

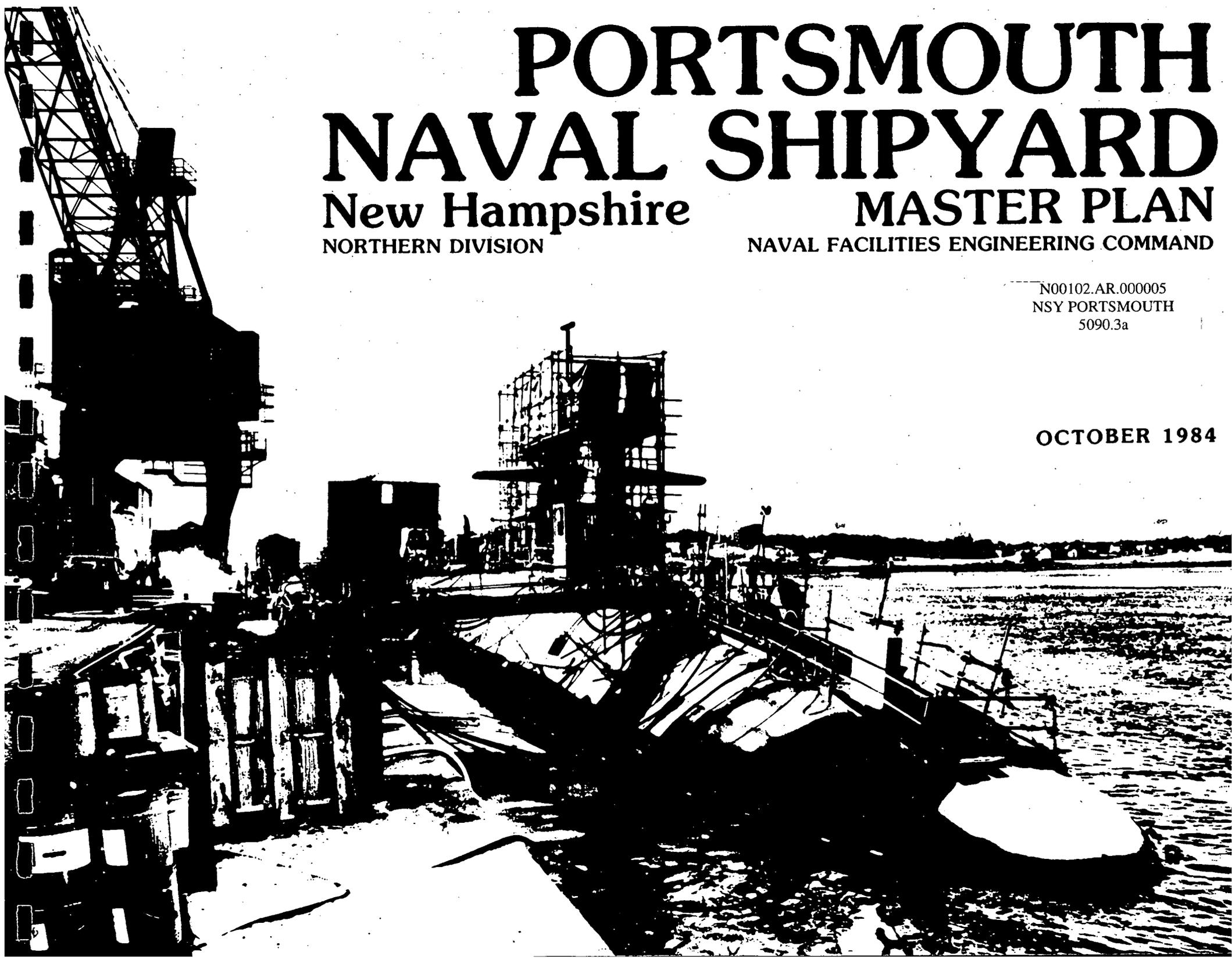
PORTSMOUTH NAVAL SHIPYARD

New Hampshire
NORTHERN DIVISION

MASTER PLAN
NAVAL FACILITIES ENGINEERING COMMAND

N00102.AR.000005
NSY PORTSMOUTH
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OCTOBER 1984



PORTSMOUTH NAVAL SHIPYARD

MASTER PLAN

CHAIN OF COMMAND REVIEW COMMENTS

<u>Reviewer</u>	<u>Received VIA</u>	<u>Comment</u>	<u>Action</u>
COMNAVELEXSYSCOM	Ltr. 11012 Ser 832/367 7 November 1984	EMR-Hazard Changes	Various pg. Changes and Narrative Changes pgs. 4-62, 7F-3
COMNAVSEASYSYSCOM	Ltr. 8020 Ser 06H11/775 13 September 1984	EMR & ESQD Changes	Various Narrative and Graphic Changes pgs. 4-61, 4-62, 7F-3
NAVMECOM	Ltr. 11010 Ser 43B/ 40827033 27 August 1984	Concurrence	
CHNAVMAT	Ltr. 11000 Ser 04H1/ Ser 40356 29 August 1984	Include Shipyard Modernization Projects into CIP. Include Facility, Energy Plan in final MP	Included Shipyard MOD projects into CIP. -Energy Plans are included in text & CIP.
CNO CHAPLAINS	Ltr. 11000 Ser 09G24/ 2250 10 September 1984	Update BFR & reflect in MP	Plan is update to reflect BFR changes.
COMNAVMIIPERS	Ltr. 1700 N-1162 2 October 1984	Project corrections	Project corrected in CIP.
NAVSEACENLANT	PHONCON btwn Jim Daye (NAVSEACENLANT) & Tom Stephan (NORTHDIV) of 8 February 1985:1515	Concurrence	
NAVRESSO	Ltr. FD1.1:JAL:EL 24 September 1984	Concurrence	
COMNAVSAFECENT	Ltr. 5100 Ser 43/3399 of 5 September 1984	Extend Date of Current Explosive Safety Waiver to 31 July 1986	Changed date of Waiver pg. 4-60

1. EXECUTIVE SUMMARY

A. INTRODUCTION

This plan is an update of the 1979 Portsmouth Naval Shipyard Master Plan. It is produced as a land use guide for future Shipyard development. The plan includes an analysis of existing conditions and presents a land use scheme which will reduce incompatible land uses and enhance the Shipyard's capability to serve the fleet. Use of this plan will ensure that future development will follow proper land use, environmental and planning practices.

The principal issues that could constrain operations and planning at the Shipyard are presented in this summary. These issues are also addressed in considerable detail in the body of the Master Plan. For specific information on any issue, the reader should refer to the Master Plan.

B. ISSUES

The key issues addressed in this plan are as follows:

1. Flexibility - The Shipyard needs to increase its flexibility to serve the fleet by modernizing the maintenance and production areas, upgrading the berths and drydocks, and expanding refueling/defueling capabilities. The majority of the maintenance and production facilities suffer from old age and poor configuration. These facilities must be modernized to accommodate new technologies. The berths and drydocks require upgrades of utility systems, and the Shipyard requires a

new refueling/defueling facility to service the new classes of submarines.

2. New Drydock - The Shipyard requires a new drydock to accommodate the new 688 and SSNX Class Submarines. Drydocks 2 and 3 are too shallow to accommodate the SSNX Class Submarines. If a new drydock facility is not constructed, the Shipyard will be limited to two operating drydocks for 688 Class Submarines and none for SSNX Class Submarines when the older class submarines are phased out of the fleet.

3. Project Sitings - Shortage of construction sites is an issue at the Shipyard. Virtually all the land area on the island is intensely developed. Only a few vacant parcels are available for future construction sites. The largest tract of undeveloped land is the spoils area. This area is filled land and would require special environmental considerations due to possible hazardous waste buried at the site and special foundations for buildings. Any additional building sites at the Shipyard will require some demolition of existing structures.

4. Underutilized Facilities - These are an important element in the Shipyard planned development. Renovation and adaptive reuse of existing underutilized facilities is important due to the limited land area available for construction. The major underutilized facilities are the Shipbuilding Ways, Building 178; the former Brig, Building 93; and the Hospital, Building H-1. Building 178 will be utilized for automated supply, production shops, and project team offices as part of the new drydock; Building 93

will be used for PERA and Shipyard training; and Building H-1, property of the Naval Hospital, will be recommended for Administrative Office use.

5. Scattered Functions - These create inefficiencies of operation, duplication of effort, and excessive circulation of people and supplies. The major scattered functions are Training, Maintenance and Production, Supply, Engineering, Administration, Public Works and Quality Assurance.

C. DEVELOPMENT CONCEPTS

1. The plan establishes general development concepts for the Shipyard. They are:

a. Increase the capacity and flexibility of the Shipyard to support the fleet.

b. Remove all non-essential functions from the CIA.

c. Consolidate similar functions to increase the efficiency of their operations.

d. Upgrade and renovate industrial facilities to modern standards to support the specialized quality of work required for submarine repairs.

e. Relocate functions that occupy sites having a higher and better use.

f. Utilize multi-story construction for buildings whenever possible due to the shortage of buildable land.

g. Provide expansion opportunities for all major Shipyard functions.

h. Minimize conflicts between the Historic District and the facility requirements needed to support the Shipyard mission.

i. Rehabilitate major underutilized facilities for Shipyard functions.

j. Support the Base Exterior Architectural Program and the Shipyard Modernization Program.

k. Improve the quality of life on base.

2. The plan further establishes specific recommendations for each functional area of the Shipyard. They are as follows:

a. Operations and Training

o Upgrade the utilities at Berths 11, 12, and 13. Relocate non-critical personnel from Building 174 and construct a new facility for field shops and project teams office.

o Upgrade Berth 6 into a repair berth with a project team office and field shops.

o Consolidate Shipyard training in a renovated portion of Building 93.

b. Maintenance and Production

o Construct a new covered drydock facility to accommodate the 688 and SSNX class submarines.

- o Construct a refueling/defueling facility at Drydock 2.
 - o Consolidate Quality Assurance Office in a new facility.
 - o Renovate buildings occupied by the Structural Group, Riggers Shop, Temporary Services Shops, Battery Shop, and Electrical/Electronic Shop.
 - o Construct a new Abrasive Blast and Paint Facility.
 - o Consolidate Public Works functions into new facilities.
 - o Construct an Integrated Repair and Test Facility for all combat systems.
 - o Construct a new Manufacturing Process Test and Evaluation Facility.
 - o Construct new facilities for the Propeller and Shaft Shop, and the Pipefitting Shop.
- c. Supply and Storage
- o Renovate Building 96 to accommodate the consolidation of Controlled Material Storage functions.
 - o Construct a new Hazardous Materials Transfer, Handling and Storage Facility.
 - o Construct a new Material Test and Storage Facility.
- o Construct a new modern warehouse to consolidate Shipyard Supply functions.
 - o Construct an automated container supply system in Building 178.
 - o Construct a new Supply and Storage Facility to support the Transducer Repair Facility.
- d. Medical
- o Construct a new Medical Clinic to consolidate Shipyard Medical and Dental functions.
- e. Administration
- o Construct a new addition to Building 86 to consolidate Shipyard Engineering and Administrative functions.
 - o Renovate Building H-1, the former Hospital, for Administrative functions.
- f. Housing and Community Support
- o Construct a new indoor swimming pool.
 - o Construct a new Auto Hobby Shop.
 - o Construct a new CPO Club.
 - o Construct a new Pass and security Office.
- g. Utilities
- o Improve steam boilers efficiency.
 - o Install energy monitoring and control systems in various shipyard buildings.

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3. INTRODUCTION

A. LOCATION

The Portsmouth Naval Shipyard is located about 50 miles north of Boston, Massachusetts at the Southernmost tip of Maine. The shipyard is on an island in Kittery, Maine across from Portsmouth, New Hampshire near the mouth of the Piscataqua River. See Plates 3-A, 3-B.

Other Naval activities in the region include the Naval Communication Unit at Cutler, Maine; the Security Group Activity at Winter Harbor, Maine; the Naval Air Stations at Brunswick, Maine and South Weymouth, Mass.; the Naval Education and Training Center, Newport, RI; and Submarine Base New London, Connecticut, the Navy's closest submarine docking and repair facility to the Portsmouth Shipyard.

Pease Air Force Base is nearby in Newington, New Hampshire and provides additional support augmenting the Commissary, Exchange, Hospital, and other personnel support services at the Shipyard.

Non-contiguous areas associated with the Shipyard include the Admiralty Village housing area, and the Wattlebury Island cable crossing.

B. MASTER PLAN AND SHIPYARD MODERNIZATION

The Engineering Long Range Modernization Program prepared in 1984 by NAVSEASYSKOM, also referred to herein as the Shipyard Modernization Study (SMS), is an in-depth industrial engineering

investigation wherein space, equipment, and utility needs were identified, compared to existing, and translated into a program to satisfy all deficiencies. This Master Plan includes the SMS recommendations within its framework.

C. PLANNING OBJECTIVE

The objective of this Master Plan is to provide a realistic and orderly development scheme for Portsmouth Naval Shipyard, considering the interface and needs of tenant activities in the Shipyard, the growing needs to repair and overhaul the current and 688 class submarines and the potential to support a newer class submarine at Portsmouth.

D. SCOPE

The Master Plan is based on requirements generated by the most recent Shore Facility Planning System (SFPS) documents and the recommendations of the Shipyard Modernization Program. The Proposed Land Use Plan allocates sufficient land areas to satisfy all basic facility requirements and provides for growth in the Administration, Supply, Production, and Training functional areas.

REGIONAL MAP

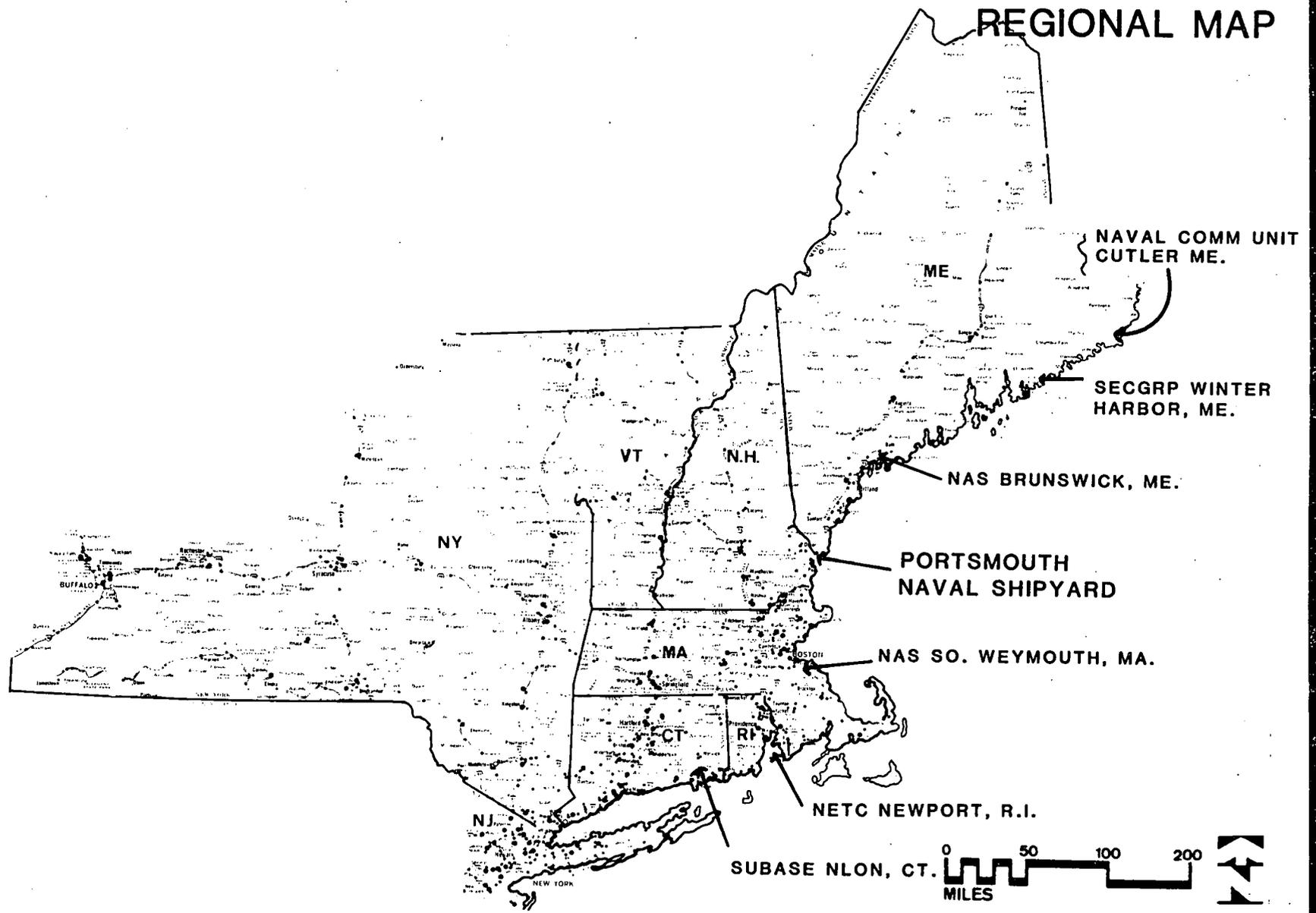
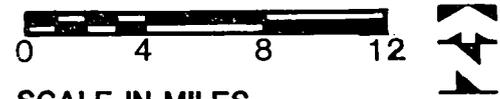
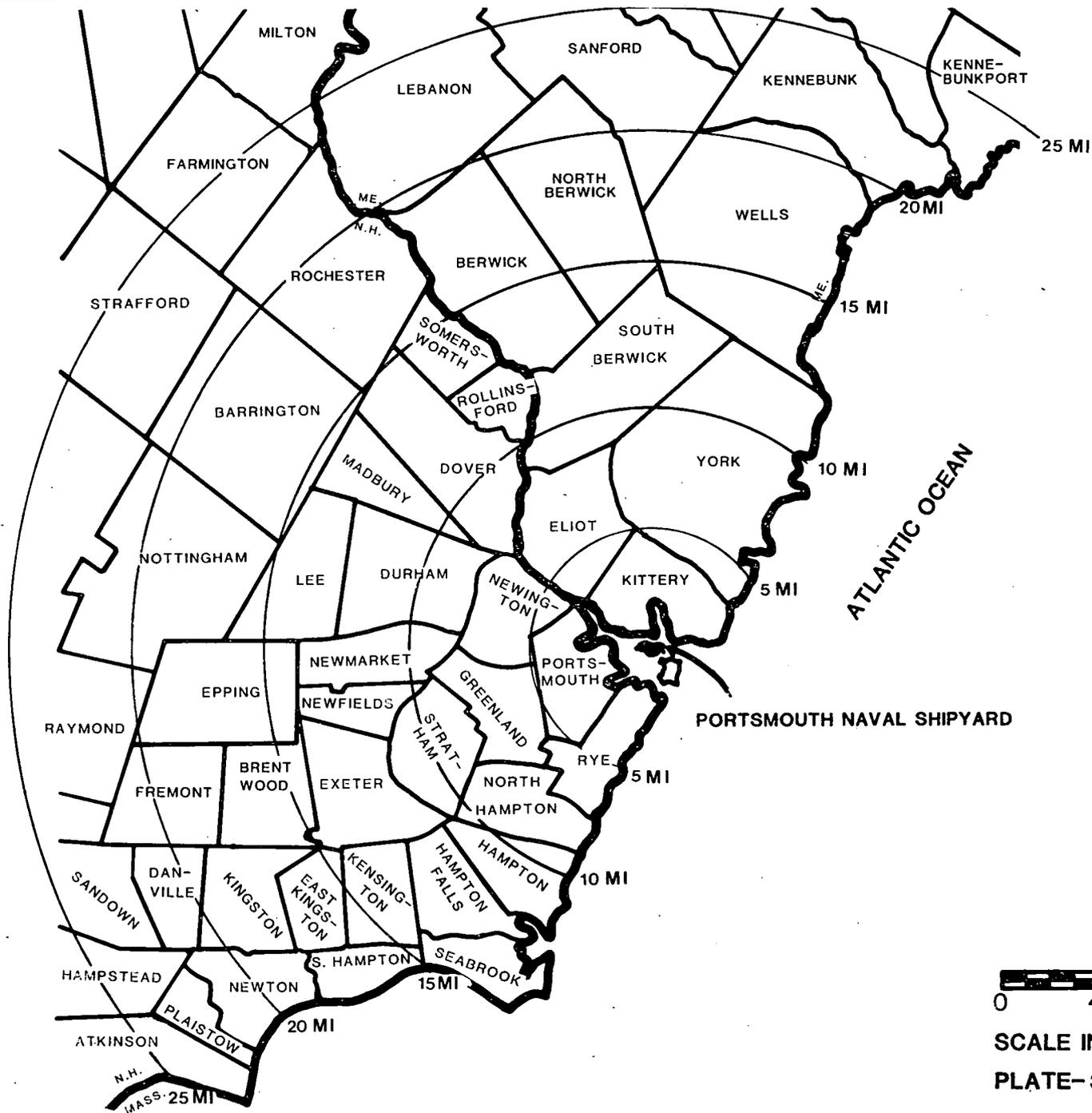


PLATE 3-A

VICINITY MAP



SCALE IN MILES
PLATE-3-B

G. REQUIREMENTS ANALYSIS

1. General

Fundamental to any planning process is an understanding of the basic purpose of the various activities at an installation and any interface that exists between the various activities. The purpose of this section is to provide that information through a brief description of the Shipyard mission, organization, base loading, and tenant activities and their corresponding function/interface with the Shipyard.

For detailed information on all facility requirements and existing assets, the reader should refer to the appropriate Facilities Requirements Plan.

2. Portsmouth Naval Shipyard

(a). Mission

To provide logistic support for assigned ships and service craft, to perform authorized work in connection with construction, conversion, overhaul, repair, alteration, drydocking, and outfitting of ships and crafts as assigned. To perform manufacturing, research, development, and test work, as assigned. To provide services and material to other activities and units, as directed by competent authority.

(b). Organization

The current organization chart is shown on Plate 3-C.

(c). Base Loading

	<u>FY-84</u>	<u>FY-89 Projected</u>
MILITARY	75	77
CIVILIAN	8,894	8,894
AFLOAT*	1,120	1,120

* Crews of submarines and other military personnel attached with the Shipyard industrial workforce.

(d). Facility Requirements

A total list of all facility requirements called a Basic Facility Requirements (BFR) has been prepared by the Shipyard in accordance with OPNAV and NAVFAC directives. The inclusion of the BFR here is not appropriate due to its accessibility elsewhere, its length, and its frequent changes in various entries.

ORGANIZATIONAL CHART

PORTSMOUTH NAVAL SHIPYARD

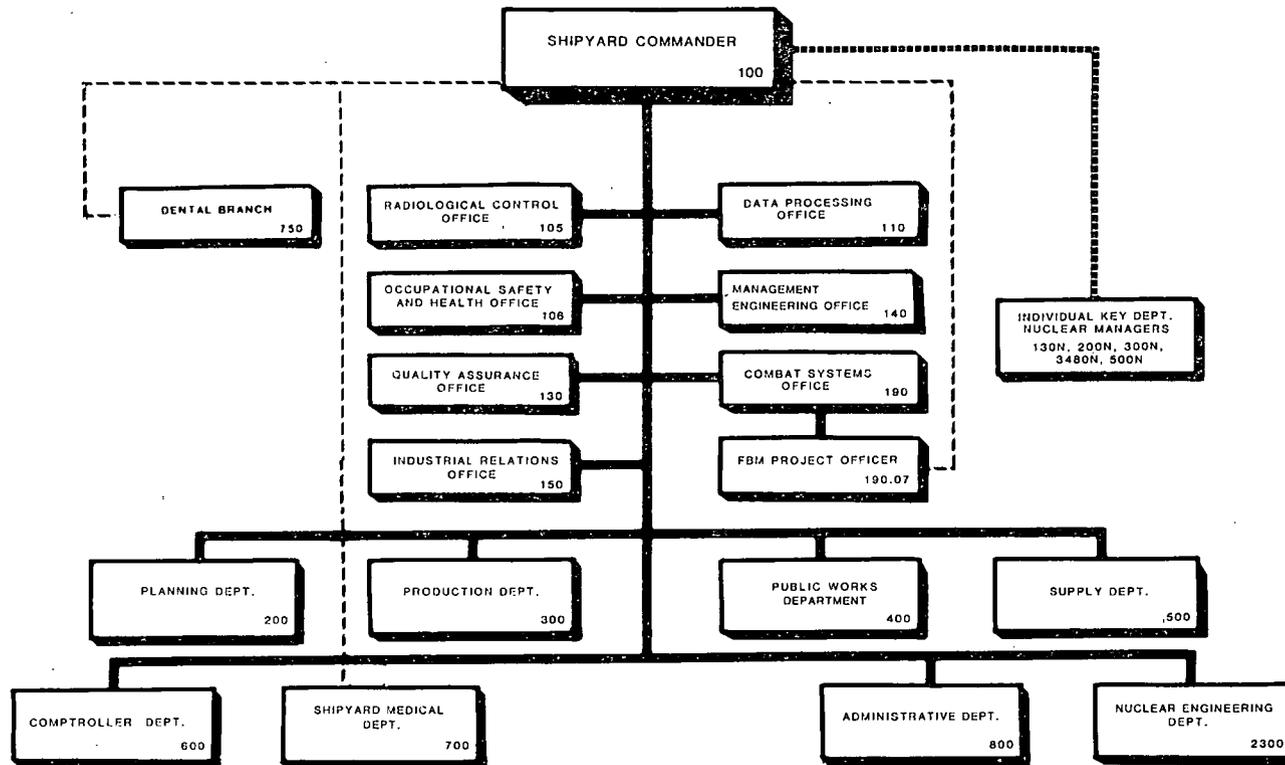


PLATE-3-C

The BFR for the Shipyard includes requirements for several supported/supporting activities but not all activities in the Shipyard. The following is a list of all tenant activities. Those with an asterisk have separate BFRs. The remaining are included in the Shipyard BFR.

<u>Tenants</u>	<u>Function</u>
* Marine Barracks	Security
* Naval Medical Clinic	Medical care
* Naval Reserve Center	Training
* Naval Branch Dental Clinic	Dental care
Navy Exchange Branch	Retail sales
Naval Sea Systems Command	
Det. (PERA SS)	Eng. & Admin.
Resident Officer In-Charge-of- Construction	Admin.
Personnel Support Detachment	Admin.
* Navy Publication & Printing Service Branch Office	Printing
Management System Support Division	Admin-ADP
Naval Investigative Service	Admin.
Defense Property Disposal Office	Scrap yard
Naval Reactor Representative Office	Admin.
Contractor Representatives	Eng. & Admin.
Service Craft	Tug Service & crafts
Submarine Crews	Eng. & Admin.
Naval Audit Service Office	Admin.
U.S. Post Office	Mail
Northeast Federal Credit Union	Personnel Service

4. EXISTING CONDITIONS

A. REGIONAL/VICINITY DESCRIPTION

1. JURISDICTION

The Portsmouth Naval Shipyard and the Admiralty Village housing area are physically located in York County, Kittery, Maine on Government-owned land. The U.S. Government provides its own police and fire protection on the Shipyard while Kittery provides police and fire protection for the Admiralty Village Housing Area.

The existing Shipyard land mass has been formed through the acquisition of three islands and the filling in between them to create one continuous parcel of land. This process started back in 1800 with the acquisition of Dennett's Island.

The second island, Seavy's Island, was acquired by the Navy in 1866.

The remaining acquisitions are explained in the Maine Status of Jurisdiction Table on page 4-2 and the Portsmouth Shipyard Real Estate Summary maps on Plates 4-A and 4-B. See also the Shipyard Land Development Map on Plate 4-C showing how the Shipyard grew in size between 1828 and the present.

2. HISTORY

A. REGION/VICINITY

Early 17th-century exploration of the coast and the Piscataqua River near the site of Portsmouth was first recorded by Captain Martin Pring in 1603, and by French explorer Samuel de Champlain two years later. The area was not publicized until visited in 1614 by English Captain John Smith, who published a description and map of the country later called New England.

By the 1630s farmers and fishermen from southern England were emigrating to the newly discovered area and the early settlements of Strawberry Banke (later named Portsmouth), Dover, Exeter, and Hampton were established.

One of the oldest cities in the United States, Portsmouth was settled under the name of Strawberry Banke in 1623, became a township in 1631, was incorporated as a town in 1653, and chartered as a city in 1849. Portsmouth developed as a typical New England maritime community which grew and prospered because of the abundant natural resources in the area and the excellent harbor. Due to an abundance of good timber and the lack of good agricultural soil, shipbuilding became the predominant activity in the region.

In 1650 the British Government selected the Portsmouth port as a suitable location to build ships for the Royal Navy. The immediate availability of mast timber was, of course, a prime consideration in addition to the obvious geographical advantages.

TABLE 4-1

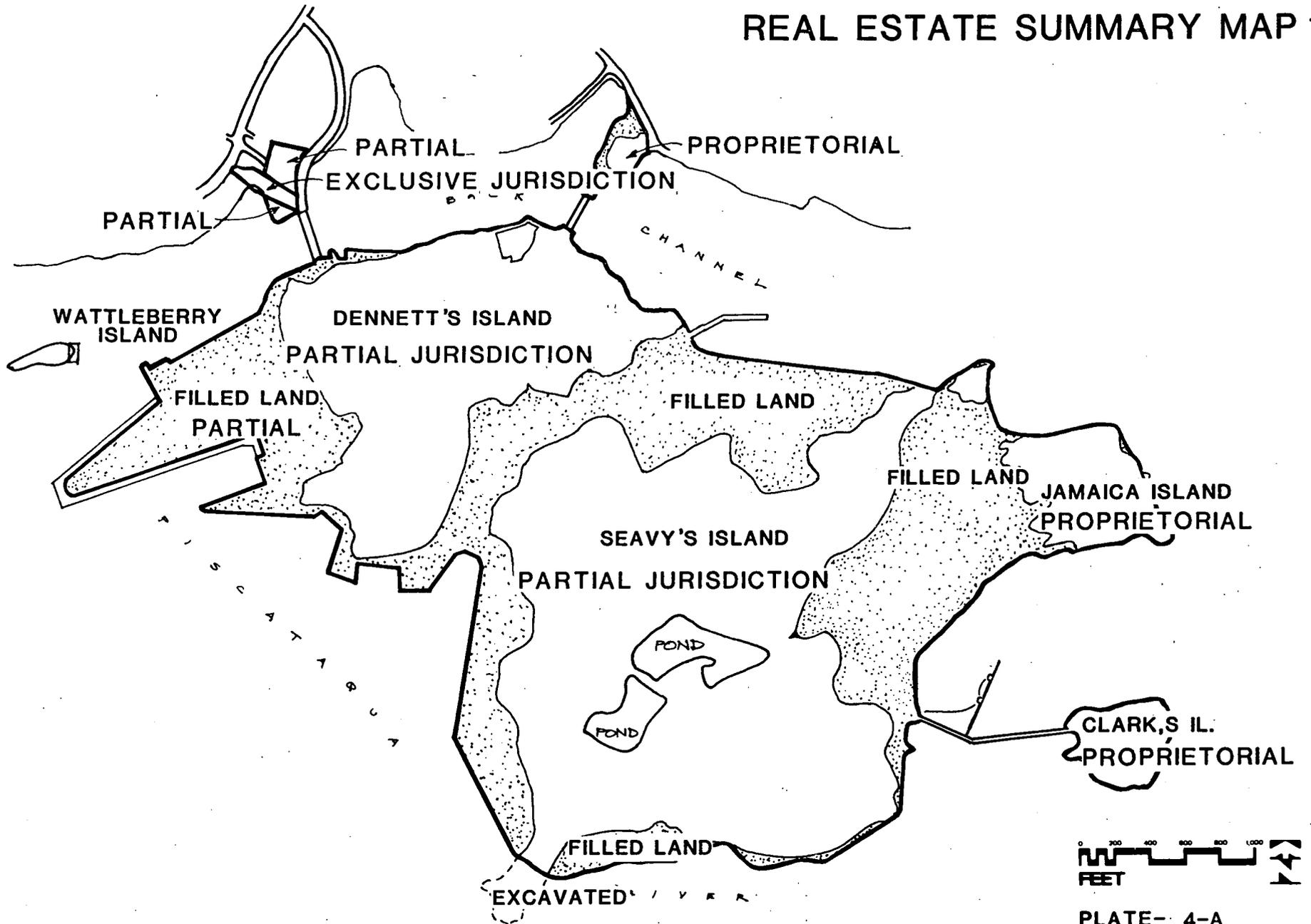
STATUS OF JURISDICTION (MAINE)

LOCATION /ACTIVITY	HOW ACQUIRED	DATE ACQUIRED	ACREAGE	LETTER ACCEPTING JURIS, AND ACKNOWLEDGMENT	JURISDICTION	STATE CESSION STATUTE
KITTERY, YORK COUNTY Naval Shipyard UIC #NO0102						
DENNETTS IS.	Deed-William & Sarah Dennet	6/12/1800 (includes 5.58 acres for U.S Marine Barracks)	47.42		Partial**	ACT 2-2-1822
SEAVEYS IS.	Deeds (27)	8/1/1866 thru 10/27/1866	105.00		Partial**	ACT 1-10-1863
BRIDGE APPROACH	Deed-Brown	9/6/1941	.76		Proprietorial	
JAMAICA IS.	Deed-Johnston	5/27/1942	11.40		Proprietorial	
			TOTAL 164.58			
BRIDGE APPROACH	Civil 214	2/27/1913	.87		Exclusive	{ ACT 3-11-1905 (Maine Public Law, 1905, CHAP. 50, Pg. 52)
RAILWAY & HIGHWAY BRIDGE	Civil 1625	9/1/1942	1.37	6/25/43; 7/14/43 (Ack)	Partial*	SECS. 10, 11, & 12, CHAP. 2, Revised Statutes of Maine, 1930, as amended 4/19/1930, (Laws of Maine, 1939, Chap. 248)
CLARKS IS.	Civil 6-68	12/24/1959	5.11)		Proprietorial	
FILLED LAND	By filling	1800 & forward	89.96		Partial*	ME. P.L., 1903 CHAP. 183, Pg. 146
			TOTAL 261.89			
U.S. NAVY HOUSING Admiralty Village	Transfer from Housing & Home Finance Agency (Deed-Knight) 11-7-40	8/19/48	1.90			
			22.83			
			TOTAL 24.73		Proprietorial	

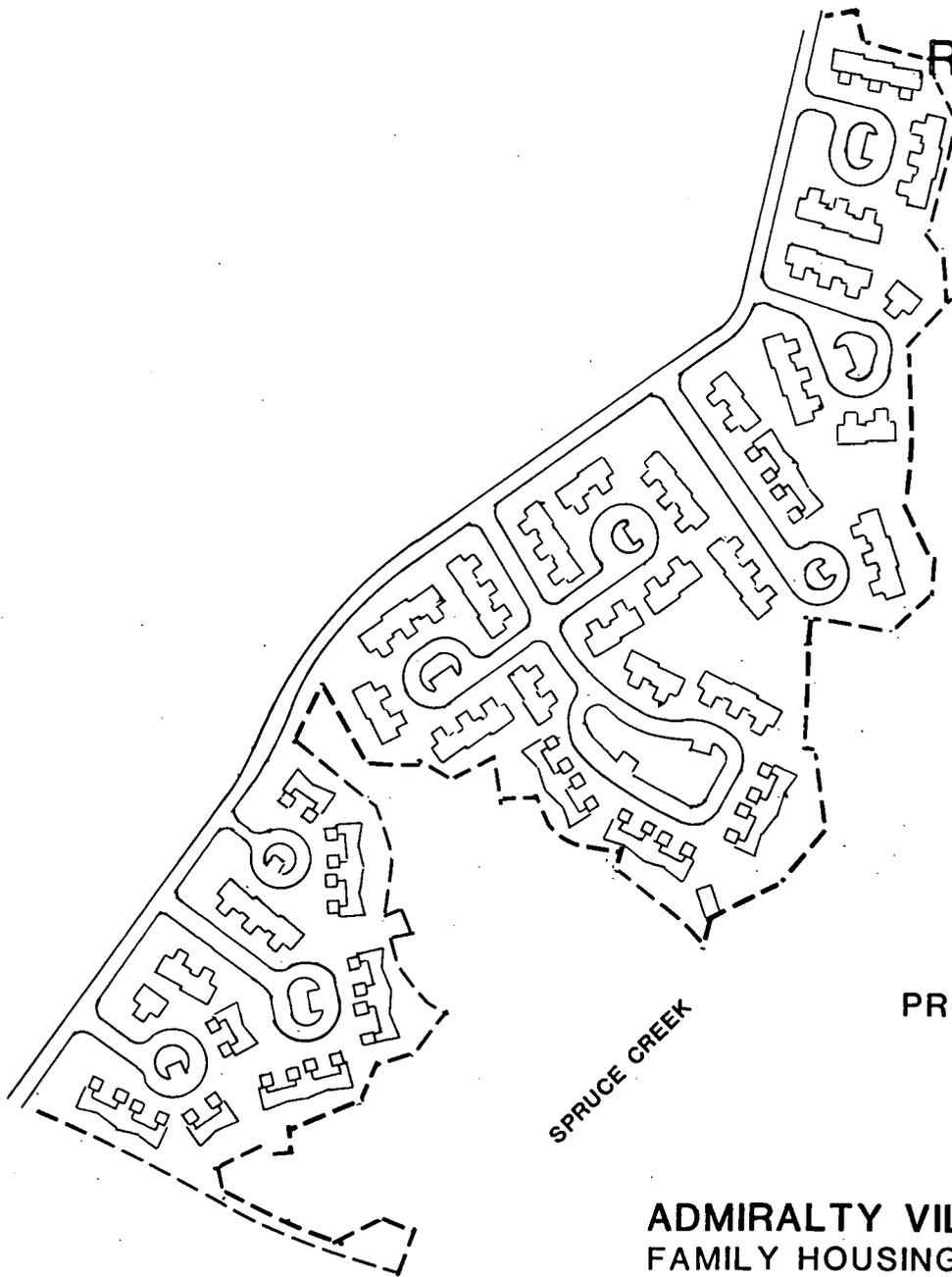
* Partial jurisdiction herein reflects jurisdiction that would be exclusive except for cession statute's reservation in state if right to service civil process in cases not affecting Federal Property, and criminal process for crimes and misdemeanors either within or without the area.

