSED TO WATER AND AIR, THE UNDERSIDE

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LONG PHASE, EXPOSED TO WATER AND AIR, THE UNDERSIDE

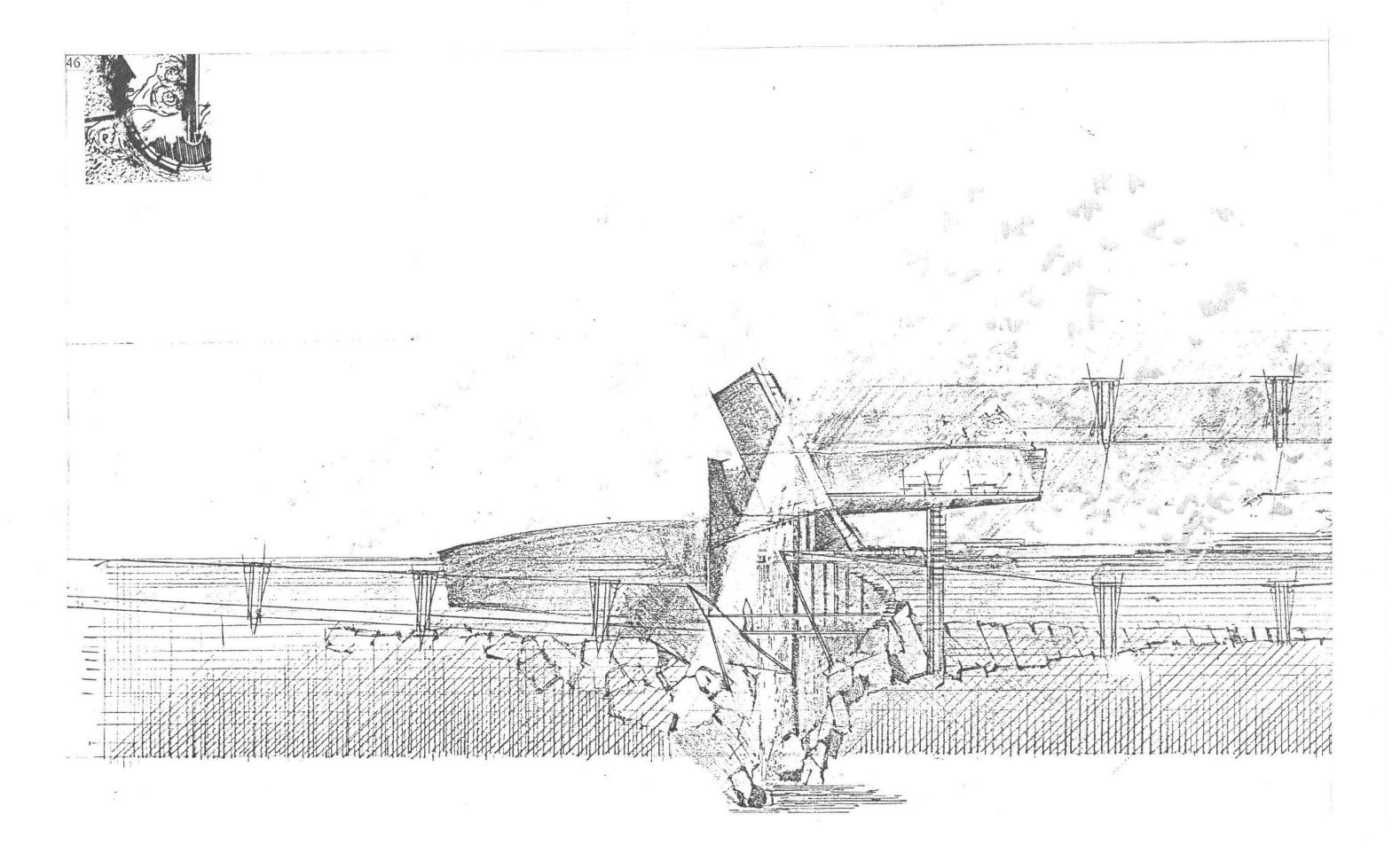
LONG PHASE, EXPOSED TO WATER AND AIR, THE UNDERSIDE

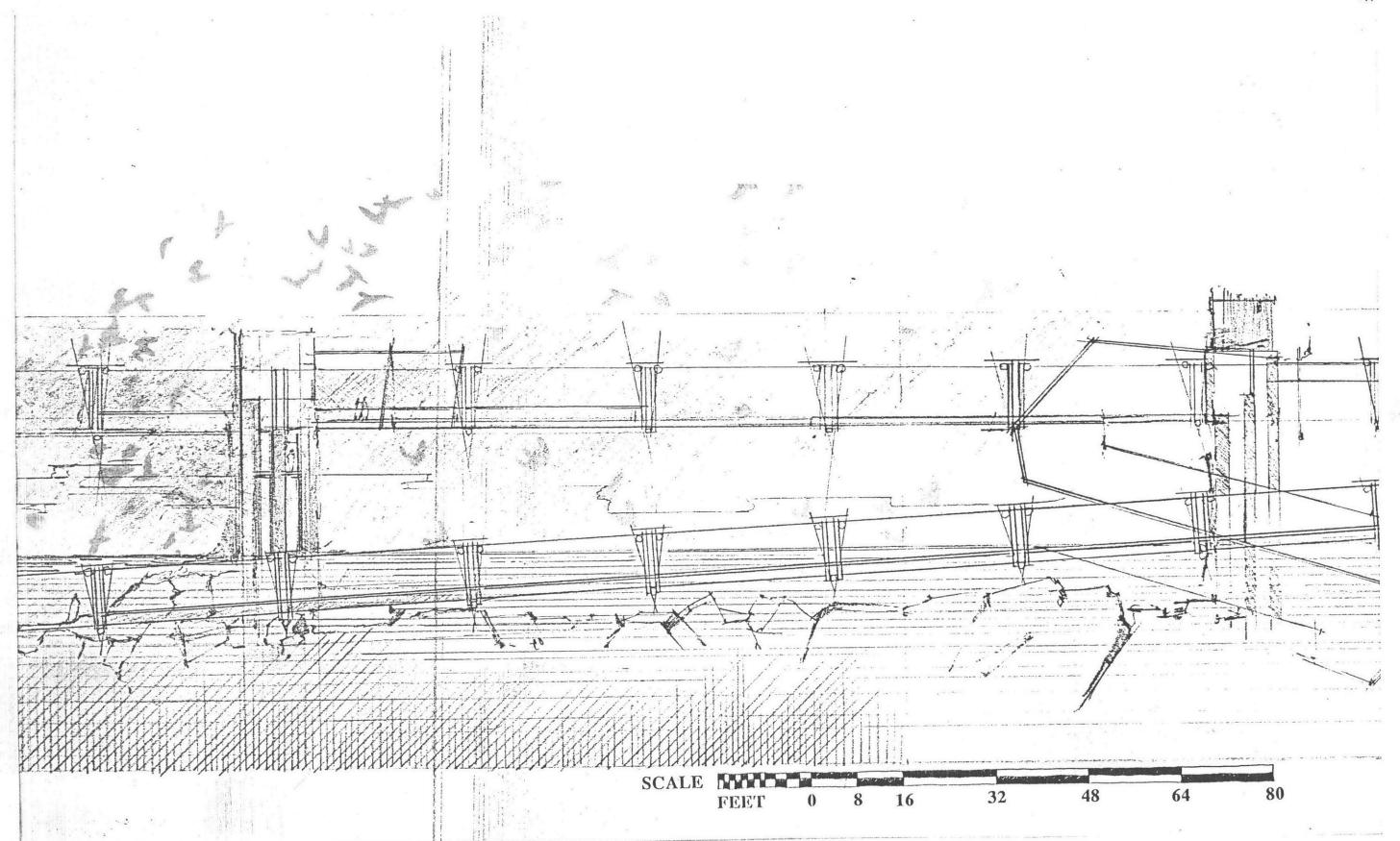
LONG PHASE, EXPOSED TO WATER AND AIR, THE UNDERSIDE

LONG PHASE, EXPOSED TO WATER AND AIR, THE UNDERSIDE

LONG PHASE, EXPOSED TO WATER AND AIR, THE UNDERSIDE

LONG PHASE AIR AIR AIR AIR AIR AIR AIR





URBAN BUILDING

POSITION ON SITE: MIDWAY BETWEEN THE DEPARTURE

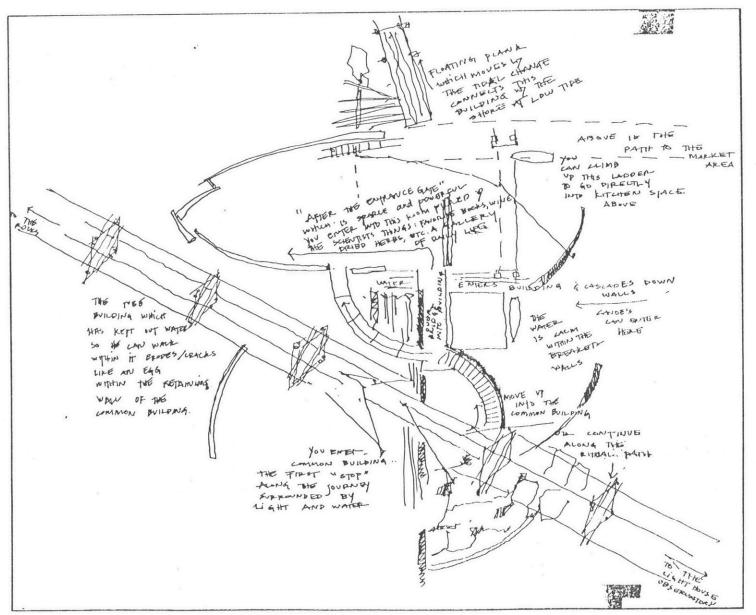
POINT AND THE DESTINATION AT THE END OF THE

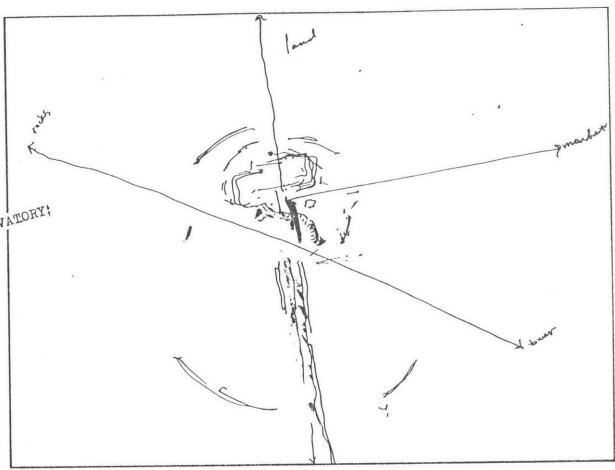
RITUAL AXIS. HERE THE SCIENTIST, STILL WITH HIS

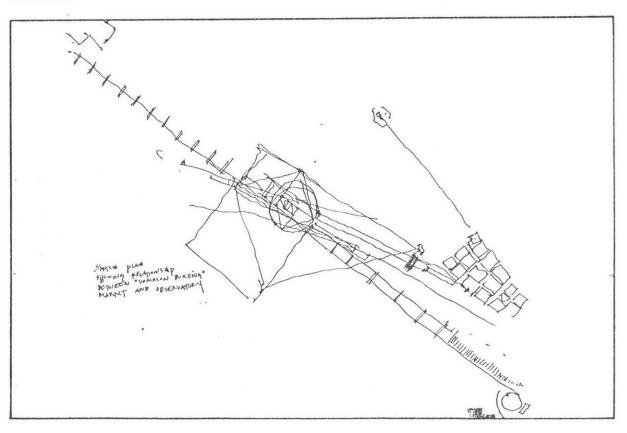
LUGGAGE CAN STOP, LEAVE HIS BAGS AND PROCEED IN

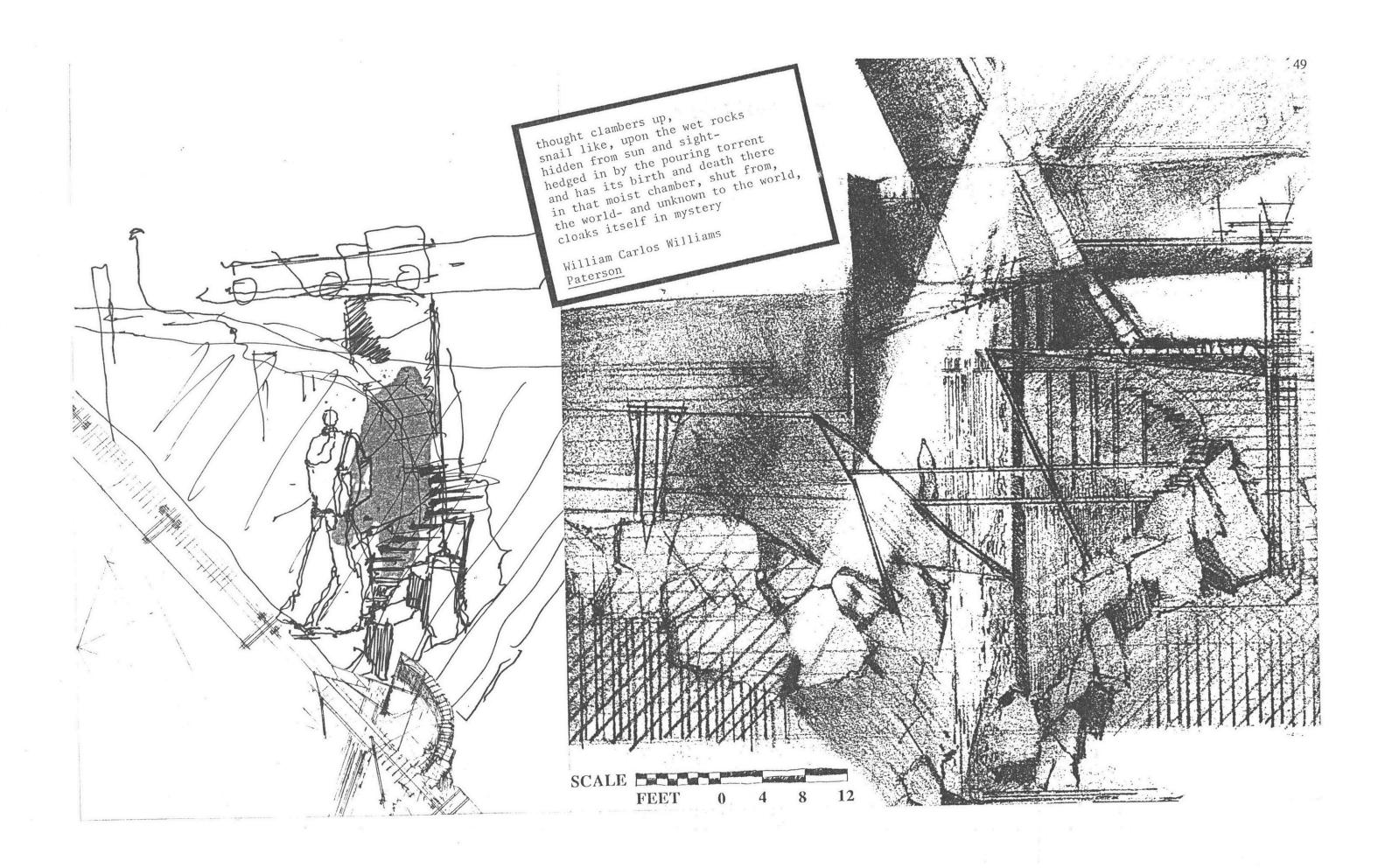
A NUMBER OF DIFFERENT WAYS: HE CAN CONTINUE

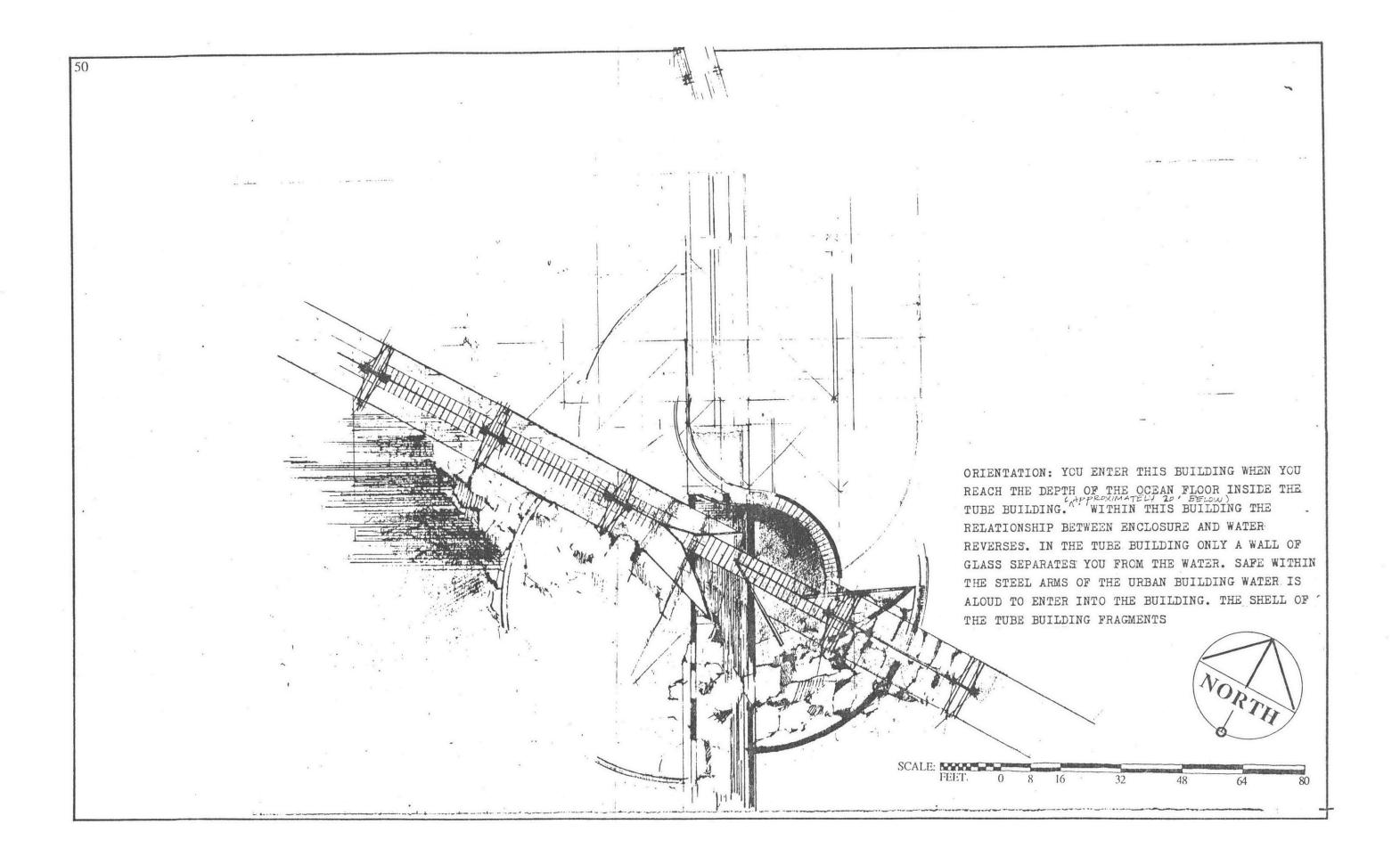
ALONG THE RITUAL AXIS TOWARD THE LIGHTHOUSE, OBSERVATORY;