** Partial jurisdiction herein reflects jurisdiction that would be exclusive except for cession statute's reservation to state of concurrent jurisdiction of service of civil and criminal process issued under State authority and, as to Dennett's Island only, of subjection of civilian residents to military duty in state militia.

REAL ESTATE SUMMARY MAP 1



REAL ESTATE SUMMARY MAP 2



ADMIRALTY VILLAGE
U.S. NAVY HOUSING

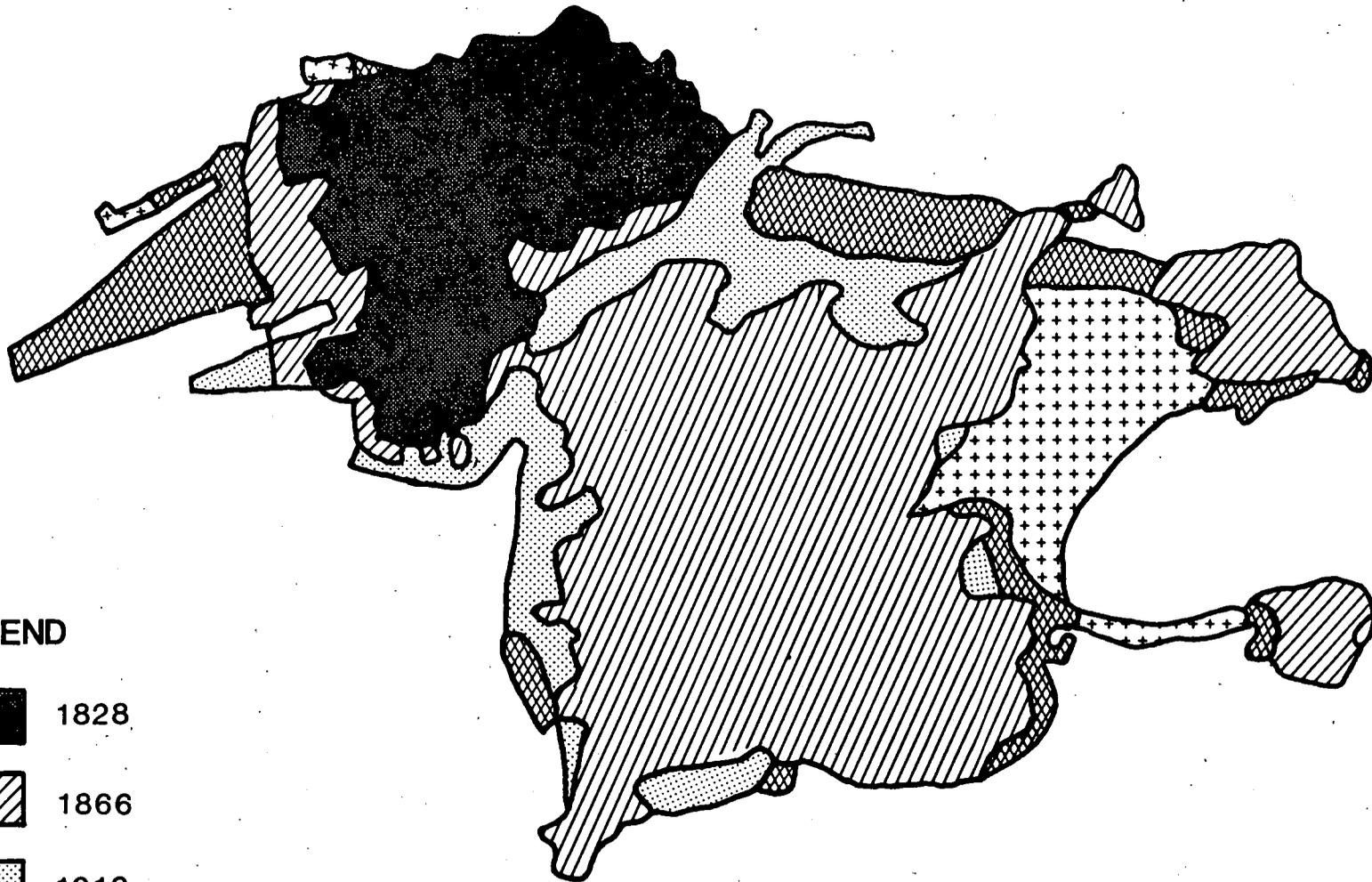
PROPRIETORIAL

ADMIRALTY VILLAGE
FAMILY HOUSING KITTERY, ME.

PLATE- 4-B

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LAND DEVELOPMENT MAP



LEGEND

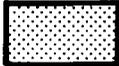
-  1828
-  1866
-  1916
-  1944
-  1984



PLATE- 4-C

For a number of years only small vessels were built, but in 1690, the 54 gun frigate "Farkland" (sometimes called Faulkland) was built by John Taylor by order of the British Government for the Royal Navy. It is claimed that this was the first ship of war built on this side of the Atlantic. The "Farkland" was followed by the 32 gun "Bedford" in 1696, and in 1749, the 44 gun "America" slid down the ways, the largest Royal Navy ship ever built in the New World.

During the Revolutionary War, members of the First, Second, and Third New Hampshire Regiments of the Continental Army saw action. The remnants of Fort Constitution mark the site of Fort William and Mary where the first armed resistance to Great Britain occurred on December 14, 1774, when a small party captured the fort and removed the powder and guns to Durham.

The birth of American and later, United States naval shipbuilding commenced almost immediately. In December of 1775 the Continental Congress authorized the construction of 13 frigates. One of these, the 32 gun "Raleigh", was to be built at Portsmouth under the direction of John Langdon, leader of the operation against Castle William and Mary, who offered his island in the river (now Badger's Island) to be employed for the purpose. Langdon's Island continued to be used exclusively by the American government for naval purposes until the official "Navy Yard" was established in 1800. The "Raleigh", the first ship built at Portsmouth for the Continental Navy under the act of December 13, 1775, was launched in May of 1776 and served creditably until captured by the British in September 1778.

In spite of its relatively small size, the second ship built at Portsmouth, the 18 gun sloop "Ranger" was one of the more famous in American naval annals under the command of John Paul Jones.

On November 5, 1782, the 74 gun ship of the line, "America", the second of that name to be built at Portsmouth, was launched. Like her predecessor she was, up to that time, the largest naval vessel ever laid down on the North American continent. She was turned over to the French in return for their services and their loss by accident of a ship of the line in Boston Harbor the same year. On April 1, 1800, the 38 gun frigate "Congress" was launched, authorized by Act of Congress approved March 27, 1794.

Improved transportation and the development of waterpower during the early 19th century stimulated the growth of industrial activity. Sawmills, grist mills, and textile mills constructed along New Hampshire's waterways, formed the nucleus of new company towns. Woolen manufacturing had its origin in New Hampshire. The Amoskeag Mills in Manchester became the world's largest cotton textile manufacturing plant. The growing industrial centers with their influx of foreign-born workers, largely French-Canadians led New Hampshire to become one of the first states to introduce progressive labor legislation.

Although devastating fires and the introduction of the steamboat during the 1800s brought Portsmouth into a temporary economic decline, it was a city which learned early the value of diversification when the decline was reversed by the introduction of a variety of new industry.

While the area lost its predominance in shipbuilding to more southerly ports, the importance of shipbuilding continues today in the area with the private shipbuilders having been replaced by the U.S. Naval Shipyard's activities.

B. VICINITY HISTORIC RESOURCES

The Portsmouth-Kittery area has been part of the country's history almost since its very beginning. Many structures and sites from the late seventeenth, eighteenth, and nineteenth centuries have survived within the framework of new development over the years, especially in the City of Portsmouth. Considered as a group, these preserved structures and sites constitute a significant aesthetic, cultural and educational resource, and a heritage with increasing value to future generations of the Portsmouth-Kittery vicinity. Many of these structures and sites have been added to the National Register of Historic Places. See Appendix C for a list of those structures on the Register that are located in the vicinity of the Portsmouth Naval Shipyard.

3. POPULATION

The Shipyard is located in a region of New England that is predominantly made up of small rural towns. The majority of towns within a 25 mile radius of the Shipyard have populations of less than 5000 people.

Portsmouth, New Hampshire is the closest urban municipality to the Shipyard. With a population of 26,254, it is also the largest municipality in the area. Other larger municipalities within the area include Sanford and Biddeford in Maine and Rochester and Dover in New Hampshire. They have populations of 18,020, 19,638, 21,560, and 22,377 respectively. Portland, Maine has a population of 61,572. This major southern Maine urban center is located about 55 miles north of the Shipyard. Also, the City of Boston, Massachusetts, with a population of 2,763,000, is located approximately 50 miles south of the Shipyard.

The overall population of the Portsmouth region has grown significantly through the 1970 to 1980 decade. On the Maine side of the Piscataqua River, the increase in population, within an approximate 25 mile radius of the Shipyard was 12,130 people, or about a 15.75 percent increase. The Town of Kittery and City of Biddeford were the only municipalities to experience a loss of population by 15.54 and 1.72 percent respectively. On the New Hampshire side of the river, the municipalities within an approximate 25 mile radius all gained in population through the 1970-1980 decade. There was a gain of 29,322 people or about a 20.9 percent increase.

The area population is projected to increase about 11.25 percent by 1990. However, the Town of Kittery and the City of Biddeford in Maine will continue to decline in population. Also, the population for the Town of Newton and Newfield in New Hampshire are projected to decrease by 1990.

4. ECONOMY

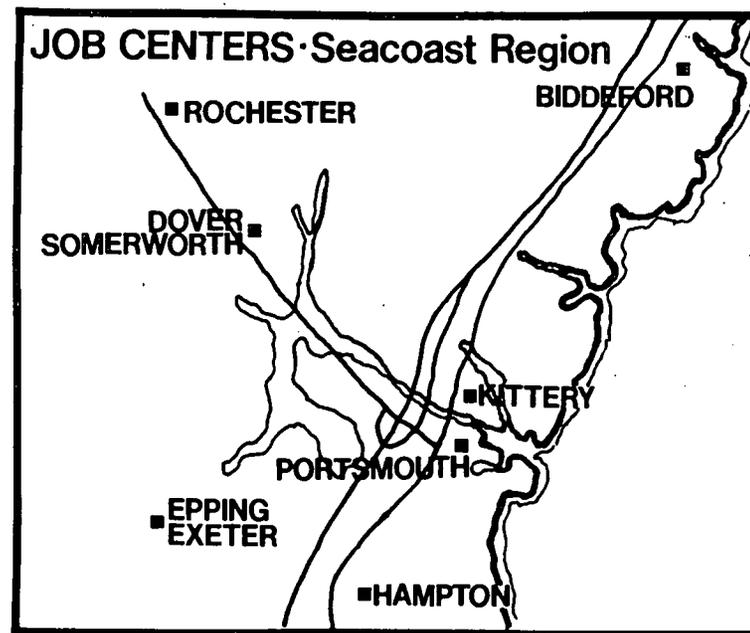
The Shipyard is located within the "seacoast region" which is defined by seven job centers. Each center includes the smaller communities adjacent to them.

The seacoast region is made up of the Portsmouth, Exeter-Epping, Hampton, Dover-Somersworth, and Rochester Centers in New Hampshire and the Kittery and Biddeford Centers in Maine. (See Below)

Historically, the economy of the seacoast region has been based on manufacturing. Textiles, shoes, and marine vessels were for many years the most important products of the region. Shipbuilding, primarily at Portsmouth Naval Shipyard, has maintained a dominant role in the economy. Textiles and shoe manufacturing have declined over the past 30 years, but have been supplemented in part by plastics, electronics, and metals manufacturers. The wages paid by these industries are low relative to those paid at the Shipyard. On balance, the seacoast region has experienced consistent declines in manufacturing employment in recent years.

Non-manufacturing employment, especially in the trade and service sectors, is increasing. The Hampton, Portsmouth, Kittery, and Biddeford job centers have experienced economic growth as vacation resorts. Communities close to Massachusetts such as Hampton and Exeter-Epping, have grown as part of the Boston metropolitan area.

The Town of Kittery is Maine's oldest community. Its early settlers, from Kittery Point, England, were proficient and industrious in fishing and shipbuilding. Badger's Island, named for William Badger, an early shipbuilder, was the birthplace of the U.S. Ship "Ranger", which sailed from Kittery under the command of John Paul Jones. From the early shipyards on Seavey's and Dennett's Islands, the first United States Naval Shipyard began in 1800.



The City of Portsmouth is the seacoast region's trade and cultural center and a major distribution market for points in northern New England.

The generally healthy state of Portsmouth's economy is reflected by its excellent employment situation. As of February 1981, the unemployment rate was just 5.3% compared to the National average of 8.0%. The civilian labor force in the Portsmouth Labor Market Area numbered 46,050 in February 1981.

Portsmouth has the distinction of being the only natural deep water harbor between Boston and Portland, making it a major factor in New England seaborne commerce. Modern year-round port facilities, an established Foreign Trade Zone (FTZ), and reliable container ship service are all available.

The chief commodities transported through the port are petroleum products which comprise over 90 percent of the marine commerce shipped. Significant quantities of limestone (gypsum) and salt are also received. The chief products shipped out of Portsmouth are petroleum products and steel scrap.

The commercial fishing industry in the area represents a multi-million dollar industry, supporting approximately 500 licensed lobstermen and 50 to 60 licensed finfishermen. A new city fishing pier, opened 4 years ago, is expected to provide for continued growth in the fishing industry.

The region's largest employer, with over 9,000 employees, is the Portsmouth Naval Shipyard.

The Shipyard is reputedly the largest employer in the States of Maine and New Hampshire. The 1983 payroll amounted to \$217 million.

Other contributing factors to the region's economic development include Pease Air Force Base in Newington, the University of New Hampshire in Durham, and the New Hampshire Vocational/Technical College in Stratham.

The Kittery-York labor market area in the southern part of York County had an average of 20,990 people in the civilian labor force in 1982. All but 720 were employed which accounted for an unemployment rate of 3.6% for 1982. The majority of the civilian labor force, 17,680 was employed in non-farm related jobs including manufacturing, transportation and utilities, wholesale and retail trade, finances, services, and government.

5. CIRCULATION AND TRANSPORTATION

The Kittery-Portsmouth area is very accessible to vehicular traffic due to the proximity of Interstate 95. The major cities of Boston, Massachusetts and Portland, Maine are approximately one hour away. U.S. Route 1, a primary road, runs parallel to I-95 in a north-south direction and provides good access to the local communities along the seacoast. Because of the Shipyard's location on an island in the Piscataqua River, access is restricted to two federally owned bridges. The bridges provide access directly to the Shipyard's northern boundary from residential streets in the Town of Kittery. The majority of installation oriented traffic traverses five local secondary roadways: Walker Avenue, Went-

worth Street, and Shapleigh, Whipple, and Rogers Roads. See Plate 4-D. Walker Avenue is the primary access route to Bridge 1 and Whipple Road provides direct access to Bridge 2. Most Shipyard generated traffic is funneled from the two major highways, I-95 and U.S. Route 1, through the local roadways and over the bridges.

Portsmouth is served by 21 regular route freight carriers and U.P.S. Overnight delivery service is available throughout the northeast market serving 35% of the nations' population plus eastern Canada. Greyhound and Trailways provide daily interstate bus service. Marshall's Transport provides bus service in the Portsmouth area.

Daily rail service, freight only, is provided to the Shipyard by the Boston and Maine Railroad. The railroad connects Portsmouth with Manchester, New Hampshire; Portland, Maine, and Boston, Massachusetts. The nearest rail passenger service available is provided via AMTRAK in Boston.

Limited air service is provided at small airports at Eliot, Maine, and Hampton and Rochester, New Hampshire. Portsmouth is within one hour travel time from major airports at Boston, Massachusetts and Portland, Maine. In addition, Pease Air Force Base provides the opportunity for Government flight services.

The Portsmouth Harbor, about three nautical miles from deep water of the Atlantic Ocean, is accessible year round via the Piscataqua River channel. The river channel is 35 feet deep below

mean low water and 400 feet wide. There are about 500 vessel-trips each way through the channel each year. About 150 of these trips involve ships with drafts greater than 18 feet and more than 200 trips are made by tankers. A Coast Guard Station is located at New Castle near the harbor entrance.

6. COMMUNITY SUPPORT

There is sufficient rental housing in the area to accommodate personnel that do not live in the Navy's Admiralty Village Housing. In the immediate area, rents for two bedroom apartments are from approximately \$385 to \$425 per month plus utilities. The apartments within a 15 to 30 mile commuting distance, however, rent for \$50 to \$75 less than those in the towns adjacent to the Shipyard. Apartments along the shore can be rented out of season, September to May, for reasonable prices. Personnel who are on the waiting list for Navy housing may have to wait six months to a year and these shorter term rentals can accommodate them in the interim.

Most of the recreation facilities used by Navy personnel and their dependents are located at the Shipyard. The neighboring towns have limited recreational facilities and the cost of those available along with residency requirements for some limit their use by the Navy community. There is limited public transportation, except taxi-cabs, serving the towns adjacent to the Shipyard. For those personnel who own vehicles, however, many outdoor activities are available. Public beaches are 12 miles away while hiking, skiing and camping activities are located about one hour away.

AREA CIRCULATION

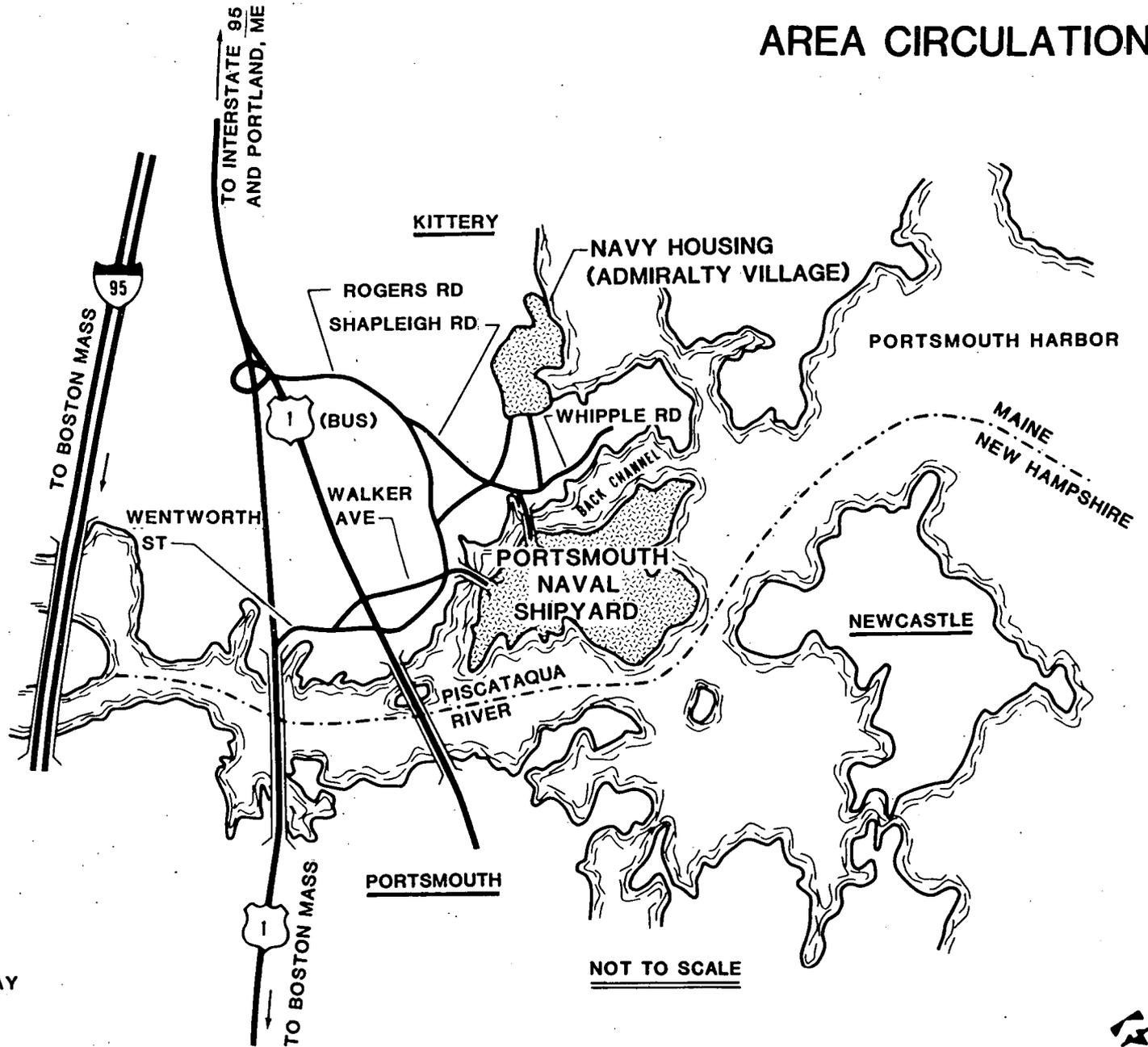


PLATE- 4-D

The children of Navy personnel attend five public schools in Kittery. There are programs available for advanced children as well as special education needs. There are two parochial schools available in the City of Portsmouth. Opportunities are especially good for adult continuing education. There are several colleges and universities within commuting distance from the Shipyard. They include the University of Maine in Portland, University of New Hampshire in Durham, New Hampshire College in Portsmouth and the New Hampshire Vocational and Technical College in Stratham. Pease Air Force Base also has a Lifelong Learning Program for adults.

Religious services and religious education are offered for all on-Base personnel by the Shipyard Chaplain. Religious activities are also available in the neighboring communities.

The Shipyard Medical Clinic is used by Navy personnel and dependents for their general medical care requirements. Medical problems that require treatment not available at the clinic are taken care of at Pease Air Force Base Hospital.

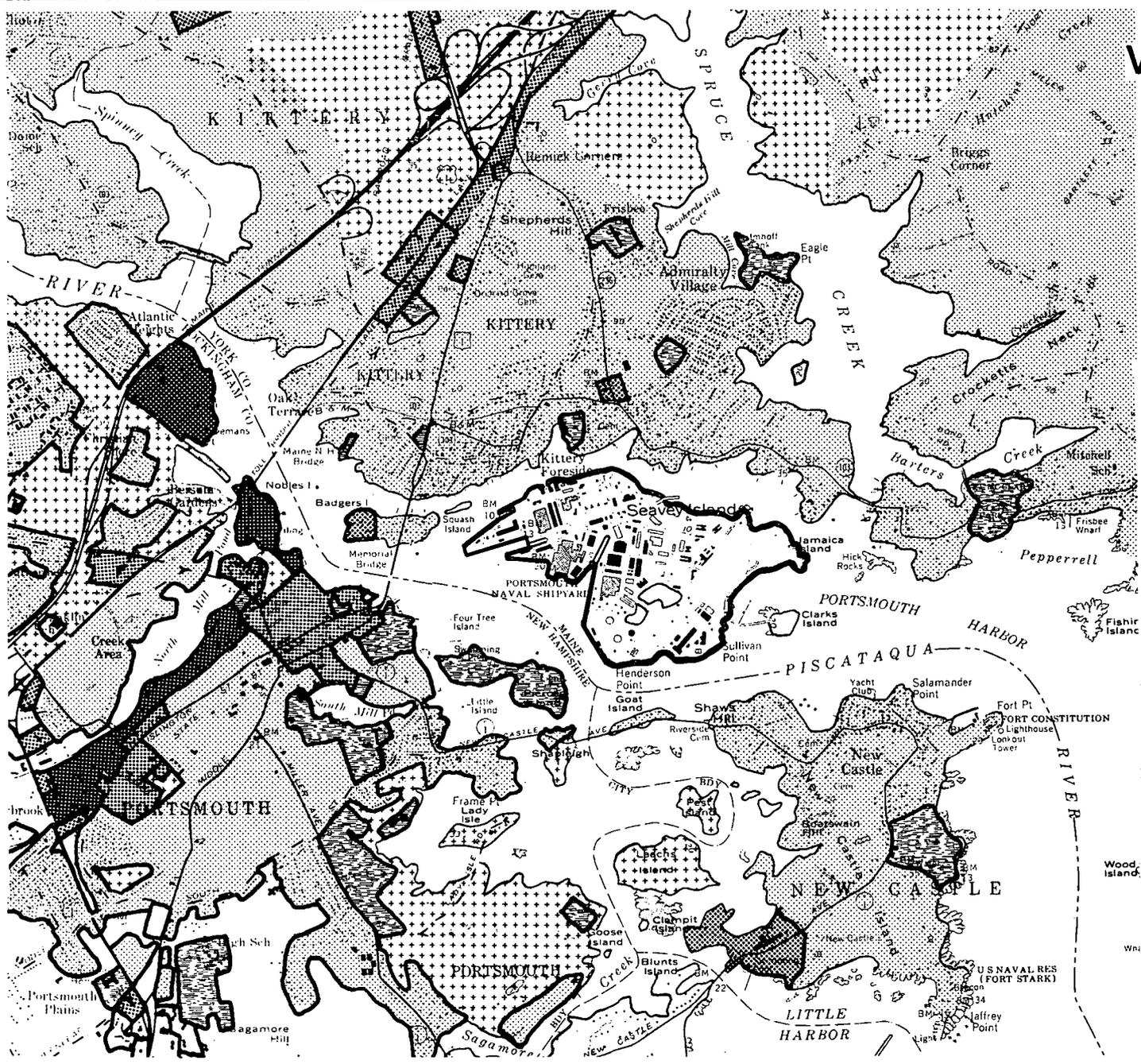
7. AREAWIDE LAND USE AND DEVELOPMENT TRENDS

The Shipyard is located at the mouth of the Piscataqua River where several creeks and the river converge and mix with the Atlantic Ocean. The Shipyard island has been developed over time by filling in between three smaller islands. As a result, there are no land areas adjacent to the Shipyard. See Plate 4-E.

To the north, across the back channel, is the predominantly low density residential community of Kittery, Maine. Kittery's land along the river and back channel is virtually all designated for residential use. The exceptions are two areas of commercial use located on Badgers Island and at the intersection of Routes 103 and 236 and several public use areas consisting of playgrounds and parks. The main commercial land use area is located along the Route 1 bypass. Most of Kittery's land further north is undeveloped due to natural constraints. The developable land is primarily designated for low density residential use.

Across the river, south of the Shipyard, are the City of Portsmouth and the Town of New Castle in the State of New Hampshire. Portsmouth's waterfront land is nearly fully developed and consists of many uses. This waterfront has played an important role in the growth and prosperity of Portsmouth since it was settled as Strawberry Banke in 1623. Today there are areas of commercial, industrial, residential and public/semi-public land use along the river.

VICINITY LAND USE



LEGEND

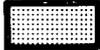
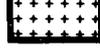
-  RESIDENTIAL
-  COMMERCIAL
-  INDUSTRIAL
-  PUBLIC/ SEMI-PUBLIC
-  UNDEVELOPED



PLATE-4-E

Further inland, Portsmouth has large undeveloped land areas. Development on some of this land is constrained by wetlands and other natural factors, however, there still remains much acreage to accommodate future development.

Directly south of the Shipyard is a large body of estuarine water containing several small islands. These islands are either undeveloped or have low density housing.

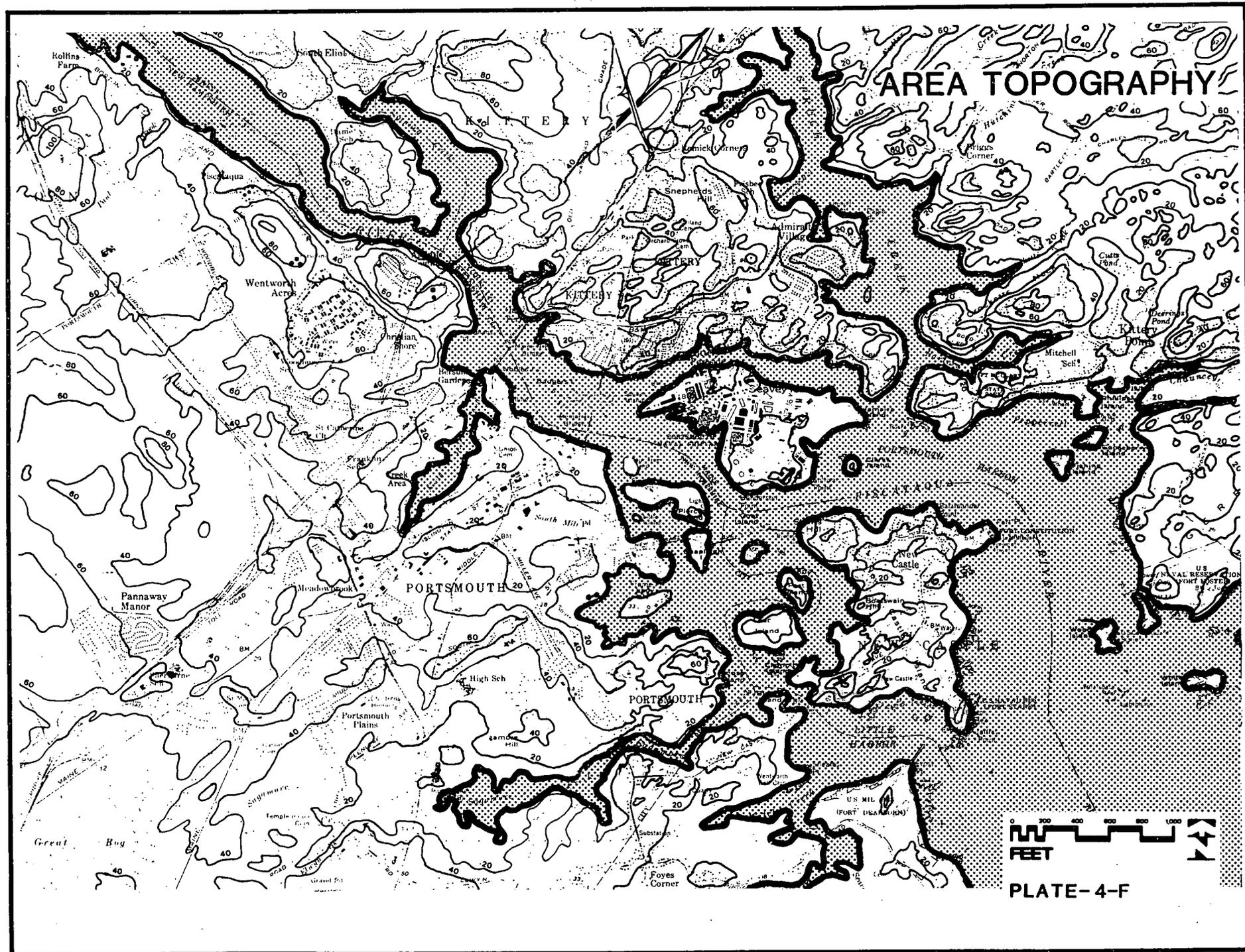
The Town of New Castle is predominantly developed with housing and is the location of a Coast Guard Station. Two other land uses on the island Town include commercial and public/semi-public land.

There are no major development projects planned for the waterfront land on either side of the Shipyard. As seen on Plate 4-E, the existing land use pattern has been well established and can be expected to remain the same in the foreseeable future.

8. TOPOGRAPHY

The topography of the seacoast region, defined as the physical features or form of the land in terms of hills, valleys, plains, etc., is generally of the coastal plain nature. The coastal plain is relatively flat along the immediate coast rising to minor hills and ridges further inland. The northern area of the region is comprised of a few scattered, gently sloping hills of up to 200 feet in elevation that lead to low, flat areas 20 to 60 feet in elevation along the coast. The topography starting from northwestern Sanford begins with several hills and ridges at 500 to 600 feet, drops to flat areas of 200 to 250 feet elevation in eastern Sanford and continues to flat areas ranging from 20 to 100 feet in elevation along the coast. Between Sanford and Kittery lies Mt. Agamenticus, the most prominent feature of the region. Mt. Agamenticus, at an elevation of 673 feet, is located approximately 6 miles inland in the Town of York. Much of the area surrounding this high point is gently rolling with small, rounded, moderately sloping hills.

The Piscataqua lowlands are characterized by extensive sand plains and terraces, with elevations rarely rising above 100 feet. See Plate 4-F. The New Hampshire coastal area consists of a flat or gently rolling plains. The coastal divide is poorly defined, with maximum elevation usually less than 60 feet. Glacial hills, known as drumlins, are notable exceptions, forming a portion of the coastal divide with 200 foot elevations. From the seacoast region, the topography rises gently to the lakes region mountains to the west and the White Mountains northwest of the seacoast region.



9. GEOLOGY

The Portsmouth Naval Shipyard is located in the Seaboard Lowland Section of the New England Province. The section has a low, undulating topography with low hills that are either bedrock covered by a veneer of glacial drift, or drumlins, consisting of glacial till.

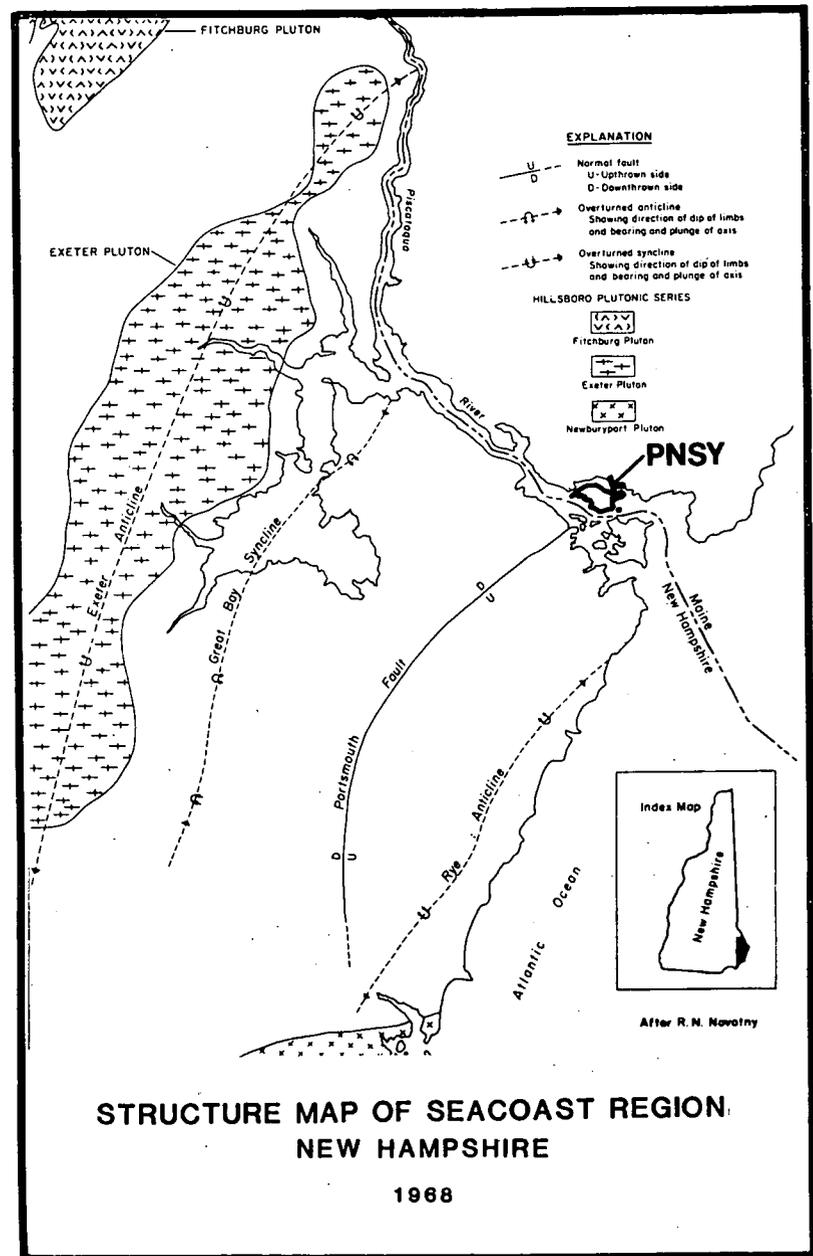
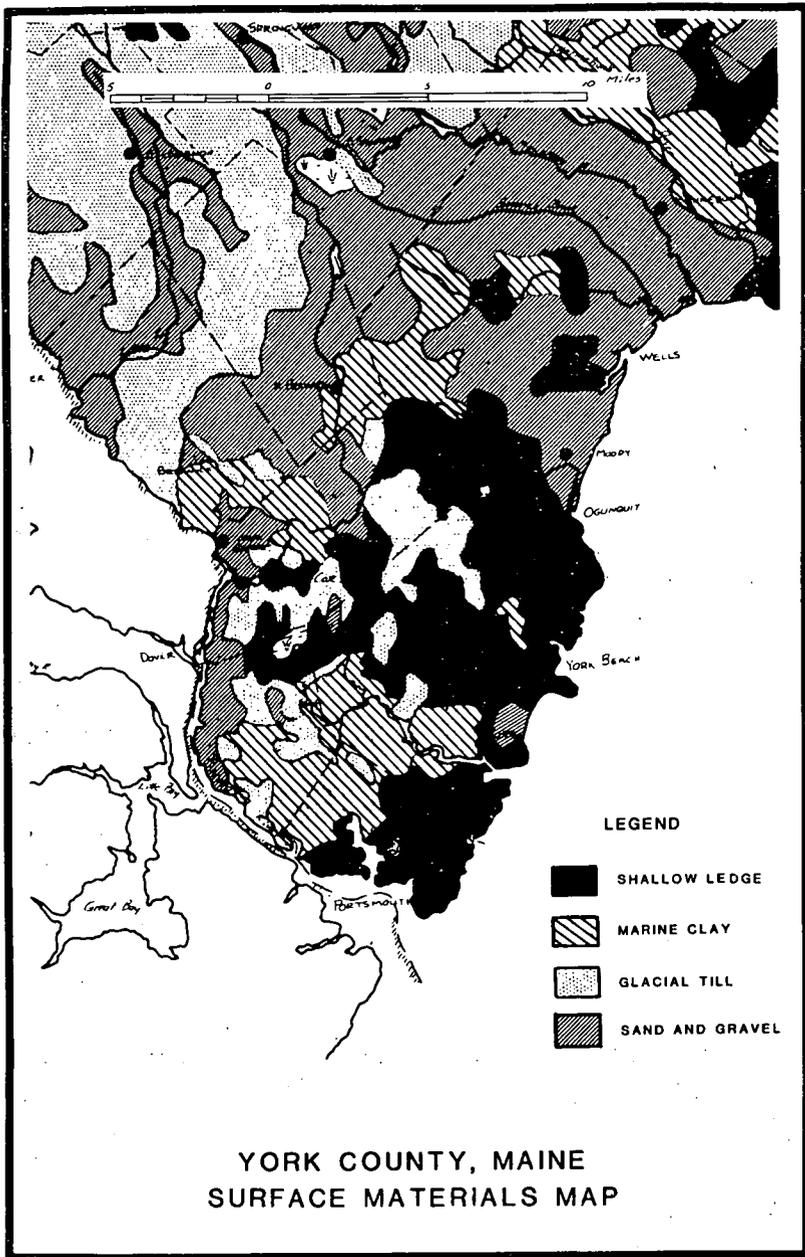
The bedrock geology of the Kittery area is a varied and complex pattern of earlier formations of sedimentary and igneous rock. The sedimentary rock has been altered through intense heat and pressure to form metamorphic rock such as slates, quartzites, schists and gneisses. Large bodies of igneous rock have pushed their way through or overlain the metamorphic rock. Uplifting the earth's crust and erosion have further altered the various combinations of rock structures.

In addition to the processes of crust shifting, uplifting, and weathering, the bedrock geology of the area has been modified through extensive continental glaciation. Glaciation tends to smooth over bedrock protrusions and peaks, leaving lower hills and ridges. The bedrock surface in the coastal area today is relatively flat, rising gradually to the foothills of the White Mountains and dissected by numerous streams and rivers that have, for example, carved gorges 20 to 100 feet deep in the granite hills of the Mount Agamenticus-Ogunquit area. What remains of the mountain range in the southern and western portions of the area are scattered and isolated, high, smooth, weathered rock hills. See York County, Maine Surface Materials Map on the following page.

The weathering and glaciation processes at work on the bedrock of the area have also been responsible for the deposits of loose surface materials and soils that form the "overburden" on the bedrock. Thick deposits of till (material usually deposited from beneath the glacier) have been left throughout most of the area. Outwash plains of sand and gravel, resulting from the melting of the glacier, were deposited over the till. The stream valleys have also received thick accumulations of the water laid materials. When the coastal lowland area was covered by ocean waters and lakes following glaciation, silt and clay materials were deposited. Later uplifts have intermixed the till, outwash, and silt and clay materials in a complex pattern that has been further complicated by post-glacial erosion and sedimentation.

The thickness of the overburden of loose materials varies from 0 to 200 feet over the region, with 80% of the area having less than 50 feet depth to bedrock. A predominant characteristic of the soil in the area is the presence of the groundwater table near or at the surface.

The physiographic configuration of the general area near the Portsmouth Naval Shipyard is characterized by bedrock prominences surrounded by and dissected by inlets and stream courses of the Piscataqua River. Seavey Island, itself a rock knob, is one of these prominent bedrock outcrops. The bedrock of Seavey Island is almost entirely the Kittery formation, a fine-grained, lime-silicate granofels consisting of (metamorphosed) calcereous sandstone, siltstone, and gray-wacke of Silurian age.



Numerous small faults are to be seen in all rock units of the region. Quantitatively, their abundance appears to be related to the brittleness of the rock containing them. Most involve displacement of a few inches or feet. Only one was deemed by Novotny (1963) to be sufficiently important to show on the geologic map. This is the Portsmouth fault which forms the Rye-Kittery contact for approximately nine miles. There are so few outcrops of the fault zone, and these are poor, that no attempt was made to calculate the fault displacement. It is not known if the fault continues across the Piscataqua River and into Southeastern Maine. See Structure Map of New Hampshire Seacoast Region on the previous page.

10. HYDROLOGY

Groundwater reserves constitute an important natural resource and are especially important to the more populated communities in the area. The majority of the public water supply in the area is taken from lakes and rivers with groundwater providing the remainder of the requirements.

As much as 35% of the total area of York County is underlain by soils which are generally adapted to storage and yield of groundwater, but this figure is based only upon surface data. In some localities, marine clays overlie deeper gravels and may represent excellent future sources. When favorable groundwater soils are measured to adequate depths, it is quite probable that the good groundwater yield areas will shrink to a few percent of the total land areas.

A significant portion of York County's surface runoff from precipitation is drained by coastal basins reaching a short distance inland from the coast.

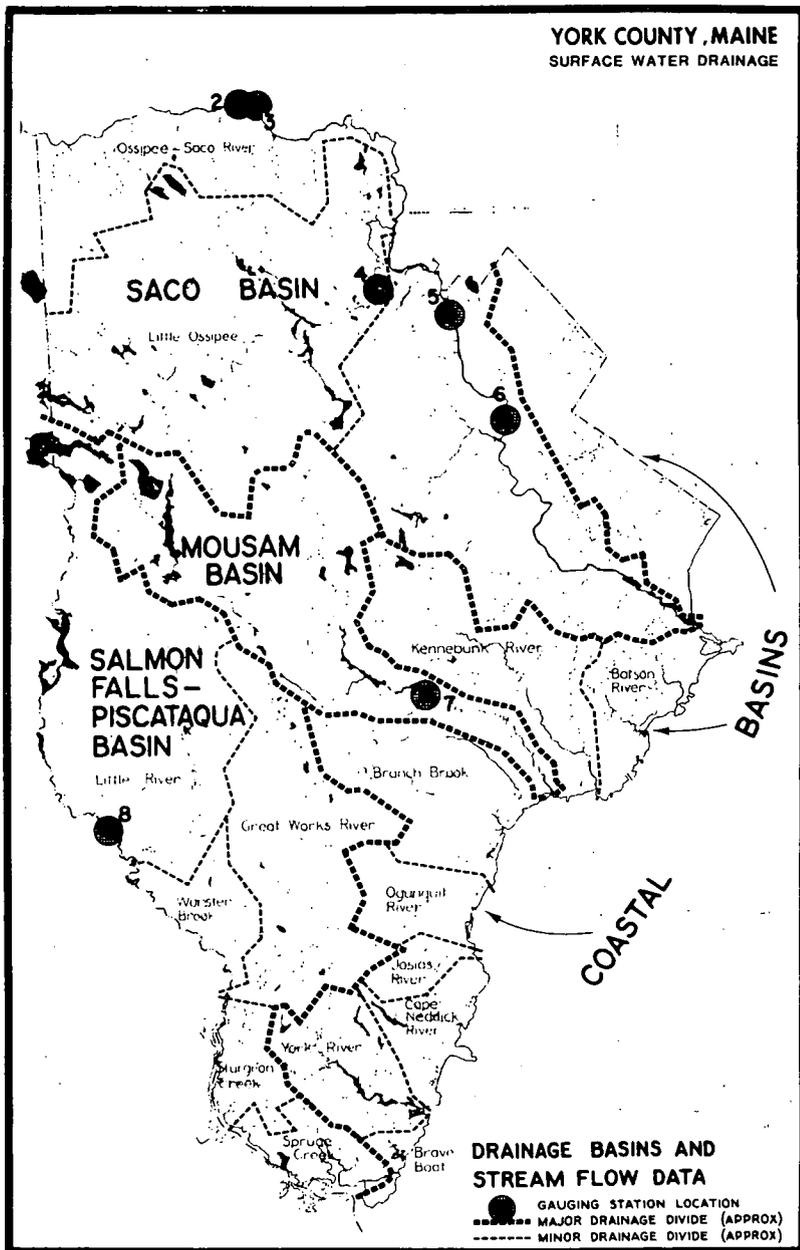
The system of water drainage channels used by run-off waters, varying from very small brooks to larger rivers, generally are in a southeasterly direction towards the Atlantic Ocean, but tributaries naturally flow from all directions into the larger channels.

The remainder of the area is drained by larger river drainage basins that reach further inland. The Saco River basin and the Piscataqua-Salmon Falls River basins are the largest drainage systems, the Mousam and Kennebunk Rivers being considerably smaller. See map next page.

In each of these drainage basins, surface water is held in swamps, ponds and lakes, both natural and man-made, and by dams for storage, water supply, and development of power.

The largest quantities of surface runoff occur during March, April, and May with the lowest occurring in August and September. On the average, runoff is approximately 22 inches of the 44 inches annual precipitation. The combination of spring rains and snow melt not only serve to greatly increase stream flow, but also tend to replenish groundwater supplies.

The Piscataqua River, formed by the confluence of the Cocheco River and Salmon Falls River, flows southeasterly for 13 miles until it enters the ocean at Portsmouth Harbor. The entire 13 miles of the river is tidal.



The river is one of the fastest flowing tidal waterways of any commercial port in northeastern United States. Due to abrupt channel changes and the strengths of flood and ebb currents, hazardous cross-currents and eddies are found in the main channel passing north and east of Pierce and New Castle Island. The average current velocity at full strength in the main harbor varies from about 2.6 to 4.0 knots, whereas in the back channels, the velocity varies from less than 1 to 2 knots.

The tide at Portsmouth is semidiurnal. The average tidal range from Portsmouth Harbor is 8.4 feet. The average mean spring range is 9.7 feet and the average mean tide level is 4.2 feet.

New Hampshire and Maine have an agreement to maintain acceptable water quality in the Piscataqua River and both states regulate their effluent discharges into the river. The river is designated by the State of New Hampshire as a Class B segment and by the State of Maine as Class SB-1. New Hampshire Class B waters are acceptable for bathing, other recreational purposes, fish habitat and public water supply after adequate treatment. Maine Class SB-1 waters are suitable for all clean water usages including water contact recreation, fishing, shellfish harvesting and propagation, and fish and wildlife habitat.

11. SOILS

The general soils map, Plate 4-G, shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each association is a unique natural landscape. Typically, an association consists of one or more major soils and some minor soils. It is named for the major soil type. The soils making up one association can occur in other associations but in a different pattern.

The general soils map can be used to compare the suitability of large areas for general land uses. The characteristics of each association determine what general uses the land will support. Because of its small scale, the map is not suitable for planning the management of agricultural operations or for selecting a site for a road, building or other structure. The soils in any one association differ from place to place in slope, depth, drainage, and other characteristics.

More detailed maps at a larger scale along with descriptions of specific soils within the map area are available in the Soil Survey of York County, Maine produced by the National Cooperative Soil Survey and issued in June 1982.

12. VEGETATION AND WILDLIFE

The majority of the land in the Portsmouth region is forest covered. Slightly more than half of the forested areas are hardwoods, principally of the maple, beech, and birch or aspen and birch growths. The remainder is softwood, with red and white pine as the major growth. Other common tree species include hemlock, oak, pitch pine, spruce, and fir. The forests provide a major contribution to the environment by supplying cover for water sources, wildlife, and plant life.

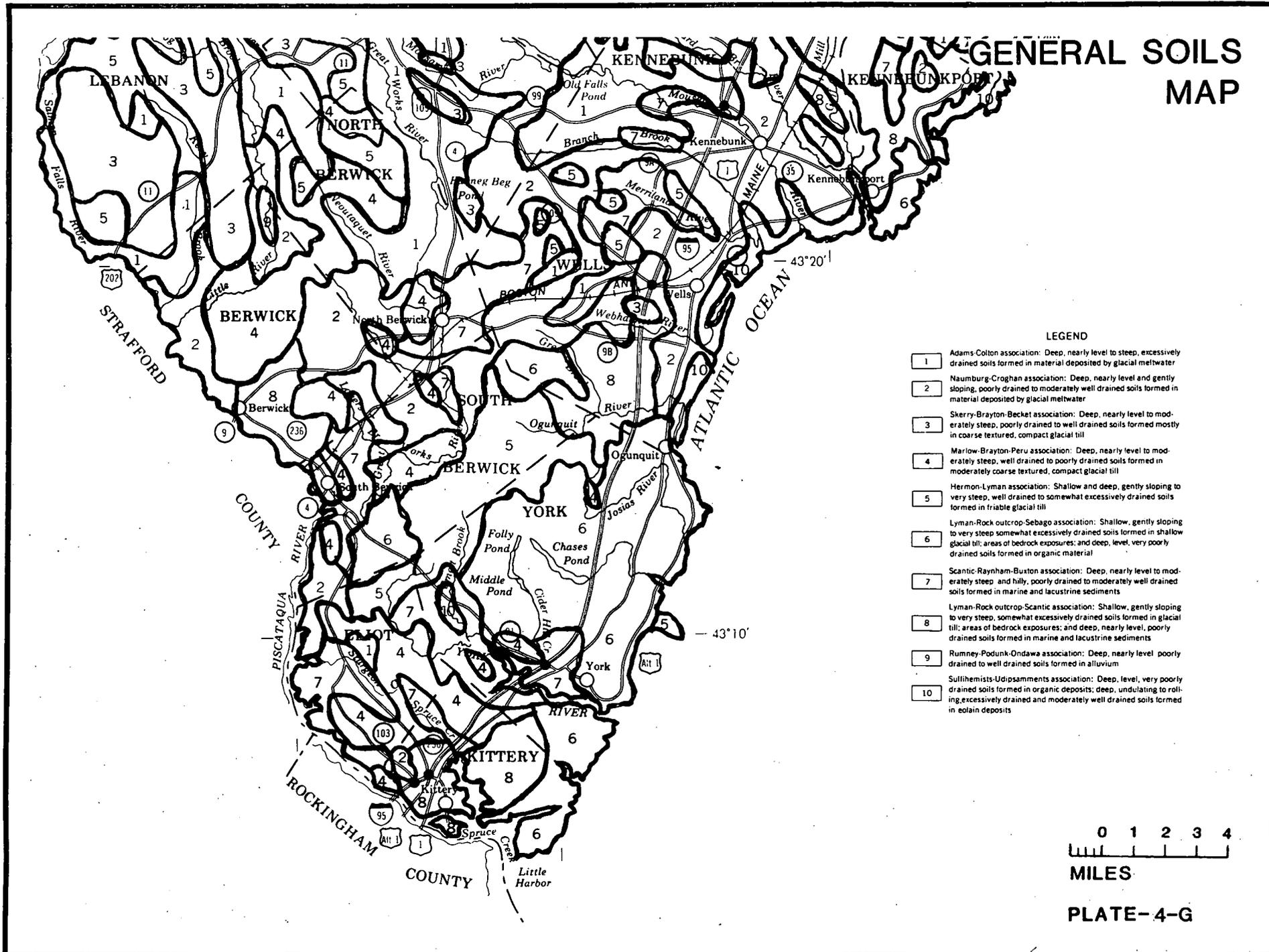
Coastal saltmarsh vegetation can be observed in several areas along the ocean shoreline. These areas are dominated by the marsh grasses, *Spartina alterniflora* and *S. patens*.

The tidal marshes are important because they provide essential spawning and nursery grounds for many species of fish, stopping and feeding places for migratory waterfowl, and are important components of the food chain for fish and shellfish.

Terrestrial wildlife in the area includes species common to northern forested areas, e.g., white-tailed deer, fox, and raccoon. Their abundance and distribution are controlled by the amount of development in the area.

Many coastal islands in the area serve as stopovers for the Fall and Spring migrations of many species of birds.

GENERAL SOILS MAP



LEGEND

- 1 Adams Colton association: Deep, nearly level to steep, excessively drained soils formed in material deposited by glacial meltwater
- 2 Naumburg-Croghan association: Deep, nearly level and gently sloping, poorly drained to moderately well drained soils formed in material deposited by glacial meltwater
- 3 Skerry-Brayton-Becket association: Deep, nearly level to moderately steep, poorly drained to well drained soils formed mostly in coarse textured, compact glacial till
- 4 Marlow-Brayton-Peru association: Deep, nearly level to moderately steep, well drained to poorly drained soils formed in moderately coarse textured, compact glacial till
- 5 Hermon-Lyman association: Shallow and deep, gently sloping to very steep, well drained to somewhat excessively drained soils formed in friable glacial till
- 6 Lyman-Rock outcrop-Sebago association: Shallow, gently sloping to very steep somewhat excessively drained soils formed in shallow glacial till; areas of bedrock exposures; and deep, level, very poorly drained soils formed in organic material
- 7 Scantic-Raynham-Buxton association: Deep, nearly level to moderately steep, and hilly, poorly drained to moderately well drained soils formed in marine and lacustrine sediments
- 8 Lyman-Rock outcrop-Scantic association: Shallow, gently sloping to very steep, somewhat excessively drained soils formed in glacial till; areas of bedrock exposures; and deep, nearly level, poorly drained soils formed in marine and lacustrine sediments
- 9 Rumney-Podunk-Ondawa association: Deep, nearly level poorly drained to well drained soils formed in alluvium
- 10 Sullihemists-Udippsamments association: Deep, level, very poorly drained soils formed in organic deposits; deep, undulating to rolling, excessively drained and moderately well drained soils formed in eolian deposits

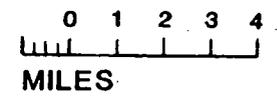


PLATE-4-G

The Piscataqua River and Portsmouth Harbor area provide habitats for various species of reptiles, amphibians, birds, and mammals.

The Great Bay is a major wintering area for large numbers of waterfowl. It is reported that about three-quarters of all waterfowl wintering in the State of New Hampshire do so in this estuary. Although the heaviest populations occur in the winter, this area is used by some avian species during all parts of the year. The most numerous species are the Canada goose (*Branta canadensis*), black duck (*Anas rubripes*), greater scaup (*Aythya marila*) and lesser scaup (*Aythya affinis*).

The most common marine mammal most likely to appear within Portsmouth Harbor is the harbor porpoise (*Phoca vitulina*). Other species likely to be found outside the harbor but close to shore include the pilot whale (*Globicephala melaena*), finback whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaengliae*) and white-side dolphin (*Lagenorhynchus acutus*). Thirty-five species of finfish inhabit the river and Great Bay.

There are several animals and one plant considered an endangered or threatened species in the State of Maine. The animals are the short-nose Sturgeon, 3 types of Turtles, bald Eagle, American and Arctic Falcons, eastern Cougar, and 6 types of Whales. The only plant is the Fur-bishes Lousewort.

13. CLIMATE

The overall climate in the Portsmouth region is characterized as variable. Weather conditions can change dramatically over short intervals. There are alternating frontal systems on a day-to-day basis, widely ranging diurnal and annual temperatures, and overall differences between the same seasons in different years.

Although this region is situated in the path of the prevailing westerly winds, the coastal area experiences a variety of air inversions over the course of a year. These include: cold dry arctic air from the north, warm land air from the Gulf States, and cool, damp air from the Atlantic Ocean. It is the combinations of, or switches between these conditions that generally cause the area's characteristic weather.

Weather conditions, especially temperature, in the Portsmouth general area are moderated by its maritime setting. The average daily temperature ranges from 80° F in July to 13° F in January and February. Temperatures can fluctuate outside this range, but they are not usually persistent.

Precipitation is fairly evenly distributed over the year, with 2.7 to 4.6 inches falling per month for a 42.6-inch annual total. On the average there are about 130 days each year having more than a trace of precipitation. Most summer precipitation results from showers and, infrequently, thunderstorms. Winter precipitation is generally associated with stormy conditions caused by air masses moving up along the coast.

The cool Atlantic waters can produce extensive advection fog when warmer moist air is carried over the cool water. With any persistent eastern component in the wind direction, the fog that often lies just offshore during the summer can reach the coast line. This situation is increased during the summer by local sea breezes. All months of the year have a fairly consistent occurrence of fog. Localized and continuous fog is observed at Pease Air Force Base an average of about 15% of the time and is dense enough to restrict visibility to 1.2 miles (2 km) or less, about 3.5% of the time.

The predominant wind direction for the Portsmouth Harbor area is a combination of the western, southwestern, and southern sectors for a combined total of 51.5% of the time. Differences in wind characteristics occur on a seasonal basis with west-northwest winds dominating in the winter, and southwest-southeast winds increasing in frequency during spring and summer.

The wind speed averages 8.8 miles per hour in the Portsmouth Harbor area. Speeds greater than 40 miles per hour, however, can occur any time of the year. During the winter, increased wind speeds are normally caused by the northeast winds moving down the coast, while during the summer high winds are more often associated with thunderstorms or squall lines moving through the area.

B. ACTIVITY DESCRIPTION

1. HISTORY

a. SHIPYARD DEVELOPMENT

In April 1798, Congress established a Navy Department separate from the War Department. Plans were made for the establishment of a Navy Yard in the Portsmouth area. After a survey of possible sites by Chief Naval Constructor Humphrie, a 58-acre island in the Piscataqua River adjacent to the Kittery shore, was bought on 12 June 1800 from William Dennett for the sum of \$5,500.

Dennett's Island, adjacent to Langdon's, was the site of the first Navy Yard. Although a small garrison was provided in 1806, little activity took place until stimulated by the War of 1812. In October of that year Captain Isaac Hull, fresh from his dramatic victory as commander of the "Constitution" over the British frigate "Serapis", became the first commandant. The 74-gun ship of the line "Washington" was launched in July 1815 and served as flagship of the Mediterranean squadron until 1818. Subsequently about 43 surface vessels were built for the Navy at the Portsmouth Yard, the last being in 1912. The first steam vessel was the side wheel frigate "Saranac", 1,238 tons, launched in November 1848.

In April 1861 the Yard was placed on a war footing and the keels of two 9-gun screw propulsion steam sloops were laid. One of these, the "Kearsarge" achieved lasting fame when she

sank the "Alabama", commanded by Captain Raphael Semmes, the notorious Confederate raider, off Cherbourg in 1864. In 1863 and 1864 two 4-gun ironclads were constructed.

The Navy Yard achieved its present size in 1866 with the purchase of Seavey Island, about three times the size of Dennett's Island. The islands were separated by the narrow Jenkins Gut. Part of Jenkins Gut was converted into the 750 foot Drydock 2 which still exists and the rest was filled in to make one large island now called Seavey Island in its entirety.

The war with Spain brought a brief boom in ship overhaul and repair work. At this time, funds were appropriated for the construction of new facilities and buildings including the Dispensary, Power Plant, Building 86, Dry Dock 2, Foundry, and the Naval Prison.

The facilities in Portsmouth were not large enough for the construction of the huge steel battleships and cruisers required by the Navy after 1890.

In 1905 an event of international significance took place at the Navy Yard with the signing of the Russo-Japanese Peace Treaty.

When, in 1914, the Navy Department was in need of a Government yard to produce the newly-important submarine, the Portsmouth Navy Yard, with its tradition of excellent ship work, was selected. The first Navy constructed submarine, the L-8, was launched here in 1917, and completed the following year. Upon the entry of this country into World War I, funds were authorized for a submarine building program at Portsmouth, and

eight undersea craft were under construction during the war years. In addition, a considerable number of surface ships were overhauled or repaired, and a large volume of electrical fittings and fixtures was manufactured.

From 1917 to 1941, 33 submarines were completed. Many more were repaired and overhauled, including one Free French and three British submarines. During this period, the Design Division acquired the necessary skills to become one of the leaders in submarine design.

Seventy-five submarines were built during 1942-45. Also two submarines, the SS298 and SS299, which had been started at Cramp Shipbuilding Company in Philadelphia, Pennsylvania, were towed to Portsmouth for completion. Thirty-two submarines were completed during 1944; and on one day, 27 January 1944, four undersea ships were launched. Building time per submarine was reduced from 469 calendar days in 1941 to 173 calendar days in 1944. In addition to new construction, 40 submarines and 34 surface craft were overhauled or repaired.

With the end of World War II, Portsmouth entered a new era of submarine design and construction, reaching out into new horizons in hydrodynamics, sonics, and nucleonics.

Portsmouth was the first government shipyard to build a nuclear powered submarine. The nuclear sub, SWORDFISH, was commissioned in September 1958. In 1959 Portsmouth commissioned the SEA DRAGON which was the first submarine to transit the Northwest Passage under the polar ice cap.

Portsmouth has been instrumental in many of the principal advances of submarine design. The ALBACORE, one of the world's fastest submarines and forerunner of today's high-speed nuclear fleet, was designed and built at Portsmouth. The hydrodynamic shape pioneered by the ALBACORE has been used since that time.

Due to facility deficiencies and a limited workload, a decision was made by the Secretary of Defense in 1964 to deactivate the Portsmouth Naval Shipyard within a ten-year period. During that period, however, the demand for nuclear submarine overhaul and repair services greatly increased the workload for the Portsmouth yard, one of only three Naval Shipyards on the Atlantic seaboard qualified to perform that work.

Submarine construction at the yard terminated in 1969 with the launching on 11 November of the SSN 660, SANDLANCE, a nuclear propulsion attack submarine of the SSN 637 or Sturgeon Class. Between 1917 and 1969, 134 submarines slid off the ways at Portsmouth. Since 1969, the emphasis has been in support of a continuing program of attack and fleet ballistic missile submarine overhauls and conversions.

In 1971 the closure order was rescinded.

b. SHIPYARD HISTORIC DISTRICT

On 17 November 1977, the National Park Service, Department of the Interior, entered the Portsmouth Naval Shipyard Historic District on the National Register of Historic Places. The district includes 54 acres of land, and 62 buildings and structures. The Shipyard qualified for the Historic Status because of its shipbuilding and repair function throughout U.S. History, its unique industrial site, and its historical and architecturally significant buildings. From the early colonial period to the present day, this shipbuilding and repair site served first, the British government, later, the revolutionary colonies and, finally, the United States through the eras of sail, steam, and atomic power. The Shipyard represents one of the country's earliest complete industrial operations. It was the first Navy Yard established by the United States Government, and the first government yard to build a nuclear powered submarine, the SWORDFISH.

Special mention must be noted of a significant international event that took place in 1905. The signing of the Russo-Japanese Peace Treaty took place in Administration Building 86, located in the district.

See Appendix C for the boundary of the historic district, list of buildings and architectural description of significant buildings.

2. EXISTING FACILITIES

According to the Detailed Inventory of Naval Shore Facilities (NAVFAC P-164) for the Portsmouth Naval Shipyard dated 30 September 1983, there are 242 permanent and 118 semi-permanent buildings that contain a total of 3,798,294 SF of floor area. Existing facilities are shown on Existing Conditions Map in pocket at back of binder. Total floor area of buildings classified by functional category codes are shown on TABLE 2.

a. OPERATIONAL AND TRAINING FACILITIES

The majority of the operational and training facilities are adequate. Building 111 (Code 580 Oil Spill Equipment Storage); Building 121 (unassigned), and portions of Building 86 are considered substandard. Building 93, the former brig is considered inadequate. A current A&E study is determining the economic feasibility of renovating a portion of the structure for training and administration functions.

The Portsmouth Naval Shipyard has 4,124 feet of berthing wharf and 2,100 feet of repair wharfs. They are all in good condition although some utility upgrading is required at berths 11, 12, and 13.

b. MAINTENANCE FACILITIES

The Shipyard has three permanent drydocks constructed during or prior to World War II. Drydocks 2 and 3 are adequate and in good condition. Drydock I is inadequate to serve the new 688 class of submarine. The Drydock requires lenthening, deepening and complete utility upgrade.

The largest category of facilities at the Shipyard is shop maintenance, located in 57 buildings, containing approximately one and a half million square feet of space. Of the 57 structures in this category code, 12 were constructed prior to 1900, 31 were constructed from 1901 to 1945, and 14 were constructed after 1945. These figures show that 75% of the buildings were constructed prior to or during World War II. Only 54% of the total space in the facilities is adequate, the rest is partially or totally inadequate or substandard.

Most of these buildings were built as submarine maintenance shops but are no longer compatible with modern technology and methods of submarine repair. New modern management, industrial techniques and submarine repair functions have to adapt to aged inefficient buildings. The current Shipyard Modernization Study will assess the current resources of the Shipyard and examine the requirements of submarine repair. The study will then recommend projects that will provide for more effective and efficient submarine repair.

TABLE 4-2

EXISTING FACILITIES

<u>CAT. CODE</u>	<u>DESCRIPTION</u>	<u>NO. OF BLDGS.</u>	<u>TOTAL FLOOR AREA (SF)</u>
100	OPERATIONS & TRAINING FAC.		
131	Communications Bldg.	1	5,588
141	Operations Bldg.	1	1,700
143	Ship Operations Bldgs.	4	12,362
159	Waterfront Operations Bldgs.	4	24,445
171	Training Bldgs.	5	40,300
200	MAINTENANCE FACILITIES		
213	Maintenance - Ships	47	1,473,761
214	Maintenance - Auto/Veh	3	53,775
219	Maintenance	9	68,720
229	Production Maint. Ops.	1	10,865
400	SUPPLY FACILITIES		
431	Cold Storage	1	4,054
441	Covered Storage	24	576,517
500	MEDICAL FACILITIES		
540	Dental Clinic	1	1,488
550	Medical Hospital*	1	44,000
600			
610	ADMINISTRATION	17	470,688
700	HOUSING & COMMUNITY SUPPORT FACILITIES		
711	Family Housing	153	445,986 (277 FA)
721	UEPH	7	297,349
721	Dining Facility	1	10,330
724	UOPH	2	18,552
730	Community Personnel Support	15	40,510
740	Morale/Recreation	19	159,519
800	UTILITIES & GROUND IMPROVEMENTS		
811	Electrical Production	1	28,800
812	Electrical Transmission	5	12,464
813	Electrical Substation	3	7,249
821	Heat - Source	2	60,000
822	Heat - Transmission	1	1,160
831	Sewage Treatment	2	15,900
833	Refuse & Garbage	3	2,084
842	Water, Potable Distribution	1	1,918

* NAVMEDCOM Facility

c. SUPPLY FACILITIES

There is approximately 544,000 SF of floor area in 24 buildings in this category. A minor portion, 6% of this, is considered inadequate or substandard. The majority of the buildings were constructed before or during WW II and, while considered adequate, are not compatible with new industrial technology of supply management. The Shipyard has three adequate fuel storage tanks with a capacity of 135,000 bbl. of fuel, and one waste oil storage tank with a capacity of 2,000 bbl. The Shipyard also has approximately 2,000 SF of magazine storage for small arms and pyrotechnics, and 27,000 SY of open storage area.

d. MEDICAL FACILITIES

The Dental Clinic is located on the second floor of Building 73 and occupies 3,000 SF. Building 73 is scheduled for demolition and the Dental Clinic will eventually colocate with the new Medical Clinic. The existing Medical Clinic is located in Building H-1 and occupies approximately 44,000 SF. Building H-1 was built in 1913 and is considered adequate. However, the old structure is not compatible with new modern medical procedures. The structure would require extensive and costly renovation to improve the operations, but this would still not fully satisfy the clinic's needs.

e. ADMINISTRATIVE FACILITIES

The administration functions are located in 27 buildings and amount to 471,000 SF. Nine of these structures are considered partially or

totally substandard and inadequate and account for approximately 20% of the total space. Ten of the structures are historic in nature and are located in the historic district.

f. HOUSING AND COMMUNITY SUPPORT FACILITIES

UEPH. UEPH facilities at Portsmouth consist of five permanent structures, Buildings 156, 191, H-21, H-23, and H-26. These five UEPH buildings provide 440 enlisted berthing spaces of which 370 spaces are considered adequate.

UOPH. There is one UOPH at the Base. Building 315 was built in 1982 and it provides 26 spaces.

Portsmouth Naval Shipyard maintains a full complement of Personnel Support Facilities including a fire station, police station, child day care center, chapel, religious education center, and a post office.

The Base Fire Station, Building 29, was constructed in 1865 and is historically significant. This building is of permanent construction and considered adequate. The existing station is central on Base and located close to the waterfront area, supply, and the community support areas.

The Police Station is located in Building 13 and is considered substandard. The existing structure will require renovation to make the facility adequate.

The Child Day Care Center at Portsmouth is located in Building 185 and houses Code 811, the Employee Assistance Program Counselor. The structure, built in 1943, is considered adequate and provides 2,200 SF of space.

The Chapel, located in Building 181, is of semi-permanent construction and is considered adequate. The Religious Education Center is located in Building 241 and is considered adequate.

The Post Office is located in Building 15. This building was constructed in 1855 and is of permanent construction. The building is of historic significance and is in the historic district.

Other Community Support facilities in the Shipyard include an Exchange, Credit Union, two Civilian Restaurants, Service Station, Thrift Shop, Hobby Shops, Bowling Alley, Gymnasium, Theater, Officer and Enlisted Service Clubs, Rehabilitation Center, Playing Fields and Courts, a running track, a park/picnic area, and a Marina, all housed in 31 buildings and 8 outdoor fields and courts. These facilities are summarized on Table 3.

The Shipyard supports three service clubs that include an Officers' Club, a CPO Club and an Enlisted Service Club. The Officers' Club is located in Building 22 and occupies 12,324 SF of space. Building 22, constructed in 1857, is located in the historic district and is considered adequate.

The CPO Club is housed in Building 248 and occupies 4,317 SF. It is of semi-permanent construction and considered inadequate.

The EM Club is located in Building 156 and is considered adequate.

One Gymnasium is located at the Shipyard in Building 173. The permanent structure provides 10,691 SF of space and is considered adequate.

The Bowling Center is located in Building 308. The eight-lane Center was constructed in 1980 and is adequate.

The Hobby Shops are located in Building H-10. The structure is semi-permanent construction and is considered adequate. The Auto Hobby Shop is on the lower level of the structure in 1,147 SF. The Arts and Crafts Hobby Shop occupies 4,671 SF of the second level.

The Theater is located in Building 22, a historic structure. The 600-seat theater occupies 8,811 SF of adequate space.

The Outdoor Recreation Facilities are located on the eastern end of the Shipyard adjacent to other community support facilities. These facilities include 3 playing fields, 5 tennis courts, a running track, and a park/picnic area.

TABLE 4-3

EXISTING FACILITIES

<u>FACILITY</u>	<u>No. OF BLDGS.</u>	<u>SQUARE FEET</u>	<u>BLDG. NO.</u>
Exchange	2	6,096	31, H-23
Credit Union	1	1,750	14
Temp. Lodging	3	2,296	179, H-23, 315
Civilian Restaurant	2	30,200	18, 174
EXCH. Service Station	1	1,171	31
Thrift Shop	1	1,200	161
Hobby Shop	1	4,671	H-10
Special Service Center	6	8,166	1Y44, 173, H-2, H-10, H-25, H-30
Auto Hobby Shop	1	1,147	H-10
Bowling Alley	1	8,534	308
Gym	1	18,413	173
Theater	1	8,811	22
Officers Club	1	12,324	22
EM Service Club	1	6,000	156
CPO Club	1	4,317	248
Class VI Store	1	1,938	22
Child Care Center	1	2,450	185
Rehabilitation Center	1	1,103	H-2
Library	1	2,670	22
Boat House	2	3,085	193, 202
Indoor Courts	2	11,181	60, 301
Playing Courts	5		
Playing Fields	3		
Recreational Ground	1		
Marina	1		

3. CIRCULATION

Due to the geographic location of the Shipyard, the vehicular circulation system is connected on the north side of the island to the mainland by two small bridges. All traffic enters the Shipyard through the gates located just north of the bridges.