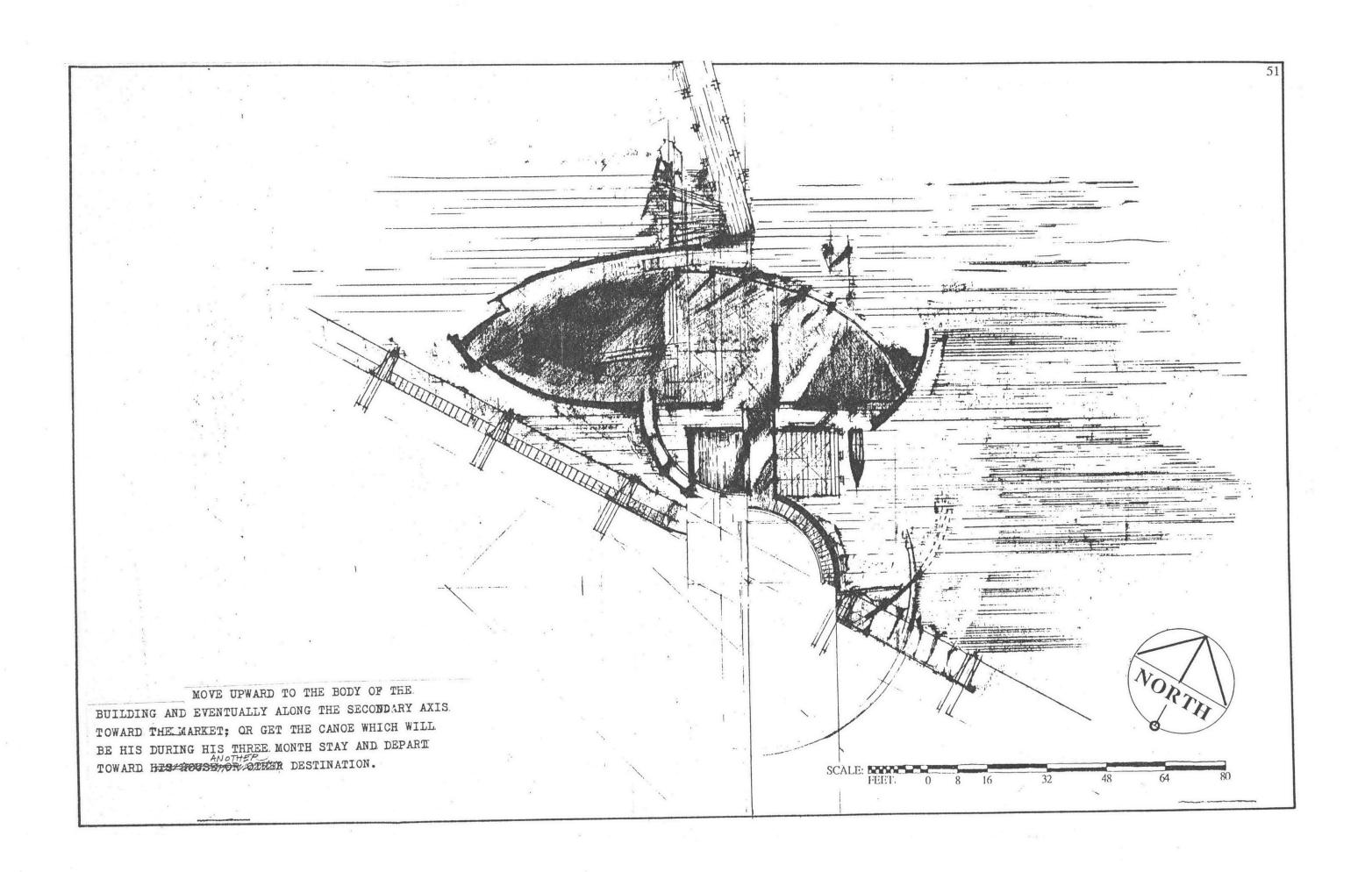


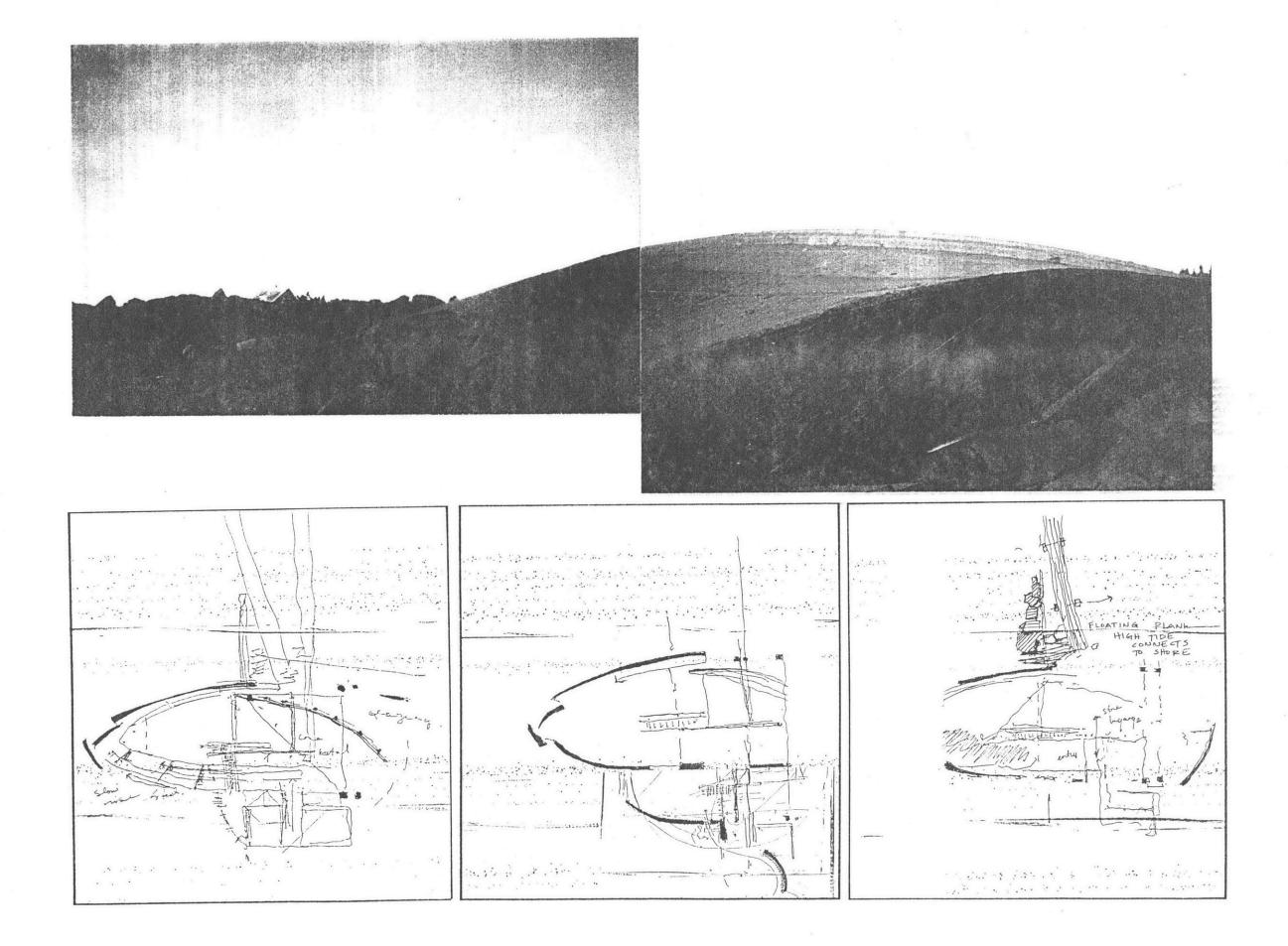


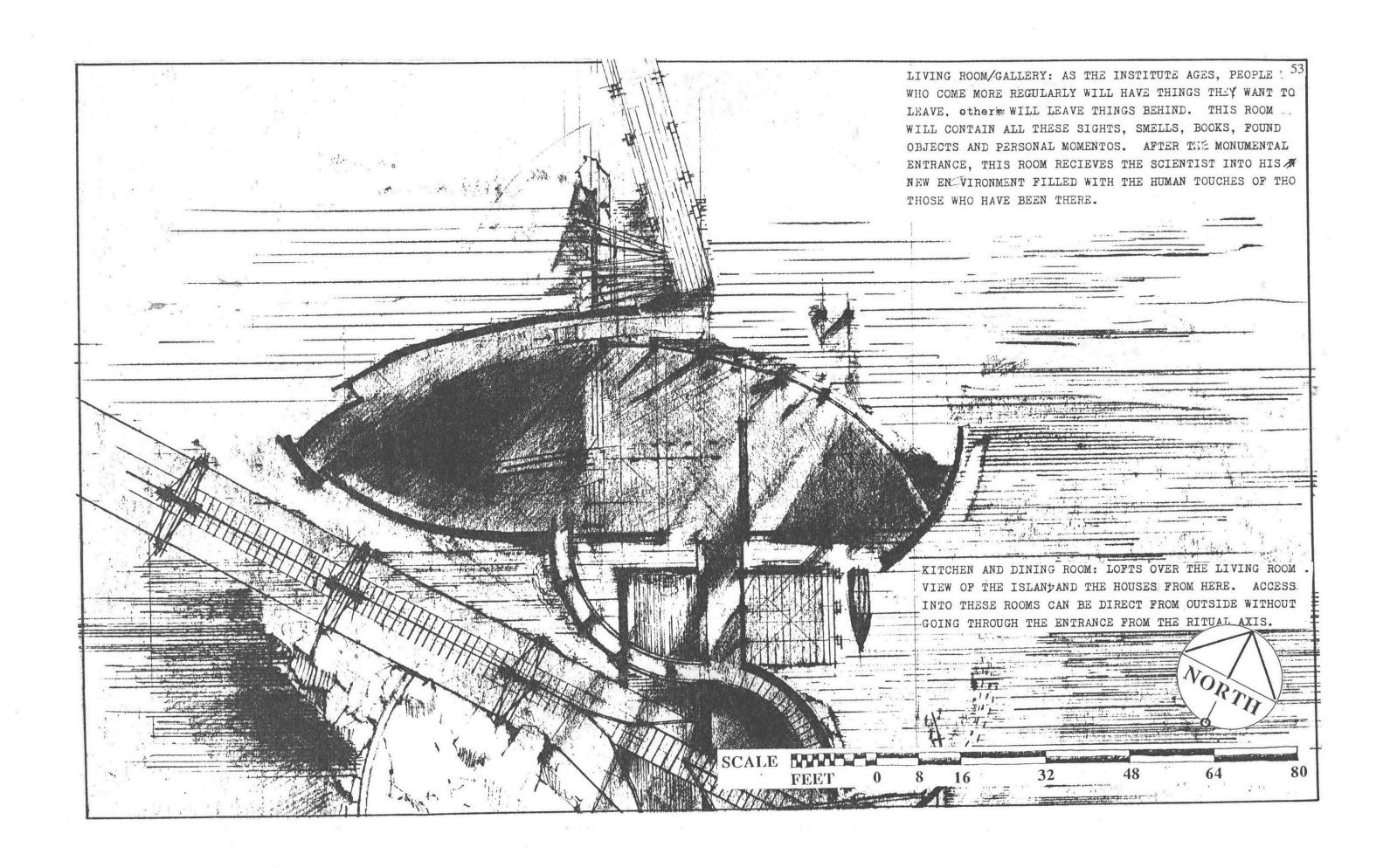


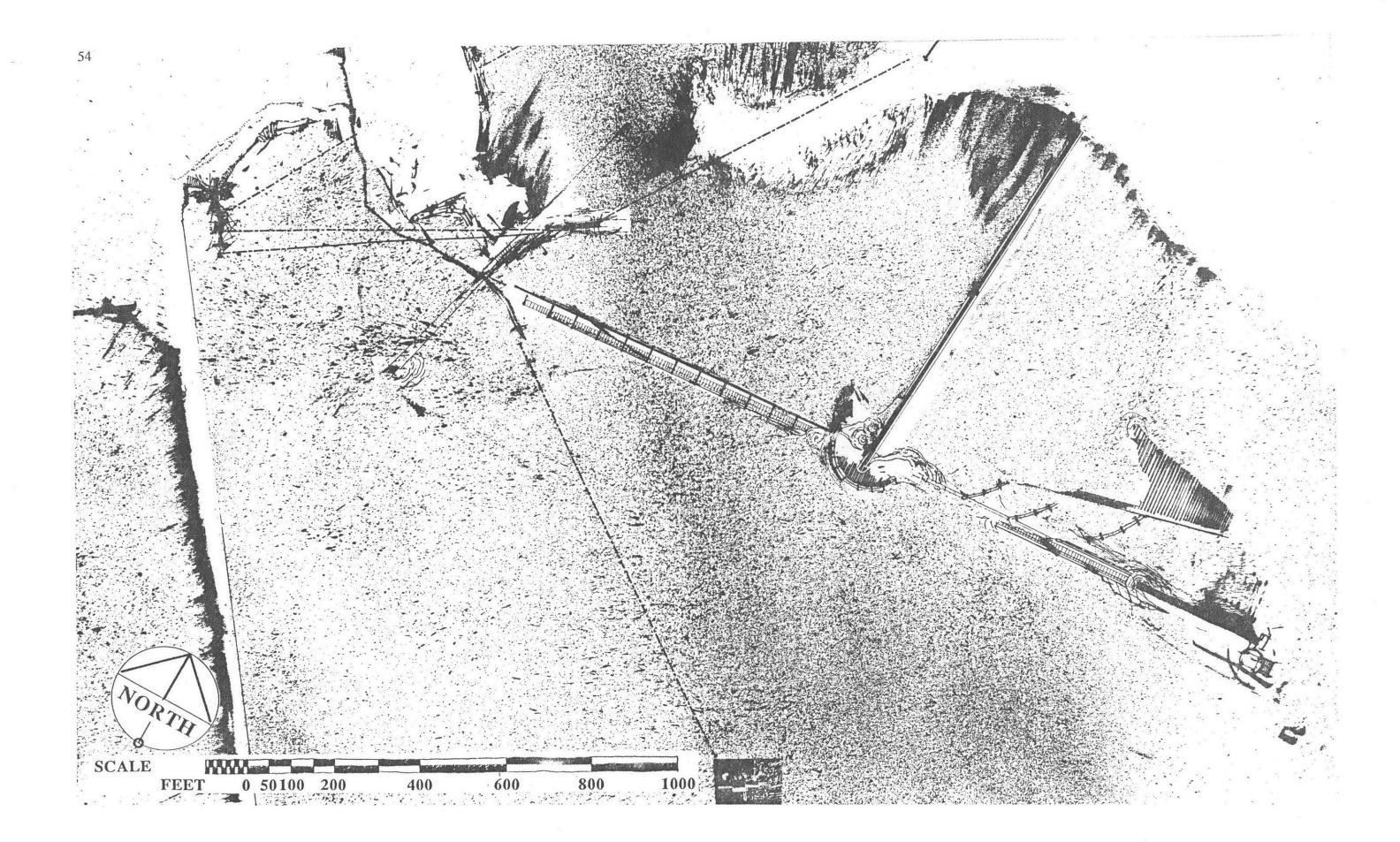


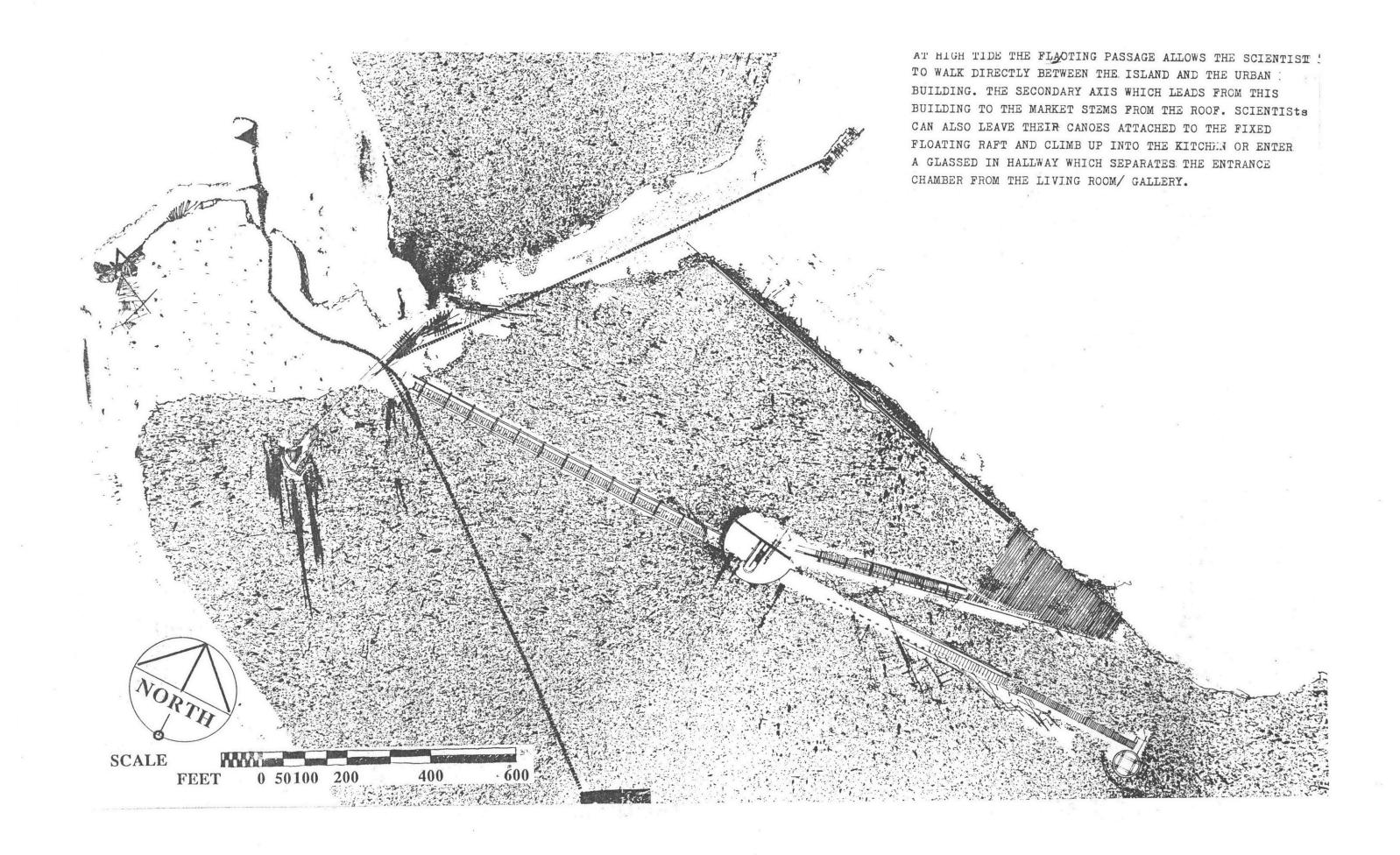


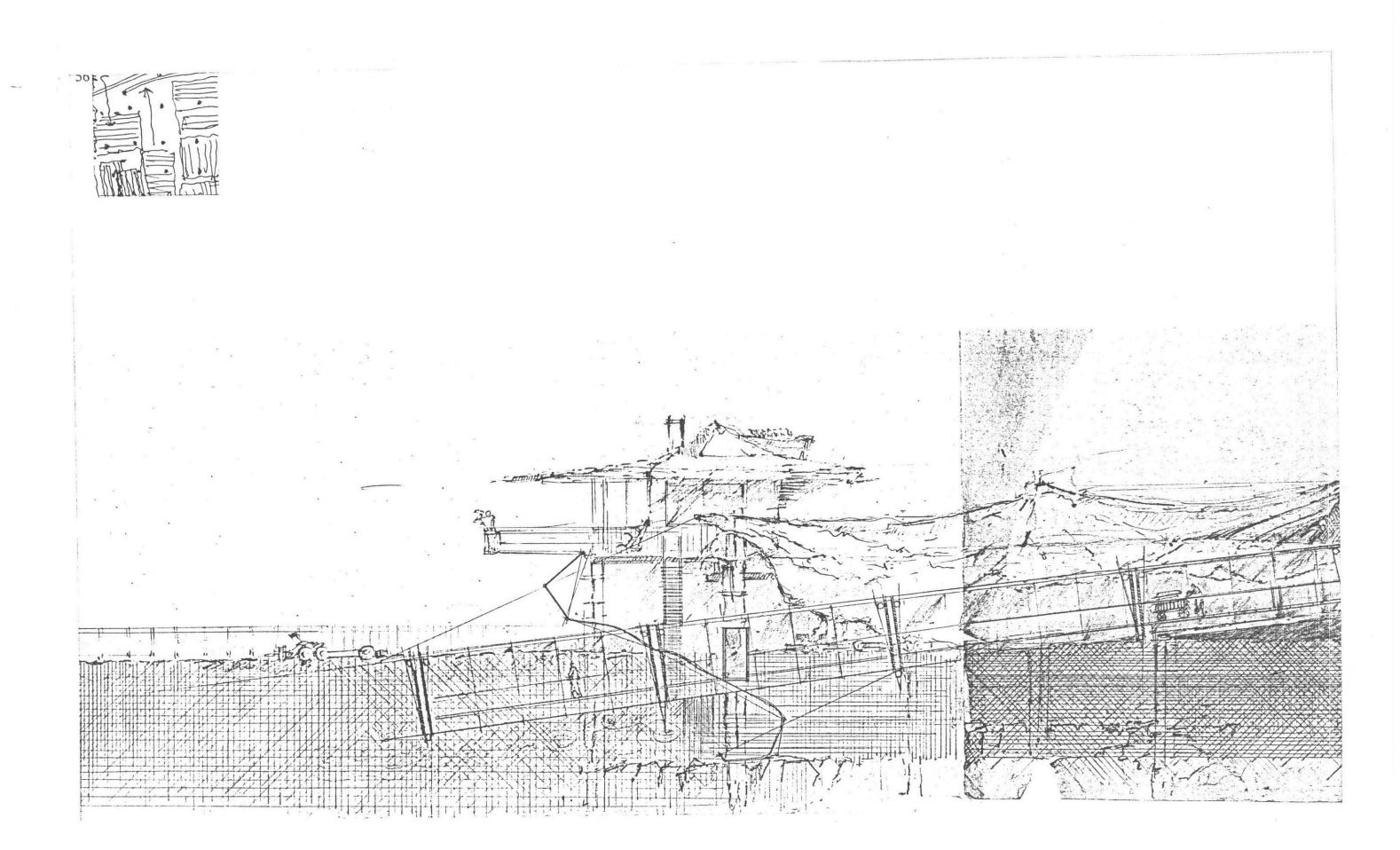


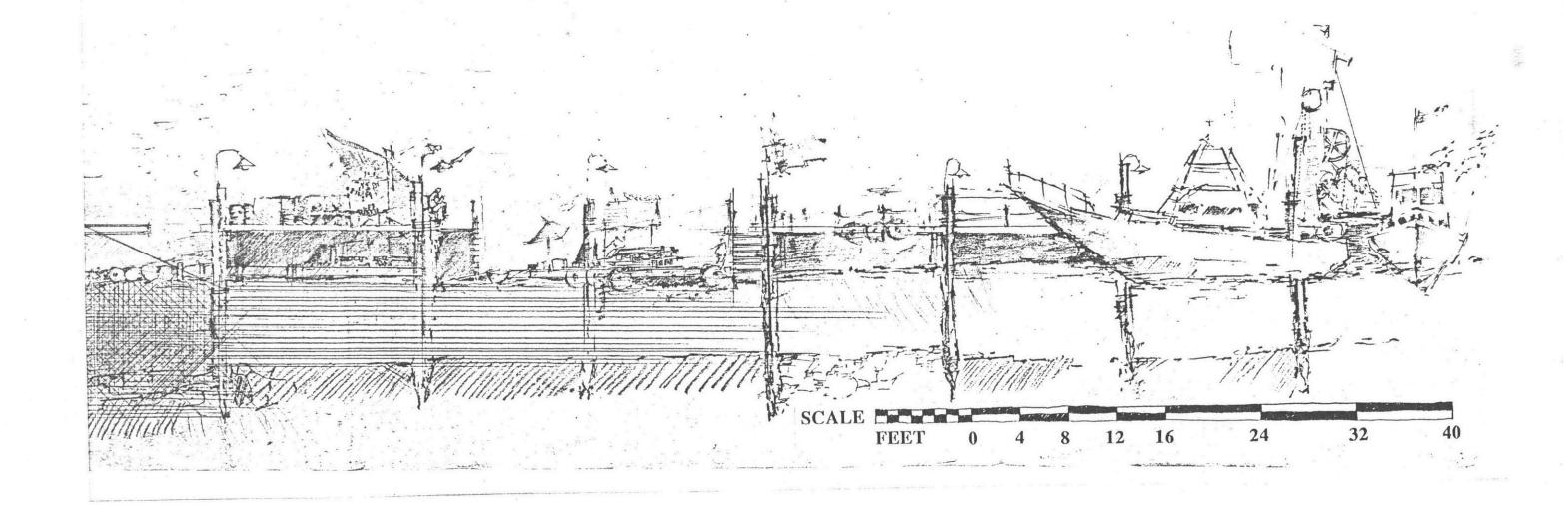


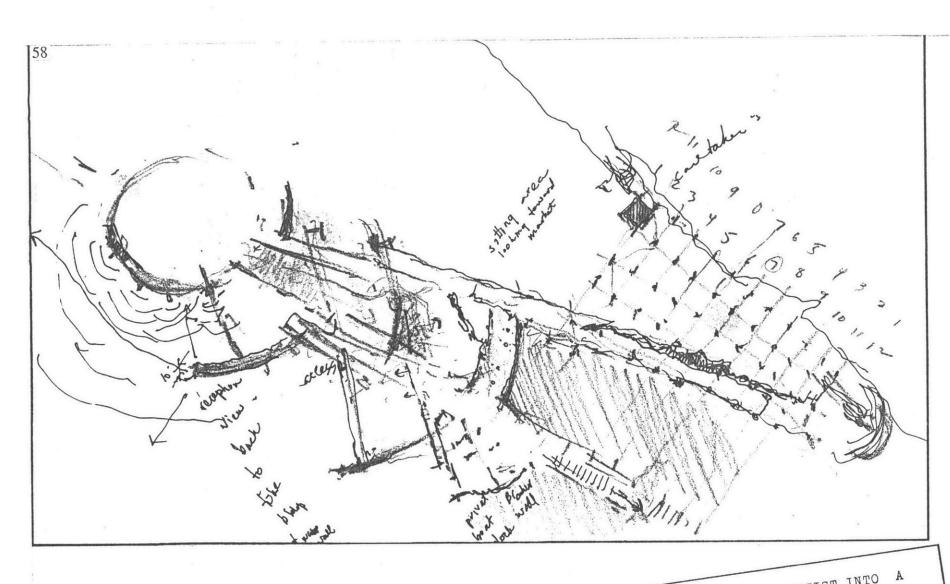








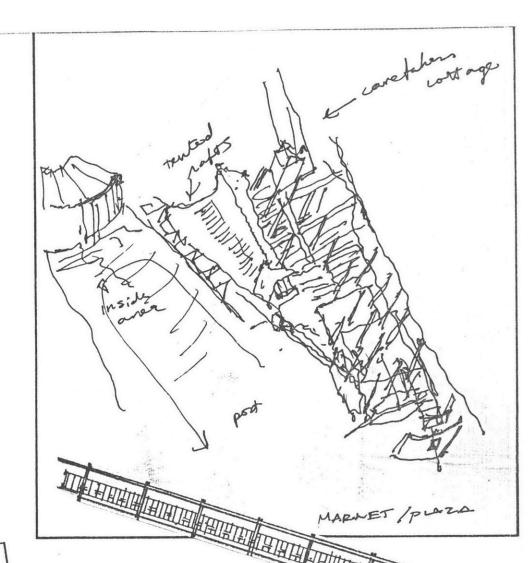


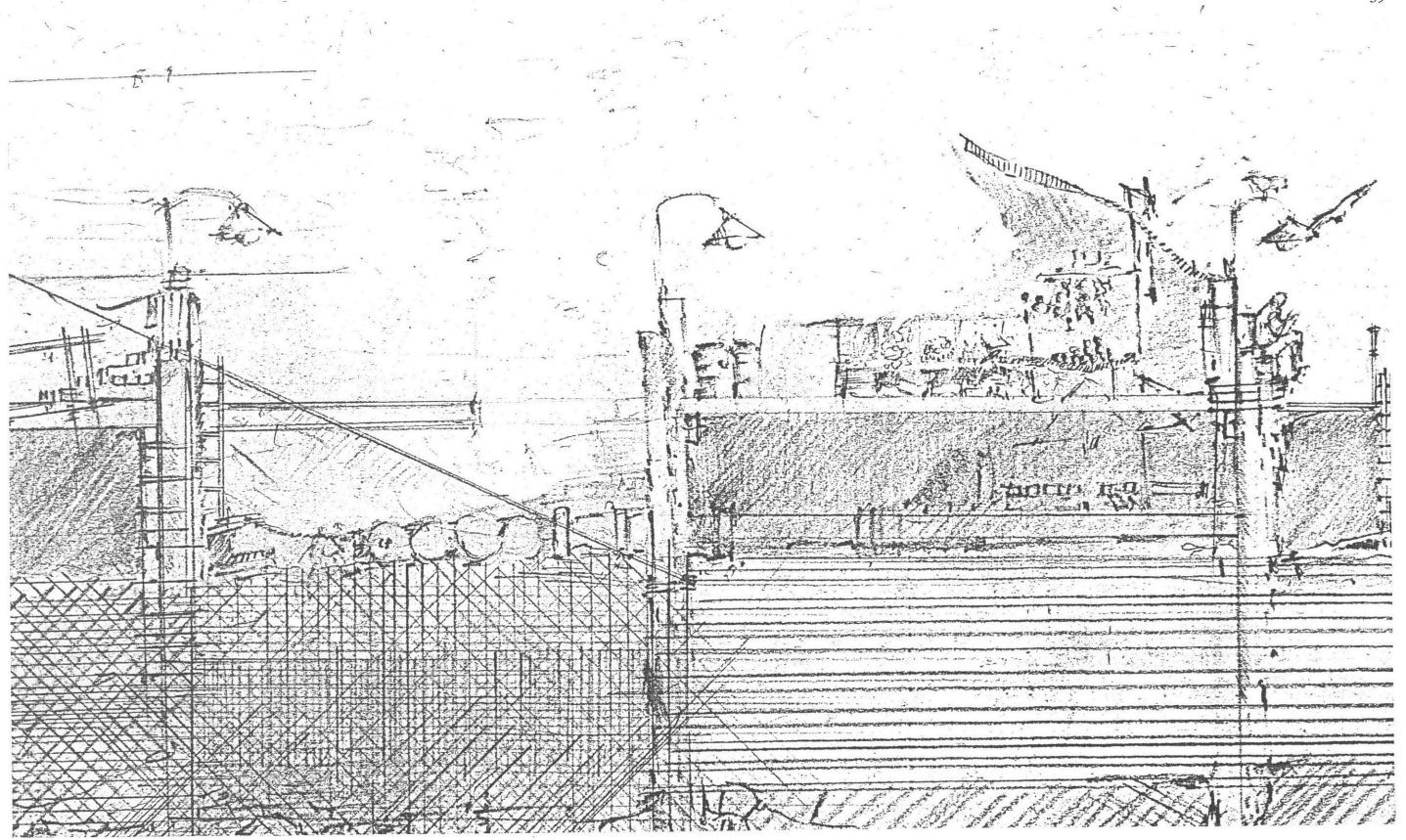


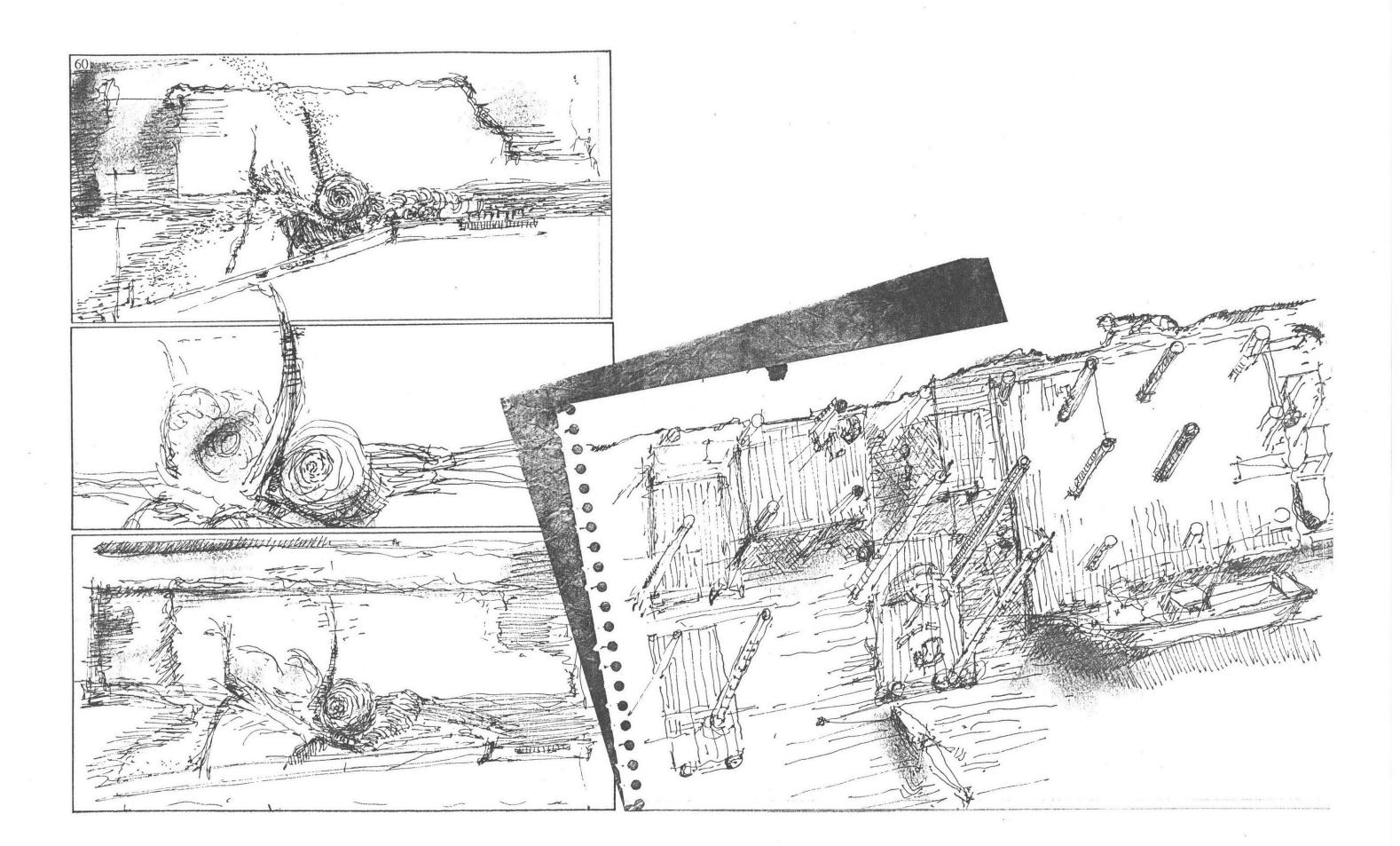
THE MARKET PROVIDES AN ESCAPE FOR THE SCIENTIST INTO A MORE SIMPLE WORLD; A WORLD OF SIGHTS, SOUNDS AND SMELLS OF DAILY LIFE. FISHERMAN COME