Gate 1, the most highly traveled entrance, is on Issac Hull Street north of bridge 1. The primary access routes to gate 1 are Walker Avenue and Stoddard Street in Kittery. Gate 2, also a heavily traveled entrance, is located on Wyman Avenue north of bridge 2. Access to the gate is from Whipple Road. All the access roads from Kittery pass through a predominantly residential area of the municipality.

Plate 4-H shows the Shipyard's primary road network. Its irregular pattern reflects that of the facility development that has occurred since the origination of the Shipyard in 1800. Due to the industrial nature of the Shipyard, much of the land between the buildings has been paved for parking and outdoor storage areas. The continuous paving creates a condition in many locations where the road is indistinguishable from the adjoining paved areas. This is more common on the secondary roads that feed into the primary network.

A total number of 8,000 vehicles enter the Shipyard on an average day during a 24-hour period. This includes all employees, enlisted personnel living at the Shipyard, off Base dependents using medical services, etc., and all

deliveries. The Shipyard operates on 3 shifts. The personnel force on each shift is 7,464 on the first, 1,646 on the second, and 840 on the third.

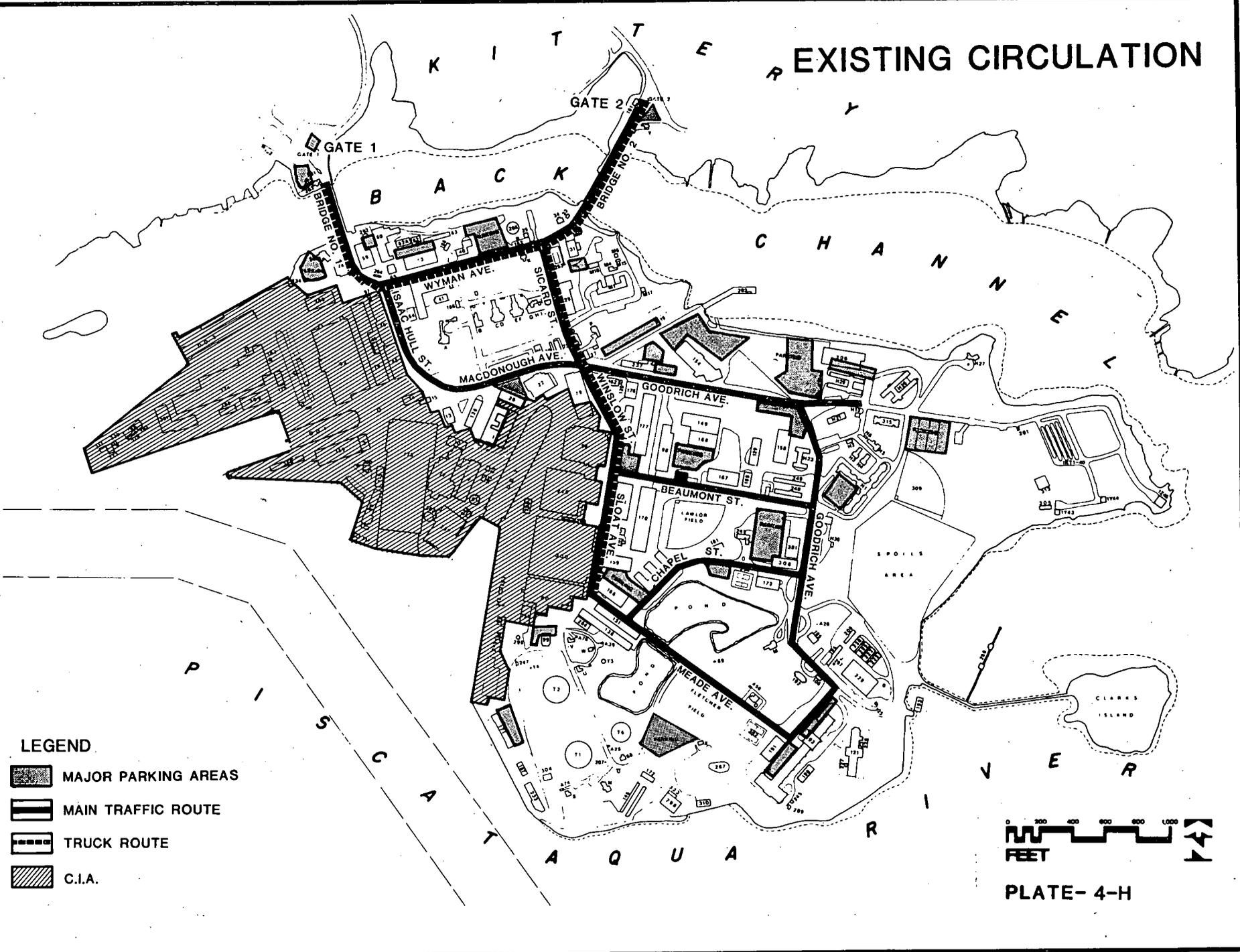
Severe traffic congestion occurs on the roadways during both the morning and evening peak-travel periods of the first shift. The heaviest volume lasts for approximately one hour from 4 PM to 5 PM after the end of the first shift. Travel time delays of 15 to 30 minutes are experienced at this time.

The restriction of traffic flow begins at the intersections outside the gates where the Shipyard roads meet the roads of Kittery. The Shipyard roads carry 2 lanes of traffic out while the Town of Kittery's roads only carry one lane of traffic in each direction. These intersections are located at Walker Avenue/Wentworth Street and Wyman Avenue/Whipple Road. Traffic backs up over both bridges onto the island and creates a gridlock situation at the island's major intersections.

A study conducted by the Military Traffic Management Command recommended the following to relieve congestion:

1. Stagger the work hours of shipyard employees.
2. Encourage Kittery officials to designate three lane traffic on Walker Avenue between Wentworth Street and the U.S. 1 Bypass; prohibit on-street parking in the same area; and possibly widen Whipple Road to thru lanes between Wyman Avenue and Shapleigh Road and modify the intersection of Whipple Road, Shapleigh Road and Woodlawn Avenue if staggering work hours does not work.

EXISTING CIRCULATION



LEGEND

-  MAJOR PARKING AREAS
-  MAIN TRAFFIC ROUTE
-  TRUCK ROUTE
-  C.I.A.



PLATE- 4-H

3. Promote carpools and buspools among shipyard workers.

Pedestrian traffic along the Shipyard roads is also dense at this time. The Shipyard uses security officers at the busiest intersections to direct and alternate the flow of vehicles and pedestrians. These intersections are Issac Hull Street and Wyman Avenue, Wyman and Sicard Street, and McDonough-Goodrich Avenue and Sicard-Winslow Streets. The peak-traffic period in the morning, before the first shift begins, flows smoother due to less constriction at the off-Base intersections.

The Shipyard truck route, shown on Plate 4-H, provides a direct route for deliveries destined primarily for the Supply area's Buildings 153 and 170. The route also allows access to the vehicular gates of the controlled industrial area (CIA). Trucks use both bridges and proceed via Wyman Avenue, Sicard Street and Winslow Street. The two vehicular gates used by trucks for access to the CIA are located between Buildings 285 and 76 and Buildings 22 and 79.

Parking facilities within most of the densely developed areas of the Shipyard do not provide enough spaces for all employee vehicles. There are approximately 3,500 parking spaces which include all assigned spaces requiring decals and three more remote open parking lots. Civilian vehicles are not permitted within the CIA. Many employees park in private lots located in the Town of Kittery and walk over the bridges to work. The shortage of parking space sites will probably continue in the future since the limited amount of undeveloped land will be required for the siting of future facilities.

4. EXISTING LAND USE

The Shipyard buildings and structures along with the land areas they occupy were analyzed according to standard Navy planning category codes. This process generated the existing land use map shown on Plate 4-I.

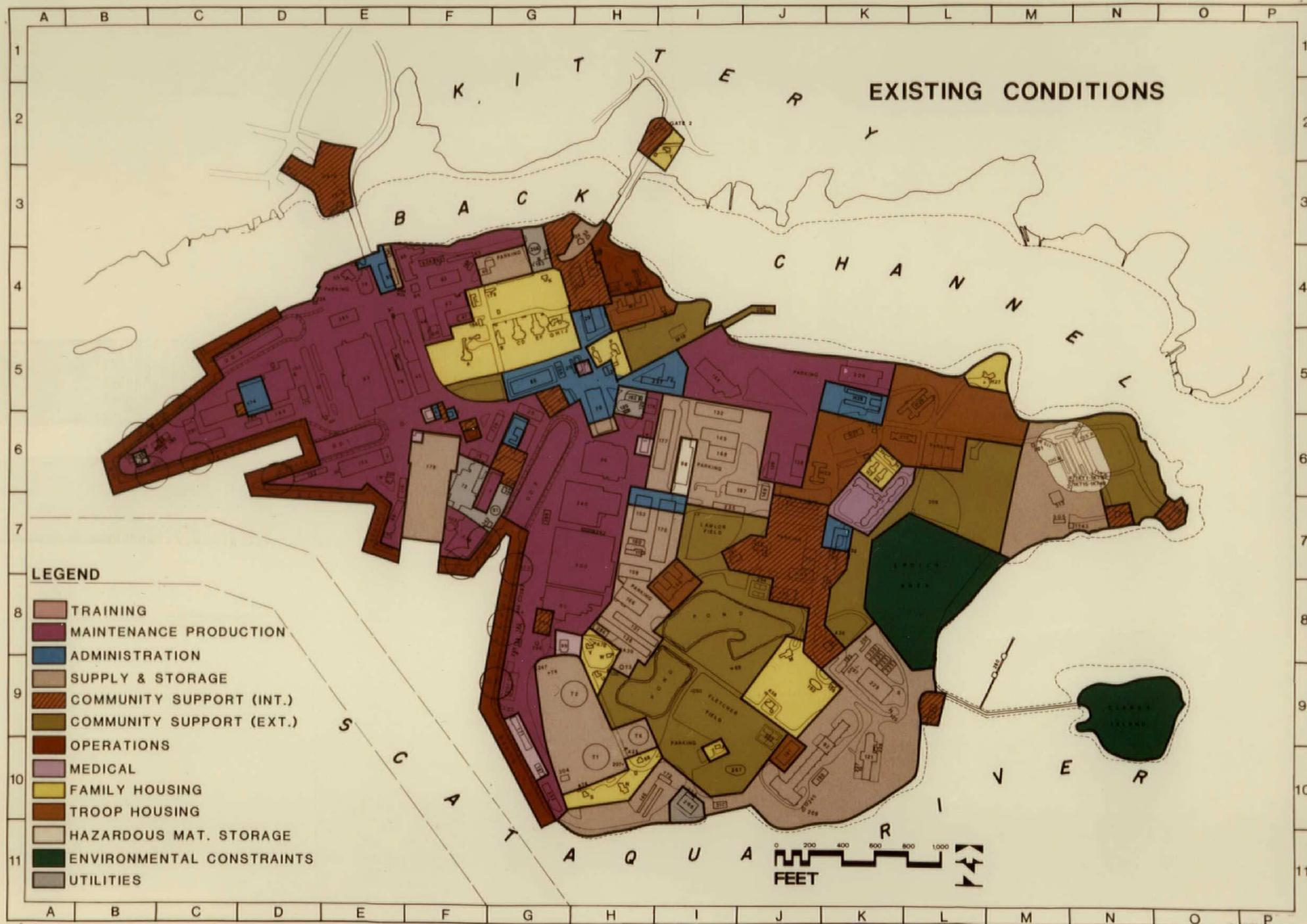
100 Operational and Training Facilities

The main Operations area is located along the waterfront on the western half of the Shipyard. This long narrow band of land includes berthing, fueling, and repair wharves and small craft berths. Other smaller parcels of land throughout the Shipyard used for Operations include the sites of the filling station, communications center, telephone exchange building and the waterfront operations building.

There are three sites utilized for Training. The Naval Reserve Training Center occupies the largest site with two buildings. The Shipyard's employee Development Division and the Radiological Control Training occupy the other sites.

200 Maintenance and Production (M&P) Facilities

The M&P facilities occupy the most land and almost the entire western half of the Shipyard. The majority of the M&P facilities are within the Controlled Industrial Area. The drydocks are the focal point of the M&P facilities since all work is directed toward or in support of the repair of submarines undergoing major overhaul or maintenance work. This largest land use category



includes the facilities for all trades. These shops include tool, sheet metal, welding, machine, electrical, pipefitting, wood working, electronics, paint and blasting, rigging, nuclear repair, auto vehicle and public works functions.

Also included in the M&P land use area are the quality assurance office, abrasive blast facility, foundry, paving grounds equipment shed, and the printing plant.

400 Supply and Storage (S&S) Facilities

The S&S facilities occupy the second largest total land area at the Shipyard. This land area is located in the center of the Shipyard and stretches almost the entire north-south width of the island. This S&S land use area separates the majority of M&P facilities to the west and the Community Support and Troop Housing land use areas to the east.

Included within the S&S land use area are storage facilities for steel; oil, paint and chemicals; lumber; batteries; compressed gas; nuclear hardware; cables; miscellaneous materials and the SOAP functions. Also, part of S&S land use areas are the interior and exterior facilities of the Defense Property Disposal Office, cold storage warehouse and the small arms magazine.

500 Medical Facilities

This category is represented by a small land area on the eastern end of the Shipyard. This is the site of the Medical Clinic which is housed in the former Navy Hospital. Also, there is a small Dental Clinic. The land use for the site of the

building housing the clinic is designated Administrative since the majority of the space in the building is used for Administrative functions.

600 Administrative Facilities (Admin)

Many small Administrative land use areas are located throughout the Shipyard. The Shipyard Headquarters and related Administrative functions are centrally located and easily accessible from both installation entrances. The remaining Administrative land use areas are utilized for functions of various Shipyard offices and departments including nuclear engineering, employee services and relations, PERA, data processing, design engineering, PSD, ROICC, and public works.

700 Housing and Community Facilities

This category includes unaccompanied enlisted and officer quarters, officer and enlisted family housing, and the interior and exterior community support facilities. Unaccompanied enlisted housing occupies 6 sites. Five of them are located on the eastern half of the island. Three of these sites are contiguous and located to the north near the Medical Clinic while the other two are in more remote areas south of the group of three. The sixth site is collocated with the Marine's facilities.

A single unaccompanied officers housing unit is collocated with the group of three unaccompanied enlisted housing units in the vicinity of the Medical Clinic.

Officer family housing is scattered throughout the Shipyard in five general areas. The most

significant site is located in the historic district and includes the housing for the Shipyard Commander and other high ranking officers. Another group of housing is on a site next to the Medical Clinic and the remaining three sites are on the southern end of the island.

The enlisted personnel family housing, Admiralty Village, is located off-Base in the Town of Kittery. This 200 unit multi-family dwelling complex is surrounded by town land designated residential use.

The Community Support facilities are sited in the center of the eastern half of the Shipyard. These interior and exterior facilities occupy a large parcel of land that separates the Supply and Storage facilities to the west and the "spoils area" to the east. This land use area supports the Chapel, religious education building, Red Cross/Navy Relief, gymnasium, bowling alley, auto hobby shop, outdoor playing fields and indoor tennis courts.

Other Community Support functions, located on smaller sites throughout the Shipyard include the fire and police stations, post office, exchange and exchange cafeteria, credit union, package store, library and the theatre.

800 Utilities

There are two major land use areas in this category. One is the site of the electrical power plant/heating plant and the other is the site of the two heating oil storage tanks. Other

smaller utility land use areas throughout the Shipyard include sites for the potable water storage tank, electrical distribution and switching stations, water distribution facilities and propane storage.

5. UTILITIES

a. Utility Systems

This section discusses the utility systems with recommended solutions to problem areas and future needs of the Shipyard.

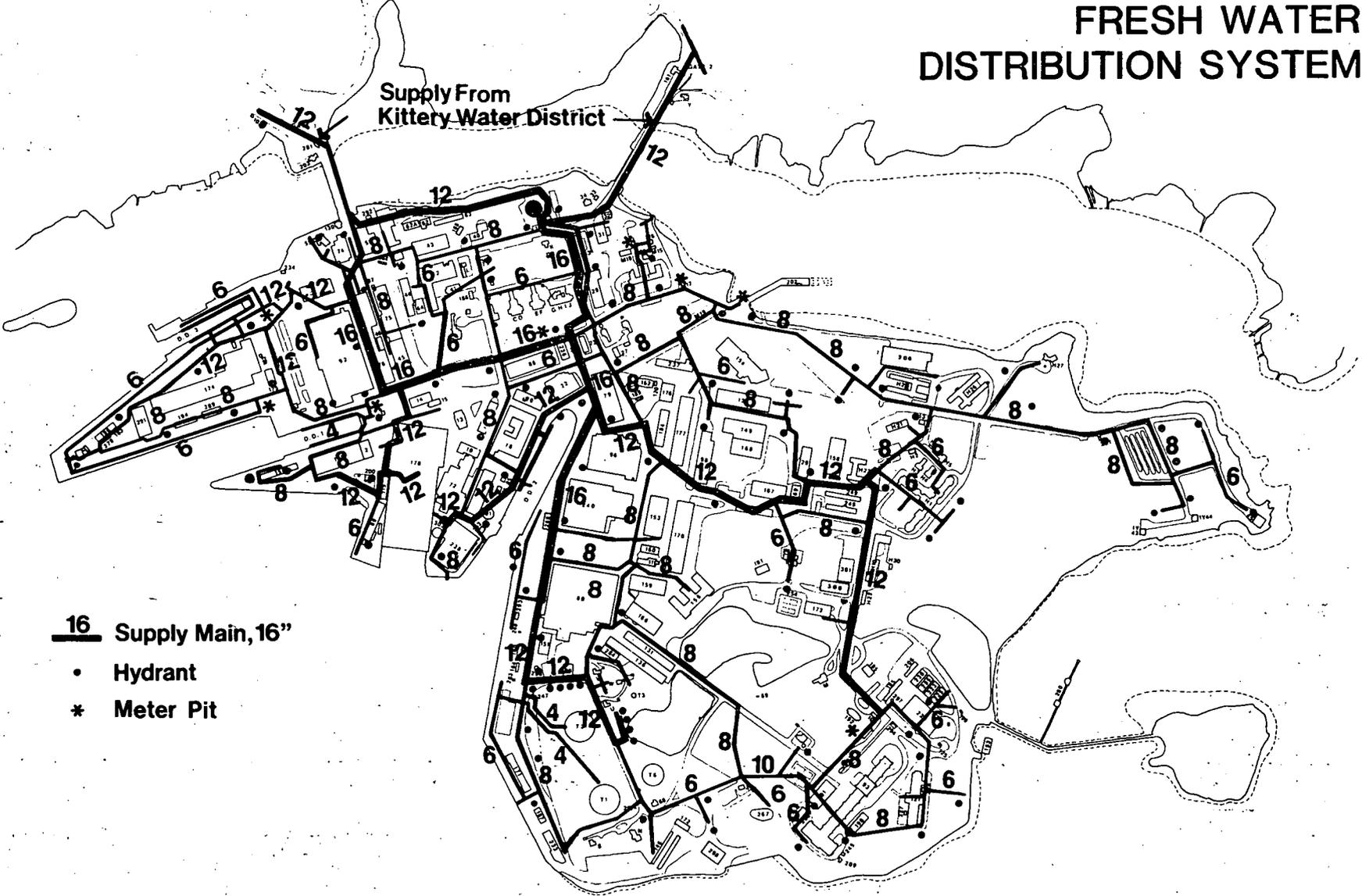
1. Potable Water System

The potable water system is in good condition. Potable water is purchased from the Kittery Water District and is supplied to the Shipyard by two 12" feeders. A million gallon elevated storage tank used for potable water is in good condition. There are two standby pumps with capacities of 1500 GPM, primarily intended for fire protection and to boost the system during low pressure periods experienced by the Kittery Water District. NAVSEA requires fresh water for submarine fire protection. MILCON project P-181 will upgrade utilities at Berths 11 and 13 and provide fresh water fire protection. P-195 provides similar fire protection at Berth 6.

2. Non-Potable Water System

A non-potable water system supplies salt water for cooling and flushing at DD-2 and Berths 11 and 13.

FRESH WATER DISTRIBUTION SYSTEM



- 16** Supply Main, 16"
- Hydrant
- * Meter Pit

More Info: P.W. Drwg No. M.S.-42-65



PLATE-4-J

3. Sewage Collection System

The sewage collection system is in fair condition and its capacity is adequate. The sewage collection system is considered adequate to meet the present and projected requirements of the Shipyard.

The Navy family housing at Admiralty Village in Kittery is utilizing Imhoff Tanks for sewage treatment. The Environmental Protection Agency considers this treatment of sewage substandard. The Town of Kittery and the State of Maine have applied for a Federal EPA grant for connecting all housing units, both Navy and town, into a secondary treatment plant. The project is now in the design phase and awaiting Federal funding.

4. Steam Production and Distribution System

There are three 120,000 lbs/hr boilers in operation and a 150,000 lbs/hr boiler in the main power plant, Building 72. The total rated capacity is 510,000 lbs/hr. Steam production is adequate to meet the present and projected needs of the Shipyard. The "test" steam boiler in Building 277 has a capacity of 60,000 lbs/hr and is primarily used for testing submarines. This boiler is inadequate for the SSN 688 Class submarine. A barge-mounted boiler rated at 90,000 lbs/hr will be used for tests on the SSN 688 Class.

The steam distribution system is in good condition, but its capacity is insufficient. The condensate return system is in poor condition and requires improvement to increase the percentage

of condensate return. The following projects involve the upgrading of specific areas of the steam distribution system. P-181 will improve the major utilities at Berths 11 and 13, and P-195 is a utility project that will upgrade Berth 6 to a repair berth.

5. Hot Water Heating System

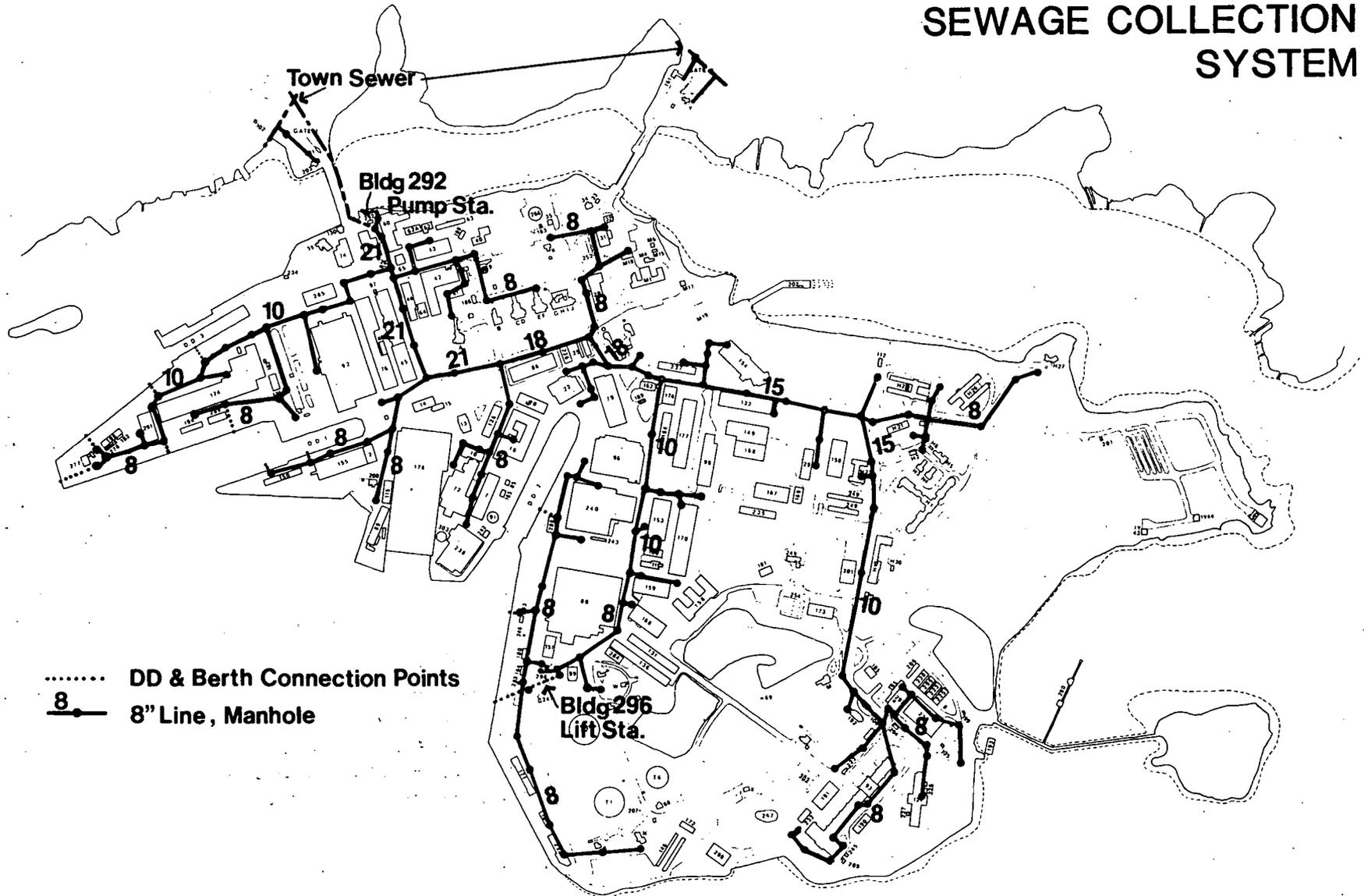
The condition of the hot water heating system in the boiler plant and its distribution system is good in most areas. Capacity of the system is marginal to adequate. There are three steam to water heat exchangers and one 7,000 GPM pump in Building 72. Hot water lines feeding into Building 86 and Building H-1 and portions along the distribution lines are deteriorated. Repair projects have been prepared and funded to replace these lines.

6. Electric Power

Commercial electric power is purchased at 13,200 volts from Central Maine Power. The commercial electric supply, as a single primary service, is considered adequate to meet the activity's present and future demands. The commercial service lines are new and are considered to be in excellent condition.

Electric power is also generated at 13,200 volts by the Portsmouth Naval Shipyard. The government electric power supply is considered reliable and totally adequate to meet the activity's present and future demands as a single primary service. The 30 year old generating facilities are considered to be in good condition.

SEWAGE COLLECTION SYSTEM



..... DD & Berth Connection Points
8" 8" Line, Manhole

More Info: P.W. Drwg No. M.S. - 83-526 & 527



PLATE-4-K

The alternating current generating facilities installed at the central power plant consist of two 40 year old Westinghouse steam turbine-generators having a total design capacity of 8750 KVA (7000 kilowatts at 80% power factor). The power plant also has a three year old Turbodyne steam turbine-generator with a total design capacity of 9375 KVA (7,500 kilowatts at 80% power factor). Considered separately, the Navy's electric power supply has a "firm" generating capacity of 13,750 KVA or 11,000 at 80% P.F.

The combined total net firm capacity of the power supply is 18,125 KVA (14,500 KW @ 80% P.F.) which is determined as follows:

Total rated capacity of Navy's generation:	18,125 KVA
Commercial firm purchased power:	<u>20,000 KVA</u>
Total normal peak capacity	38,125 KVA
Less system largest power source:	<u>20,000 KVA</u>
Total firm capacity:	18,125 KVA

A plot of the base electrical demand and consumption indicates that the share of the Base demand assumed by the purchased and generated sources is approximately equal. The total electrical demand and consumption has gradually increased since August of 1976, at which time electrical usage at the Shipyard was at a low point. The five year peak demand of 14,712 KW was achieved on 3 January 1977.

The plan recommends that the Shipyard purchase voltage surge protection equipment as referenced in NORTHNAVFAC'S Computer Assisted Power System Engineering (CAPSE) report, dated February 1977.

Capacitors are incorporated in all Military Construction modification and building construction projects in order to improve the power factor level in the most cost effective manner.

7. Fire Alarm & Fire Protection System

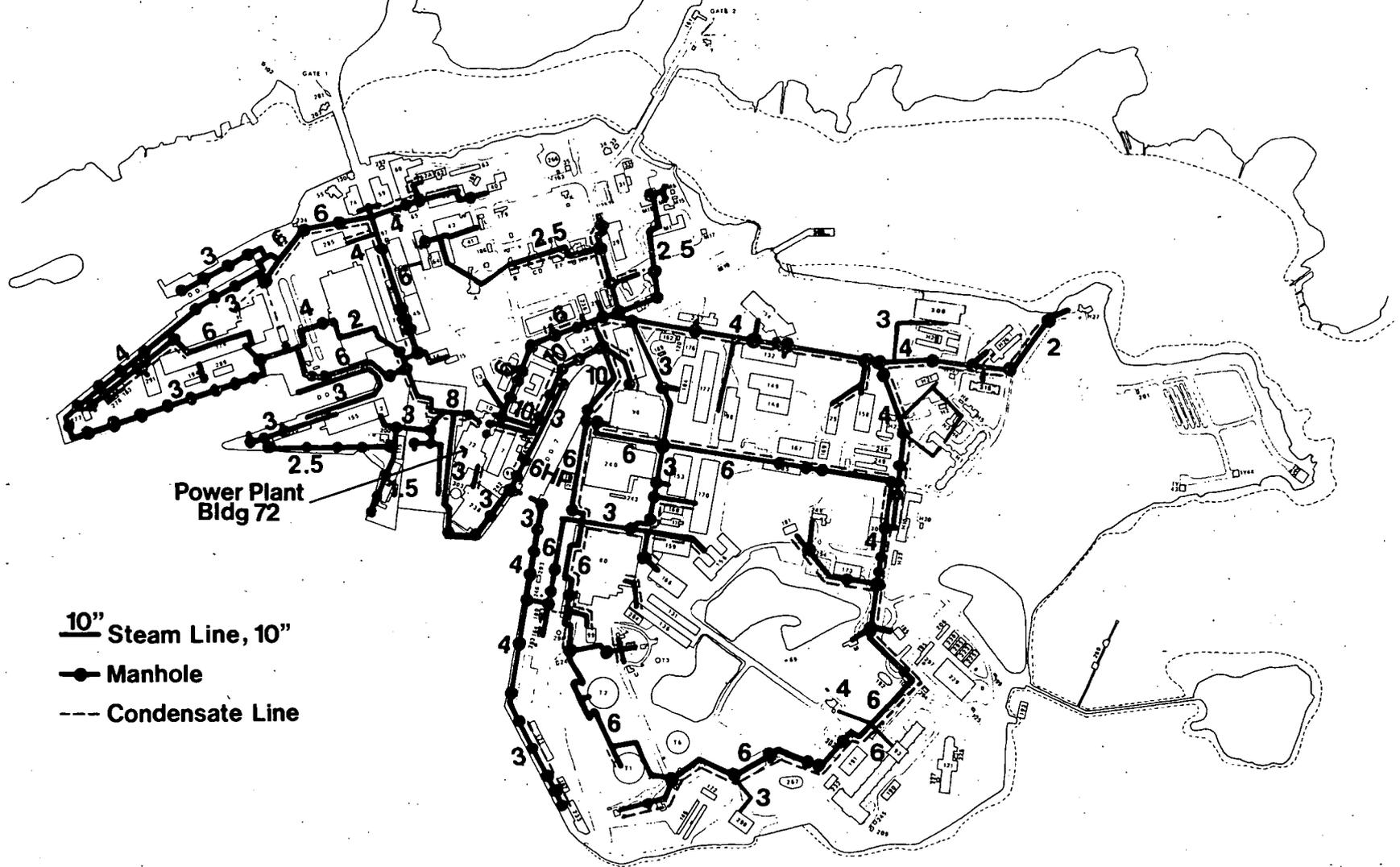
The overall condition of the fire alarm system is considered satisfactory, although portions along the distribution lines are beginning to fail from corrosion and age. The Shipyard is replacing the lead-covered fire alarm cables with polyethylene jacketed cables on sections that have failed. Eventually, all lines will be replaced with this material.

A Fire Protection Engineering Survey (NAVMAT Report 11320.2) was performed at Portsmouth Naval Shipyard in April 1980 by Northern Division Naval Facilities Engineering Command. Major deficiencies include a weak water supply in the drydocks and berthing areas. Water supplies to all areas of the Base are considered adequate except for the drydocks and berthing areas, and numerous unsprinklered shops and warehouses. A Current Project P-123, Building Fire Protection, includes the installation of automatic sprinkler systems, fire alarm control panels, stairway and elevator enclosures, exit and emergency lighting and fire detection/extinguishing equipment in various Shipyard buildings.

8. Street Lighting System

The street lighting system is in good condition. Illumination of the streets is provided by 400 watt high pressure sodium lamps.