AND LEAVE THEIR MORNING CATCH, WHICH CAN BE COOKED RIGHT ON AN OPEN FIRE ON ONE OF THE FLOATING DECKS. FRIENDS AND FAMILY WHO COME TO VISIT THE SCIENTISTS, CAN MEET AT THE MARKET AND SHOP FOR A PICNIC WITH WHICH TO SPEND THE DAY WANDERING WITH.

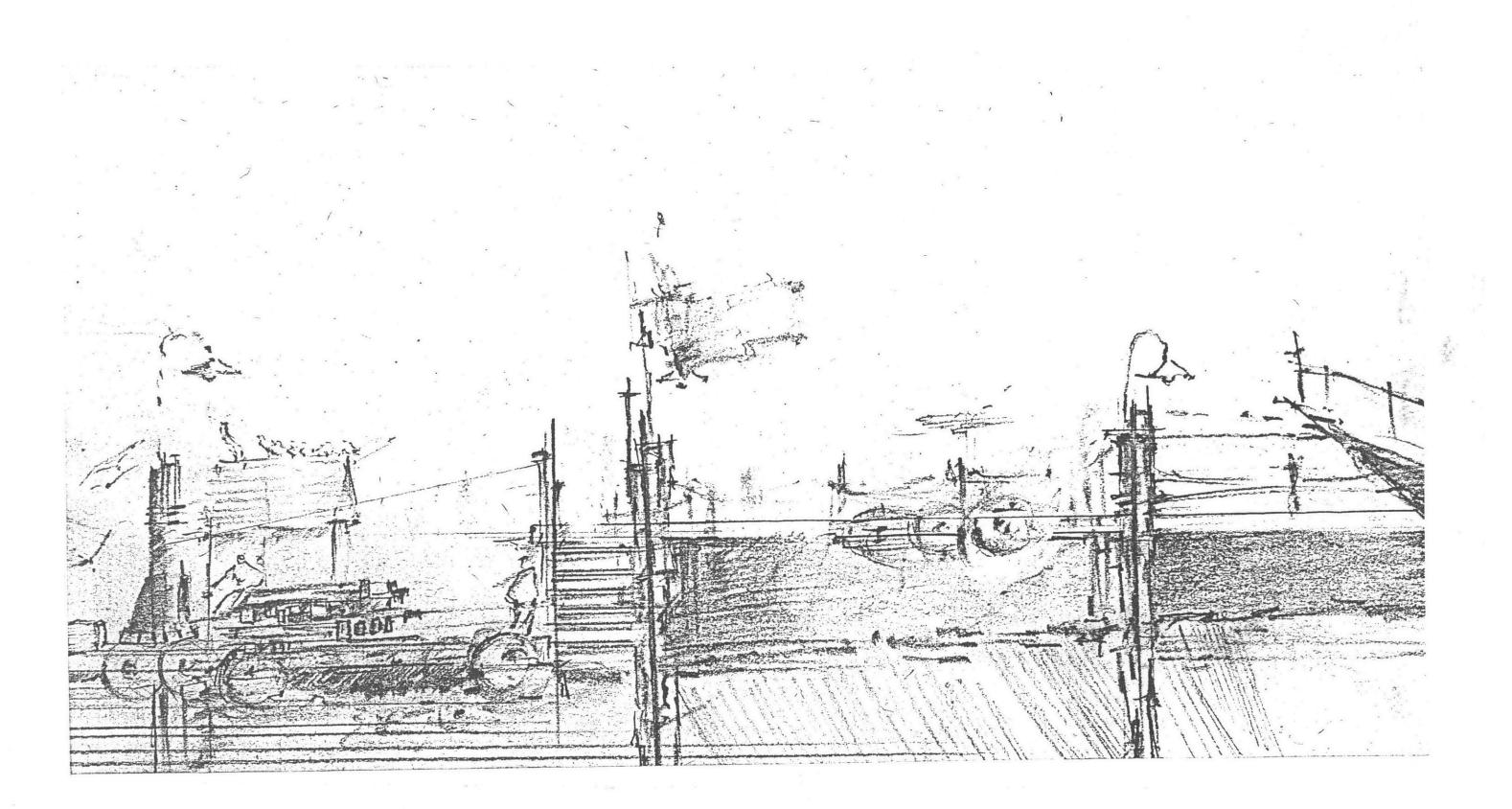
THE MARKET BECOMES A SHARED PLACE FOR THE THOMPSON ISLAND THE MARKET BECOMES A SHARED PLACE FOR THE THOMPSON ISLAND RESIDENTS, THE QUINCY LOCALS, AND THE GENERAL PASSERBY.

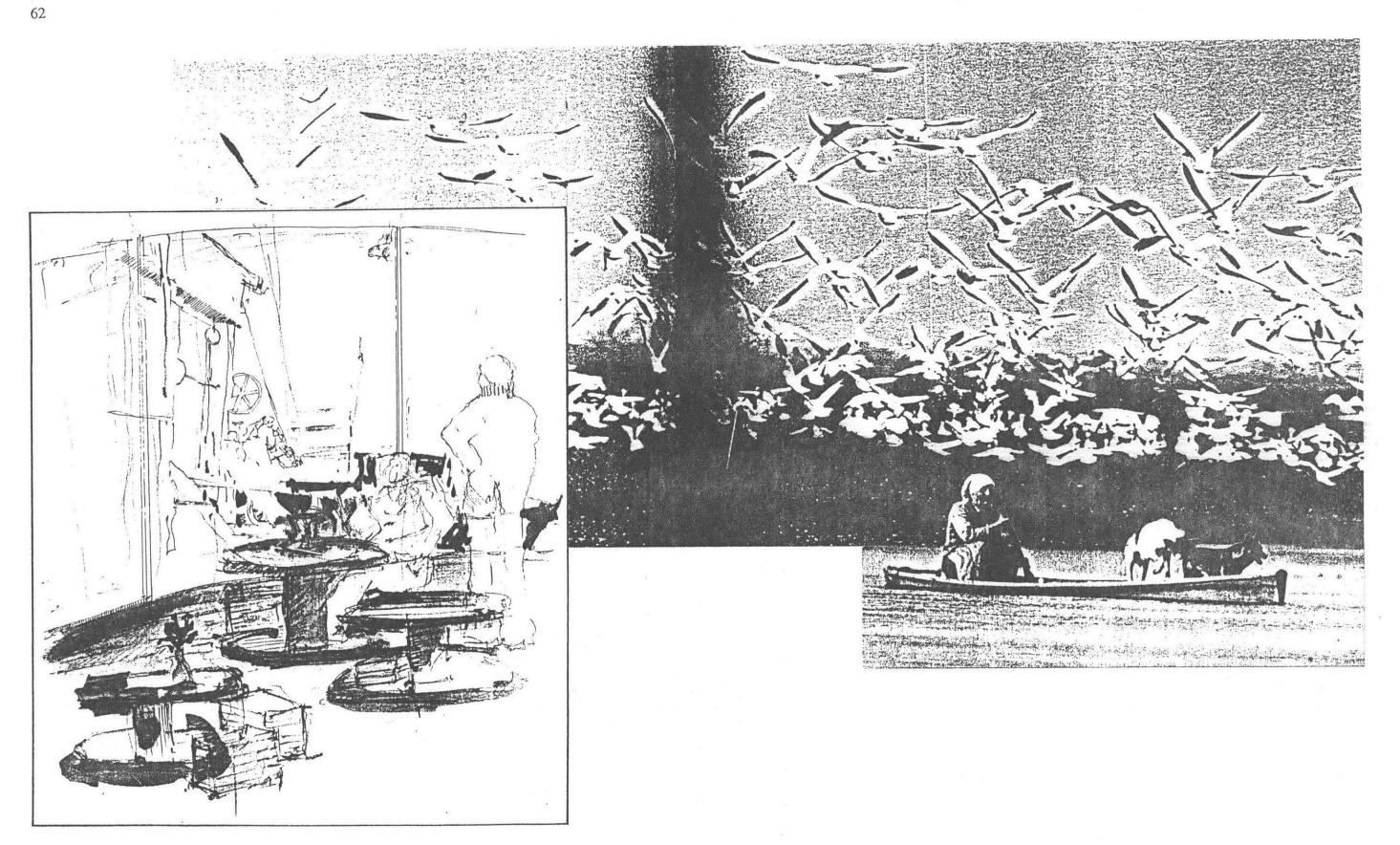
IN THIS WAY NEW VITALITY CAN BE BROUGHT TO THIS AREA WHICH PRESENTLY IS ONLY SEEN AS A KIND OF URBAN SCALE DUMPSTER.