STEAM DISTRIBUTION SYSTEM



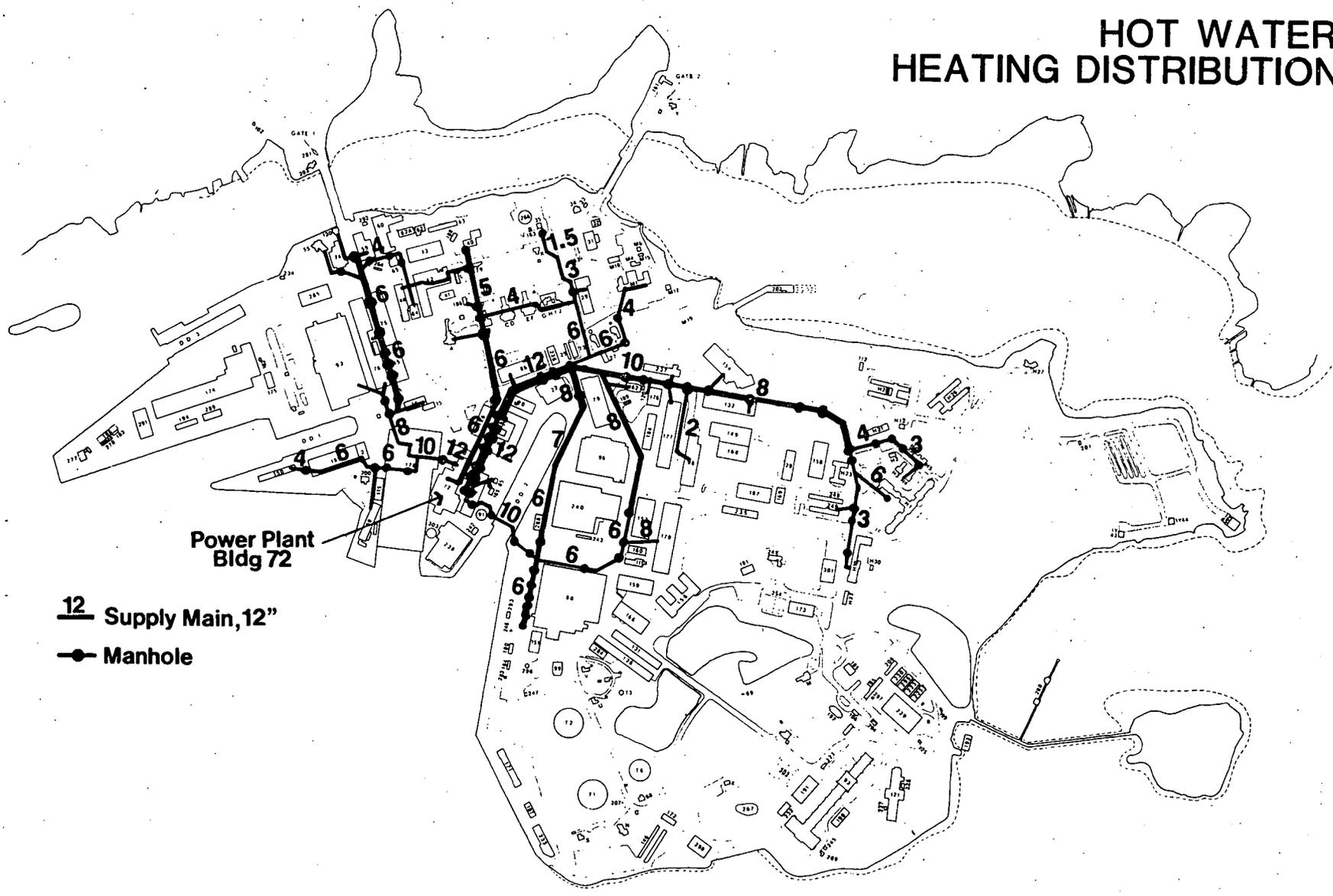
- 10"** Steam Line, 10"
- Manhole
- Condensate Line

More Info: P.W. Drwg No. M.S.-43-66



PLATE- 4-L

HOT WATER HEATING DISTRIBUTION



Power Plant
Bldg 72

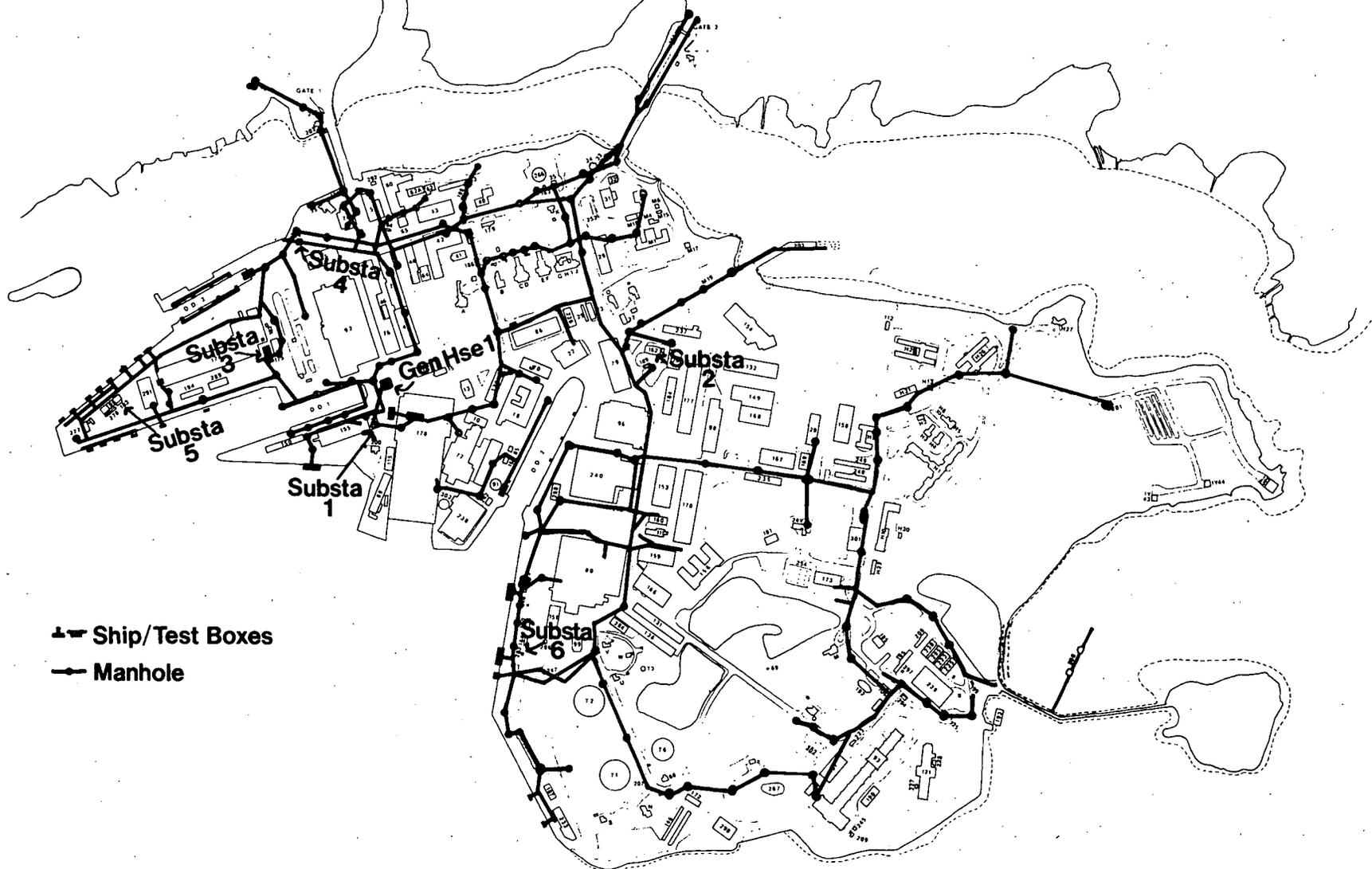
- 12** Supply Main, 12"
- Manhole

More Info: P.W. Drwg No. M.S.-43-67



PLATE-4-M

A.C. ELECTRIC DISTRIBUTION



- ↳ Ship/Test Boxes
- ↳ Manhole

More Info: P.W. Drwg No. E.S.-70-453 & 454

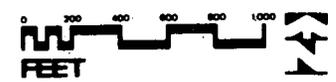
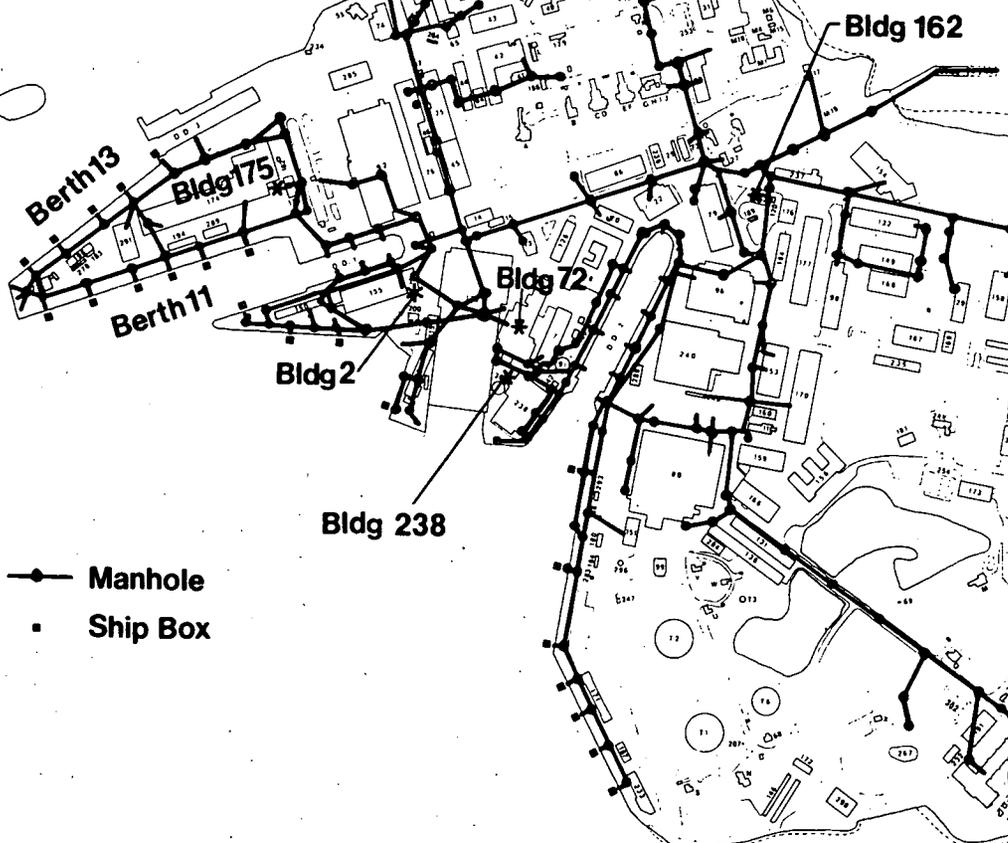


PLATE-4-N

D.C. ELECTRIC DISTRIBUTION SYSTEM



- Manhole
- Ship Box

More Info: P.W. Drwg No. E.S. - 70-454

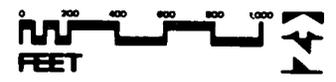


PLATE-4-0

9. Telephone System

The telephone system at the Portsmouth Naval Shipyard is leased from the New England Telephone and Telegraph Company. The main switchboard has 1440 lines with 1316 lines being used. Also, there are three, "in-coming only", Federal trunk lines and 24 Autovon trunk lines installed at the Activity. Overall condition of the communication system is considered good, but a design deficiency exists in the distribution system. The telephone communication lines are routed with the electrical power lines along power ducts and manholes. This is not in compliance with NAVFAC DM-4 design criteria relative to proper separation of electrical and communication lines along distribution lines.

10. Industrial Waste

The Industrial Waste Treatment Plant, Building 298 was completed in 1975 providing the Shipyard with the capability to treat chromes, and general industrial chemicals including acids and alkalis. It was designed to be a continuous flow treatment process for 3 million gallons of plating wastes. Unfortunately the plating facility was disbanded in 1975. The Plant has been utilized since this time as a batch treatment process, a purpose for which it was not designed. The plant has had little or no maintenance since 1975 and is in need of some major modifications.

All waste materials produced at source locations are transported to the treatment building by tank truck. The waste material is then unloaded through truck connections which allows the waste

materials to be transported by pipe to various unit operations. The sludge generated by the treatment process is thickened, conditioned, and vacuum filtered prior to proper disposal at a permitted landfill, while the clarified effluent is discharged to the sanitary sewer system. Since discharge is to the Town of Kittery Sanitary System, there is no National Pollution Discharge Elimination System (NPDES) permit involved.

11. Refuse Disposal

Refuse is collected using a dumpster system which consists of 225 containers varying from four to six cubic yards in size. These containers are collected twice a week and are taken to a transfer station where the refuse is loaded into the activity's compactor trucks. Sixty to seventy-five cubic yards each day is disposed at an off-site solid waste disposal facility.

12. Classified Waste Disposal

The current methods of disposal include the collection of secret and confidential documents by an authorized employee. Destruction of these documents is done by a paper shredder. The collection of "official use only" and NOFORN documents is done with the use of a locked color coded dumpster system. These documents are also destroyed with the use of the paper shredder. The shredded paper is landfilled off-Base.

13. Cathodic Protection

The Naval Shipyard's single cathodic protection system consists of a Harco Corporation Permanode Flootation impressed current system located within the Activity's potable water tank, installed and tested in July 1982. The operational meters are read daily and recorded in a monthly report.

14. Liquid Nitrogen

The liquid nitrogen distribution is considered adequate to meet the needs of the Activity.

Liquid nitrogen is purchased and stored in a 1,500 gallon and a 3,000 gallon trailer and in a 1,500 gallon storage tank. The nitrogen is taken by trailer truck to the shipboard test site and delivered to the submarine in either a gaseous or liquid state. This method is capable of delivering 12,000 SCF/hr of nitrogen at pressures up to 4500 psig. P-181 will install a permanent liquid nitrogen system at Berths 11 and 13.

15. Compressed Air Systems

The Shipyard has both low pressure (100 psig), and high pressure (4500 psig), air systems. Low pressure air is distributed throughout most of the Shipyard for industrial use in the drydock and berthing areas. Distribution piping varies from 10 inch to 2 inch in size and is considered in good condition. A small high pressure air distribution system serves Drydock 2. Another system serves Drydocks 1 and 3 and Berths 11 and 13. Remaining high pressure air requirements are

supplied by portable compressor units. The capacity of the systems serving Dry Dock 2 is 20 CFH at 4500 psig and meets the needs of newer class submarines at this location. The plan recommends that the power plant, Building 72, operate a separate compressed air system for boiler control and plant instrumentation. P-181 will add additional air system capacity at Berths 11 and 13.

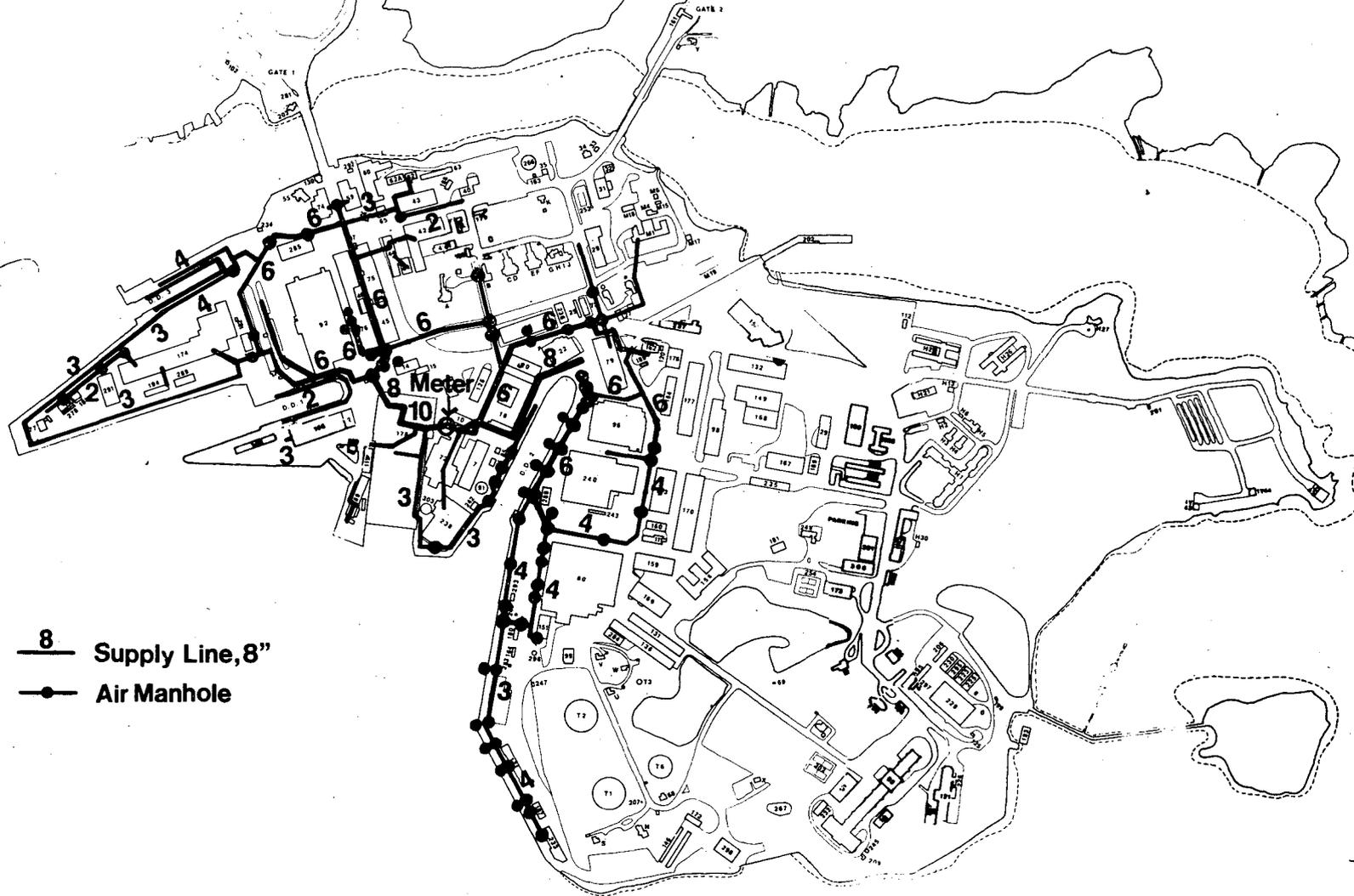
16. Oxygen System

The oxygen distribution system is considered to be generally in good condition, however, there are sections of old underground piping in use that have not been inspected and are in questionable condition. Several sections of distribution have been blanked off as the requirements have been eliminated. The oxygen storage tank, with a liquid capacity of 3,040 gallons, and the supply facilities are owned by the oxygen supplier. Distribution system piping varies from 4 inch to 2 inch and is generally distributed throughout the Shipyard as direct burial. The capacity of the oxygen system is adequate to supply the present and future demands of the Activity.

17. Mapp Gas System

The MAPP (methyl acetylene propadiene) gas distribution system is considered to be generally in fair to good condition, however, there are sections of old underground piping in use that are in marginal condition. Several sections of distribution have been blanked off as require-

AIR DISTRIBUTION SYSTEM



- 8** Supply Line, 8"
- Air Manhole

More Info: P.W. Drwg No. M.S. - 80-446



PLATE- 4-P

OIL DISTRIBUTION SYSTEM

2 · 20K Gal Undrgrnd Fuel Tanks

Pump

Tank

2.5

Bldg 151

200 Gal Tank

4" Diesel to Ship
6" Diesel to Shore
6" Bunker 'C'
6" Navy Special
3" Lube to Ship
3" Lube to Shore

b- 8" Sludge
c- 10" Oil

T1 · 150K BBL Fuel Oil
T2 · 150K BBL Fuel Oil
T3 · 225K Gal Diesel
T6 · 55K BBL Diesel

More Info: P.W. Drwg No. M.S.-43-69



PLATE- 4-Q

ments have been eliminated. The 2,000 gallon storage tank and supply facilities are owned by the supplier.

Distribution system piping varies from 1 1/2" to 3" and is generally distributed throughout the Shipyard as direct burial. The capacity of the system is adequate to supply the present and future demands of the Activity.

The plan recommends that the 2" and 3" mapp gas mains from Building 74 to Drydock 3, be inspected and repaired or replaced. The main headers from Building 92, Building 178, and Building 155 to DD #1 have been replaced and are in good condition.

18. Petroleum, Oil, and Lubricant (POL) System

The POL System needs repair due to deterioration. The lines that exist are in very bad condition and are being replaced through maintenance projects by the Shipyard.

19. Propane Gas System

There is one propane gas storage system with limited distribution piping. The system in Building 189 is in good condition.

The only use for propane gas is the bake ovens in Building 240. If these ovens could be converted to MAPP gas, the propane system could be eliminated.

It is recommended that the feasibility of converting the bake ovens in Building 240 from propane to MAPP gas be studied in order to secure the propane gas system.

20. Ripple Fire Oil System

The Shipyard requires two dockside missile ripple fire hydraulic power plants capable of supplying 18 gallons of 3000 psi fluid in 27 seconds with flow rates which temporarily peak as high as 160 gpm and with an accumulation capacity of about 30 gallons. One power plant will serve Berths 11B and 13, and the other will serve Berth 6B—the berths slated for development into full service berths for SSEN overhaul and repair. Presently the need for this system is being met through the use of a portable system that is considered adequate by the Shipyard.

21. Industrial Fluids & Gas Distribution Systems

Presently the various gases and fluids required during a submarine overhaul are provided by various methods of temporary setups for each different gas or fluid and for each submarine overhaul. This requires laborious and time consuming installations. MILCON Project P-181, will provide a centralized convenient distribution for industrial fluids and gases for Berths 11 and 13, the same will be provided by P-195 for Berth 6.

b. Environmental Pollution Controls

1. Air Pollution Control

Air quality control matters for the Shipyard are regulated by the State of Maine, Department of Environmental Protection (DEP). The Shipyard falls within the Portland Air Quality Control Region I (AQCR). The Shipyard holds a State of Maine air emission license No. 1823 issued August 1980. The air license is good for two years, and the Shipyard has reapplied. However, the state, due to backlog has been unable to process the Shipyard application. The existing permit is for four power plant boilers and one pier-side test boiler. The new application is for the above plus three newly acquired test steam boilers. At the present time, sulfur content of #6 fuel oil in the area is limited to 2.5% per State of Maine Dept. of Environmental Protection for the Portland AQCR.

2. Water Pollution Control

Sanitary sewage is currently pumped to the municipal system for treatment by the Kittery Maine Sewage Authority. The capacities of the Shipyard collection system and the Town's collection and treatment system are adequate for the waste quantities generated.

Two projects: (W178) entitled Wheeler System Discharge Elimination and (W178K) Entitled BLDG-240 Waste Holding Tank, have been submitted to Northern Division. Northern Division has submitted both the above projects to NAVFAC for entry into the PCR.

A family housing facility consisting of 187 units is located off-base in the Town of Kittery Admiralty Village development. The sanitary treatment, consisting of an Imhoff tank with pre-and post-chlorination, is owned and operated by the Town for this discharge.

The Town of Kittery has applied for a Federal EPA grant for the purpose of connecting all 600 units, both Navy and Town units, into the Kittery secondary treatment plant. In accordance with the Federal Grants program, the Shipyard may be requested to participate in the cost of this connection.

The industrial waste treatment plant provides the Shipyard with the capability of treating chromes and general industrial chemicals including acids and alkalis using batch treatment processes. The treatment facility was designed to treat 20,000 gallons per day with discharge to the Town of Kittery sanitary system.

Reduced Shipyard operations have resulted in considerable reductions in the actual quantities of wastes generated. Presently, approximately 2,000 gallons per day of waste are treated with weekly additional quantities of 4,000 gallons per day once per week.

3. Potable Water Treatment

The Town of Kittery, Maine Water District treats and chlorinates the water supplied to the Shipyard. Tests for chlorine residual and coliform

are performed by the Preventive Medical Officer and Industrial Hygiene Department on a weekly basis.

4. Oil Spill Prevention

MILCON P-108, Oily Waste Collection and Reclamation, would have provided for improvements to the Shipyards oil-transfer, piping, pumping and storage facilities as well as providing a new facility for waste oil reclamation. The project, lacking funds, was cancelled. The proposed work is being accomplished by the Shipyard as needed.

5. Solid Waste Management

The Shipyard maintains and operates its own equipment for the collection and transportation of solid waste generated on-Base. Waste from the housing area at Admiralty Village is collected by contractor and disposed of at a private incinerator.

The waste collected at the Shipyard is transported to a transfer facility on-Base where it is compacted and subsequently hauled to an off site incinerator.

The tidal flat area, previously used for disposal of miscellaneous wastes, is no longer used as a disposal site. This area has since been utilized as a dredging disposal site for MILCON Project P-152.

6. Hazardous Waste Management

All hazardous waste is disposed of off-Base by contract at EPA permitted/licensed disposal facilities in accordance with the Resource Conservation Recovery Act. The Department of Defense has assigned Hazardous Waste Disposal Responsibility to the Defense Logistics Agency. The Defense Property Disposal Service will administer a disposal contract for the Shipyard through the on-Base Defense Property Disposal Office. The Shipyard will have its own contract for disposal of materials DLA will not accept.

A centralized Hazardous Waste Storage Facility has been established which serves as the Shipyard's collection, storage and transfer point. This facility (9,000 SF fenced, paved area and 350 SF office and transfer building) is manned 8 hours a day, 5 days a week by the Supply Department.

DLA and NAVFAC are planning a new joint use (SHIPYARD and DPDO) Hazardous Waste and Transfer Facility to be located behind Building 93 at the site occupied by Building 121. Another project, MCON P-215, Supply Dept. Hazardous/Flammable Storage, is scheduled for FY-87 and relocates functions currently located in Buildings 98 and 169. This project is to be located at the site presently occupied by Buildings 229, 225, 223, 295, and 230.

7. Noise Pollution

An industrial noise survey was conducted at the Portsmouth Naval Shipyard by the Industrial Hygiene Division, Naval Regional Medical Clinic, Portsmouth, New Hampshire during 1980. The purpose of the survey was to accomplish the following:

- Specify noise sources where further study and engineering control methods may provide a reduction in the overall noise level.

- Determine the trades which require audiometric examination.

- Specify areas where protective hearing devices must be worn.

- Provide sound pressure levels and frequency analysis of work exposure which can be corrected with the audiograms of exposed personnel.

Noise level measurements were conducted at specific locations, particularly at machinery areas in and outside of production shops. Measurements were also made at work areas along the waterfront, drydocks, and inside of submarines being repaired. The criterion of the survey was based on a level of 90 dBA which determines whether personnel must/may not wear hearing protection. 90 dBA approximates a condition that exists when it is difficult to hear a loud spoken voice at a distance of one foot.

According to the survey, hearing protection must be worn in various locations in or around these buildings/structures and equipment: 2, 7, 10, 42, 44, 45, 46, 60, 64, 72, 74, 75, 76, 80, 86, 89, 92, 96, 115, 129, 153, 154, 155, 170, 174, 177, 178, 184, 196, 238, 240, 285, 288, 295, 298, 300, H-10, DD1, DD3, diesel generators, floating cranes, Wheeler pumps, and cranes.

Aside from noise emissions from the various shops in the industrial area and the noise emissions from tools and moving equipment of construction and repair workers, there were no reported or evident instances of noise pollution occurring at the Shipyard.

6. NATURAL ENVIRONMENT

a. Topography

There is no Shipyard topography map available at this time, however, one will be prepared in time for the final Master Plan. The Shipyard topography is generally flat and does not present any problems due to steep hills or depressions on the land. In general, elevations range from 10 to 20 feet above high water. All of the land within the CIA is relatively flat. There are a few general areas that are higher in elevations than the rest of the Shipyard. The first area is in the Historic District area that includes the officer family housing. There are predominantly gentle slopes in this area. The second area is in the Marine barracks/Navy Exchange area where there are some rather steep short slopes. The final area is in the south central portion of the Base. This is the largest area of higher elevation land and meets the lower areas with a combination of long gentle slopes and short steep slopes. This area encompasses parts of the Supply, Personnel Support, and the old Disciplinary Command areas. See Plates 4-R for the location of slopes.

b. Geology and Soils

The bedrock under the Portsmouth Naval Shipyard is principally of the Kittery Formation. (See Page 4-16).

The depth-to-bedrock over much of the Shipyard is 0 to 10 feet. Soils on base are designated UR-URBAN LAND and LnC - Lyman Fine Sandy Loam. Over the years, much of the Shipyard has been

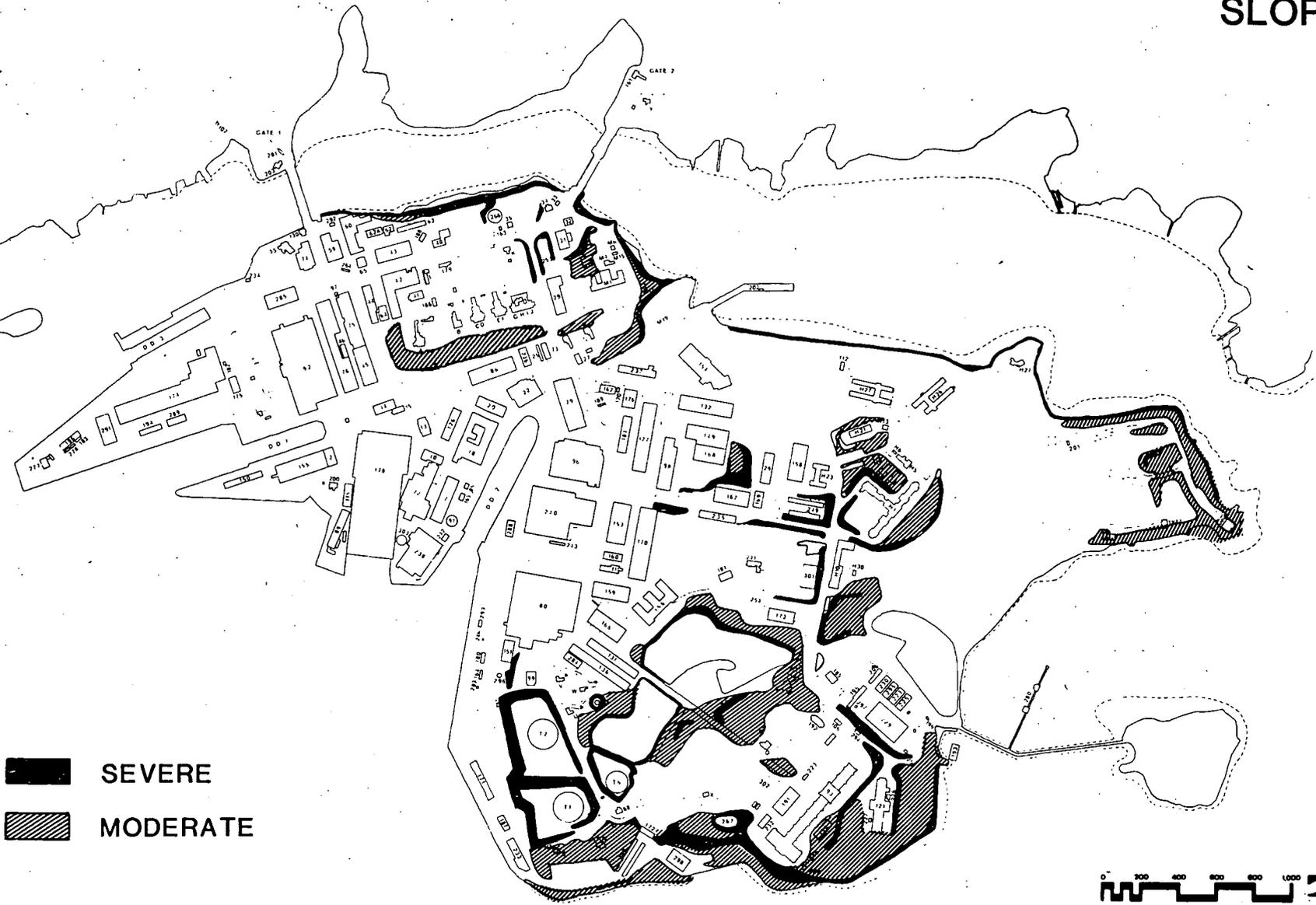
built up by landfilling with a variety of materials, including dredge spoils. A soil-boring program was conducted in the Jamaica Island area of the Shipyard. It revealed a natural substratum of medium to soft clay beneath 15 to 20 feet of fill. The clay itself overlies a dense till 3 to 15 feet thick, underlain by bedrock. Special mention is made to the spoils area. Due to the potential hazards of the fill materials, it is not considered a site for development. An environmental study and soil borings would be required to determine the suitability of this area for development. (See Plate 4-S).

C. Vegetation and Wildlife

The Shipyard is a highly-developed, industrial property, with limited vegetative growth. Most of its ground cover consists of introduced plants, with only scattered remnants of naturally-occurring species. The sites supporting trees and shrubs are located in the Housing and Community Support areas. Clark's Island, a small undeveloped land mass east of the Shipyard, supports some biological resources. The vegetation here is composed primarily of herbaceous and shrub species such as rushes, jewelweed, skunk cabbage, spike grass, swamp azalea, bittersweet, witch hazel, and dogwood. There are also scattered low-land tree species of red maple, sycamore, willow, and poplar growing over the island.

The industrial nature of the Shipyard also severely limits its value as a wildlife habitat. The lack of appreciable amounts of vegetation, presence of trash and scrap metal, and constant vehicular and pedestrian traffic and human

SLOPE



■ SEVERE
▨ MODERATE

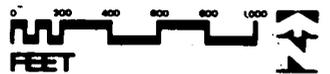
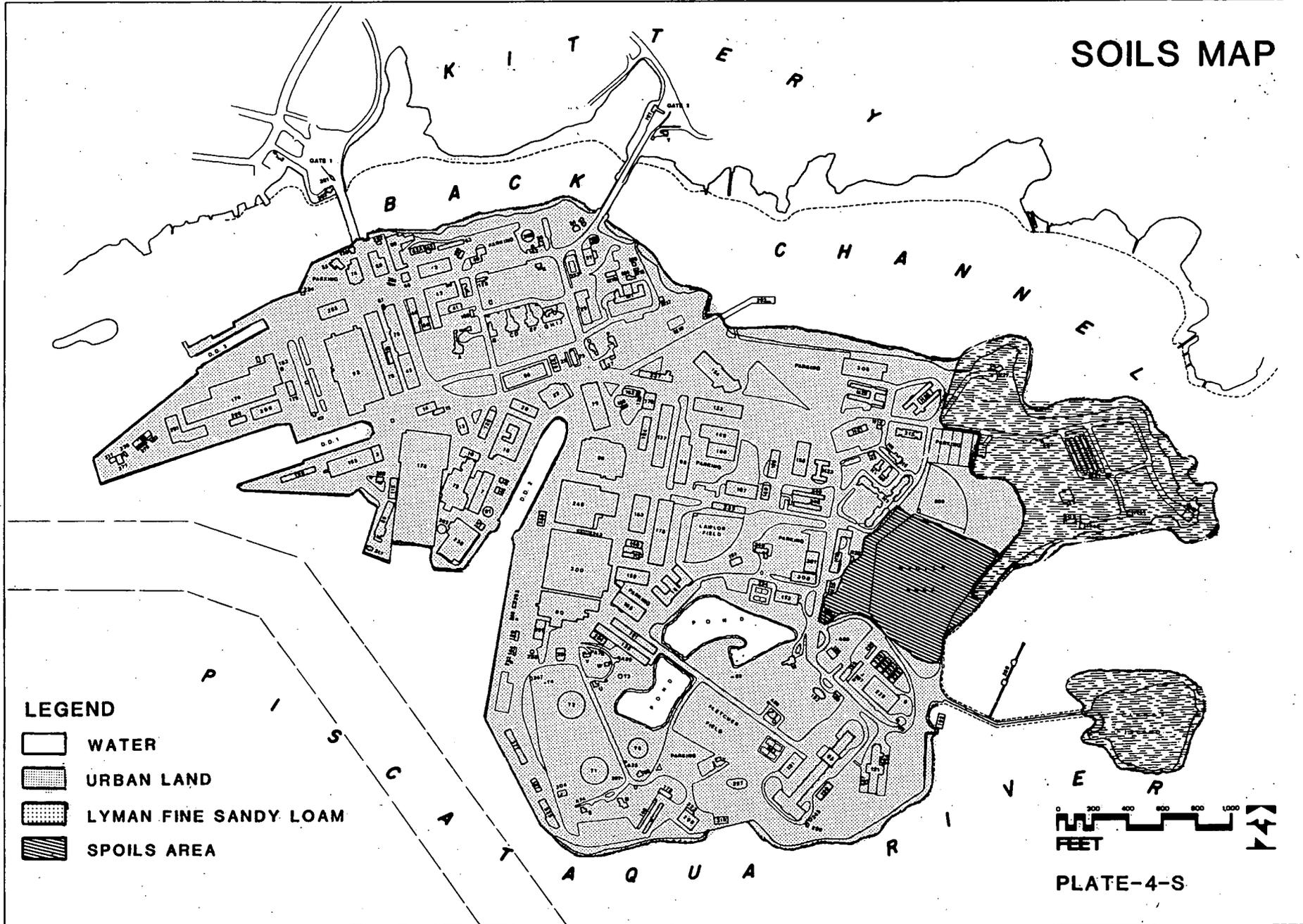


PLATE- 4-R

SOILS MAP



activity in the area combine to make the area very unattractive to wildlife. Some small mammals, however, have been seen, including mice and raccoons. Gulls are prevalent and passerine birds also appear on the property occasionally.

The more abundant and diverse vegetation on Clark's Island and lack of significant human activity provides an area of much higher value to wildlife. Because Clark's Island has a field/meadow environment, it provides habitat for a variety of small mammals such as mice, raccoons, and opossum. Its greatest use, however, is as a wintering and nesting area for a large variety of waterfowl. In addition to numerous seagulls, Canadian geese, black duck, greater scaup, and lesser scaup are the most common species. There are also some passerine birds and, to a lesser extent, raptors use the island during other parts of the year. The mud flats around the island are exposed at low tide and provide feeding habitat for gulls, shorebirds and waterfowl. Except for reports of shortnose sturgeon (Acipenser brevirostrum) being present in the Portsmouth Harbor area, no threatened or endangered species are known to inhabit the Portsmouth Naval Shipyard. The Shipyard is not included in the critical habitat of any of these species.

The State of Maine has a floral protection program (Critical Areas Program) geared toward the protection of rare or significant floral species and their habitat throughout the state. None of these species is reported in the Portsmouth Shipyard area.

d. Hydrology

1. Groundwater

There is no groundwater development at the Shipyard since the Town of Kittery supplies potable water through two 12-inch mains. Groundwater levels on those portions of the Shipyard that were the original islands (Seavey and Dennett's Islands) are reported to be relatively shallow. Glacial outwash sands and gravels form these unconfined aquifers. Much of the Shipyard (90 acres), however, was formerly an intertidal area and the depth to groundwater is equal to the depth of fill. This varies from approximately 13.5 feet at mean low water to 5.5 feet at mean high water.

2. Surface Runoff

Because it is a small highly-developed island, the Shipyard has very little natural surface runoff. An extensive stormwater collection system has been constructed at the Shipyard, and most surface runoff is conveyed through the storm system to specific outlets into the Piscataqua River. Two natural ponds drain the open area in the southern portion of the Shipyard. A drainage outlet has been constructed from the ponds to the Piscataqua River.

3. Floodplain

Floodplain information is not available at this time from the Federal Emergency Management Agency (FEMA). The floodplain information will be included when available.

7. DEVELOPMENT CONSTRAINTS

a. Man Made

1. Drydocks and Berths

Three drydocks and six berths are situated on the Western portion of the Island, located in the Controlled Industrial Area (CIA). Of the three drydocks, only Drydock 1 is incapable of berthing the 688 class of submarines because of size limitations. A Shipyard Drydock Modernization Study has recommended that a new drydock facility be constructed in the CIA to replace Drydock 1.

The existing berths must be upgraded to accommodate the 688 class submarines. Berths 6, 11, 12, and 13 will be used as repair berths and all require complete utility overhauls.

2. Boundary

Because the Naval Shipyard is an island, its boundary forms a constraint. Any additional land mass must be formed by fill. On the north, west, and south sides, little expansion capability exists due to the river channels. To the north-east, expansion is limited to straightening the shore line. No filling in this area is possible because of the existing access channel and private moorings. The only possible expansion by fill at the Shipyard exists on the east end of the island. The area east of the spoils area and north of Clark's Island could be filled in to create acreage. Much of this existing land area is the result of previous filling by the Shipyard.

3. Crane and Railroad Trackage

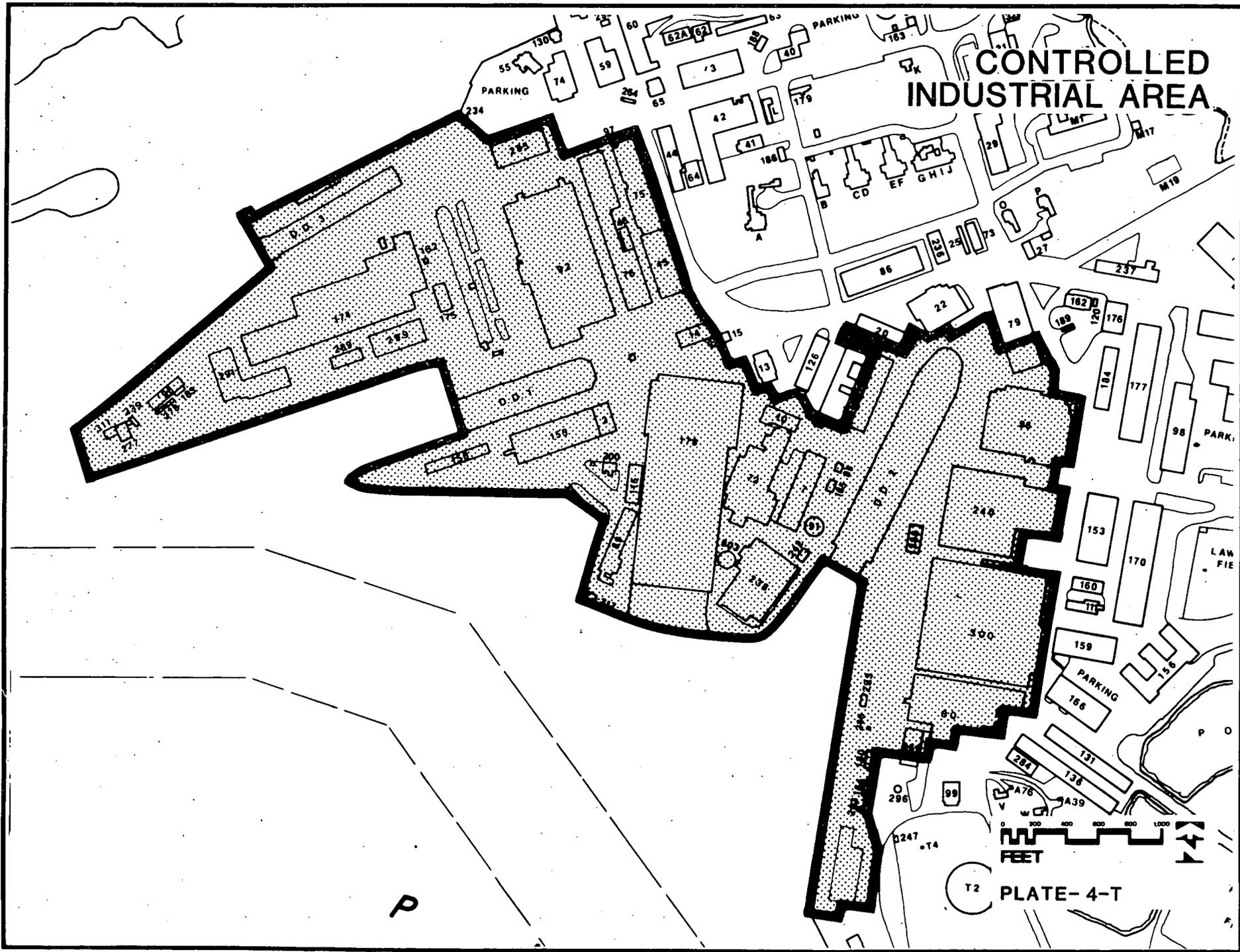
These facilities form a planning constraint. The services they provide to various areas in the Shipyard cannot be severed. Available land for development and construction sites is limited by the need for trackage continuity and the various swing clearances required by the cranes.

4. Controlled Industrial Area (CIA)

The Naval Shipyard maintains a controlled industrial area (CIA) for security. This area limits the movement of personnel and equipment. Decisions are required to determine which functions should be in or out of the CIA because of its limited size. The CIA boundaries are limited by water in the south and west, the Historic District and officer housing in the north and north east. Expansion to the east is possible, but relocation of several functions would be necessary for any expansion. See Plate 4-T.

5. Historic District

The Historic District is an important constraint on development. Any work to be performed in, or affecting the Historic District involving demolition, construction, repair, or modification of structures is subject to review by the State Historic Preservation Officer (SHPO), the Advisory Counsel on Historic Preservation, and CNO prior to the start of such work. While the demolition of existing and construction of new facilities is possible, any such development must be carefully documented for timely review.



The MCON project documentation must include an Environmental Assessment (EA) that details the projects' impact on historic resources. Without this EA, the project will be delayed until it is completed (design authorization will not be granted). Additional information on the review process is provided in Appendix B. Recommendations for the Historic District are also discussed in Appendix B.

6. Electro Magnetic Radiation (EMR)

An EMR survey has not been completed for the Naval Shipyard. The extent of any possible hazards to personnel, ordnance handling, operations or submarine repair are not known at this time. The shipyard uses gas generators that are EMR susceptible however, adequate safety precautions are utilized to ensure safety during handling and shipping evolutions. The generators are handled under the classification Hazards of Electromagnetic Radiation to Ordnance (HERO).

Equipment used on base consists of CB radios in private vehicles, radio gear of official vehicles including security, fire, police, public works, ambulance and staff vehicles; service craft and pleasure craft radios; submarine installed radio and other equipment; and various other handheld portable radios. This equipment is listed in Appendix F. EMR hazard distances have been determined for two systems, AN/FRC-59 and AN/URC-32. HERO SUSCEPTIBLE and HERO UNSAFE separation distances for the systems are shown on Plate 4-V, and listed in Appendix F. The plan recommends that a EMR Survey be conducted to determine if possible EMR problems exist and the measures necessary to correct them.

7. Explosive Safety

The ordnance utilized at the Shipyard consists of small arms ammunition for training and security; pyrotechnics for special events and submarine emergency signals; and gas generators for testing submarine missile tubes during sea trials.

a. Magazines. The magazines are located in the eastern area of the Shipyard at Jamaica Island. The magazines are not in good condition and are currently under a CNO Waiver to permit continued use. Repairs are currently being completed by the Shipyard. The summary of magazine storage and capacities is detailed in Table 4. As shown on Plate 4-U, no inhabited buildings are encumbered by the Explosive Safety Quantity Distance (ESQD) Arcs.

TABLE 4-4 Magazine Storage and Capacities

MAG NO.	TYPE	CLASS/DIV	MAX NEW
LKT1	Riot Control (CS, CN)	1.4	4,000
LKT2-LKT9	C3, C4 Gas Generators	1.3	4,000
LKT10-LKT17	Demolished		
LKT18	Small Arms	1.4	4,000
LKT19	Caps and Fuzes	1.4	4,000
LKT23	Small Arms	1.4	4,000
LKT24	Pyrotechnics	1.3	4,000
LKT25	Pyrotechnics	1.3	4,000
LKT26	Small Arms	1.4	4,000
LKT27	Pyrotechnics	1.3	4,000
LKT31	Pyrotechnics	1.3	4,000
LKT32	Pyrotechnics	1.3	4,000
LKT33	Pyrotechnics	1.3	4,000
LKT35	Small Arms	1.4	4,000
LKT36	Small Arms	1.4	4,000
LKT37	Small Arms	1.4	4,000
LKT38	Small Arms	1.4	4,000
LKT39	Small Arms	1.4	4,000
LKT40	Small Arms	1.4	4,000

b. Explosive Handling. Submarine safety and security devices must be maintained on board until arrival at the shipyard where they are off loaded and moved to the magazine area for storage. When the submarine departs for sea trials or when the repairs are completed, the safety and security and testing devices are moved from the magazine area to the submarine. In addition to these movements, 40 mm saluting charges for special events are moved from the magazines to the saluting cannon in Saratoga Square. The route of these movements are shown on Plate 4-V.

c. Waiver. The existing location of structures at the Shipyard prevents compliance with current safety standards while performing the movement of ordnance to and from the submarines. A waiver is required to permit the off-loading and reloading of submarine small arms ammunition and emergency identification signals upon arrival and the departure at the Shipyard. The frequency of movements is about six times a year. The waiver is also required to permit the installation of test gas generators by Shipyard personnel. CNO Waiver No. NAVSHIPYD PTSMH 1-78 remains valid and will expire on 31 July 1986. The waiver is included as Appendix D.

d. Encumbered Structures. An ESQD arc of 100 feet for small arms ammunition and 115 feet for gas generators occurs at each handling point at the berths. There are many buildings and structures sited within these arcs. The number of personnel in each building and the function performed is shown on Table 5.

TABLE 4-5 Encumbered Facilities

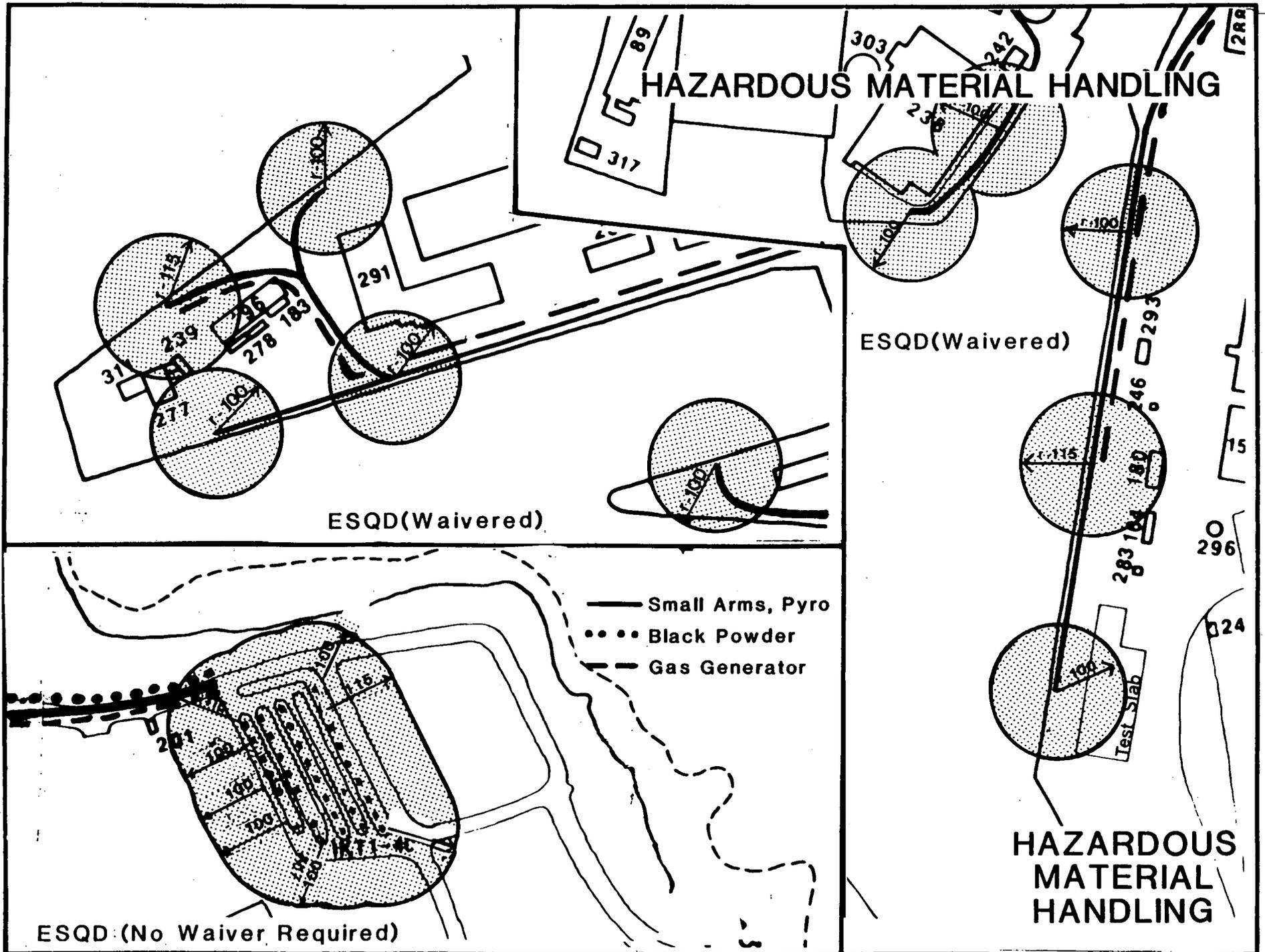
Berth	Bldg.	Function	Occupants	Construction
1	150	Quality Assurance Office	177	Brick
4	238	Production Shop	140	Brick
5	238	Production Shop	140	Brick
	242	Chlorine Gas	0	Brick
6b	164	Head	*	Brick
	283	Hyperbaric Chamber	*	Wood
6c	283	Hyperbaric Chamber	*	Wood
	286	Test Lab.	0	Metal
11b	194	Flushing Department	3	Wood
	289	Material Control Center	3	Wood
	291	Radiological Control	125	Brick
11c	277	Steam Plant	1	Metal
13b	291	Radiological Control	125	Brick
13c	277	Steam Plant	1	Metal
	239	Head	*	Brick
	196	Tools & Lockers	16	Wood

* Not normally occupied.

8. Hazardous Waste Storage and Dump Sites

Past hazardous waste disposal methods, although acceptable at the time, have often caused unexpected long-term problems through the release of hazardous pollutants into the soil and groundwater. In response to increasing national concern regarding these problems, Congress directed the Environmental Protection Agency (EPA) to develop a comprehensive national program to manage past disposal sites. The program is outlined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of December 1980. (See Plate 4-W).

The Navy manages its part of the program, the Navy Assessment and Control of Installation Pollutants (NACIP), in three phases. Phase 1



HAZARDOUS MATERIAL HANDLING

ESQD (Waivered)

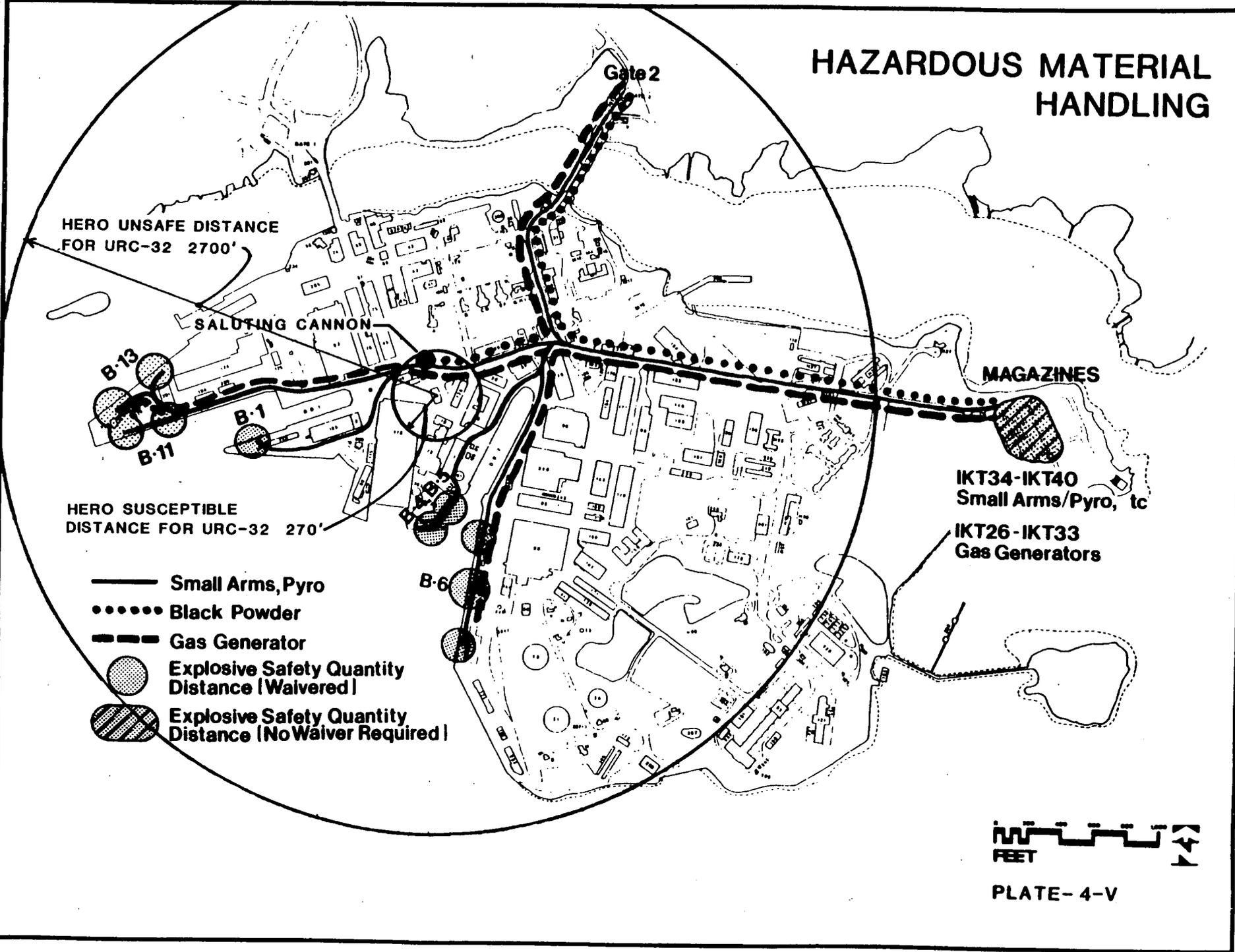
ESQD (Waivered)

HAZARDOUS MATERIAL HANDLING

ESQD (No Waiver Required)

- Small Arms, Pyro
- Black Powder
- - - Gas Generator

HAZARDOUS MATERIAL HANDLING



HAZARDOUS MATERIAL DISPOSAL SITES

SITE 1

(JAMAICA ISLAND LANDFILL)

SITE 3

(MERCURY BURIAL SITES)

SITE 2

(INDUSTRIAL WASTE OUTFALLS)

SITE 4

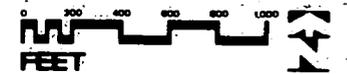
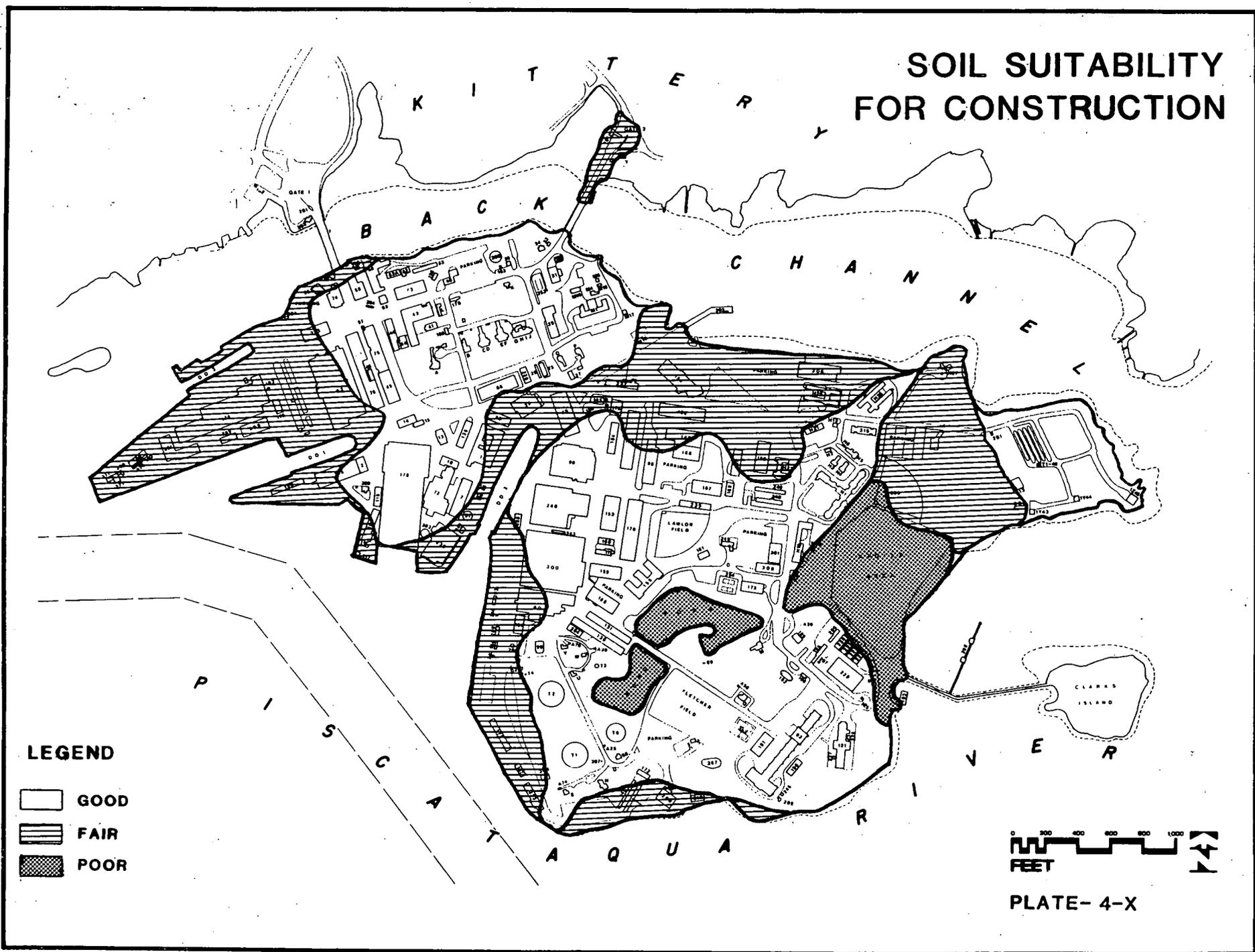


PLATE-4-W

SOIL SUITABILITY FOR CONSTRUCTION



identifies potential threats to human health or the environment caused by past hazardous substance storage, handling, or disposal practices at Naval activities. Phase 2 analyzes contaminants present at sites of concern and determines their migration paths. Phase 3 provides the required corrective measures to mitigate or eliminate confirmed problems.

The Naval Facilities Engineering Command (NAVFAC) manages the program within the existing structure of the Naval Environmental Support Service (NEPSS). Thus, the Naval Energy and Environmental Support activity (NEESA) conducts the program's Phase 1 Initial Assessment Studies in coordination with NAVFAC Engineering Field Divisions (EFD's).

A 1982 NEESA Initial Assessment Study for Portsmouth Shipyard identified four sites/areas that were used in the past for disposal of hazardous materials. Plate 4-W illustrates the locations of the sites identified during the onsite survey. One of these sites appears to present a potential hazard to the environment and is recommended for a confirmation study. The Jamaica Island landfill was originally a tidal flat and was used for disposal of general refuse, trash, and other materials from about 1946-1976. The three other sites do not appear to present hazards to the environment or the public health and are not recommended for confirmation studies.

For further information on this topic, see NEESA report (13-032)-Initial Assessment Study of Portsmouth Naval Shipyard, Portsmouth, New Hampshire 1983.

b. Natural

1. Slope Constraints

The terrain in the industrial area is relatively flat and poses no severe constraints to development or construction. In the vicinity of the Marine barracks and the Navy Exchange there are some rather steep slopes which would render costly any added development or redevelopment to any configuration other than that which exists today. In the south-central portion of the Base, encompassing part of the supply, personnel support, and the old Disciplinary Command areas, there are some areas with long gentle slopes and a few areas with decidedly steep slopes. This latter area is most amenable to attractive development of bachelor personnel living and recreation areas and is not really suited for industrial development, see Plate 4-R.

2. Vegetation

Tree and ground cover is non-existent in many areas of the Shipyard as one might expect. But immediately adjacent to the industrial area in the senior officers' housing area are lawns and tree shaded streets which form a pleasant background in contrast to the brick and steel nature of the yard itself. This area should be preserved, as such, and even enhanced if possible. Similarly, several areas adjacent to the medical clinic, surrounding the scattered housing areas, and the Jamaica Island picnic area are quite pleasant and should likewise be retained if at all possible.

3. Wetlands

There are no designated wetland areas on the Shipyard, however, there are two runoff fed ponds in the south-central portion of the island. The ponds are aesthetically attractive and play a part in supporting the limited wildlife. This plan recommends the retention of the ponds to be used as part of the landscape for future personnel support facilities such as troop housing, club, and recreation facilities.

4. Floodplain

The planned development at the Shipyard must consider the possibility of flood damage during severe storms which infrequently occur in this coastal zone.

Any structure built in the 100 year floodplain zone must have special structural design to withstand the forces of the flood waters.

According to Executive Order 11988, no development for critical activities can occur in the 100 or 500 year floodplains unless there is no practicable alternative. If an activity can find no alternative other than the floodplain for siting a facility, the situation must be justified in detail in the Preliminary Environmental Assessment (PEA) that is required as part of the project documentation. Detailed Floodplain information will be provided when available.

5. Soil Suitability

A primary consideration in the siting of buildings is the subsurface conditions. Among them is the ability of the soil to support the weight of the structure. Since a large part of the Shipyard was formed by fill, there are many sites that require further study to determine their suitability for development. In addition, there are native areas of soil that vary in suitability from fair to poor. All of these sites make up a substantial portion of Shipyard real estate that is questionable for siting buildings. See Plate 4-X.

5. PLANNING ANALYSIS

A. CONCEPT DEVELOPMENT

1. Assumptions

a. The Long Range Shipyard Modernization Program reflects a realistic and achievable program for the future.

b. The Shipyard functions of submarine conversion, overhaul and repair will remain the same in the foreseeable future.

c. The number of submarines to be converted, overhauled and repaired in future years will remain the same as the current workload.

d. There will not be an introduction of explosives, torpedoes, missiles or propellants whose storage will encumber large areas of Shipyard land due to the application of explosive safety distance criteria.

e. The boundary of Shipyard property, the perimeter of the island, will change slightly with the introduction of a new drydock. No additional land will be created by fill material.

f. Funding levels for Shipyard construction, maintenance and repair projects will increase in future years to accommodate the 688 class submarines.

2. Ideal Functional Relationships

Plate 5-A shows an ideal model for the interrelationships of the major functional areas at a Naval shipyard repair facility for submarines. The primary relationship is between the submarines and the Maintenance and Production shops. The location of submarines at the berths and in the drydocks must be close to the shops to achieve maximum efficiency. There must be sufficient space between the submarines and the shops to provide for the unobstructed movement of cranes, laydown areas, the network of utilities and movement of materials from shops to the submarines.

Due to the classified nature of the work done on the submarines, it is necessary to have a special security barrier around the repair area to prevent entry by unauthorized personnel. This high security area, is known as the Controlled Industrial Area (CIA).

The Supply and Storage facilities have the next most significant location/access requirements in supporting the Shipyard mission. Parts and materials must flow smoothly to the shops and directly to the submarines. Therefore, the Supply function should be adjacent to the shops and close to the drydocks and berths. Supply facilities should also be close to a main gate so deliveries can be made without unnecessary traffic passing through other functional areas.

In addition to the overall management activities that require accessibility to all areas of the Shipyard, the Administrative function includes

IDEAL FUNCTIONAL RELATIONSHIPS

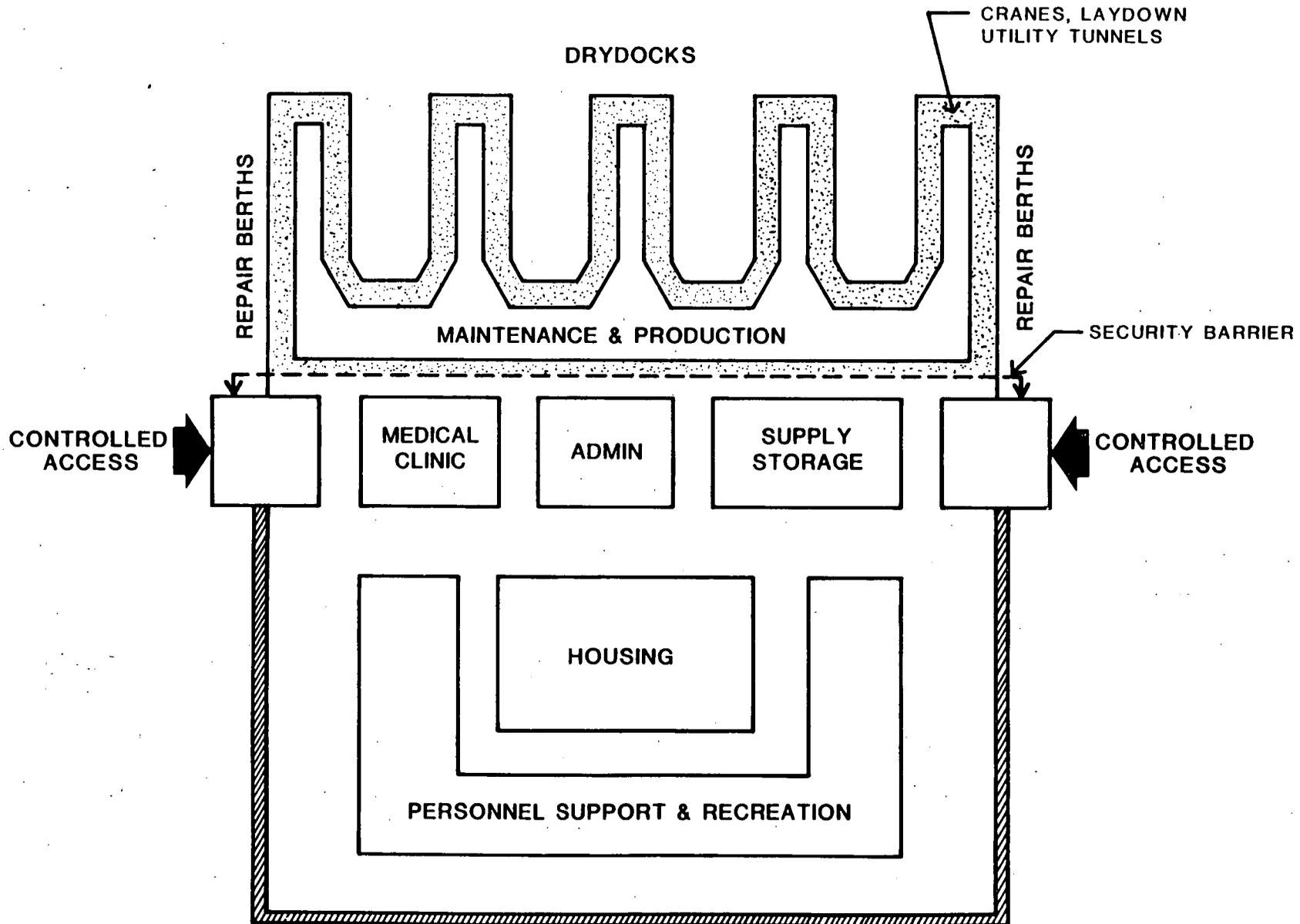


PLATE-5-A

public works, engineering, data processing and printing services. The Administrative function should be central and accessible to all shops and submarines for maximum efficiency.

The Medical Clinic provides many services for civilian and military personnel. The medical function should be located close to the industrial area for medical emergencies and be easily accessible for military personnel and dependents. It should be near a main gate to provide easy access for personnel living off Base and easy exiting from the Shipyard if emergencies require hospital treatment.

In the ideal model, all of the above functional areas make up the major facilities required to accomplish the Shipyard mission. The remaining functional areas are for the support of military personnel stationed at the Shipyard. In the ideal model, these functions are separate from all industrial facilities. The Housing function should be located distant from the Maintenance and Production portion of the Shipyard. All vehicular circulation related to the industrial facilities should not pass through the Housing area. Ideally, a buffer zone of non-industrial facilities, i.e., Administration, Medical Clinic, etc., should be located between the Maintenance and Production function and Housing. Similarly, the Personnel Support and Recreation function should be distant from the Maintenance and Production function. It should be adjacent to the Housing function and have all extraneous traffic eliminated.

Vehicular and pedestrian circulation between functional areas as well as circulation between the Shipyard and off Base land is a major consideration of the ideal model.

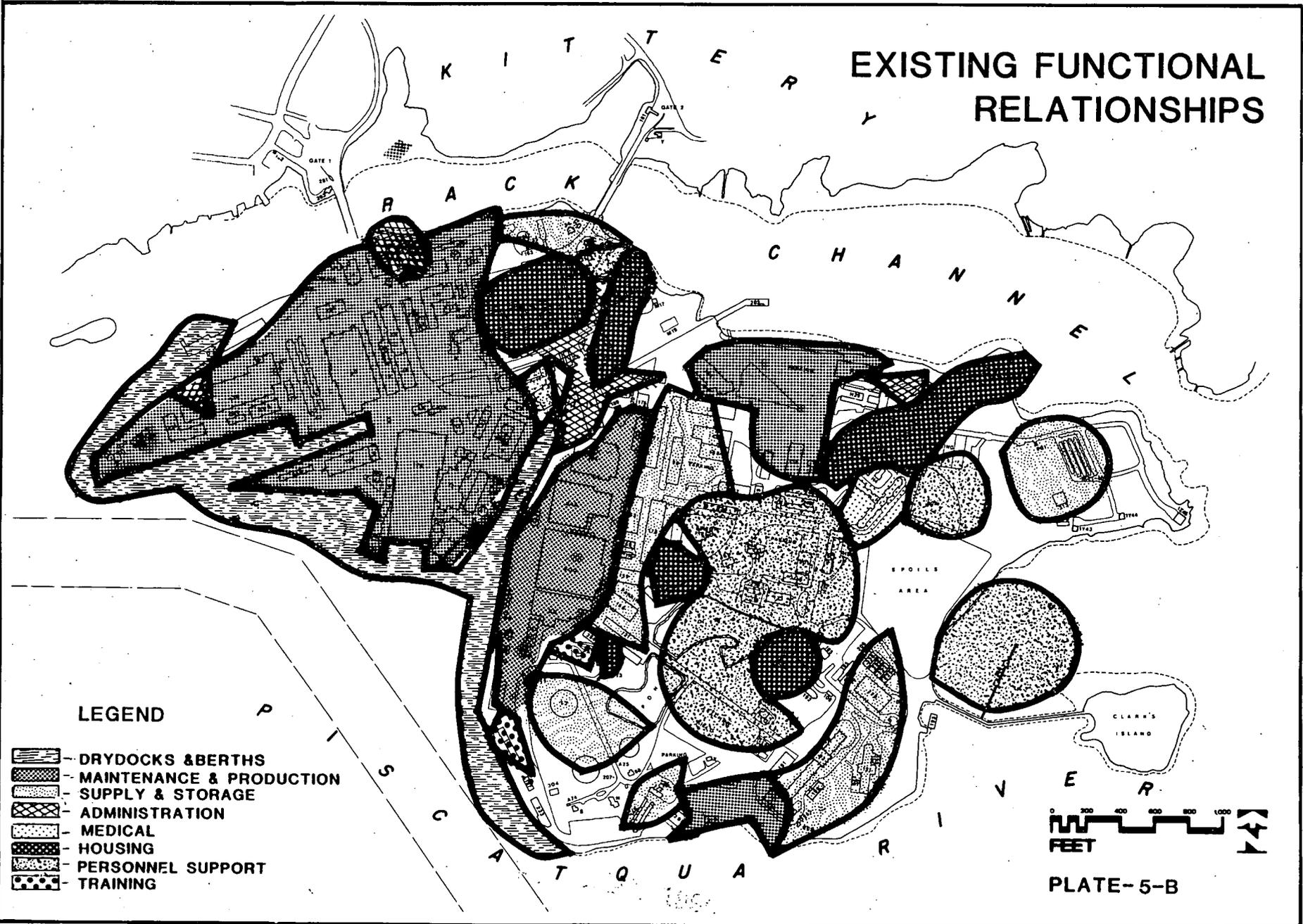
There should be convenient access from off Base to all functional areas for employees. The already mentioned truck access to the Supply and Storage function is important. Easy access to the Medical Clinic from all locations on Base as well as from off Base is important. There should also be easy access from the Maintenance and Production area to the Personnel Support training area. Circulation from off Base to the Housing and Personnel Support functions should not pass through other functional areas.

Note that the ideal model does not take into consideration any development constraints of a specific site.