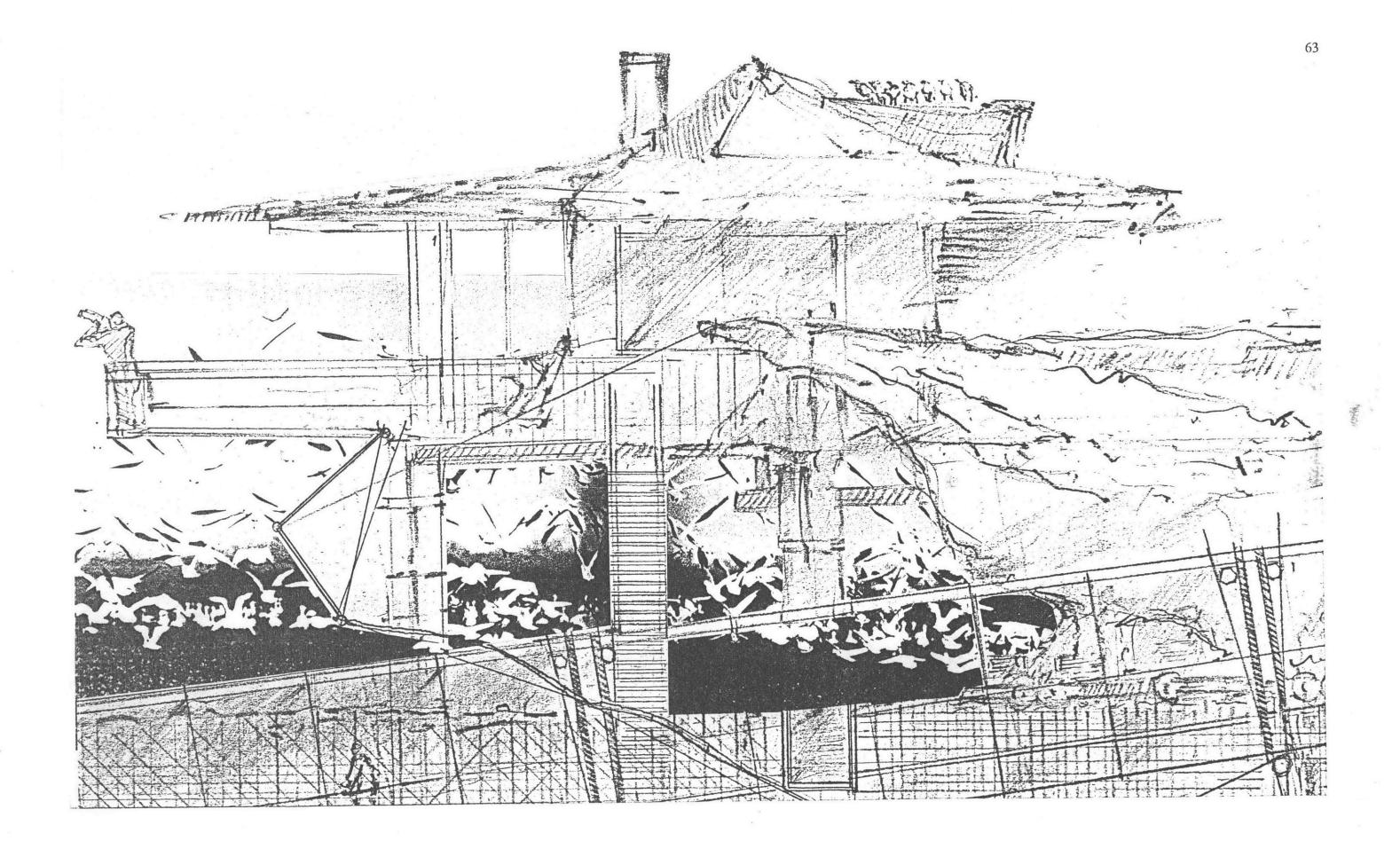


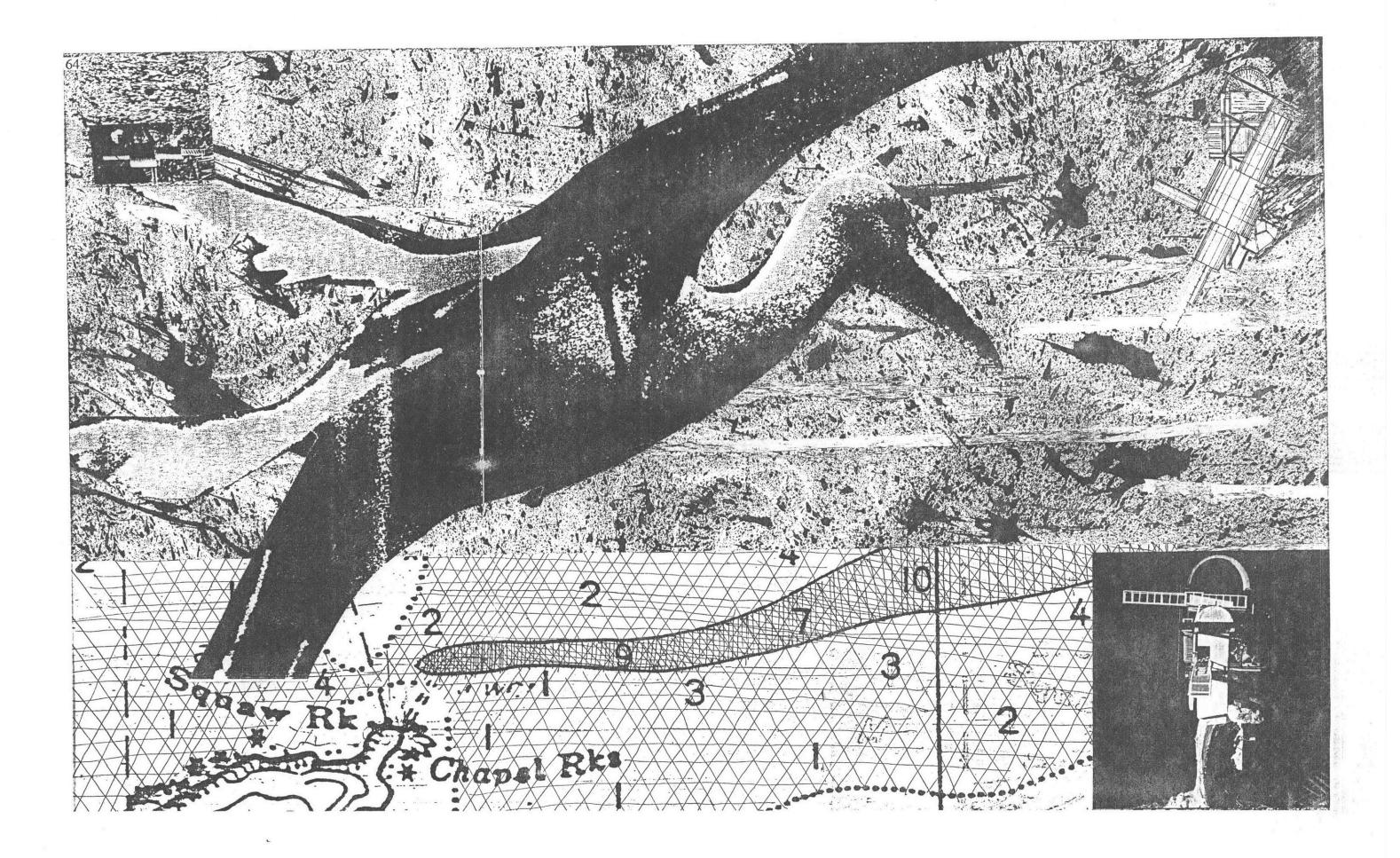


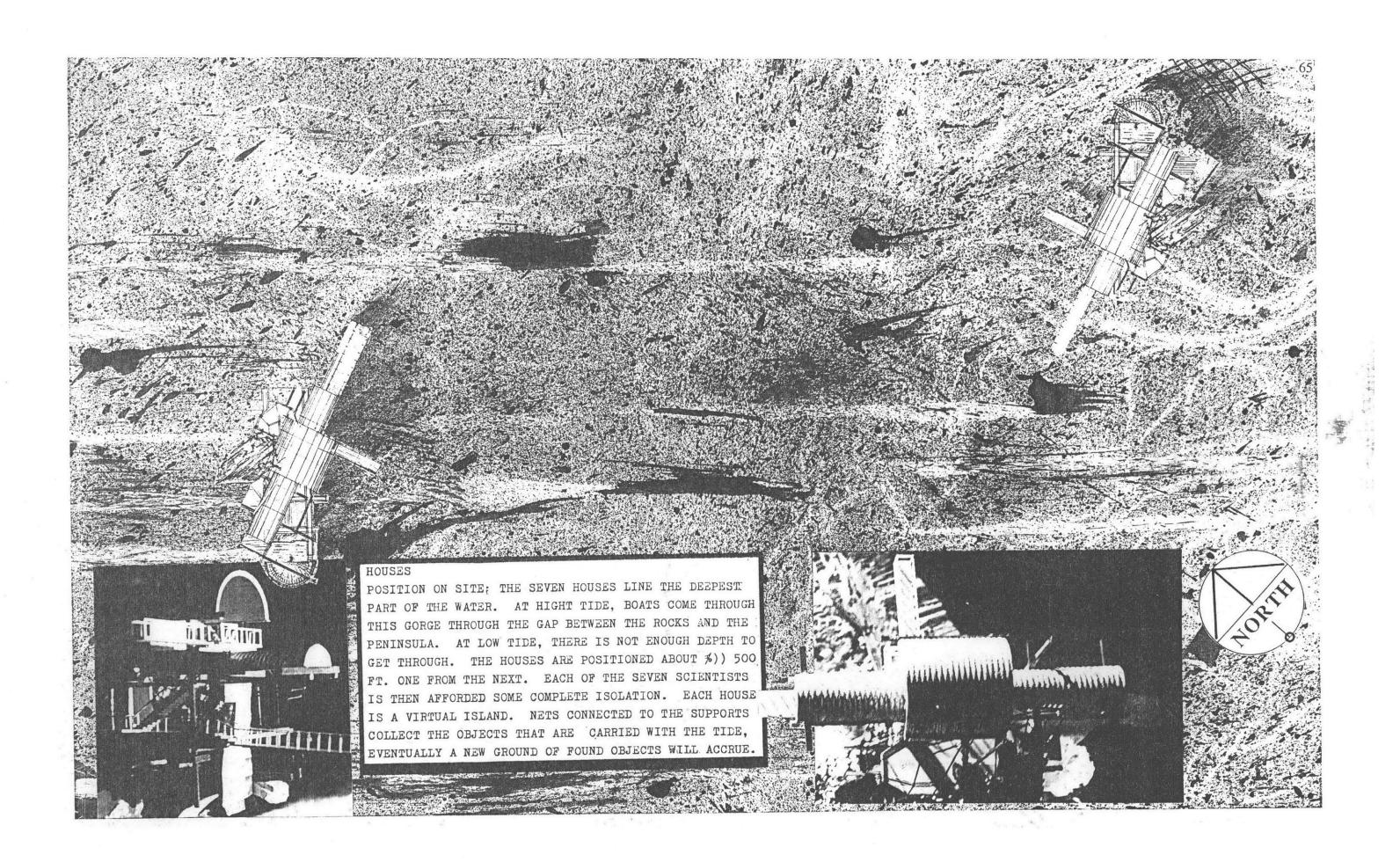


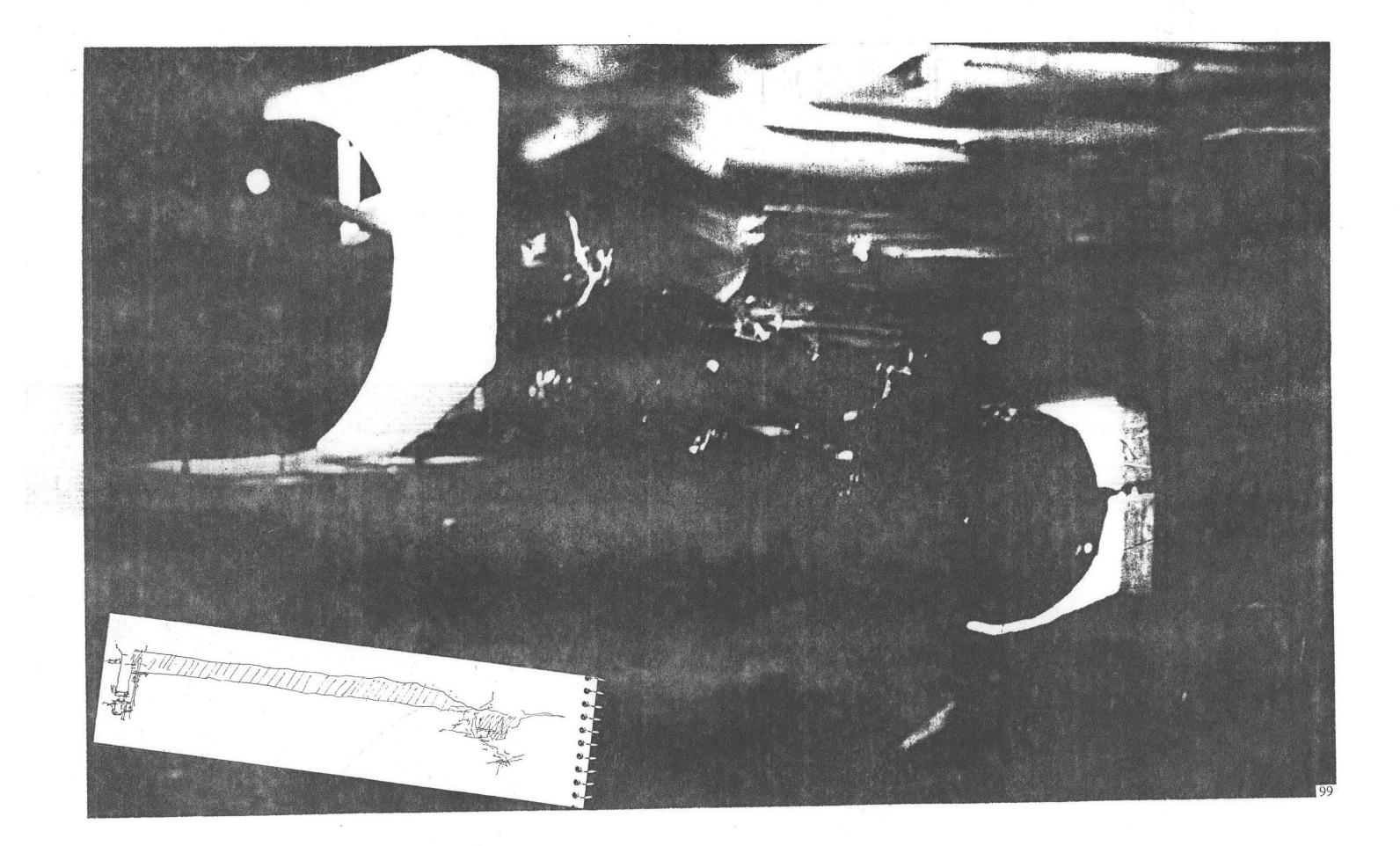


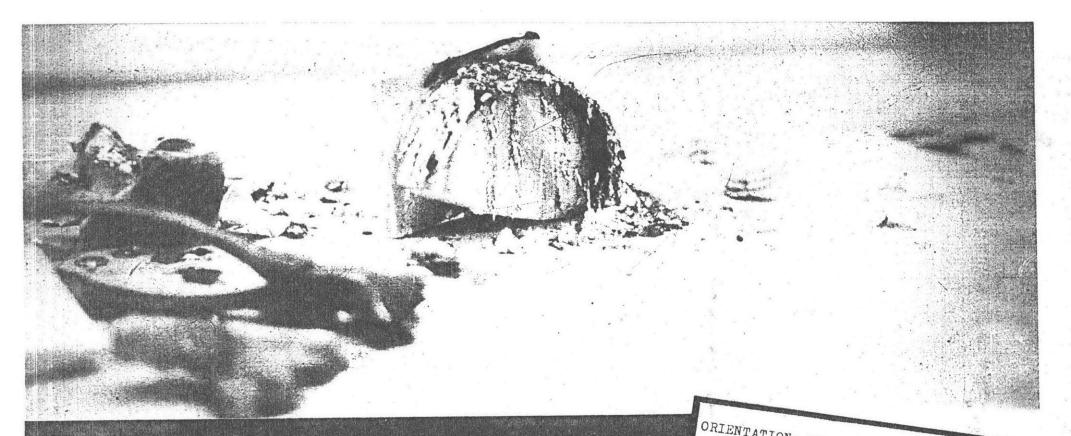


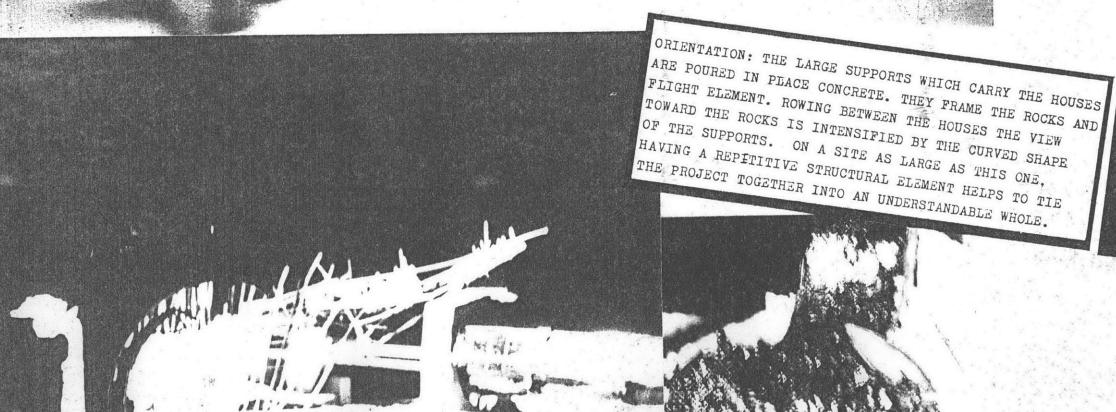


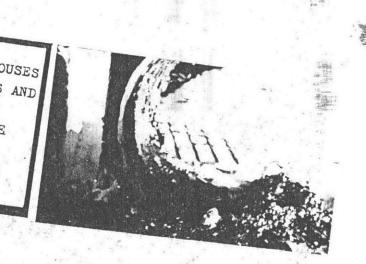


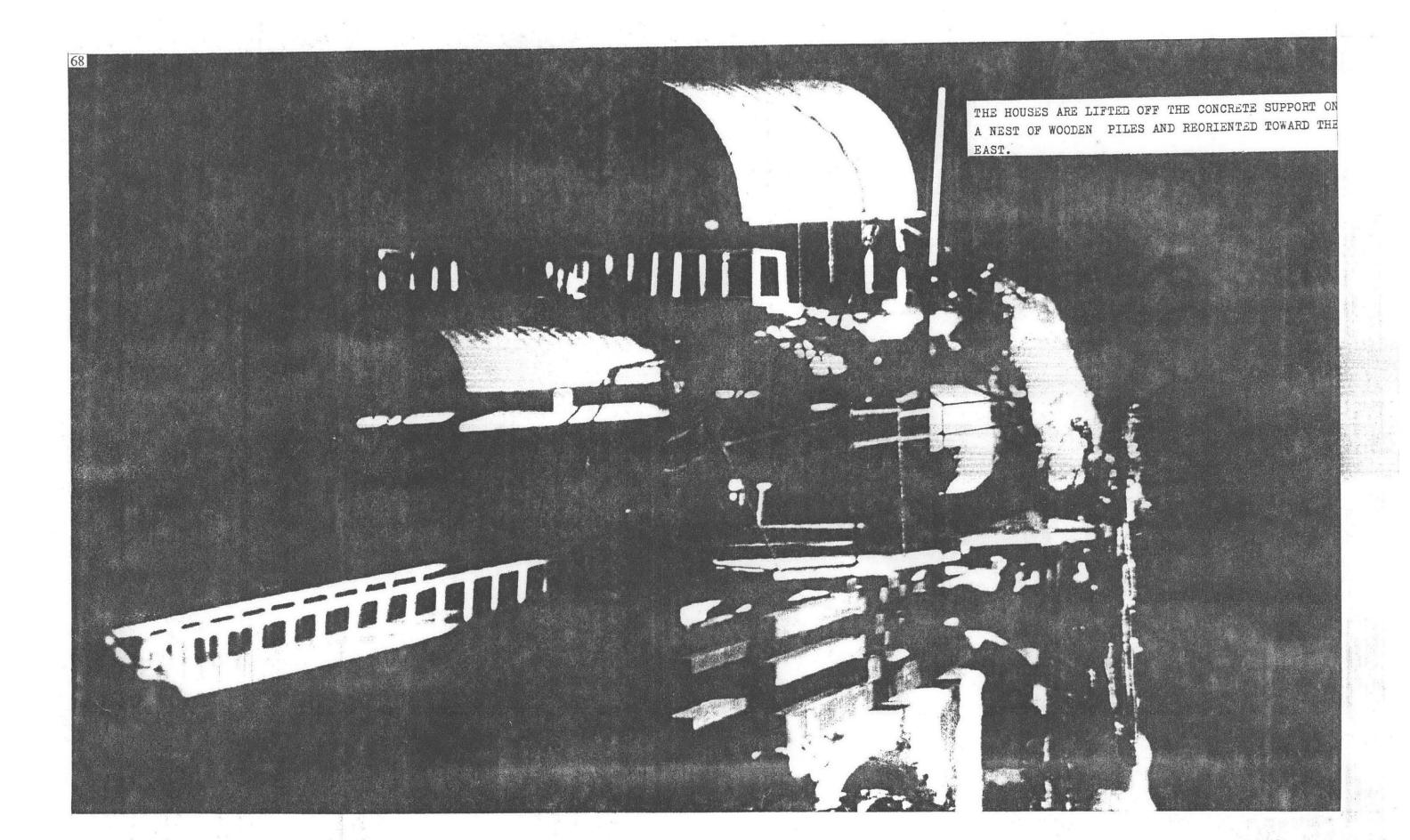


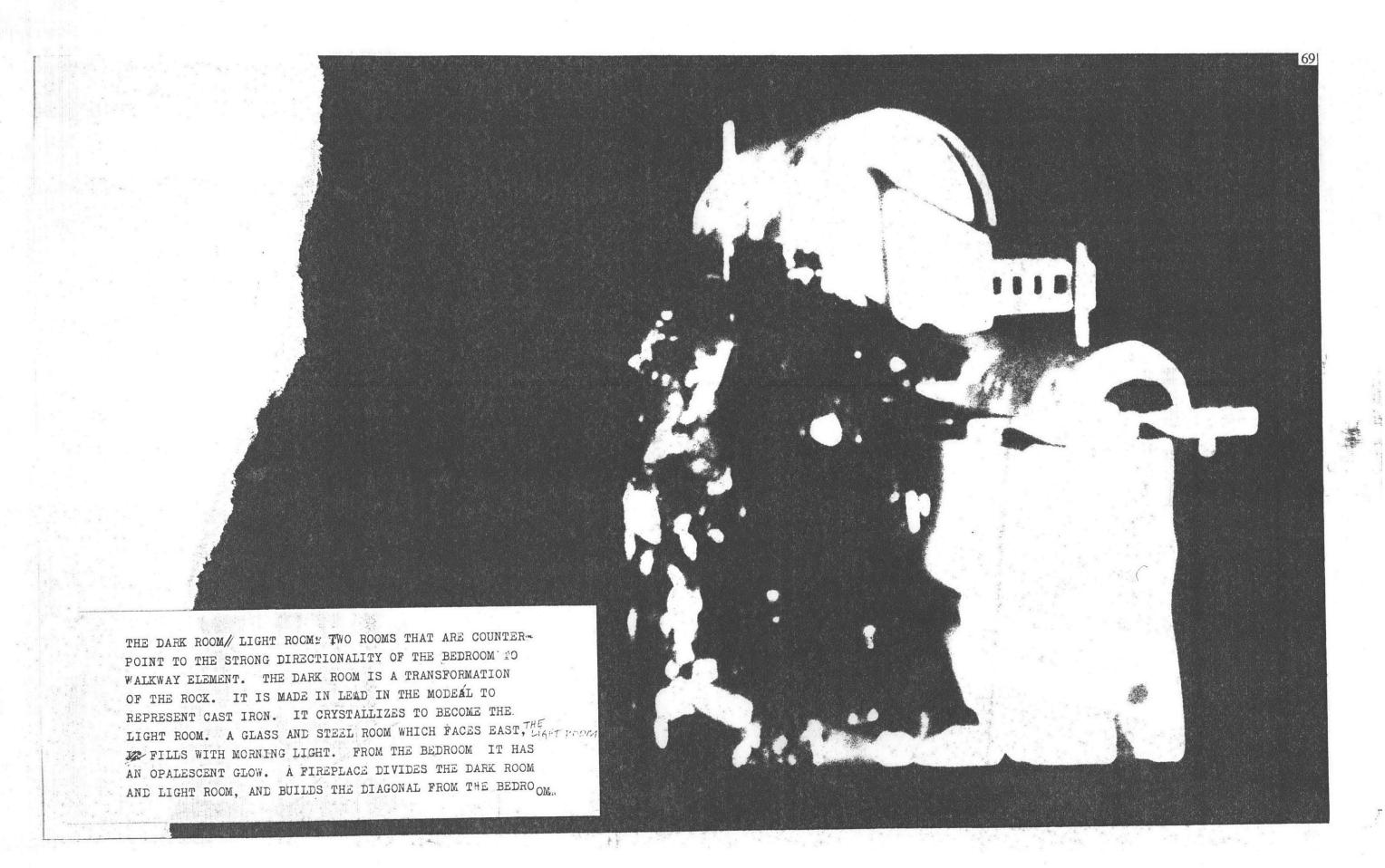