3. Existing Functional Relationships

Plate 5-B shows the existing Shipyard functional relationships. Although the island has been heavily developed to the point where there is not enough circulation space between certain facilities, the majority of the functions are relatively well sited in relation to each other. The major differences between the ideal and existing functional relationships are as follows:

EXISTING FUNCTIONAL RELATIONSHIPS



LEGEND

-  DRYDOCKS & BERTHS
-  MAINTENANCE & PRODUCTION
-  SUPPLY & STORAGE
-  ADMINISTRATION
-  MEDICAL
-  HOUSING
-  PERSONNEL SUPPORT
-  TRAINING



PLATE-5-B

a. There are several locations where officer family housing is sited adjacent to incompatible functions. The senior officers' housing, within the Historic District, is next to Maintenance and Production and Supply and Storage facilities. Due to the historic nature of the residences, they will remain intact for the duration of this Master Plan. Two smaller sites of officer family housing on the southern portion of the island are sited between Supply and Storage functions. These sites are not conducive to a residential environment and could be better used for the expansion of Maintenance and Production or Supply and Storage functions if ever required for the Shipyard expansion.

b. The Medical function is not centrally located. It is distant to the Maintenance and Production function inside the CIA and does not provide easy access for personnel and dependents living outside the Shipyard.

c. There are several Administrative functions among the Maintenance and Production facilities in the CIA that do not need to be located there. They should be relocated close to or within the main Administrative functional area. The space vacated can be better used by the Maintenance and Production function.

d. Training of employees in many Shipyard trades occurs in numerous production shops. This arrangement reduces the efficiency of shop production. Trainees utilize equipment and instruction time from other employees that otherwise would be used for production work. A single facility consolidating all the shop

training, including all the machinery and equipment required, would increase the shop machinery available for work and provide a better training environment.

e. The Reserve Center Training function is situated along the waterfront on the southern end of the island. The site is between the Operations function on the waterfront and the Supply and Storage function. The best function for this site is Maintenance and Production. Since the Training function does not require a waterfront site, it should be relocated to another site with an environment conducive to Training. The site can be used for the southern expansion of the Maintenance and Production function.

f. The Supply and Storage function on the southeast edge of the Shipyard is distant from the Supply and Storage core in the center of the island. The site is a vestige of the Naval Disciplinary Command and does not serve the functions adjacent to it. The subsequent occupants of these under-utilized and substandard facilities should be relocated to other Supply and Storage areas to allow development of the site for better uses such as Training, Personnel Support, Housing or Administration.

B. PROGRAM REQUIREMENTS

As the Shipyard prepares for the repair of the SSN 688 class of submarines, careful study of existing functions and facilities is required. This analysis will determine the necessary projects that will allow the Shipyard to fully serve the fleet. This section will examine the current problem areas that impede efficient Shipyard operation as well as future requirements that are necessary for repair and overhaul of the 688 class of submarines. Problems that are typical of a Shipyard as old as Portsmouth include a scattering of functions, age and condition of buildings, unnecessary circulation, congestion, and inefficient energy use. The plan analyzes the following major functional areas: Operations, Training, Maintenance and Production, Supply and Storage, Medical, Administration, Housing and Community Support.

1. Operations

The major Operations facilities at the Shipyard are the repair and parking berths. They are located in the CIA and are used to support the drydock operations. These berths are restricted in the ability to service the 688 class submarines. They all require utility upgrading and in some cases additional utilities are needed. The planned development in this functional area is to increase the flexibility of berthing for the future class of submarines. (See Plates 5-C and 5-E.)

a. Berth 2

Berth 2 will be the site for a new Drydock.

b. Berth 6

Berth 6 is used as a parking berth for loading and unloading. The existing utilities provide hotel accommodations for submarines. With the lengthy overhaul periods of the submarines, berthing flexibility is limited to two existing repair berths at the Shipyard (11 & 13). With the incoming repair mission for SSN 688 class submarines, it is necessary to upgrade Berth 6 to a repair berth.

Field shops for Berth 6 are currently housed in Buildings 96, 7, 288, and assorted portable buildings. These spaces are inefficient and ill-equipped. Project teams are currently housed on barges which are inefficient, costly to move, and take up valuable berthing space. New field shop and project team facilities are required.

c. Berths 11, 12 and 13

Berths 11, 12 and 13 support highly active industrial functions during the final stages of submarine overhaul. The berths are located away from the support production shops causing inefficiencies in work flow. Field shops are also scattered and project team offices are located on barges and trailers. Temporary utility services used in the overhaul are portable units and are highly inefficient and expensive. These units, as well as the barges, must be relocated with each ship movement. The plan recommends a project to increase production and reduce the inefficiencies of operations at the berths.

2. Training

The Shipyard has a growing requirement for training due to the rapid growth of "state-of-the-art" technology, and the new repair requirements of the 688 class submarines. The Employee Development Division plans, develops and conducts programs for the training of apprentices, supervisory management and instructor certification.

Currently, training is being conducted in Buildings 99, 14, and in 32 small areas in various shop buildings. The scattered training in the shop areas is very inefficient. Training time on shop equipment leads to a reduction of productivity. Space in Building 99 lacks lounges, faculty restrooms, and an audiovisual laboratory. In addition the building configuration prevents it from being effectively used for teaching purposes. Existing classroom sizes are restricted by structural limitations and further modifications are not economically feasible. The continued growth of the Shipyard Apprentice Program requires an increase in student capacity and non-classroom support space. Existing facilities also lack a study hall and lecture hall. The Shipyard auditorium is not configured for effective training and the conference room in Building 22 is almost in constant use.

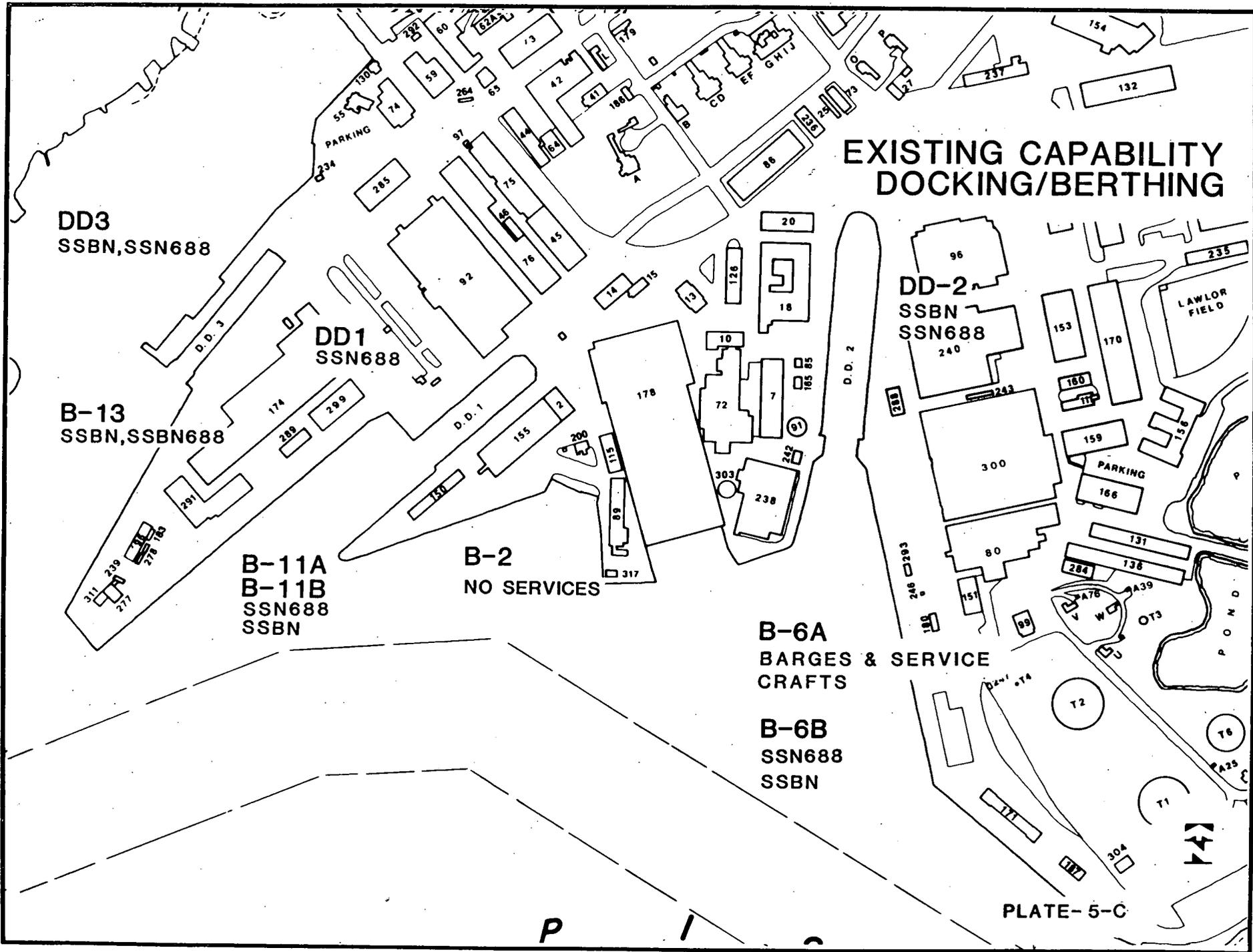
The plan recommends the consolidation and expansion of academic and applied instruction space to meet the requirement for modernization of Training.

3. Maintenance and Production

a. Drydocks

The existing drydocks at the Shipyard are fully utilized and the current docking schedule indicates that this will continue through the 80s. One of the major problems is the limited flexibility of the drydocks. Only drydocks 2 and 3 are capable of accommodating the 688 class. Drydock 1 is too small to handle the 688 class. None of the Drydocks can accommodate the next generation of SSNX Class Submarine. This will severely limit the Shipyard's ability to accommodate the fleet. The configuration of the three drydocks in the CIA results in a very congested circulation mix of people, materials, and supplies. The utilities are in good shape and only minor upgrading is required at Drydocks 2 and 3.

1.) Drydock 1. The usefulness of Drydock 1 is marginal and will become less useful as the older class submarines are retired and the makeup of the fleet becomes all 688 class and SSNX class. Currently, Drydock 1 can handle the smaller class only with the aid of external floatation tanks. The plan recommends the construction of a new facility specifically configured for the 688 class and the SSNX class. This will allow the Shipyard to take advantage of modern "state-of-the-art" industrial processes, techniques and equipment. The result will be a substantial savings due to shorter time requirements for repairs. The facility should be covered for weather protection and house all other necessary functions including shops, administration, and personnel support.



2.) Drydock 2. This drydock is capable of overhauling all current classes including, the SSN 688 class. Drydock 2 is limited because it lacks refueling and defueling capability and is not deep enough to dock the SSNX Class. The Shipyard is scheduled to start defueling overhaul SSN 597 Class in late 1989 and refueling overhauls for SSN 688 Class in 1992. The refueling/defueling requires a drydock and Drydock 2 was selected. A crane is required for refueling/defueling. Because of the limited land available at Drydock 2, a stiff leg derrick is recommended. The project documentation has been submitted.

3.) Drydock 3. Drydock 3 is capable of handling all current classes of submarines including the 688 class, but not the SSNX Class. In addition, the drydock has fueling and defueling capability for SSN and SSBN Class Submarines, but not SSN 688 Class.

b. Shops

The Maintenance and Production shops have several general problems that are common to most codes at the Shipyard. The age of facilities at the Shipyard is a concern. Originally constructed for a different generation of equipment, most are poorly configured and result in inefficiencies and safety problems. As shop functions have expanded to accommodate new missions, some overcrowding has occurred and problems arisen when shops have tried to accommodate "state-of-the-art" equipment in antiquated buildings. Due to the growth of the repair function, shops were also constructed in several locations throughout the Shipyard. The following is a list of major shops and their requirements:

1.) Temporary Service Shops

The temporary Service Shop 99, located in Building 45, provides electric, air, water, steam and other services to all ships and barges whether afloat or in drydock. Shop 99 stores equipment in seven buildings and several outdoor locations. Many of these structures are unheated and structurally inadequate for bulk storage. Maintenance functions are scattered in four buildings creating inefficiencies in material handling and supervision. This results in costly equipment transportation, personnel travel time and poor communication. The plan recommends the consolidation of all outlying storage and maintenance into a central shop.

2.) The Riggers Shop

The Riggers Shop, located in Building 7, serves the submarine overhaul operation with rigging services and fabrication of temporary protective coverings. The shop is operating considerably below peak efficiency due to inadequate floor loading capacities, remote storage of equipment, and dirty working conditions due to the rough wooden floors. The building structure prevents the use of optimal equipment and layouts. The plan recommends increasing the floor loading capability in Building 7 which will allow the relocation of shop machinery and the consolidation of storage.

3.) Structural Group Shops

The Structural Group is made up of Shipfitters Shop 11 in Building 92, Sheetmetal Shop 17 in Building 75, and Welding Shop 26 in Building

92. The Shipfitting and Welding Shops are suffering from problems related primarily to operational inefficiencies and severely limited space. The work area limits efficient production and material flow. In addition, there are scattered storage areas in five buildings. The plan recommends the consolidation of all functions under one roof.

4.) Propeller and Shaft Shop

Propeller and shaft rework is presently performed in several locations requiring excessive handling and transportation. Machinery layout and laydown space is inadequate. The Shipyard Modernization Study recommends the consolidation of all propeller and propulsion shaft rework activities into one facility. This consolidation will result in more efficiency in shop operations.

5.) Pipefitting Shop

Fabrication of pipe assemblies is currently performed in Building 155. This work area is overcrowded and poorly laid out resulting in inefficient work flow. Equipment and layout areas are located too close together for required access. The ventilation system is inadequate. The Shipyard Modernization Study recommends a new facility to provide shop, office, and administration space for the Pipefitting Shop.

6.) Battery/Transducer Shops

Facilities and equipment currently used by the Battery/Transducer Shops are inadequate. The deficiencies adversely affect the quality of

work, and the ability of meeting scheduled work loads. The Shipyard Modernization Study recommends the renovation of the existing facility, Building 238.

7.) Electrical/Electronics Shops

The quality of work and efficiency of operations are adversely affected due to deficiencies in Building 240 that includes poor use of storage space, tight laboratory work areas, poor training equipment and facilities, poor electrical systems and lack of facilities for testing. The Shipyard Modernization Study recommends the renovation of existing Building 240 to provide more functional, efficient, safe, and environmentally acceptable operation.

c. Quality Assurance

The Quality Assurance Office (QAO) provides engineering test, inspection, evaluation, and analysis in support of the Shipyard's Quality Assurance and Quality Control programs. Quality assurance facilities are currently scattered in 15 locations, limiting the efficiency of operations. The areas are crowded, and duplication results because of the many locations. The plan recommends the consolidation of testing into a new facility and renovation of some existing facilities to house the laboratories and offices required. This will provide efficiency in testing, inspections, evaluations and analysis in the quality assurance programs.

d. Public Works

Public Works Department is currently located in three scattered locations and the related shops are located in seven separate buildings. Most of these structures are very old and poorly configured for Public Works functions. The plan recommends the consolidation of Public Works into a new facility for the engineering and administrative functions. This consolidation will result in more efficiency and control of Public Works functions.

e. Abrasive Blast Facility

The existing abrasive blast and paint operations have insufficient space and equipment for the present heavy workload and future workload will require a significant increase in capacity to perform this type of work. The existing Shop 71 in Building 285 is heavily overstressed, does not meet OSHA standards, and retrofit work to improve condition is not economically feasible. The existing weight handling equipment for the staging of materials to and from blasting, as well as painting, creates problems in painting quality due to the lack of dust control.

f. Integrated Repair and Test Facility

Various work functions associated with Integrated Repair and Test Facilities are scattered throughout the Shipyard resulting in inefficiencies and duplication. There are no facilities available for complete integration of systems testing that are essential in the post overhaul period. The Shipyard Modernization Study recommends the construction of a new Integrated Repair and Test Facility.

g. Manufacturing Process Test and Evaluation Facility

There is no on base facility to conduct tests and evaluations of processes, methods, techniques and materials that are currently performed by vendors, suppliers, or other outside testing establishments. Since Naval applications are frequently classified, on Base facilities are required. The Shipyard Modernization Study recommends the construction of a new test and evaluation facility.

4. Supply & Storage

a. General Storage

The Supply Department currently stores its materials in over 20 locations. Most of these facilities are substandard and beyond their economic life expectancy. They have low stacking heights and were not designed to accommodate modern handling equipment. The buildings are scattered throughout the Shipyard resulting in inefficiencies in delivery, records, inventory, control of materials, and travel time. The size and configuration of the buildings limit renovations to accommodate the new "state-of-the-art" automatic stacking and retrieval systems.

Accountability of materials and timely delivery to the production shops and waterfront repair facilities is a critical element in Shipyard productivity. The storage and handling systems must be efficient, timely, provide the proper storage conditions and be flexible enough to accommodate future Shipyard repair programs. The

plan recommends a new high bay facility that will allow consolidation of supply from substandard facilities. The new facility will accommodate the newest stacking, retrieval, shipping and receiving, pallet rack and bulk storage systems, and an automated inventory control system.

b. Material Test and Storage

The testing and warehouse facilities are presently scattered in four buildings which results in inefficient duplication of effort. New mission requirements of the 688 class will place additional burden on these facilities. Buildings 98, 79, 132, 149, and 177 all contain storage, for material testing, that totals approximately 110,000 SF. Of this total, only Building 98 with 22,000 SF is inadequate. All the structures are of pre-WW II construction and Buildings 98, 132, 149, and 177 are poorly configured to allow the proper movement of modern supply storage equipment. Building 79 is located in the CIA and can be better utilized for CIA production functions. The plan recommends the consolidation of material test and storage functions in a new warehouse.

c. Controlled Material Storage

Controlled materials, used in the overhaul of submarines, are stored in three locations in the Shipyard: Building 168 is the main controlled material storage facility, Building 170 is the receipt inspection area, and Building 178 provides a static storage site for large components. Buildings 168 and 178 are outside the CIA and are remote from the waterfront area. Building 178 is a multi-purpose storage facility with heating and security problems. Other

problems include lack of proper weight handling equipment, wood frame construction with a higher risk of fire and improper ventilation. The plan recommends renovating Building 96 to consolidate all controlled storage functions. This will increase control and eliminate duplication of operations.

d. Hazardous Material Storage

Hazardous material transfer handling and storage currently occurs in three buildings. Buildings 98 and 169 house the major portion of this function. Building 98 has severe foundation problems causing settling of the floor in many locations. The building also suffers from old age and has structural and ventilation problems. Building 169 is used for the storage of compressed gas cylinders. Building 229 provides space for lubrication and hydraulic oils. All hazardous material management functions are presently being performed in substandard facilities which have resulted in outstanding OSHA and Inspector General deficiencies with insufficient space to meet present and future projected hazardous material management. The plan recommends the construction of a new consolidated hazardous material storage facility.

e. Automated Containerized Supply System

Materials removed from a ship for repair and storage are presently stored in a portion of Building 178 on pallets and shelves and in other buildings where space is available. This existing system of storage does not have a good material control system nor an efficient use of storage space. This results in delays due to

inefficient retrieval of materials from storage. The Shipyard Modernization Study recommends the renovation of Building 178 to provide an automated containerized supply system.

f. TRF Supply Facility

A supply and storage facility is required to provide support for the Transducer Repair Facility in Building 306.

5. Medical and Dental

The Medical, Optometry, Audiology, and Radiation Health Divisions operate within a three-story structure designed as a hospital in 1913. The facility cannot provide for ambulatory health care and does not permit linear work flow required for acute care or occupational health support. The distance from the CIA and Main Gate causes lost time for the workers off the job as well as travel problems for processing new and retiring employees.

The Dental Clinic is located in Building 73. The clinic has satisfactory spaces, but very old equipment. Building 73 is scheduled for demolition as part of the new admin/engineering management addition to Building 86.

The plan recommends a new combined Medical/Dental clinic be constructed near the CIA and Gate 1.

6. Administration

There is a large deficiency of adequate administrative space at the Shipyard. Administrative functions are scattered in five separate locations, causing excessive movement of personnel and poor communications resulting in a loss of productivity. Some administrative functions are located in space that could be better used for production functions.

Building 79, is located in the Controlled Industrial Area. This building could be better utilized to house technical codes presently located in Building 174. In turn, the space in Building 174, adjacent to Drydocks 1 and 3, Berths 11, 12 and 13, can be better utilized for project team offices and field shops in support of the Shipyard mission. The consolidation of the 200 codes from Buildings 29, 41, 79, 86, and 236 is needed to bring about the benefits of freeing up Building 79 and 174 space for better utilization. The existing Building 86, a converted supply warehouse built in 1905 requires modernization for efficient operations.

The plan recommends the construction of a new centralized facility that will consolidate the scattered administrative functions and have easy access to all shops and submarines. This project will allow the vacated space in other buildings to be used more effectively by other departments, especially at the waterfront.

7. Housing and Community Support

There are no deficiencies or other problems in Troop or Family housing at the Shipyard.

The community support facilities, except for those below, are generally adequate. The plan recommends the following projects:

a. Chief Petty Officers' Club (CPO Club)

The Chief Petty Officers' Club is located in Building 248, a substandard wooden pre-WW II structure. The building has severe deficiencies that result in excessive maintenance and operation costs. The enlisted personnel assigned to the Shipyard are being offered inadequate and inefficient club facilities that do not offer full club services. A new replacement structure is recommended.

b. Indoor Swimming Pool

The Shipyard currently lacks a swimming facility. The closest facility is located approximately eight miles from the Shipyard and is heavily used by city residents. The Shipyard has a requirement for a swimming facility for all military personnel and their dependents.

c. Auto Hobby Shop

The Auto Hobby Shop is located in Building H-10, a structure that dates from WW II and was not designed for an Auto Hobby Shop. The structure is shared by administration functions, and occasionally, fumes from the hobby shop enter the administration areas. The Shipyard

requires a new efficient, safe, indoor auto hobby shop for use by military and their dependents.

d. Pass and Security Office

The current facility, Building 203, is not adequate to provide services to visitors, contractors, and potential employees. Inefficiency of the building interior plan hinders proper circulation which causes excessive waiting periods. The Shipyard Modernization Study recommends a replacement facility in the vicinity of Building 203.

C. SUMMARY OF DEVELOPMENT CONSTRAINTS

1. Man Made

- a. Drydocks and Berths - Their location and configuration determine in advance any other development in the area because these existing facilities are too costly to relocate.
- b. Boundary - The acquisition of additional land for expansion is impossible due to the fixed nature of the island's boundary.
- c. Cranes and Trackage - The railroad and crane tracks cannot be cut off from the facilities they serve. Also, the crane swing clearance space cannot be obstructed.
- d. C.I.A. - Only certain functions can be located in the CIA due to security requirements.

SUMMARY OF CONSTRAINTS

LEGEND

-  CRANE AND TRACKAGE
-  C.I.A.
-  HISTORIC DIST.
-  ESQD ARC
-  SPOILS AREA
-  STEEP SLOPE
-  TREES
-  PONDS
-  LAND FILL

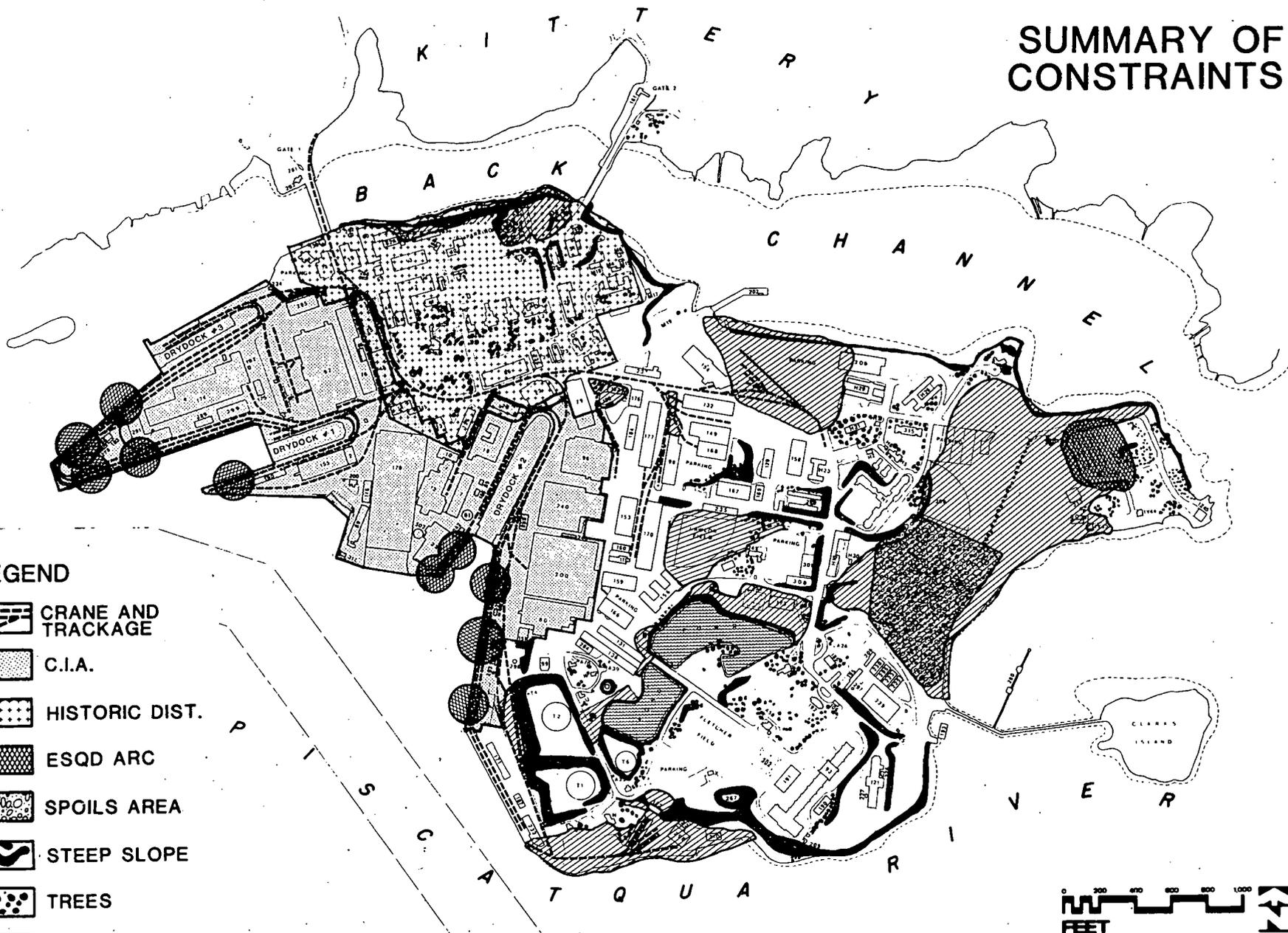


PLATE-5-D

- e. Historic District - Work performed on the facilities in the Historic District has to be reviewed by the State Historic Preservation Officer.
 - f. Explosive Safety Zones - Regulations prohibit the construction of inhabited buildings or structures within ESQD arc safety zones.
 - g. Spoils Area - The required corrective measures to mitigate or eliminate confirmed pollution problems will have to occur before the spoils area can be developed for outdoor recreation as proposed by this plan.
2. Natural
- a. Slopes - There are several locations on the island where severe and moderate slopes would increase costs for new facility construction.
 - b. Vegetation - The limited vegetation on the island should be preserved.
 - c. Wetlands - Similar to the vegetation, the two ponds on the south central portion of the island are a major element of the limited natural environment at the Shipyard and should be preserved.
 - d. Floodplain - Information on the 100 and 500 year floodplains is not available at this time.
 - e. Soil Suitability - There are several areas of filled land that cannot support the weight of large structures.

D. DEVELOPMENT CONCEPTS

The following development concepts have evolved as a result of the analysis of all data previously discussed:

1. Increase the capacity and flexibility of the Shipyard to support the fleet.
2. Remove all nonessential functions from the CIA.
3. Consolidate similar functions to increase the efficiency of their operations.
4. Upgrade and renovate industrial facilities to modern standards to support the specialized quality of work required for submarine repairs.
5. Relocate functions that occupy sites having a higher and better use.
6. Utilize multi-story construction for buildings whenever possible due to the shortage of buildable land.
7. Provide expansion opportunities for all major Shipyard functions.
8. Minimize conflicts between the Historic District and the facility requirements needed to support the Shipyard mission.
9. Rehabilitate major underutilized facilities for Shipyard functions.
10. Support the Base Exterior Architectural Program and the Shipyard Modernization Program.

E. PROPOSED PLAN

This section represents the culmination of the Master Planning process. It discusses the proposed facility and land use along with future expansion capacity.

1. Facility Use - The proposed facility use discusses changes in the utilization of the Shipyard buildings and other facilities. The changes include the relocation of activities from one building to another, the renovation and/or expansion of buildings for specific activities, and the construction of new buildings or facilities. The facility use plan portrays the siting of these actions. See the Capital Improvements Plan (CIP) for descriptions of the projects.

a. Operations

1. The Berth 11, 12, and 13 area supports highly active industrial usage during the final stages of submarine overhaul after the drydock period is complete. In order to increase production capacity and reduce inefficiency in operations, Project 181, Pier Modernization, Berths 11, 12, and 13, will provide four new buildings in this waterfront area. They are: (1) a restaurant, field shop, and supply; (2) a mechanical building; (3) a pure water facility; and (4) an electrical substation. Buildings 183, 196, 239, and 289 will be demolished.

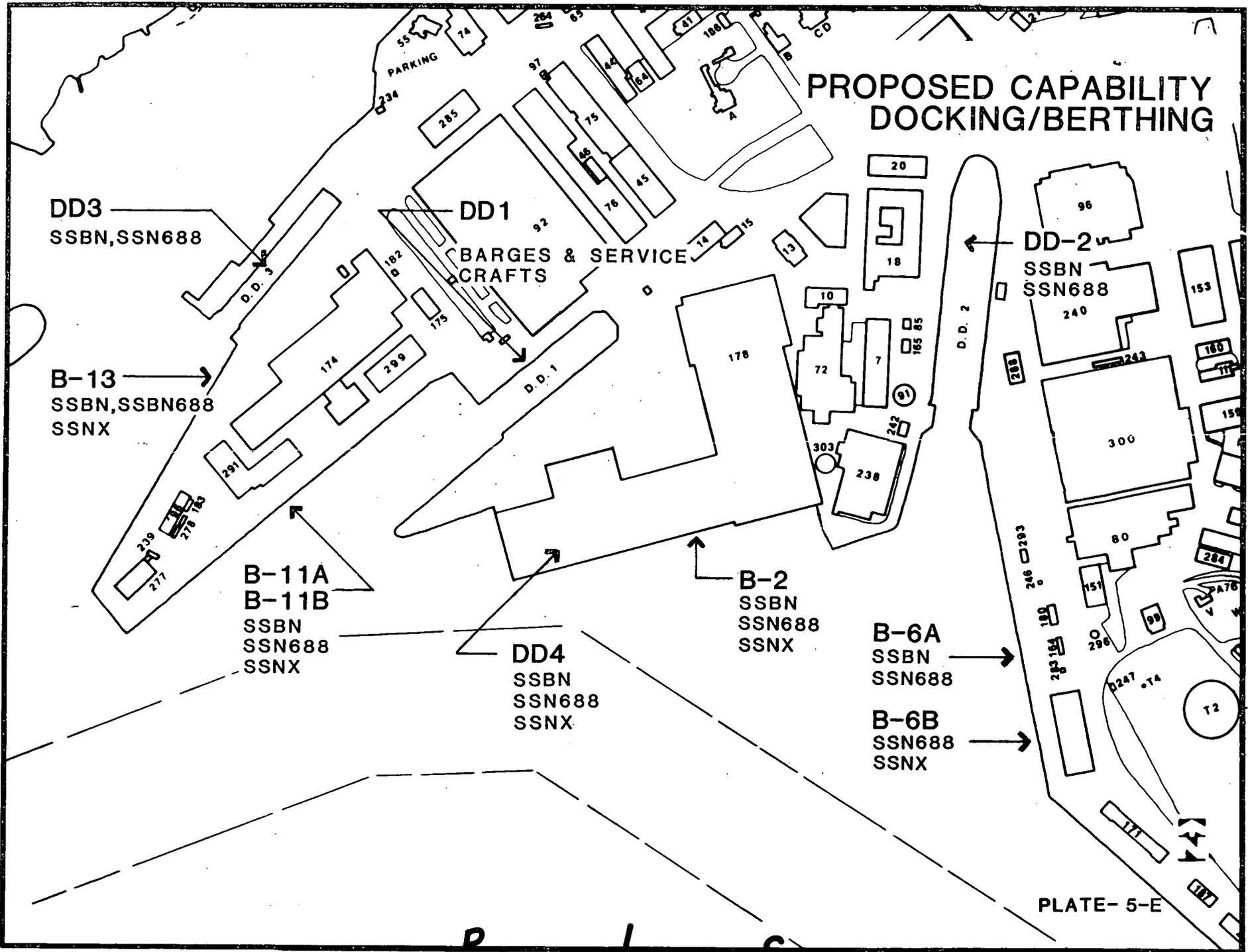
2. Berth 6 is currently a parking berth only, however, it does have the depth and crane access to support its upgrading to a needed repair berth. Project P-195, Upgrade Berth 6 for SSN/SSBN overhaul, provides a one-story con-

solidated field shop for seven shops, a project team facility and a two-story administrative building. Also, the proposed project will provide supershore power, hotel power and D.C. power for testing of the 688 class. Additional utilities will include new high pressure steam and condensate return lines, and upgraded compressed air, fresh water and low pressure steam. As part of construction, the Structure 286, a testing slab, will be demolished. These new facilities will also support the operation of Drydock 2.

b. Training

At present, Training is being conducted in Buildings 99, 14, and 32 small areas in various industrial shop buildings. Building 99 is insufficient for classroom and supporting non-classroom spaces. The training areas within the 32 industrial shops lack the proper training support facilities. Project P-199, Training Facility, will provide alterations to the S.W. wing of Building 93 to accommodate the needs of the growing Shipyard Apprentice Program by consolidating academic spaces and applied training spaces into one facility. Through consolidation, all trade programs will have access to required support areas such as a lecture hall, an audio-visual laboratory, administrative personnel, student and faculty lounges, and faculty work areas. Buildings 99 and 14 will become available for the Maintenance and Production function and spaces in the 32 shops will be utilized for production.

PROPOSED CAPABILITY DOCKING/BERTHING



c. Maintenance and Production

1. The Structural Group Shipfitters Shop 11 in Building 92, Sheetmetal Shop 17 in Building 75, and Welding Shop 26 in Building 92 are suffering from problems related primarily to operational inefficiencies and severely limited space. In order to achieve a more efficient overall operation of the Structural Group, all three shops will be consolidated under one roof. Project P-120, provides for the northern and western expansion of Building 92 along with the construction of a second and third level within existing bays. Building 76 and the plate yard, both adjacent to Building 92, will be refurbished as part of the project. The space vacated in Building 75, by the Sheetmetal Shop, will be utilized for other Maintenance and Production functions.

2. The Riggers Shop, is operating considerably below peak efficiency due to internal structural limitations creating an inefficient layout of equipment and work space. Project P-125, Rigger Shop Modernization, will upgrade and remodel Building 7 to obtain more efficiency. The project will reinforce the second floor, relocate shop equipment, provide a monorail, and remodel work areas which will provide an optimum layout of the first and second floors.

3. The QAO facilities are scattered in 15 separate locations creating inefficiency of operations. Equipment maintenance at three machine shops and duplication of effort results from the separated facilities. One building,

150, utilized by QAO is designated inadequate by the latest engineering evaluation. Project P-127, Quality Assurance Facility, will construct a multi-story building to consolidate all operations. The new QAO building will be located on the site of Building 126 after it is demolished. Building 150, an inadequate structure, will also be demolished after being vacated by QAO functions.

4. The Temporary Services Shop 99 stores equipment in Buildings 10, 45, 178, 233, 206, 295, 121, and various outdoor locations. Many of these buildings are unheated and structurally inadequate for bulk storage. Maintenance functions are scattered between Buildings 45, 10, 178, and 233 creating inefficiencies in material handling and supervision. Project P-131 will demolish the brick wall dividing Buildings 45 and 75, provide structural supporting members where necessary, and reroute utilities as required to provide one continuous facility. Crane rails will be installed in Building 45 to match those in Building 75 providing single crane service the entire length of the consolidated building. All wooden additions attached to the basic brick structure will be demolished and a new administrative complex will be constructed within.

5. The existing electric power available at Drydock 2 is inadequate to meet the demands required by the 688 class submarines. Since these newer submarines will become part of the future workload at the Shipyard, the electric power must be increased.

6. Drydock 1 has the capability for docking early SSN 594 and 637 class submarines with the addition of external floatation device only. In order to meet the docking requirements of 688 and other future submarines, a new larger drydock is needed. Project P-172, New Drydock Facility, will construct a new drydock outboard of Berth 2. It will be connected to Building 178 which will be used as a shop, office, and storage area. This new facility will be enclosed to provide an optimum work environment. In addition to the dock and related work areas, the project also includes materials handling access systems and crane service, offices for Navy Project Teams, field shops and offices, automated storage systems, and related personnel services and material handling facilities for nuclear refueling operations. The construction of the new facility will require the demolition of Building 89, Production Shop, Building 115, Production Shop, and Building 200, Propane Gas Building. Structure 317, a fixed crane, will be relocated, and Berth 3 will be eliminated. With the completion of the new drydock, Drydock 1 can be used for berthing the various Shipyard barges and other smaller craft.

7. The existing Abrasive Blast Shop 71 in Building 285 is heavily overstressed, does not meet OSHA standards, and retrofit work to improve condition is not economically feasible. Project P-217, Abrasive Blast and Paint Facility, will construct a new building providing improved plant layout, material handling and quality control, and productivity improvements for increased workload capacity. The new facility will provide

for silk screen work, sign painting, and miscellaneous painting now located in Building 64. Building 64 will be used for other Maintenance and Production functions.