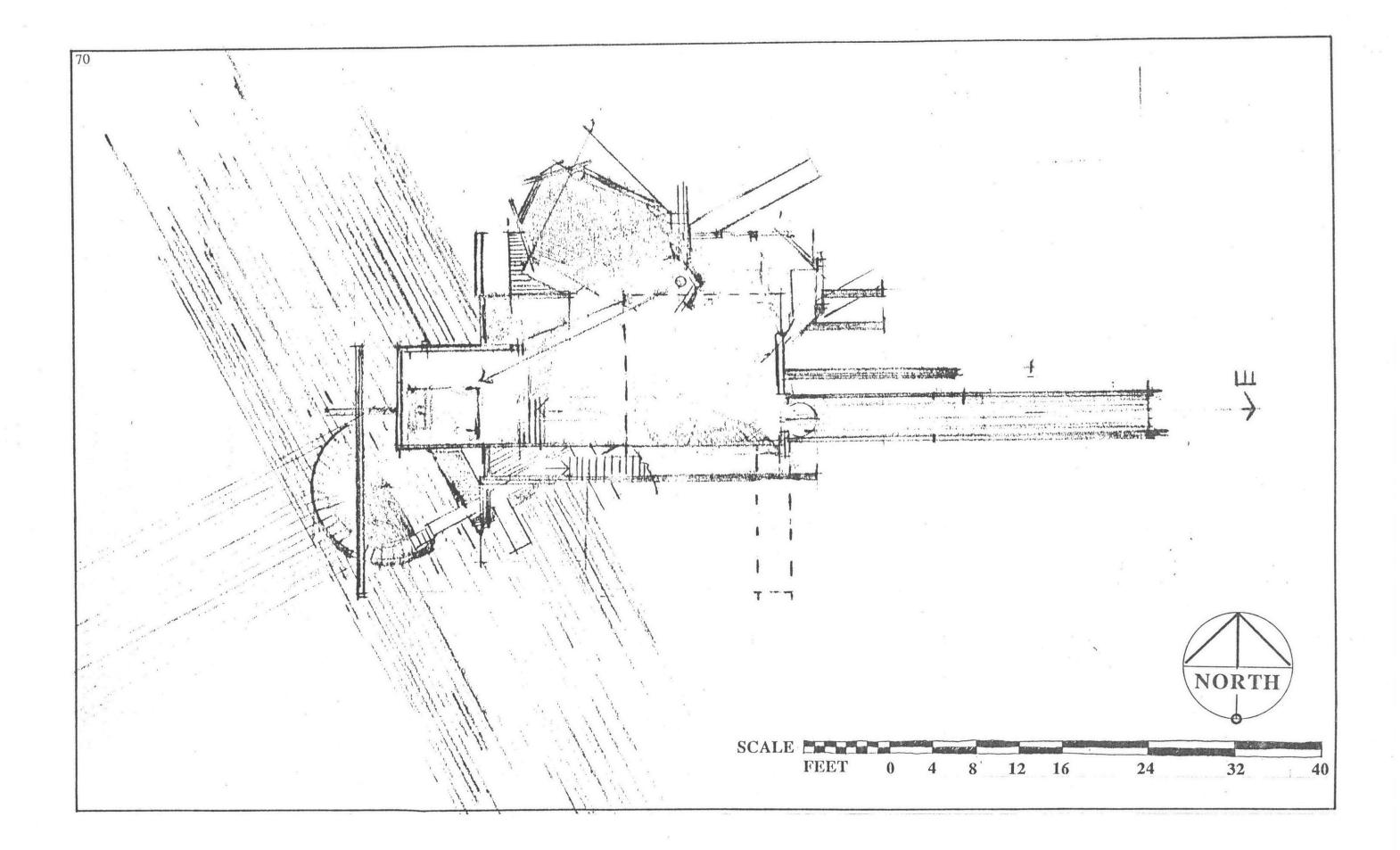


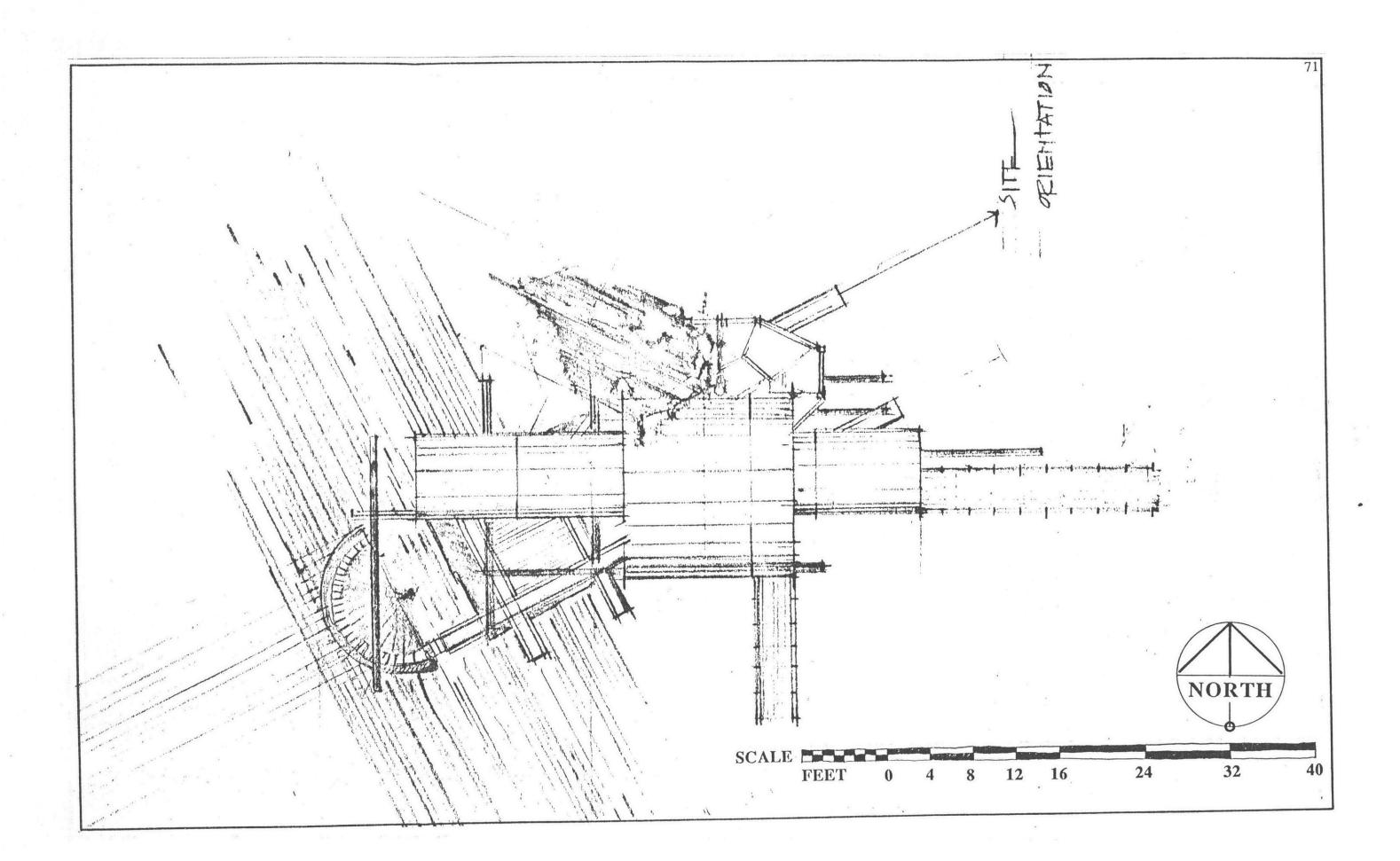


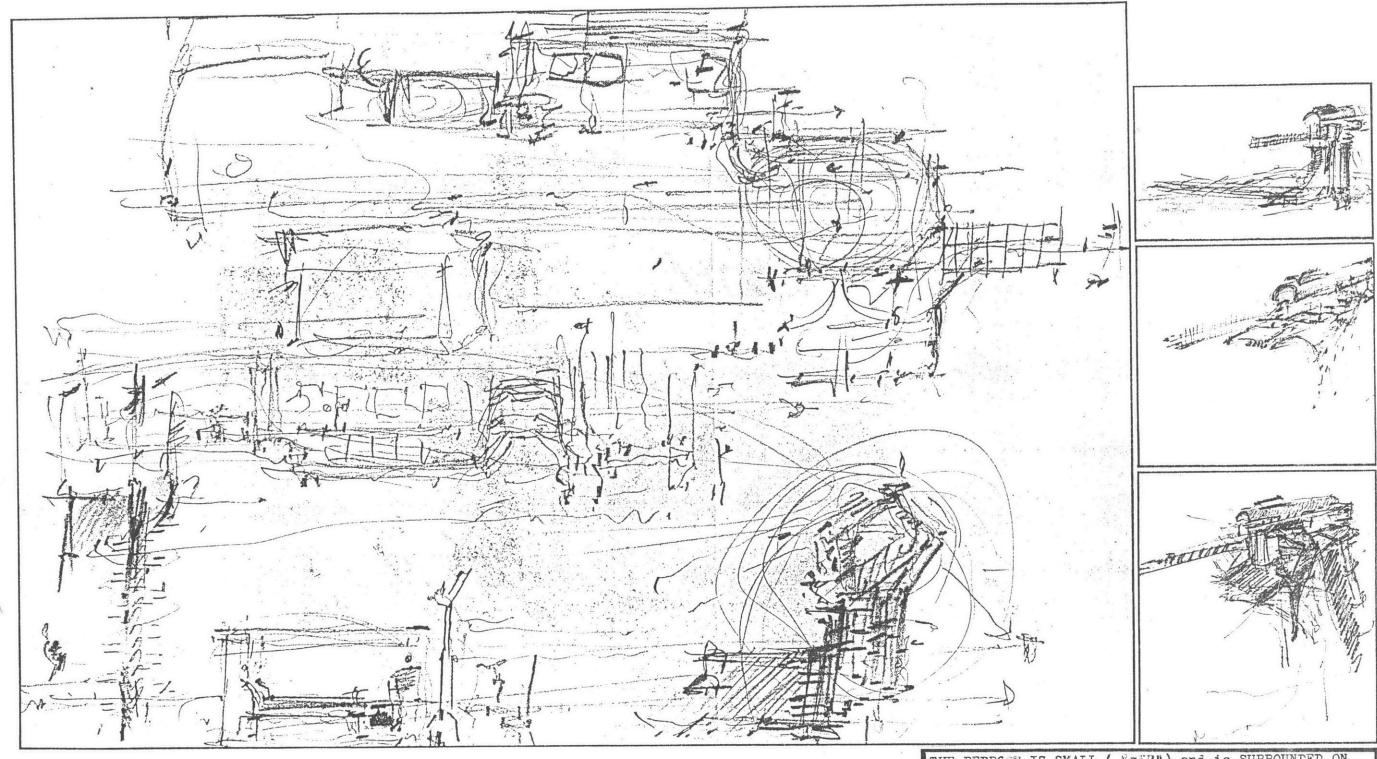






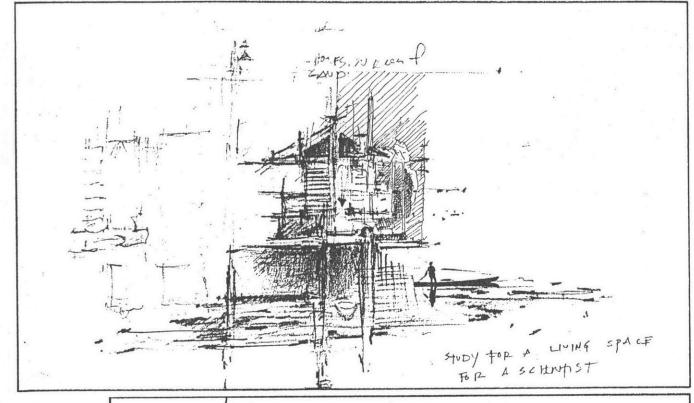


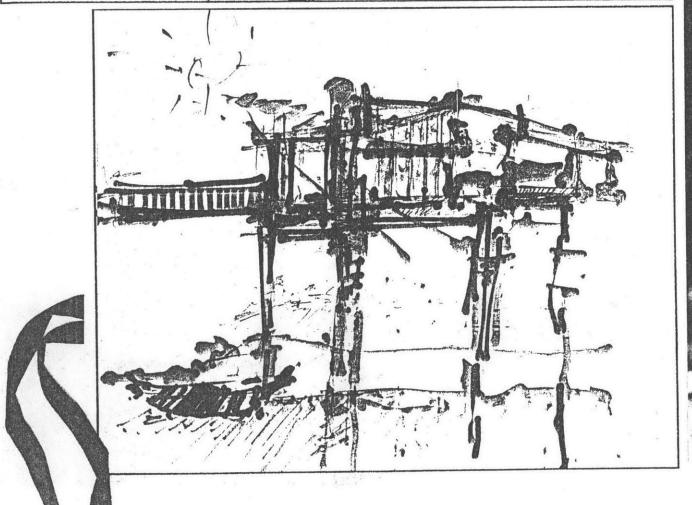


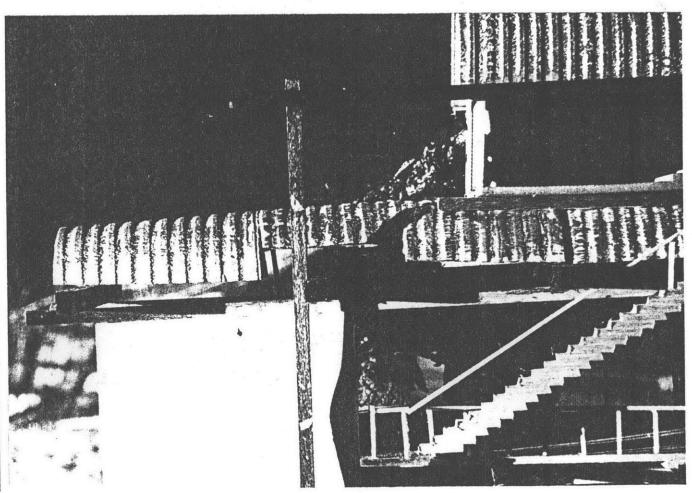


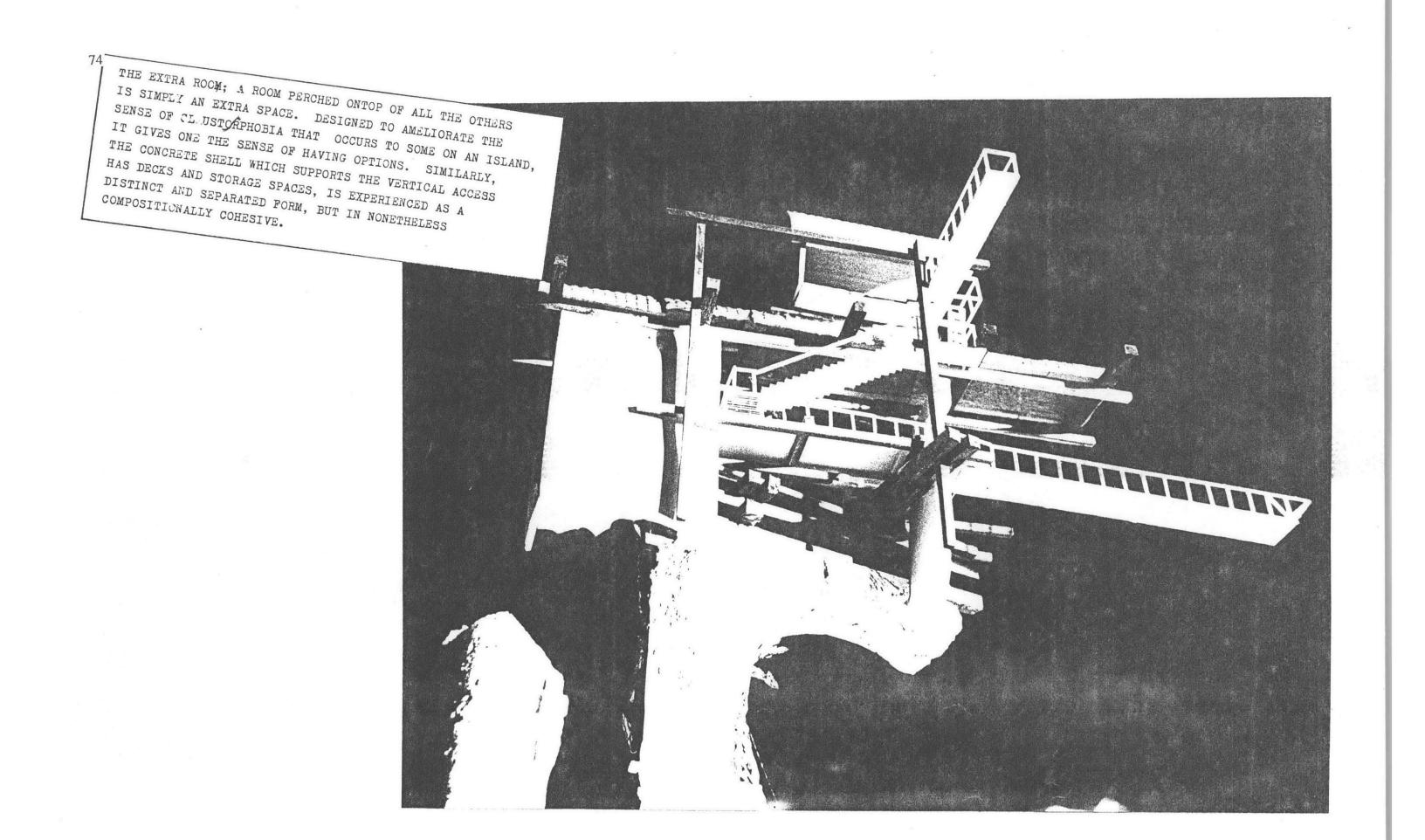
THE BEDROOM IS SMALL (ETT2") and is SURROUNDED ON THREE SIDES BY SMOOTH BLUE TINTED PLASTER PLATES.

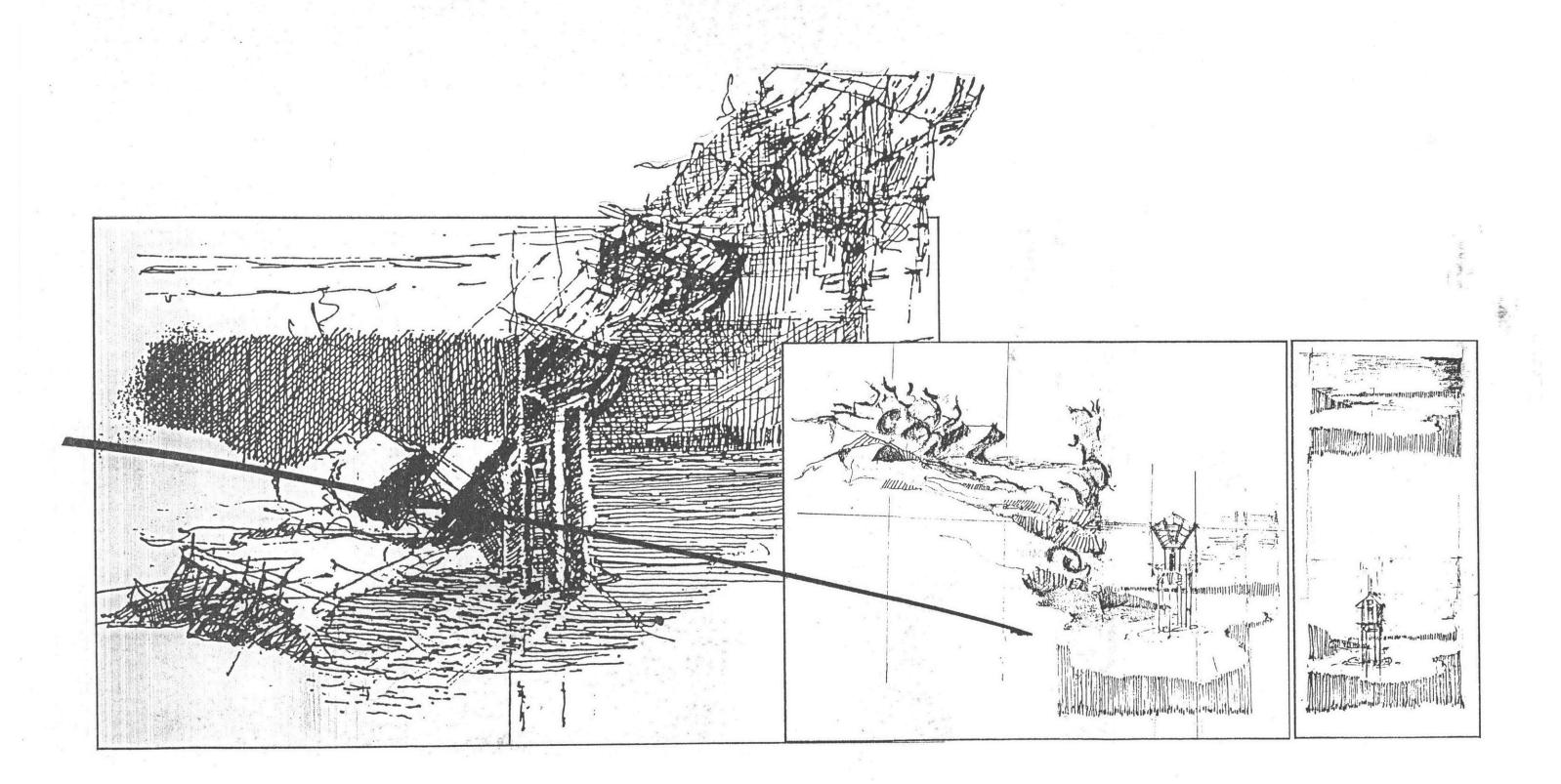
YOUR VIEW IS CLEAR THROUGH THE HOUSE AND OUTTME LONG PLANK THAT STRETCHES OUT TOWARD THE HORIZON. IN THE MORNING, LIGHT STREAMS IN THROUGH THIS ONE OPENING TO FOCUS A RAY OF LIGHT JUST ABOVE YOUR HEAD.

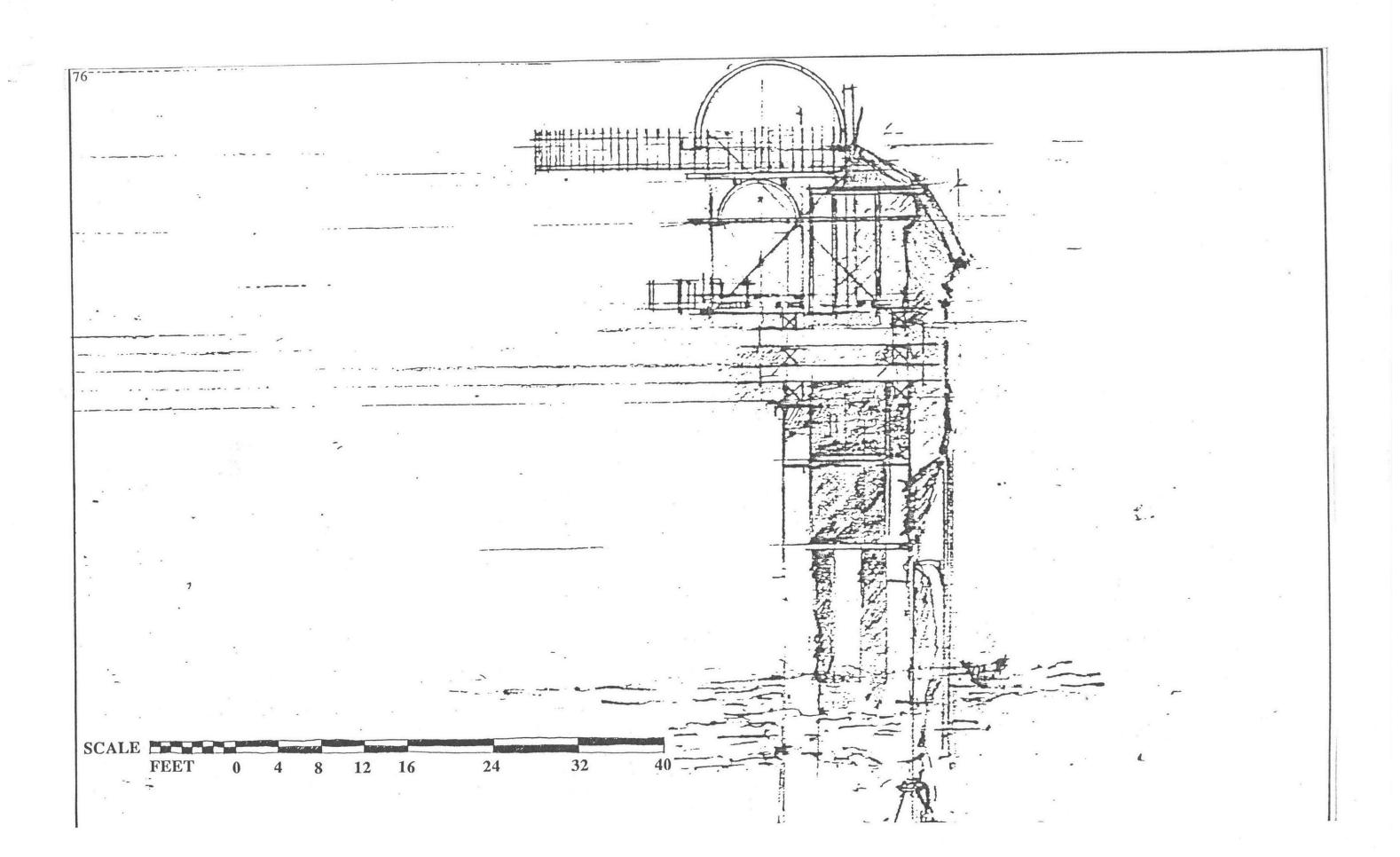


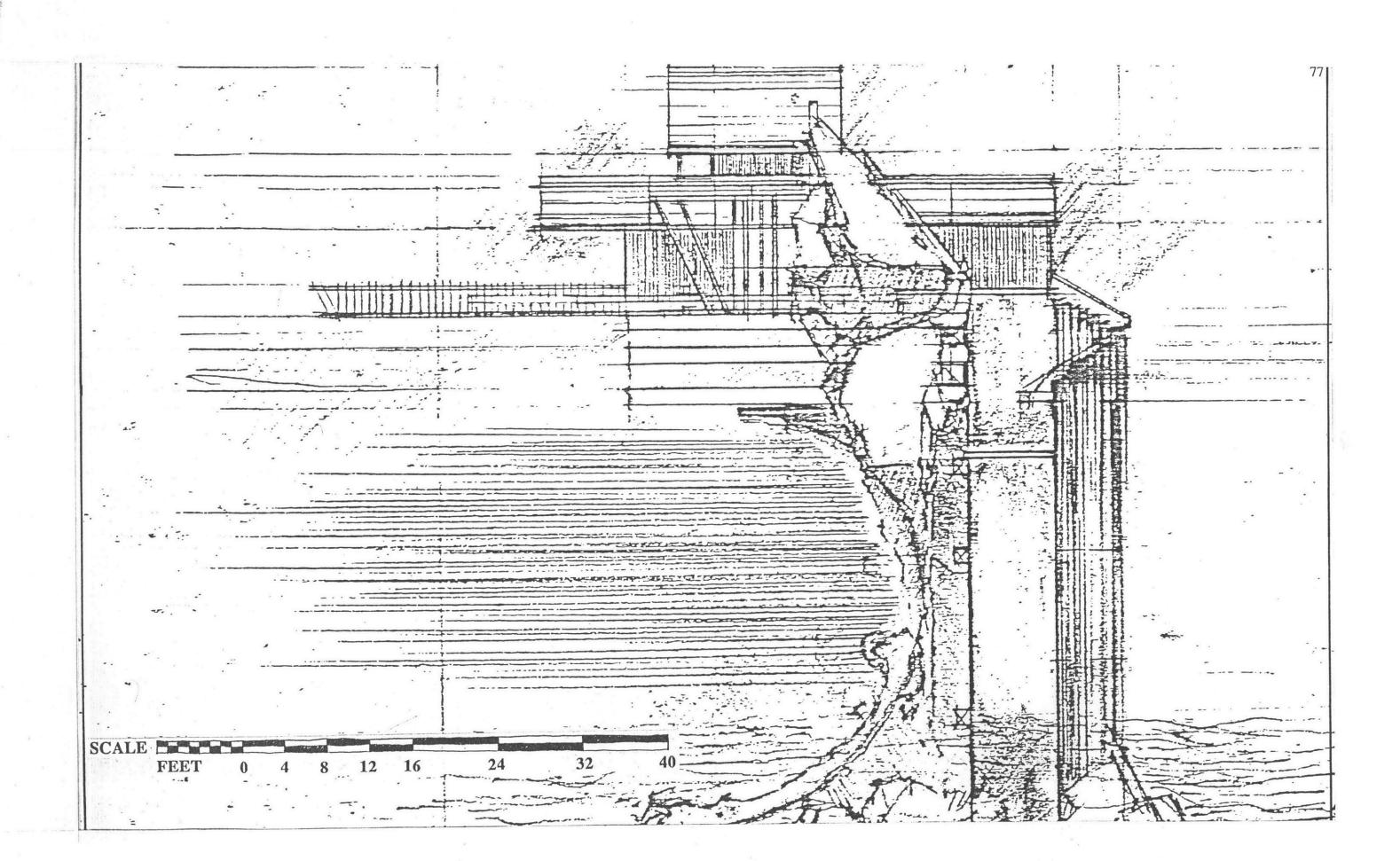


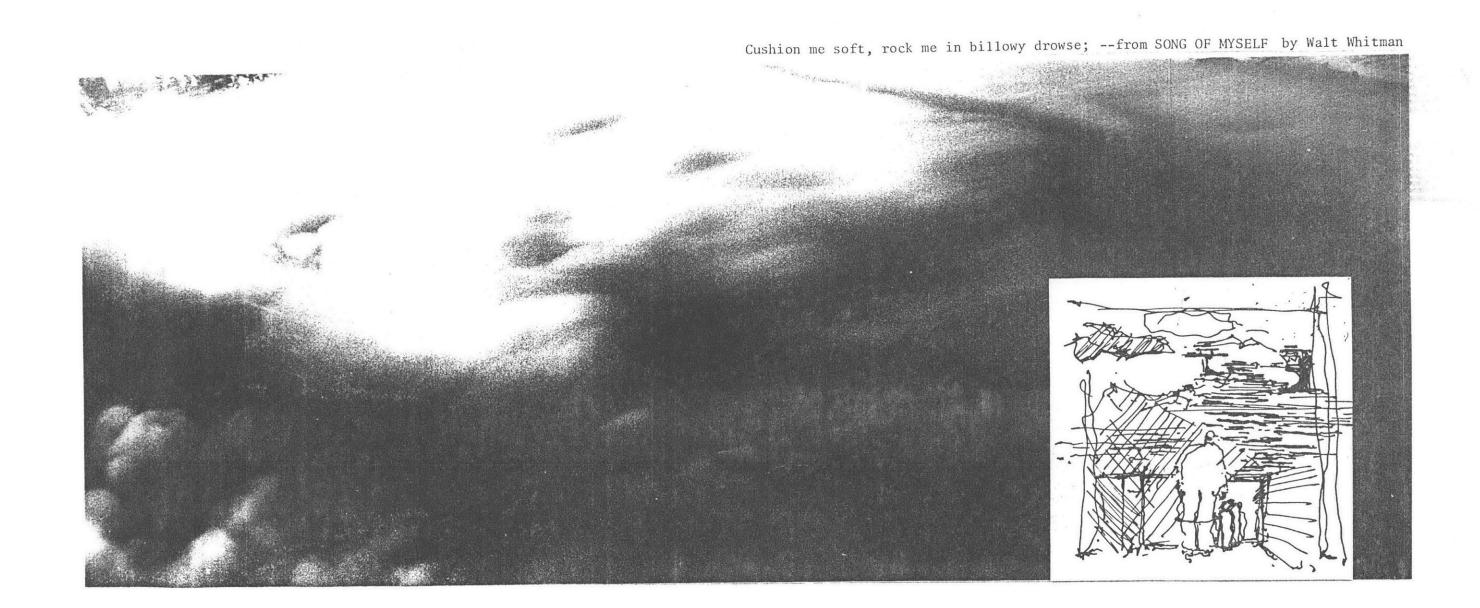


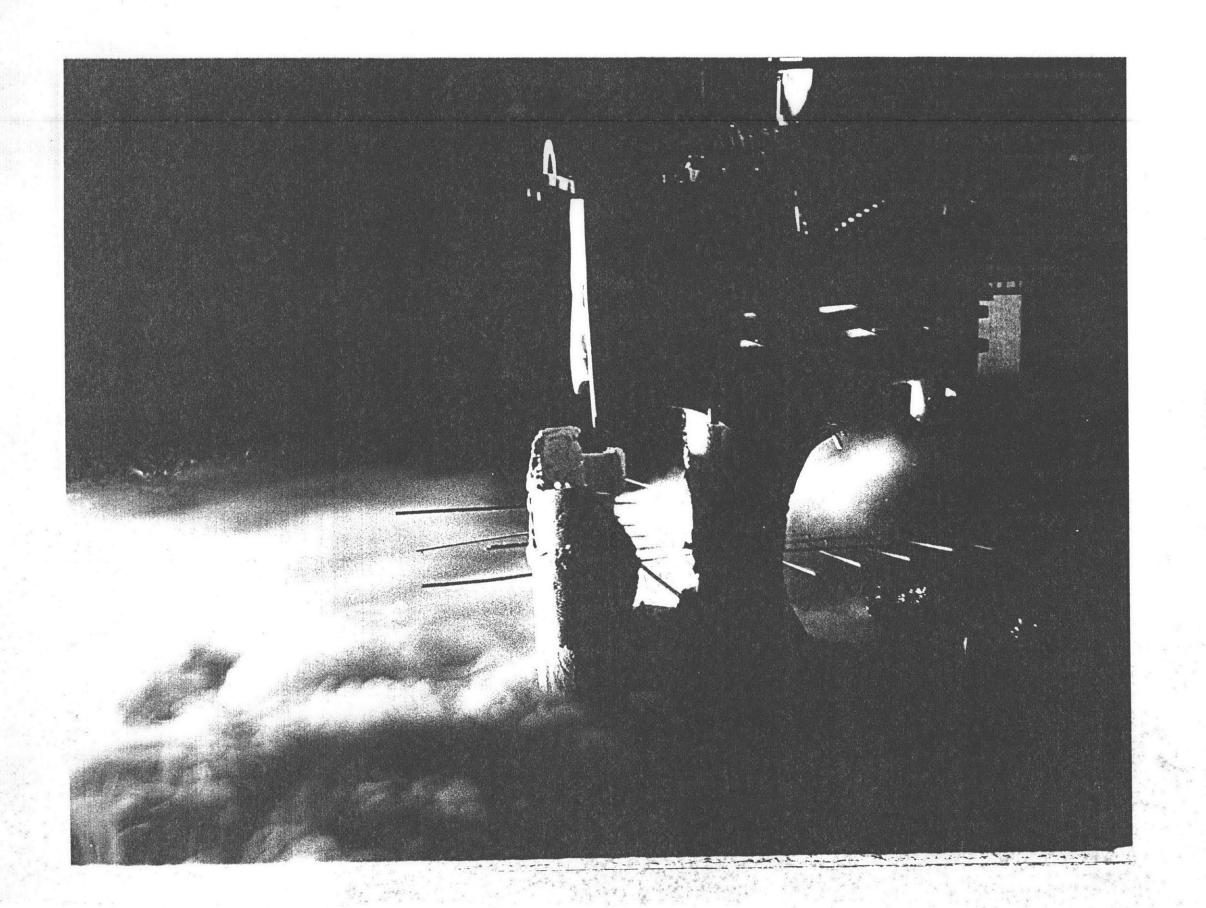


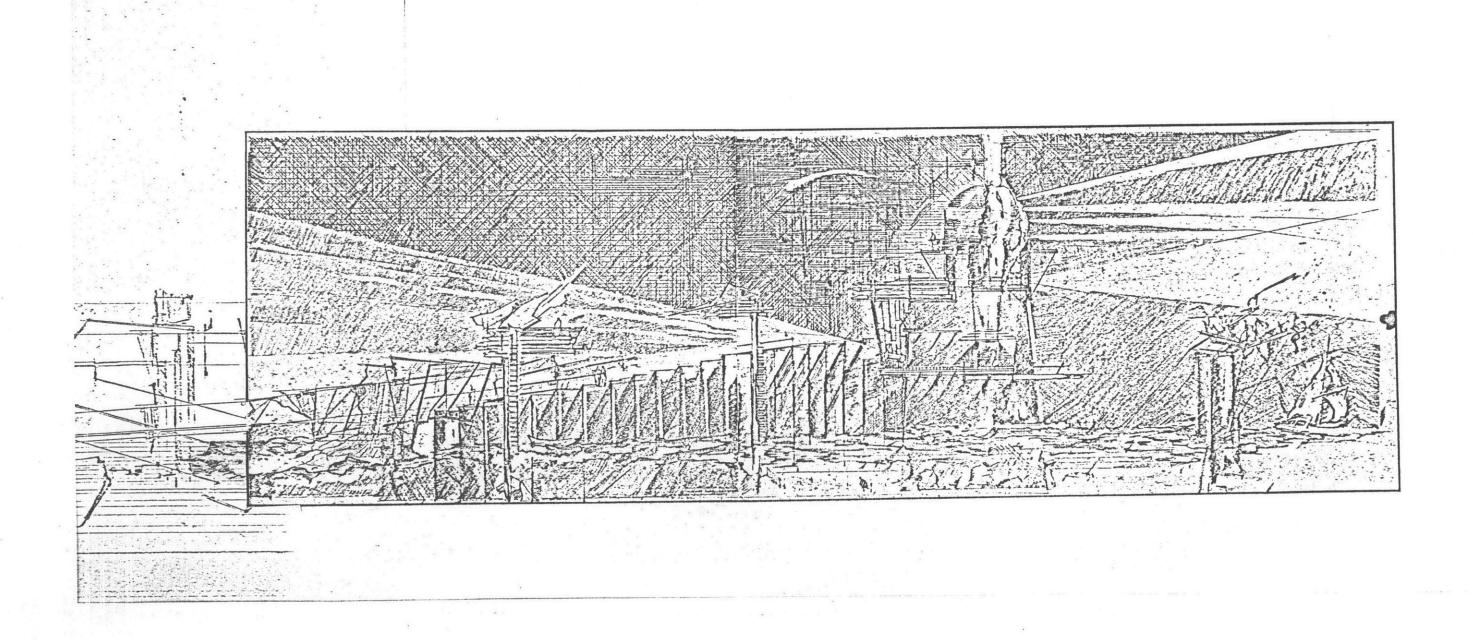


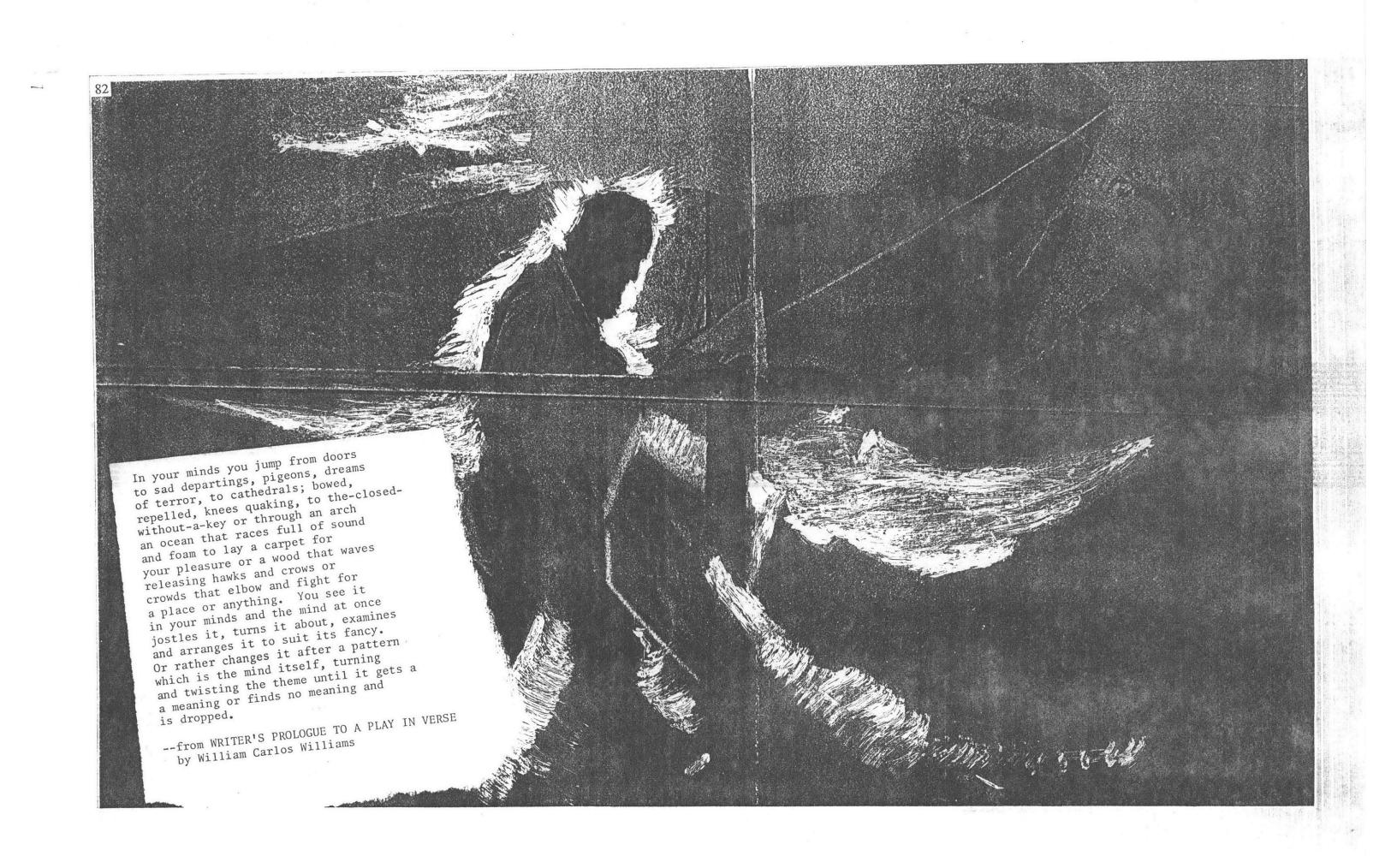


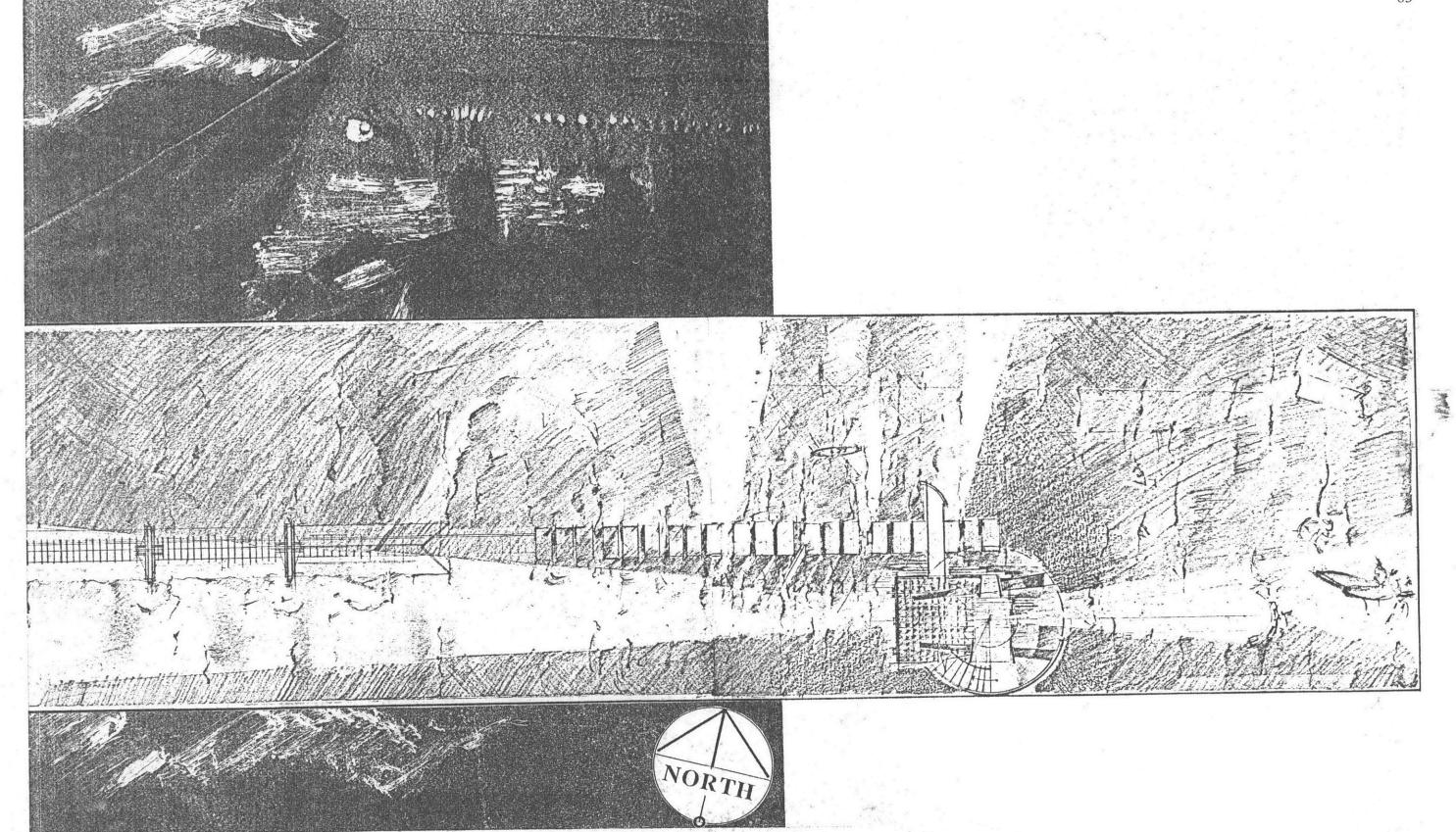


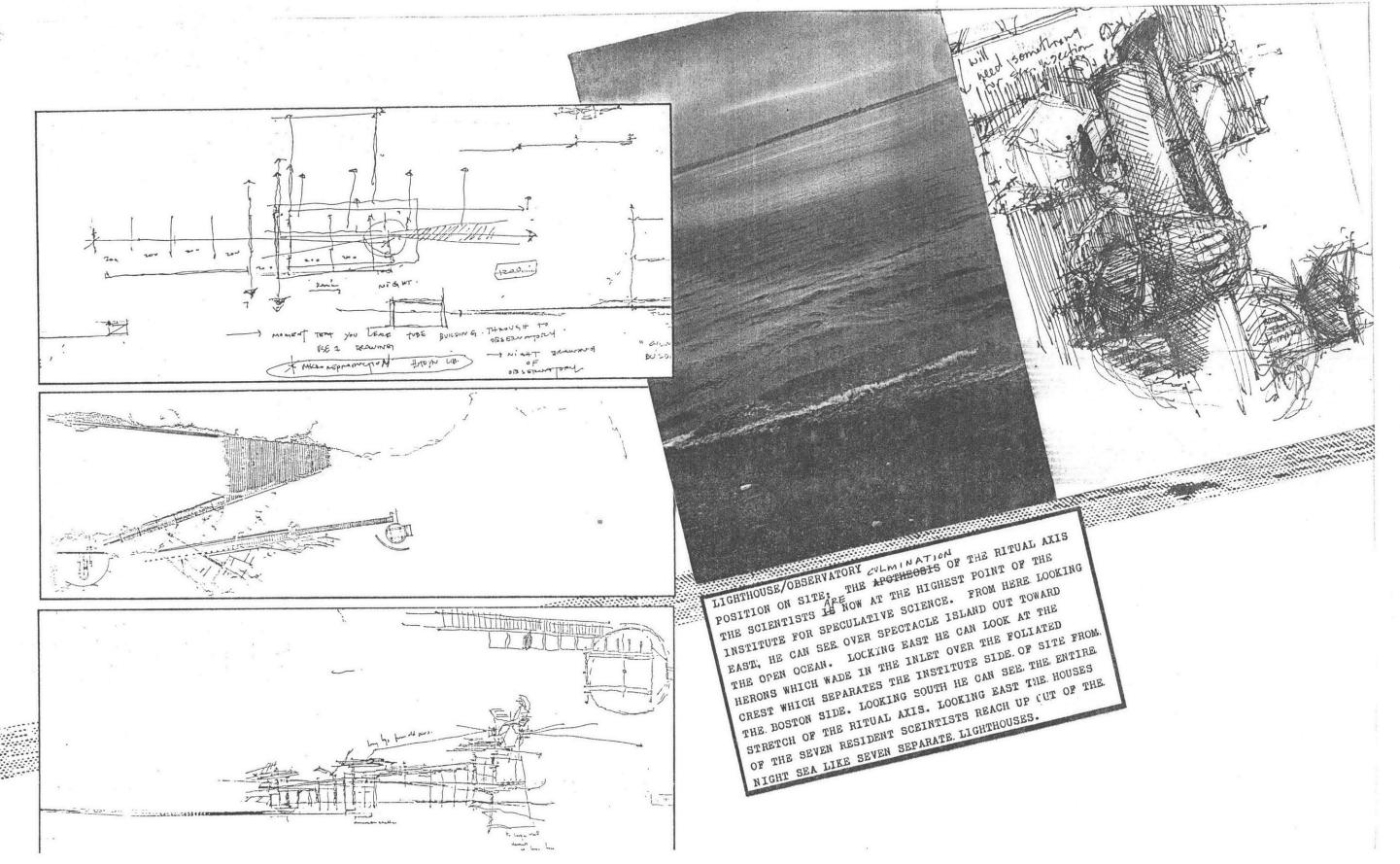


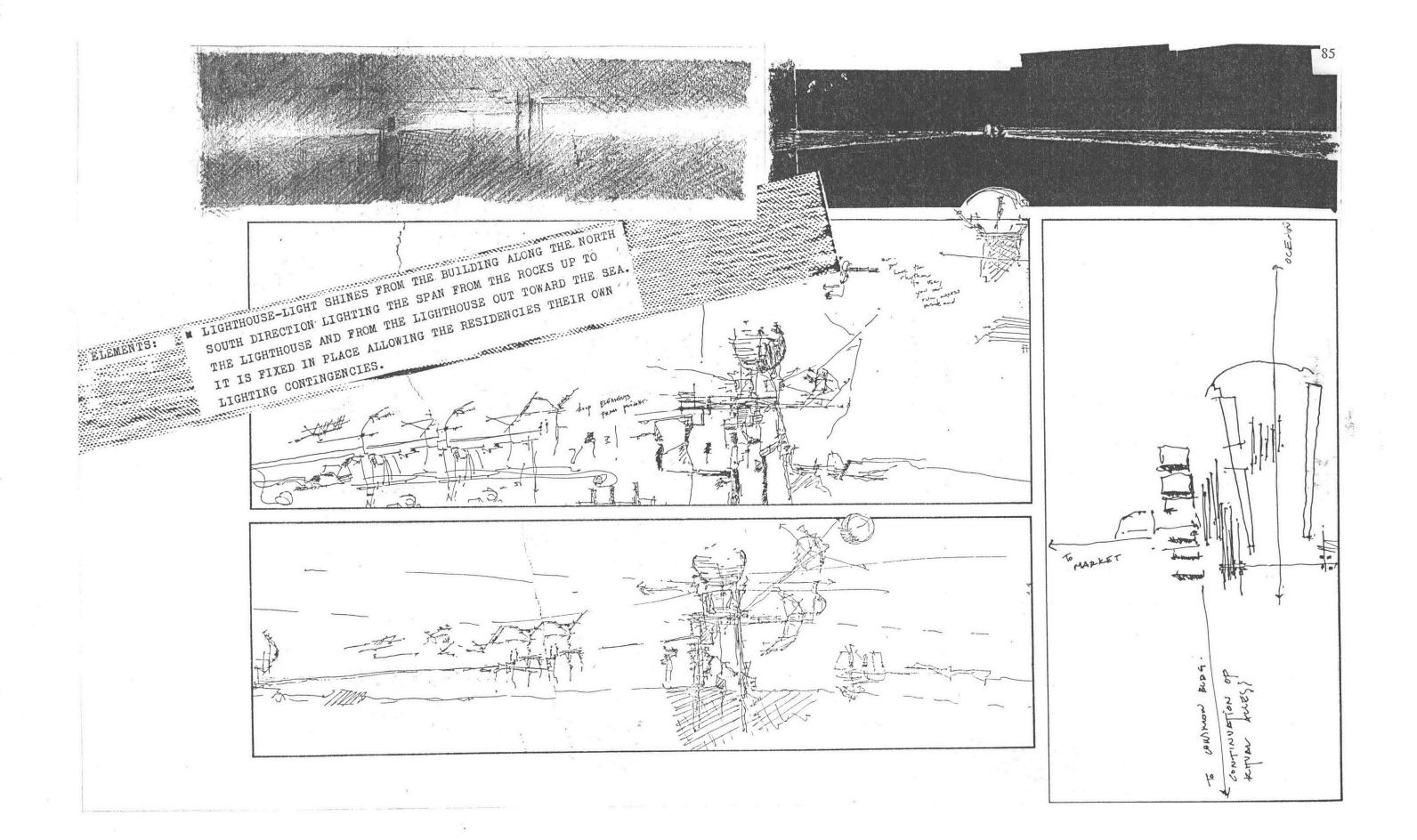


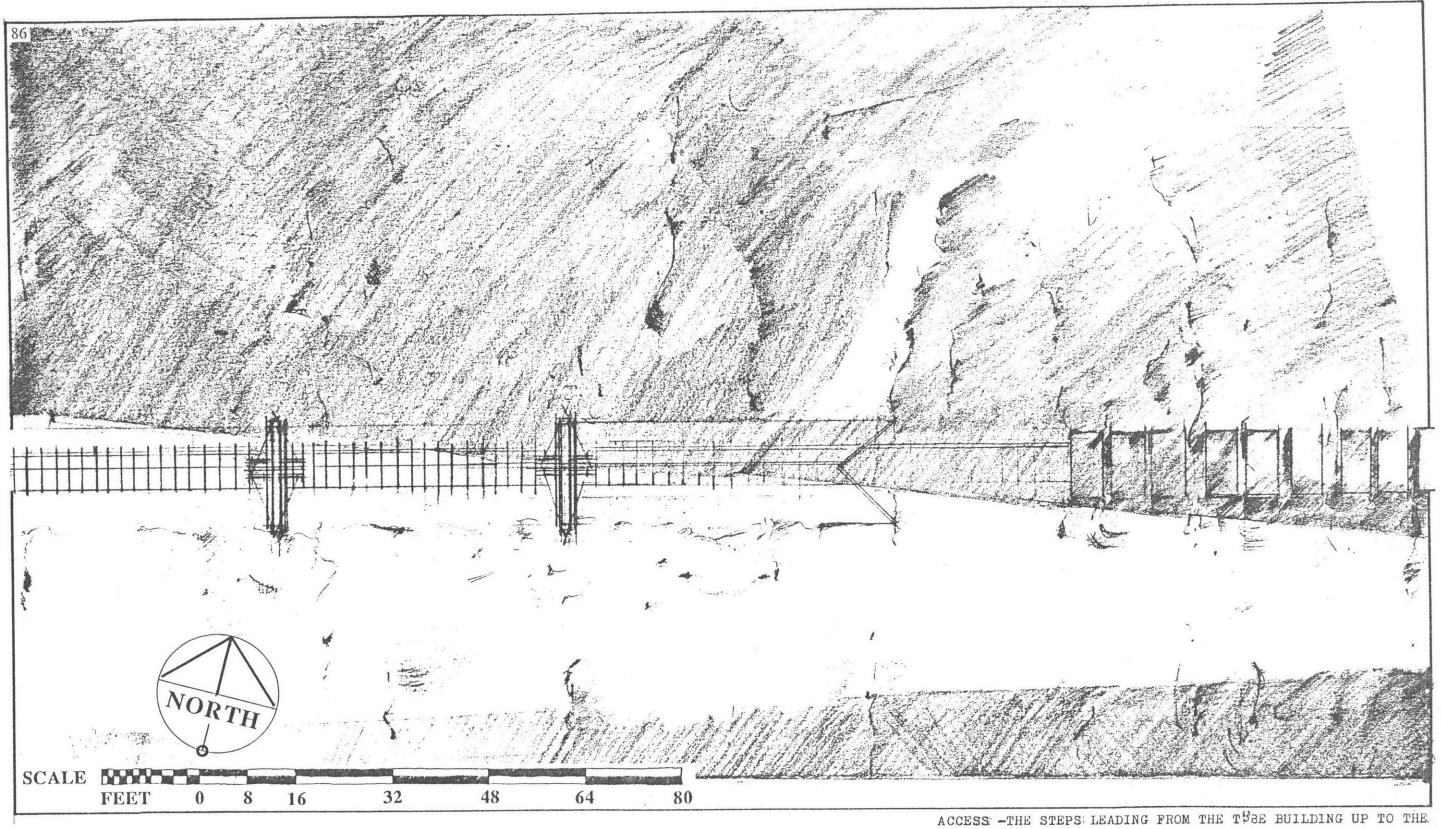




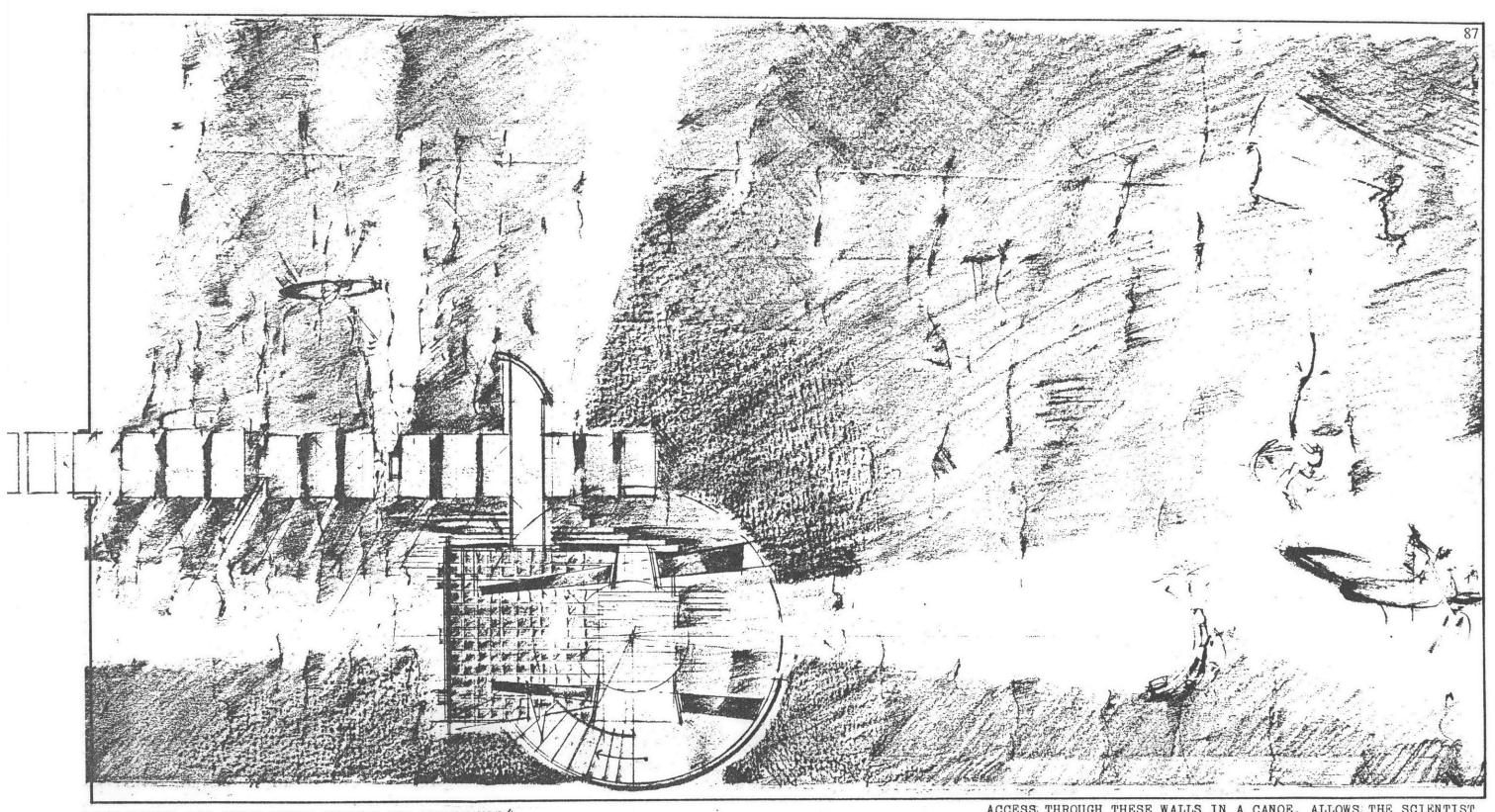






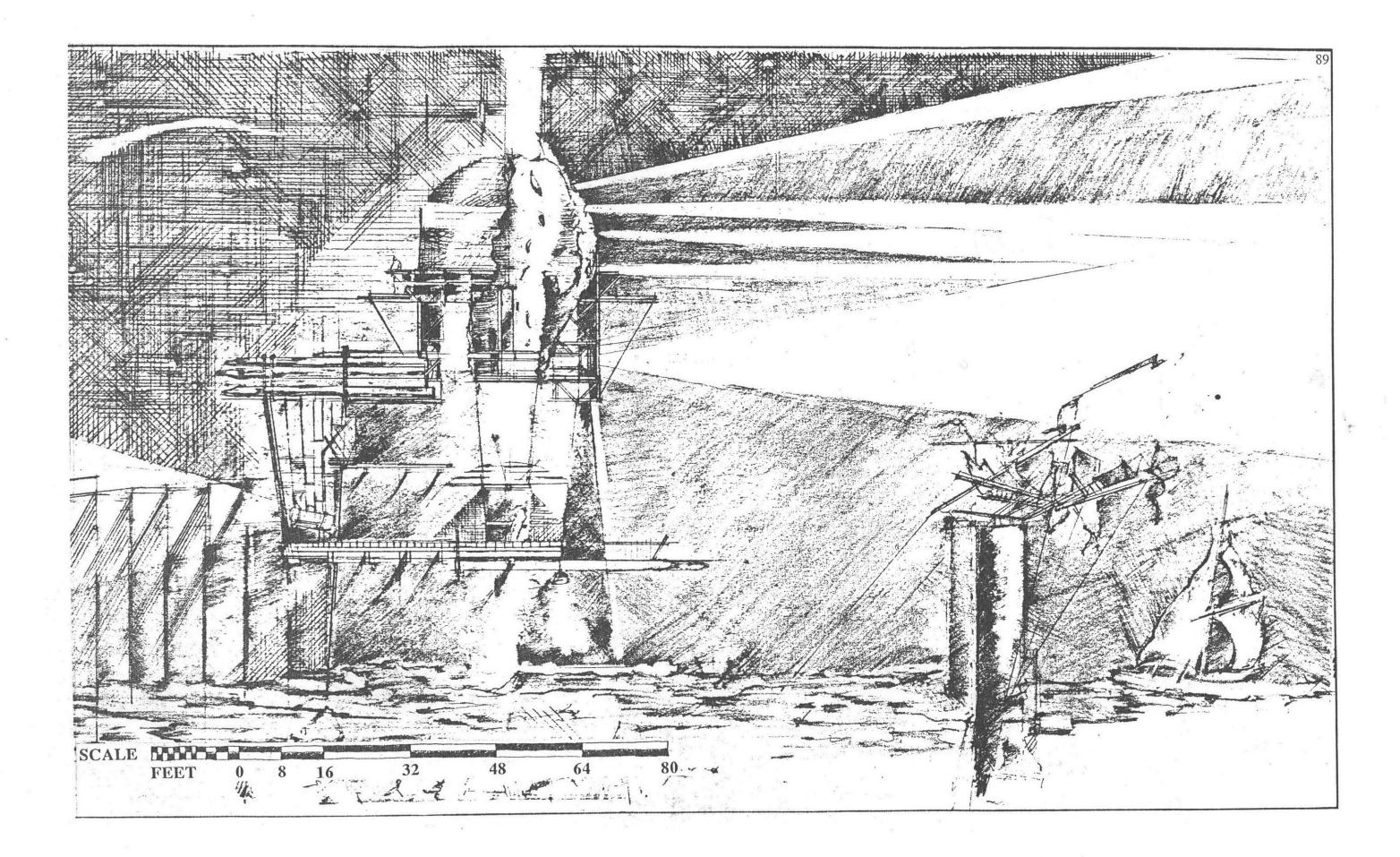


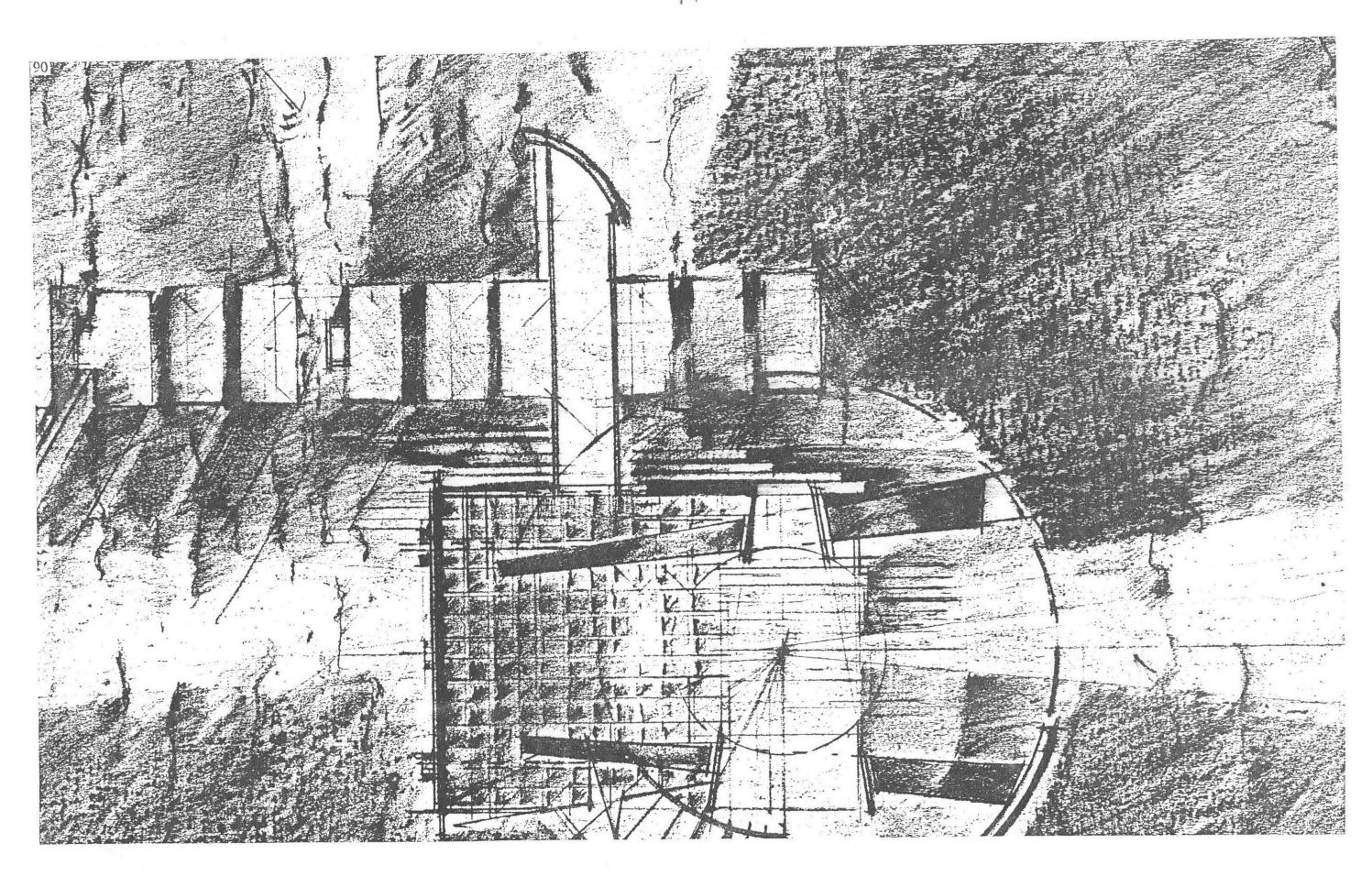
ACCESS: -THE STEPS: LEADING FROM THE TTGE BUILDING UP TO THE OBSERVATORY LIGHTHOUSE ARE POURED IN FLACE USING THE SAME. MOLD AS: THE SUPPORTS FOR THE SAME MOLD AS THE OTHERS.

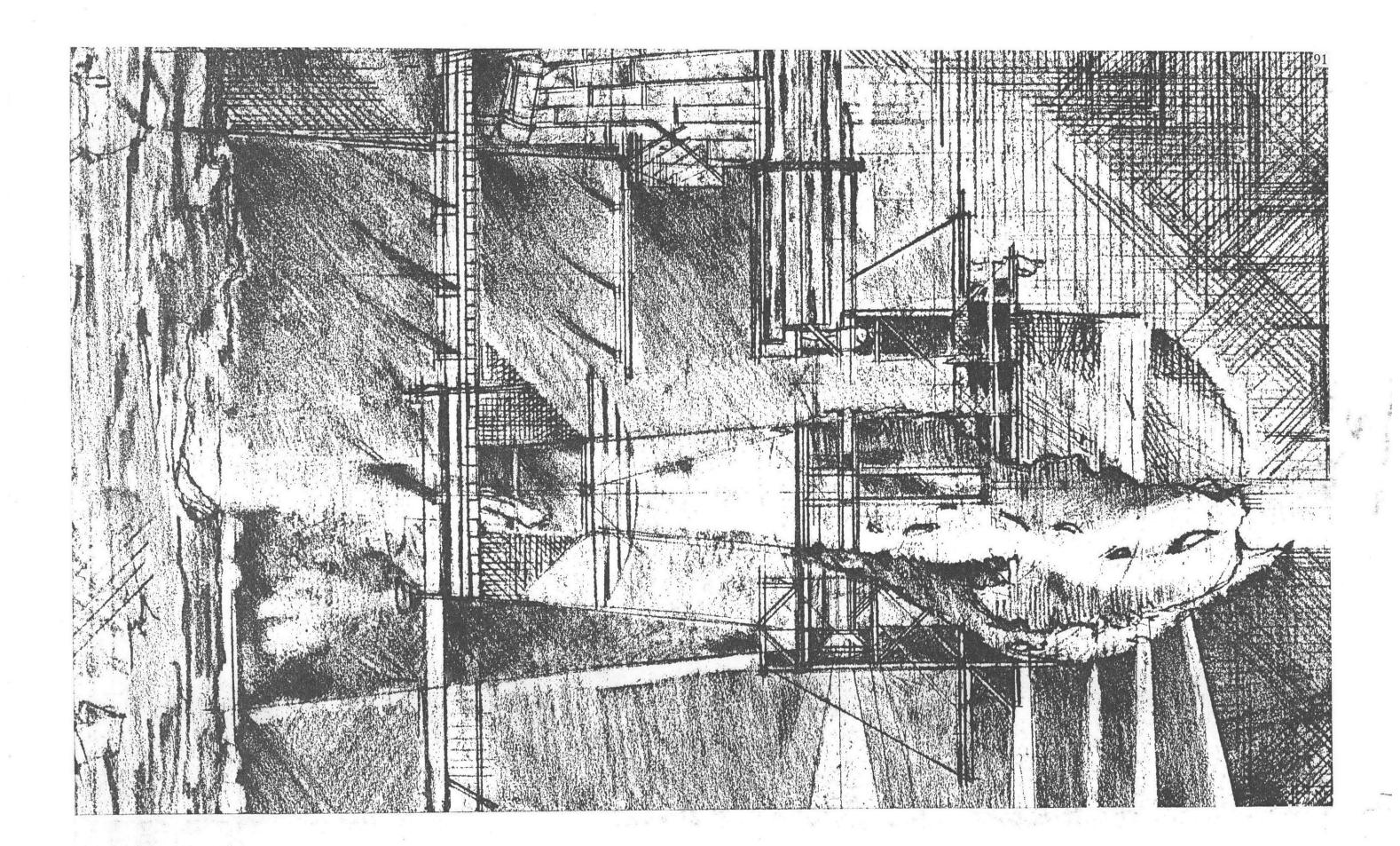


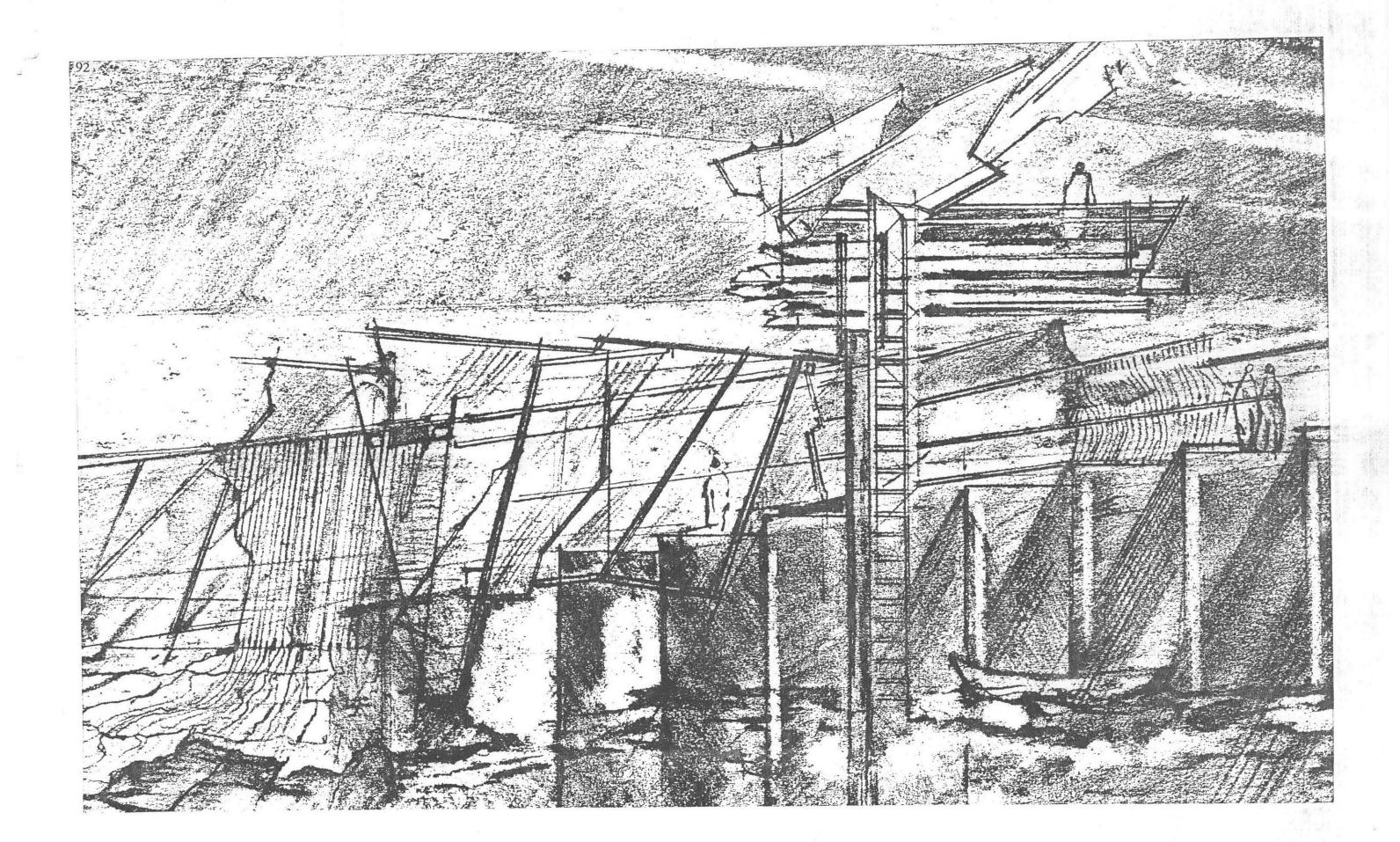
THE WALLS: TWO GREAT WALLS SUPPORT THE LIGHTHOUSE/OBSERVATORY. THEY ARE AT AN ANGLE WHICH FOCUSES THE VIEW TOWARD THE ROCKS AND MOVES THE EYE OUT TO SEA.

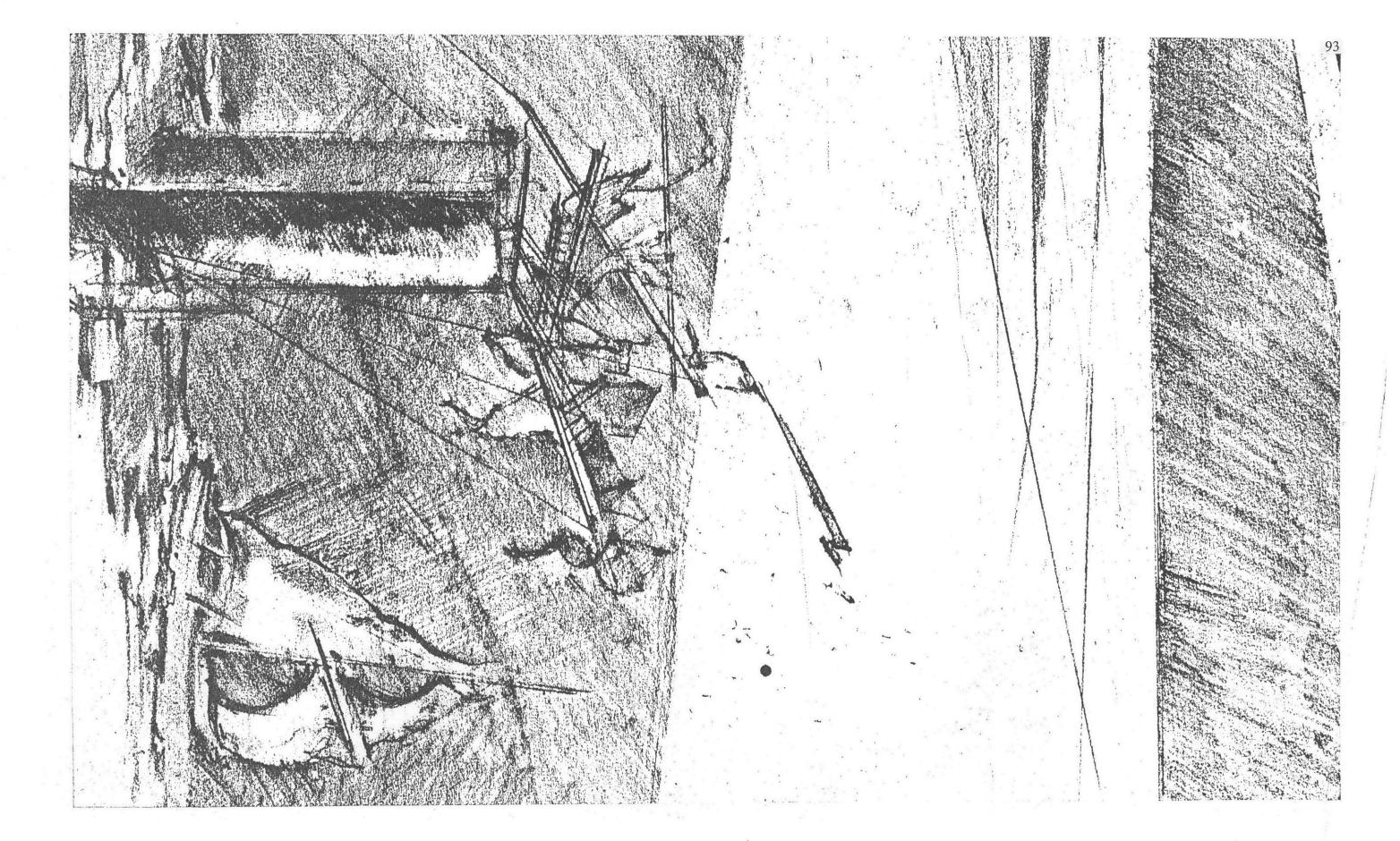
ACCESS THROUGH THESE WALLS IN A CANOE, ALLOWS THE SCIENTIST TO VIEW THE STARLIGHT IN THE WATER SHILLDED FROM THE BRIGHT LIGHTS.











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Salter, Rossi, Woods, Wright