8. Portsmouth Shipyard will start performing the refueling of 688 class submarines in FY 1992. At this time, the Shipyard does not have the weight handling capacity to perform this function. Project P-225, Refueling/Defueling Crane at Drydock 2, will provide a 165-ton stiff leg derrick crane atop a reinforced concrete tower. The steel derrick will have a boom hinge in height of 45 feet above ground level. A machinery house will also be constructed approximately 150 feet from the mast leg. The new crane will be located on the east side of the drydock adjacent to Building 240. No demolition of existing structures is required.

9. The Public Works Department is now located in three scattered locations, and the related facility maintenance shops are housed in seven separate buildings. The majority of the buildings are very old and in poor condition. The present transportation shop, Building 154, is in good condition but is inefficient as a transportation maintenance shop. Ceiling heights are very low, and the configuration results in inefficient use of interior space. Public Works engineering and administrative functions are located in Building 237 and are severely overcrowded. The Shipyard Modernization Study proposes a project that will consolidate Public Works functions. Building 154, the existing transportation shop, will be converted into

facility maintenance shops and storage. A new transportation maintenance shop will replace the existing inefficient shop, and a new administration/engineering facility will replace the overcrowded Building 237. This consolidation effort will provide better control, communication and efficiency.

10. Propeller and shaft rework is presently performed in several locations. This results in excessive handling and transportation. Unpacking and repacking of propeller shafts and propeller gauging and repair is presently performed in a temporary structure, Building 178. Propeller balancing is performed in Building 240. Propeller shaft repair and rework is performed in Building 300 which is not large enough for all shop operations. Machine tools are placed without sufficient clearance space and insufficient laydown areas create safety and work flow problems. The Shipyard Modernization Study recommends the construction of a 51,000 SF permanent facility to allow the consolidation of all propeller and propulsion shaft repair functions. Vacated space in Building 178 will be used for storage of rip-out materials, vacated space in Building 140 will allow for the expansion of other balancing operations, and vacated space in Building 300 will allow various inside machinery work sections to expand.

11. Pipefitting shop assemblies are performed in cramped and congested work spaces resulting in inefficient work flow. Some OSHA standards are not being met. Building 155 is planned for demolition for P-172, a new drydock. The Shipyard Modernization Study recommends the construction of a one-story 150,000 SF facility to house

the relocated shop, office, and administration functions for the pipefitting shop. Buildings 131, 136, 284, A76, A39, A38, Quarters U, V, W, and Tank T3 will be demolished for construction.

12. Battery/Transducer Shop facilities in Building 238 are inadequate, resulting in adverse effects on work schedules. The Shipyard Modernization Study recommends the modernization of Building 238 to provide for more functional shop operations. The project will restore the Battery Shop, install semi-automatic filling and charging equipment, redesign the existing layout, repair the computer/control room in the Transducer Shop and repair the transducer calibration tank.

13. The Electrical/Electronics Shop is located in Building 240. The building is currently disfunctional and requires utility and elevator repair. The Shipyard Modernization Study recommends the modernization of this facility. The emphasis will be on integrating systems repair and test facilities in conjunction with the Integrated Repair and Test Facility, P-233. Building 240 will be reconfigured. The high bay and low bay areas will be rearranged for efficient work flow. The elevators, HVAC system, and lighting will be repaired and updated.

14. A new Integrated Repair and Test Facility (IRTF) will be constructed to consolidate, IRTF functions currently scattered throughout the shipyard. The Shipyard Modernization Study recommends the construction of a new 122,500 SF two-story building. Demolition of Buildings A-58, 69, Quarters M and Q is required by this project.

15. A new Naval Manufacturing Process Test and Evaluation Facility is required at the Shipyard. Testing and evaluation of manufacturing process methods and materials is currently performed by the vendors or by outside testing establishments. The Shipyard Modernization Study recommends the construction of a new facility with the necessary offices, shops, laboratories and clean rooms to perform required testing and evaluation. Buildings 192, Officers' Quarters, and Building 106, a garage, will be demolished to provide the construction site.

d. Supply and Storage

1. Controlled materials, used in the overhaul of submarines, are stored in three locations in the Shipyard: Building 168 is the main controlled material storage facility, Building 170 is the receipt inspection area, and Building 178 provides a static storage site for large components. Several problems with these facilities include lack of proper weight handling equipment, wood frame construction with a higher risk of fire, adjacent buildings of wood construction, improper ventilation, locations outside the CIA remote from the waterfront operations, and inadequate security. Project P-196, Renovate Building 96 for Controlled Material Storage Facility, will provide major renovations to Building 96 to provide a secure, consolidated facility with proper material handling equipment suited for the storage, receipt/inprocess inspection, minor repair, and handling of controlled materials. Building 168 will be demolished as part of the new Consolidated Ware-

house Project, Building 170 will be retained for Supply function use and Building 178 will be incorporated into the new drydock to be constructed at Berth 2.

2. Hazardous material transfer handling and storage currently occurs in three buildings. All hazardous material management functions are presently being performed in substandard facilities which have resulted in outstanding OSHA and Inspector General deficiencies with insufficient space to meet present and future projected hazardous material management. Project P-215, Hazardous Material Transfer Handling and Storage Facility, will provide a new one-story building with sufficient space to consolidate all functions from Buildings 98, 169, and 229. After completion of this project, Building 98 will be vacated and temporarily used for other Shipyard space deficiencies. The building will eventually be demolished to make part of the site for the new Consolidated Supply Warehouse, MP-001. Building 169 will be used for other supply functions and Building 229 will eventually be demolished to make way for P-215, Hazardous/Flammable Material Storage.

3. Material testing and warehouse facilities are currently scattered in five buildings resulting in inefficient duplication of effort. New mission requirements of the 688 class will place additional burden on these facilities. The Shipyard must provide a secure, efficient materials testing and storage for Level One material. The proposed project, P-218, provides for the consolidation of target metal material

testing and storage in a new building containing 112,800 SF. Buildings 98 and 177 will be demolished to provide the site for construction and the testing and storage space in Buildings 79, 132, 149, 98, and 117 will be relocated into the new facility. Buildings 132 and 149 will be demolished to provide the eventual site of the proposed Consolidated Warehouse Facility. Vacated space in Building 79 will be used for production.

4. The Transducer Repair Facility (TRF) is located in Building 306, and requires a supply and storage facility. A new building will be constructed to provide the necessary supply support. Construction will be adjacent to Building 306.

5. Materials presently removed from a ship for repair and/or storage are stored in Building 178 or other buildings where space is available. This leads to production delays due to inefficient retrieval of materials. The Shipyard Modernization Study recommends the modification of 80,000 SF of existing space in Building 178 to accommodate an automated containerized supply system in the high bay east part of the building. Shops presently occupying the space will be relocated.

6. The Supply Department currently stores materials in over 20 locations. Most of these facilities are substandard. They are old structures that are poorly configured, have low stacking heights, and some are without heat and

ventilation. The Shipyard requires a new consolidated warehouse to employ modern methods of handling, storage, and retrieval of material and storage. The project will construct a high bay building containing space for supply, administration, shipping, and receiving. The project includes the demolition of Buildings 132, 149, 168, 235, and 129. Space in the other vacated buildings will be used for Maintenance and Production functions.

e. Medical and Dental

1. Building H-1, the former hospital, cannot provide for ambulatory health care and does not permit linear work flow required for acute care or occupational health support. The distance from the CIA and Main Gate causes lost time for the workers. The Shipyard requires a new Medical Clinic. The existing hospital building cannot be economically converted into an efficient medical and dental clinic. The proposed project, P-107, will construct a new 62,000 SF facility sited near the Main Gate. Another project will renovate the existing hospital, Building H-1 for administrative functions. The related services of the Dental Clinic and the Occupational Safety and Health Office will be consolidated into the facility. The Dental Clinic is located in Building 73 which is scheduled for demolition as part of P-145, the new addition to Building 86. The Occupational Safety and Health Office is located in Buildings H-1, 22, and 27. Space in Buildings 22 and 27 will be used for Administration or Community Support interior functions.

Building H-1 will be modernized to provide administrative/engineering space. Building H-1 will also be used to house occupants displaced by the demolition of Buildings 43, 62, 62A, 63, and 188 which have to be razed to make a site for the new clinic. Shop Store 07 will be relocated to Building 74 which will be vacated under another project.

The project is in the Historic District and will have an adverse affect on the building demolished to provide the site of the clinic. An environmental assessment will be required.

f. Administration

1. The administrative functions are currently located in seven buildings throughout the Shipyard. This situation causes excessive and unnecessary travel of personnel resulting in lost productivity. There is also a large deficiency in the amount of adequate Administrative space at the Shipyard.

The project, P-145, provides a 114,000 SF six-story addition to Building 86 to reduce administrative space deficiencies. The project will consolidate and centralize engineering management functions, replace inadequate space, modernize Building 86, and renovate a portion of Building 29 for occupants replaced by the demolition of Building 73.

Adequate facilities vacated by this project will be utilized to correct deficiencies. Building 29 will have 11,000 SF that will be used by dis-

placed functions by the demolition of Building 73. The Dental Clinic, also in Building 73, will relocate to the new Medical Clinic, P-107, and the occupants of Building 236 will be moved to Building 86.

The project is in the Historic District and will have an adverse impact on the buildings demolished. An environmental assessment will be required.

Building H-1 will be renovated for Administration when the new Clinic is constructed.

g. Housing and Community Support

1. The Shipyard currently lacks a swimming facility. The project, P-147, will provide an indoor swimming pool allowing year-round swimming. The site is to be located near the Bowling Alley, Building 308 and the Recreation Building, Building 301, which are part of the existing recreational complex.

2. A new Hobby Shop is required to provide an efficient, safe, and indoor shop for use by military personnel and their dependents. Project P-190 provides a 4000 SF facility which includes 8 automotive stalls, area for general repairs, tune-up, muffler, tire, and body work. It will be sited to the east of Building H-25. Space vacated in Building H-10 will be used for general storage.

3. There is an 8,000 SF requirement for CPO Club space. The existing building has severe deficiencies. The project, P-211, will construct a

new CPO Club facility for enlisted personnel E7-E9, their spouses, and Navy and Marine Corps retirees in the area. Building 248 will be demolished to provide the site for the new club.

2. Land Use. The proposed land use ~~is a plan that designates what type of facilities and functions that can be developed on each land use area. The proposed plan differs from the existing land use at many locations, throughout the Shipyard.~~ The changes in land uses ~~areas~~ were made to create consolidated land areas of similar or compatible use. The proposed plan provides sites for the expansion ^{OR RENOVATION} of existing facilities and new construction and ensures that ~~new~~ changes are compatible with adjacent land use. ~~The result of using this proposed land use plan as a guide for future development will be a highly organized Installation with good access to all land areas.~~

~~The land use area changes are created to accommodate new construction and renovation projects that relocate existing functions and consolidate others.~~

. The Operations Area expands slightly when a new drydock is constructed at Berth 2. The outboard side of the new Drydock will create a new berth.

. Training Functions scattered in the shops area and other Shipyard locations are consolidated in Building 93 after renovations.

. The Maintenance and Production land use expands when Training and non-related Administration land use areas are relocated from the production area, freeing up badly needed space.

. The Supply land use area expands into vacated hazardous material storage areas. The hazardous material storage is relocated to a new site northeast of Building 93.

. The Medical functions in Building H-1 are relocated to a new facility and land use area near the main gate. Other scattered medical related functions will be consolidated at this facility.

. Administration is consolidated from the production areas to the addition of Building 86, and buildings 93 and H-1 land areas change to Administration.

. The Housing and Community Support areas remain the same. New construction of the CPO Club, indoor pool, and auto hobby shop occur on existing Community Support land use areas.

3. Expansion Capacity

Because the Shipyard is an island, the expansion capacity is severely limited. As a result of the intensive development in the past, few sites are available for expansion after the currently planned facilities are constructed. Any mission requirement that would require large tracts of land could only be met by the Navy acquiring new land near the Shipyard, by filling the Clark's Island Cove area, or by the demolition of existing facilities on the island.

Additional small land areas for future expansion on a site by site basis include the following:

. The elimination of family housing adjacent to the oil storage tank area would free up land for the expansion of Maintenance and Production. The housing in this area is an incompatible land use.

. Buildings 160 and 111 are two small buildings utilizing a site that could accommodate a larger modern building. The functions currently housed in Buildings 160 and 111 could be absorbed into space provided by projects already planned. Then Buildings 160 and 111 could be demolished.

. The spoils area has some construction problems, but could be used for future expansion. Careful environmental analysis would have to be considered before any construction could begin.

. The Shipyard's playing fields, Lawlor Field and Field 309 could be relocated to a "stabilized" spoils area. The vacated sites could be used for Supply or Maintenance and Production facilities.

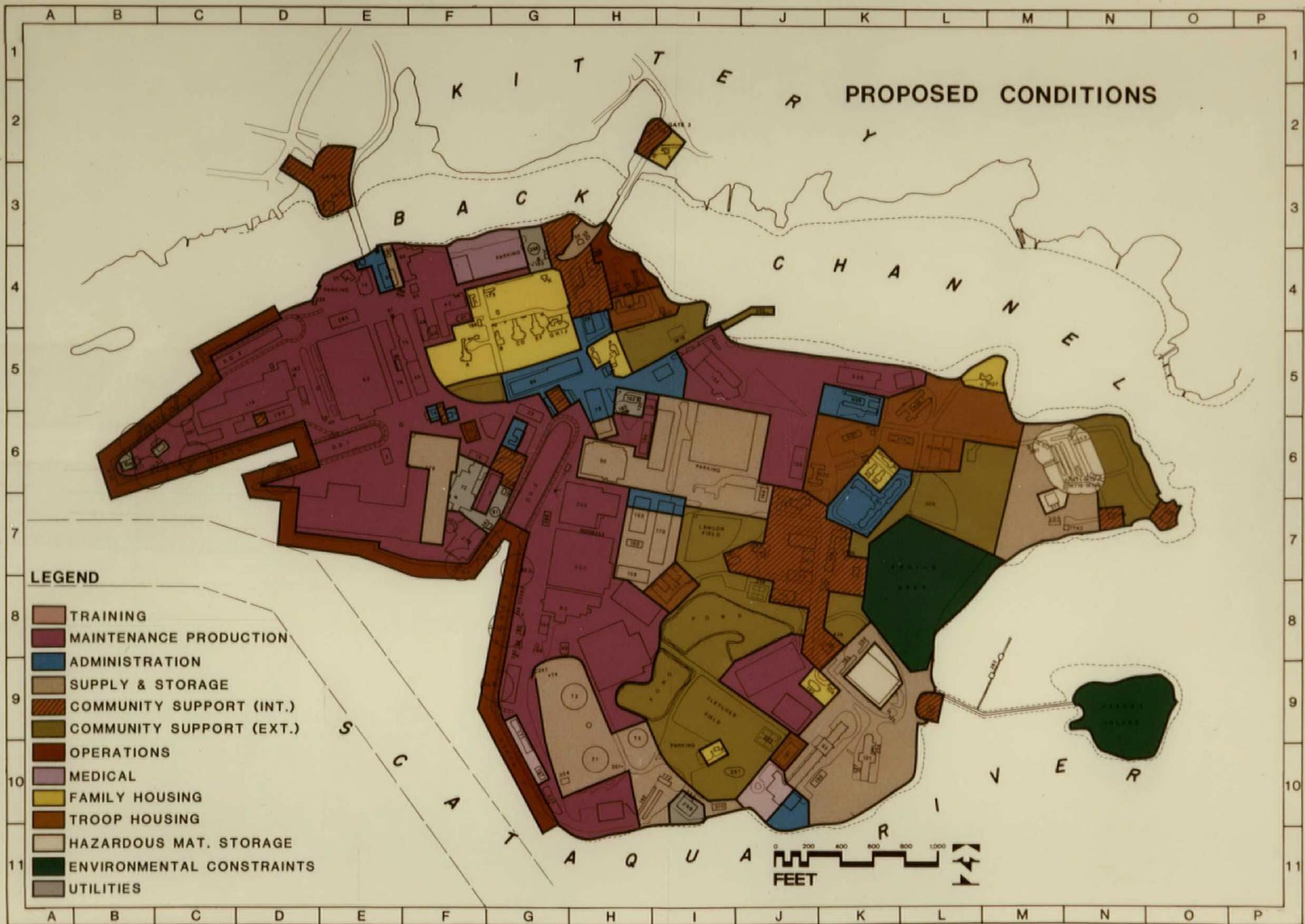
. The Naval Reserve Training Center could be relocated to the area adjacent to the former brig, Building 93. The vacated site could be used for Operations functions or Maintenance and Production.

F. SHIPYARD MODERNIZATION STUDY

The Shipyard Modernization Study was completed after this Master Plan and could not be incorporated into the body of the text. The following is a summary of the Modernization Study and its recommendations and projects. Full descriptions of the projects developed from the study can be found in the Capital Improvements Plan (CIP), Chapter 8.

1. General - It is recognized that the shipyard is constrained in many ways, (see Chapter 5, Planning Analysis.)

Existing and proposed structures are similarly constrained. In order to meet and accommodate the anticipated changes in future Shipyard repair and maintenance programs, effective use of existing functions and structures must be con-



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sidered. Economy and efficiency were goals of the modernization study. The approach was to identify projects, both Military Construction (MCON) and Industrial Production Equipment (IPE), and to develop them by fiscal year, category codes, and project goals. The Shipyard, because of its age, and constrained natural and geographic characteristics, requires careful analysis. Special considerations were given to projects to minimize their possible effects on current and future Shipyard production. The historic values of structures and land use adjacent to the CIA, were also given special attention.

2. Assumptions - The study was based on anticipated ship configuration and changes caused by the newer classes of submarines as well as probable advances in technology.

3. Constraints

Limitations of the industrial area include the size and configuration of the land mass, an island; the drydocks with their limited capabilities due to size, age, location, crane trackage, limited laydown area, and work flow congestion; and the age and configurations of structures at the Shipyard.

4. Goals and Concepts

- o. Any projects recommended by the Shipyard Modernization Study had to be planned, designed and constructed with a minimum amount of disruption to the production functions at the Shipyard.
- o. Reduce the limitations of obsolete structures and equipment.
- o. Improve the capability of the drydocks to support the fleet by providing improved depth and the installation of drydock shelters for increased production, efficiency, and better security.

5. Summary of Findings

The Shipyard should be modernized to accommodate the 688 Class Submarines in the most effective and efficient way, without excluding the potential for the next generation of SSNX or Trident. While SSNX and Trident are not foreseen in the current work load projections, no project should specifically limit the Shipyards' capability (in the shops or waterfront operations) to serve the fleets' needs.

It is most important to note that the Shipyard must maintain its full range of capabilities during the implementation of all planned projects, both IPE and MCON.

6. Recommended Projects and Description

The following new projects were developed from the Shipyard Modernization Study. Descriptions of the projects are found in the Capital Improvement Plan (CIP), Chapter 8:

- P-230 Propeller and Shaft Shop
- P-231 Pipefitting Shop
- P-232 Modernization of Battery/Transducer Shop
- P-233 Integrated Repair and Test Facility
- P-235 Public Works Facility
- P-236 Consolidated Supply Warehouse
- P-237 Pass and Security Office
- P-238 Modernization of Electrical/Electronics Shop
- P-239 Automated Containerized Supply System
- P-240 Naval Manufacturing Process Test and Evaluation Facility

6. PRELIMINARY ENVIRONMENTAL ASSESSMENT

A. PRELIMINARY ENVIRONMENTAL ASSESSMENT

Prepared by: Northern Division, Naval Facilities Engineering Command for the Portsmouth Naval Shipyard, Kittery, Maine, in accordance with OPNAVINST 5090.1 in compliance with the National Environmental Policy Act of 1969. Northern Division, Naval Facilities Engineering Command may be contacted at the following address for further information.

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B. SUMMARY

The purpose of this Preliminary Environmental Assessment (PEA) is to preview the potential environmental impacts to be expected from both near-term (programmed) and far-reaching (unprogrammed/Master Plan) projects discussed in this Master Plan. The PEA will also alert the Portsmouth Naval Shipyard and the Navy to potential or additional investigations that may be required in order to implement the recommendations of the Master Plan.

1. Description of Action. The Master Plan update is a guideline for future land use and facilities development at NAVSHIPYD Portsmouth in the mid range (five to eight years) time frame. The proposals in this Plan will fulfill the most recent requirements at the Activity, including those identified in the Engineered Long-Range Shipyard Modernization Program. Most of the proposed development has little or no adverse impacts on areas other than the immediate project sites. Therefore, detailed environmental documentation will not be necessary. The proposals which involve listed historical resources may require preparation of Environmental Assessments.

2. Summary of Impacts

The PEA will discuss in detail the programmed projects in this Plan. Some projects will cause temporary, short-duration adverse environmental impacts during construction, which may affect the natural or human environment in several ways:

a. Surface geologic materials and soils suffer some disturbance from building and demolition activities, and from paving. Heavy construction equipment compacts the soil.

b. Air quality is often temporarily deteriorated during construction from dust, fumes, odors, and smoke.

c. Construction practices often cause temporary increases in surface runoff. Soil erosion and waterway siltation are especially high where large areas are stripped bare. Less ground percolation also lowers the local groundwater table.

d. A certain amount of vegetation clearing and grubbing are common construction procedures, however, most of the Master Plan projects occur in previously developed areas and little mature vegetation is disturbed.

e. Dredging will occur during the construction of the drydock and any required deepening of the waterway for the 688 class. This dredging will temporarily disturb the river bottom and include a loss of biota by direct removal or disturbance of habitat material. Sedimentation suspension and deposition will result in temporary decrease in water quality.

f. Visual qualities or site aesthetics are temporarily compromised during construction activities and noise impacts may temporarily increase.

g. Demolition often occurs before or after construction. This generates a variety of solid waste and debris which must be disposed of in an environmentally acceptable manner. Some demolition debris such as asbestos or old oils are classified as hazardous wastes, and thus must meet stringent disposal standards/procedures. More information on hazardous material disposal may be found in Chapter 11 of OPNAVINST 5090.1.

3. Alternatives Considered

a. Recommended Action Adoption and implementation of the Shipyard Modernization Plan and the updated Master Plan will reduce incompatible land use, reduce maintenance requirements, and promote environmental safeguards.

b. No Action Maintaining the status quo at the Shipyard will not accommodate new mission and facility requirements which will not fulfill the primary mission of the Shipyard - repair and maintain the submarine fleet.

c. No Further Construction A moratorium on all new construction will adversely impact the mission capability for all of the activities in the Portsmouth Naval Shipyard.

C. INTRODUCTION

1. Plan Description The project is a major update of the existing approved Master Plan for Portsmouth Naval Shipyard. The Plan provides guidelines on long-range land use and site selection for specific development for the mid-range time frame. The Plan's purpose is to promote orderly development of facilities based on military requirements, current planning criteria and environmental concerns.

2. Major Planning Proposals

o Increase the Shipyard's flexibility to repair and serve the fleet through new construction, (a replacement drydock and a refueling/defueling facility), and utility upgrades, (at the drydocks and berths).

o Accommodate new technologies of submarine service and repair through renovation of existing maintenance and production shop space and construction of new maintenance and production facilities.

D. EXISTING ENVIRONMENT OF PROPOSED ACTIONS

This section deals primarily with the natural environment of the Shipyard. The existing environment is briefly discussed here. More detailed information may be found in Chapter 4, the Existing Conditions chapter.

1. Geology and Soils. The bedrock under the Shipyard is principally of the Kittery Formation, a fine-grained metamorphosed sedimentary rock. The Portsmouth Fault is reported to reach from New Hampshire to the southeastern end of the Shipyard. Much of the natural soil material at the Shipyard is Layman fine sandy loam. The Shipyard is built up by landfilling with a variety of materials including dredge spoils. Depth to bedrock over much of the Shipyard averages 0 to 10 feet. Slopes vary from 3 to 15 percent and erosion is moderate.

2. Groundwater and Surface Runoff. There is no groundwater development at the Shipyard. Groundwater levels on the original islands of the Shipyard are relatively shallow, and the depth of water table varies from 5.5 feet at mean high water to 13.5 feet at mean low water. Little natural surface runoff exists at the Shipyard. The extensive stormwater collection system drains into the Piscataqua River.

3. Wetlands and Floodplain. There are two runoff ponds at the Shipyard, however, there is no designated wetland area. There is a small area in Admiralty Village designated as wetland, however, none of the projects will affect this area.

The Navy must integrate floodplain design into new projects at the Shipyard. Any structure built in the 100-year floodplain zone must have special structural design to withstand the forces of the flood waters.

Floodplain Data is not available at this time.

4. Vegetation. The Shipyard is a highly-developed, industrial property, with limited vegetative growth. Most of its ground cover consists of introduced plants, with only scattered remnants of naturally-occurring species.

The State of Maine has a floral protection program (Critical Areas Program) geared toward the protection of rare or significant floral species and their habitat throughout the state. None of these species is reported in the Portsmouth Shipyard area.

5. Wildlife and Aquatic. The State of Maine has not made any state designation of rare, threatened, or endangered animal species beyond those contained on the Federal list. Several of these species may be present in the state, at least seasonally. Except for reports of shortnose sturgeon (Acipenser brevirostrum) being present in the Portsmouth Harbor area, no threatened or endangered species are known to inhabit the Portsmouth Naval Shipyard. The Shipyard is not included in the critical habitat of any of these species.

The industrial nature of the Shipyard also severely limits its value as a wildlife habitat. Some small mammals, however, have been seen, including mice and raccoons. Some gulls and passerine birds also appear on the property occasionally.

6. Air Quality. There are no known conflicts with respect to air quality at the Shipyard. Air quality control matters for the Shipyard are regulated by the State of Maine, Department of Environmental Protection. The shipyard holds a State of Maine air emission license No. 1823 issued August 1980.

7. Spoils Area. The Jamaica Island landfill was originally a tidal flat and was used for disposal of general refuse, trash, and other materials from about 1946-1976. A study is required to determine the scope of any hazardous waste materials located in the landfill. No projects are sited in this area.

8. Historic District. The district includes 54 acres of land, and 62 buildings and structures. The Shipyard qualified for the Historic Status because of its shipbuilding and repair function throughout U.S. History, its unique industrial site, and its historical and architecturally significant buildings. Any work to be performed in, or affecting the Historic District involving demolition, construction, repair, or modification of structures in the district is subject to review by the State Historic Preservation Officer (SHPO), the Advisory Counsel on Historic Preservation, and CNO prior to the start of such work. While the demolition of existing and construction

of new facilities is possible, any such development must be carefully documented for timely review.

Several structures in the district are recommended for demolition as part of construction projects. They include Buildings 25, 73, and 236 as part of P-145, New Administration Facility, while Buildings 43, 62, 62A, 63, and 188, will be demolished as part of P-107, New Medical Clinic.

E. PROJECT DESCRIPTION

The majority of the projects identified in this Master Plan are not in conflict with the objectives of Federal, regional, state, or local land use plans, policies, or controls. This section will review the potential environmental impacts to be expected from the current MCON program for the shipyard. Each project is evaluated according to the environmental criteria as outlined in NAVFACINST 11010.63B.

P-107 Medical Dental Clinic Replacement.

This project will construct a 62,000 SF four-story replacement facility for the Medical and Dental Clinic. The proposed action will demolish five structures in the Historic District, Buildings 188, 43, 62, 62A, and 63. The latter three structures are historically significant. All buildings are storage type structures. Full documentation photographs and construction drawings of Buildings 43, 62, 62A, and 63 will be provided for archives. The proposed site will have the least impact on historic resources.

P-120 Structural Group Improvements.

This project will renovate and construct a new addition to Building 92 to consolidate the structural group shops 11, 17, and 26 into a single location. This project will create only the normal short-term and insignificant adverse impact on the existing environment due to standard construction practices.

P-127 Quality Assurance Facility.

This project will construct a new facility to consolidate Quality Assurance functions from nine different locations. Two Buildings, 128 and 150, will be demolished as part of the project. The project will create only the normal short term environmental impact due to standard demolition and construction practices.

P-145 Administration Engineering
Management Building Addition.

The project will provide the additional space required to reduce administrative space deficiencies. The project will construct a new 114,000 SF six-story addition to the existing Building 86. This project is within the Historic District. All new exterior construction will be compatible with Building 86. Three structures will be demolished as part of this project. Building 236, presently used for administration, and Building 25, a garage, do not contribute to the historic district. Building 73, built in 1900, is a historic district building. The demolition of these three buildings for the

addition to Building 86 has received approval from the Maine Historic Preservation Commission. The project will create only the normal shortterm environmental impact due to standard demolition and construction practices.

P-172 Drydock Facility.

This project will construct a new drydock facility at Berth 2. The project will include some dredging and possible blasting to construct the drydock. This will result in some temporary aquatic disturbances and the blasting will cause some temporary noise pollution during construction. Otherwise, no significant environmental impacts will result from the construction of a new drydock. An EA will be required.

P-181 Pier Modernization, Berths 11, 12, & 13

This project will upgrade and consolidate utilities at the berths. In addition, two new structures will be constructed to accommodate field shops, project teams, supply, and restaurant. Buildings 289, 196, and 183 will be demolished as part of this project. The project will create only the short-term environmental impact due to standard demolition and construction practices.

P-195 Pier Modernization, Berth 6.

This project will upgrade Berth 6 to a repair berth, and construct a consolidated 26,600 SF field shop building and a 10,000 SF project team facility. As part of the project, Building

286 will be demolished. This project will create only the short-term environmental impact due to standard demolition and construction.

P-196 Controlled Material Storage Facility.

This project will renovate Building 96 for the consolidation of controlled material storage for security control and proper material handling flow. This project will create only the normal short-term and insignificant adverse impact on the existing environment due to standard construction practices.

P-199 Training Facility.

This project will provide for the consolidation and expansion of academic and applied instruction space for Shipyard training. The project will renovate the S.W. wing of Building 93. This will make use of an underutilized building and saves a valuable site for a future facility. This project will create only the normal short-term and insignificant adverse impact on the existing environment due to standard construction practices.

P-215 Hazardous Material Storage Facility

The proposed project will construct a new 60,000 SF facility to house the Shipyard hazardous material management functions and the storing of hazardous materials. The project will enable the Shipyard to provide efficient hazardous material management in compliance with both Navy and OSHA regulations. This project will create

only the normal short-term and insignificant adverse impact on the existing environment due to standard demolition and construction practices.

P-225 Refueling/Defueling Crane at Drydock 2

This project will provide a stiff leg derrick and a machinery house at Drydock 2. This project will create only the short-term environmental impact due to standard demolition and construction practices.

P-230 Propeller and Shaft Shop

This project will provide a modern facility that will consolidate all propeller and propulsion shaft rework into one building. Building 166 will be demolished to provide a site for the proposed project. The project will create only the short-term environmental impact due to standard demolition and construction practices.

P-231 Pipefitting Shop

This is a replacement project for the Pipefitting Shop in Building 155 which will be demolished to accommodate the necessary access area for a new drydock MCON P-172. The project will construct a one-story building with mezzanine to provide shop, office, and administrative space for the Pipefitting Shop. Buildings 131, 136, 284, A76, A39, A38, Quarters U, V, W, and diesel fuel tank T3 will be demolished to provide the site

for the project. This project will create only the short-term environmental impact due to standard demolition and construction practices.

P-233 Integrated Repair and Test Facility

The proposed building will be of permanent construction which will contain offices, shops, laboratories, integrated system test areas and climatically controlled storage space. This project will create only the short-term environmental impact due to standard demolition and construction.

P-235 Public Works Facility

The project will construct a new Public Works Management/Engineering Building, transportation shop building, maintenance storage building, and convert the existing transportation shop building into a facilities maintenance shop and storage building. Buildings 237, 111, 40, will be demolished. The project will create only the short-term environmental impact due to standard demolition and construction practices.

P-236 Consolidated Supply Warehouse

This project will provide a high-bay consolidated supply warehouse with automated, semi-automated and manual material handling systems. Buildings 132, 149, 167, and 168 will be demolished to provide the project site. The project will create only the short-term environmental impact due to standard demolition and construction practices.

P-237 Pass and Security Office

This project will be a replacement facility in the vicinity of the present facility. Building 203 will be demolished. The project will create only the short-term environmental impact due to standard demolition and construction practices.

P-240 Naval Manufacturing Process Test and Evaluation Facility

The proposed facility will be a two-story permanent structure with a mezzanine to house the necessary offices, laboratories, test equipment, and shop rooms. This project will create only the short-term environmental impact due to standard demolition and construction.

F. IMPACT OF UNPROGRAMMED AND MASTER PLAN PROJECTS

The unprogrammed projects are the valid projects listed on the latest Military Construction Requirements Lists (MILCON RL) Report 1360. These are projects submitted by the Activity, endorsed by the Master Plan, supported by the major claimants but have not been assigned a year, nor approved for appropriation. Master Plan projects are new projects recommended as a result of the master planning effort. These projects are viable solutions to land use conflicts, some current deficiencies and new mission requirements. Similarly, these projects will cause short-term negative effects on the environment during construction but none are expected to cause any concern for long-term negative environmental consequences.

G. MEANS TO MITIGATE ADVERSE ENVIRONMENTAL IMPACTS

The majority of projects identified in this Master Plan are not in conflict with the objectives of Federal, regional, state or local land use plans, policies, or controls. Projects P-145, Administration and Engineering Management Addition has State Historic Preservation Office (SHPO) approval. P-107, Clinic Replacement, has the potential of conflicts with SHPO. Careful coordination with the SHPO should result in a Memorandum of Agreement with P-107 in the Historic District.

7. APPENDICES-A

BASE EXTERIOR ARCHITECTURAL PLAN

Goal - The goal of the Base Exterior Architectural Plan (BEAP) is to provide guidance for improving the Base smartness and appearance at the Shipyard. The plan is intended to supplement the Shipyard Master Plan and guide the location, planning, and design for future site and building exterior improvements. It also provides the Shipyard with a prioritized list of projects for upgrading appearance and facilities where the need is the greatest. See Plates 7A-A thru 7A-D. (Specific designs for street furniture, lighting, signage, and color schemes will be added later as an addendum to this appendix, when the Portsmouth Naval Shipyard BEAP is completed).

Objectives - The objectives for the Shipyard BEAP involve the following key areas:

- o. Highlight the historic and natural resources on-Base.
- o. Improve Base smartness through screening and housekeeping efforts.
- o. Provide guidelines for change and adaptive reuse of historic or architecturally significant structures.
- o. Increase amenities and promote personnel satisfaction by upgrading the historic, ceremonial, and support areas on-Base.

- o. Improve the orientation by improving signage throughout the Base.

Recommended Projects

1) PASS Office Parking

Install curbed islands and provide for one-way traffic flow for safe orderly circulation. Develop more clearly defined parking bays to improve direct access to Pass Office. Plant trees and shrub masses to soften and define the site perimeter. Construct a new 2-span gate portal that will provide clear orientation to arriving vehicles.

2) Gate No. 1

Develop design for improved entry/exit functions and safety for both vehicular and pedestrian circulation. Provide curbed islands, sidewalks, crosswalks, signage, lighting, parking striping, and shrub/tree planting to give greater clarity to the area.

3) Isaac Wyman Intersection

Install unit paving and bollards in bus stop area to delineate space for pedestrian use. Provide painted crosswalks and walkways to connect the bus stop area with pedestrian circulation throughout the intersection. Include shade trees to soften the appearance of the site without interfering with the Shipyard function.

4) Building 315 Fore Area

Install walkways from streets to the building entrance and plant intermittent ornamental shrub masses to enhance the visual smartness and function of the building. Provide 6-foot seats on the lawn.

5) Saratoga Square

Remove the existing steps at the fore end of the USS SAILFISH and replace them with stone mulches representing bow wash. At aft end, stone mulches will portray stern wake. Naturalize and enhance the shrub mass on the port side. Trim shrub to provide flowing hedge forms reminiscent of sea waves or swells. Increase available seating and improve linkage between monument sites by providing additional path sections with benches. Consolidate historic markers into a new single marker with a panorama of building silhouettes in bronze. Add masses of flowering shrubs to accentuate individual lawn/lunching area and to improve visual smartness.

6) Raleigh Park

Install unit pavers and bollards along Building 13 drive, and add benches and a drinking fountain to accommodate the lunch hour functions. Provide curbed islands to channelize traffic and to enhance pedestrian safety. Install islands and plantings to better define the parking spaces. Improve amenity at Buildings 14 and 15 by providing benches. Install unit paving on MacDonough Avenue to meet pedestrian safety needs and to highlight the focal nature of Saratoga Square/Raleigh Park.

7) MacDonough

Define edge of roadway and sidewalks with painted crosswalks, curbed street tree and shrub screen planting.

8) Winslow Street Intersection

Provide crosswalks, bollards, and tree planting to organize and define vehicular and pedestrian circulation and safety. This will cause better direction to high frequency functions of library, mess, and other personnel related activities.

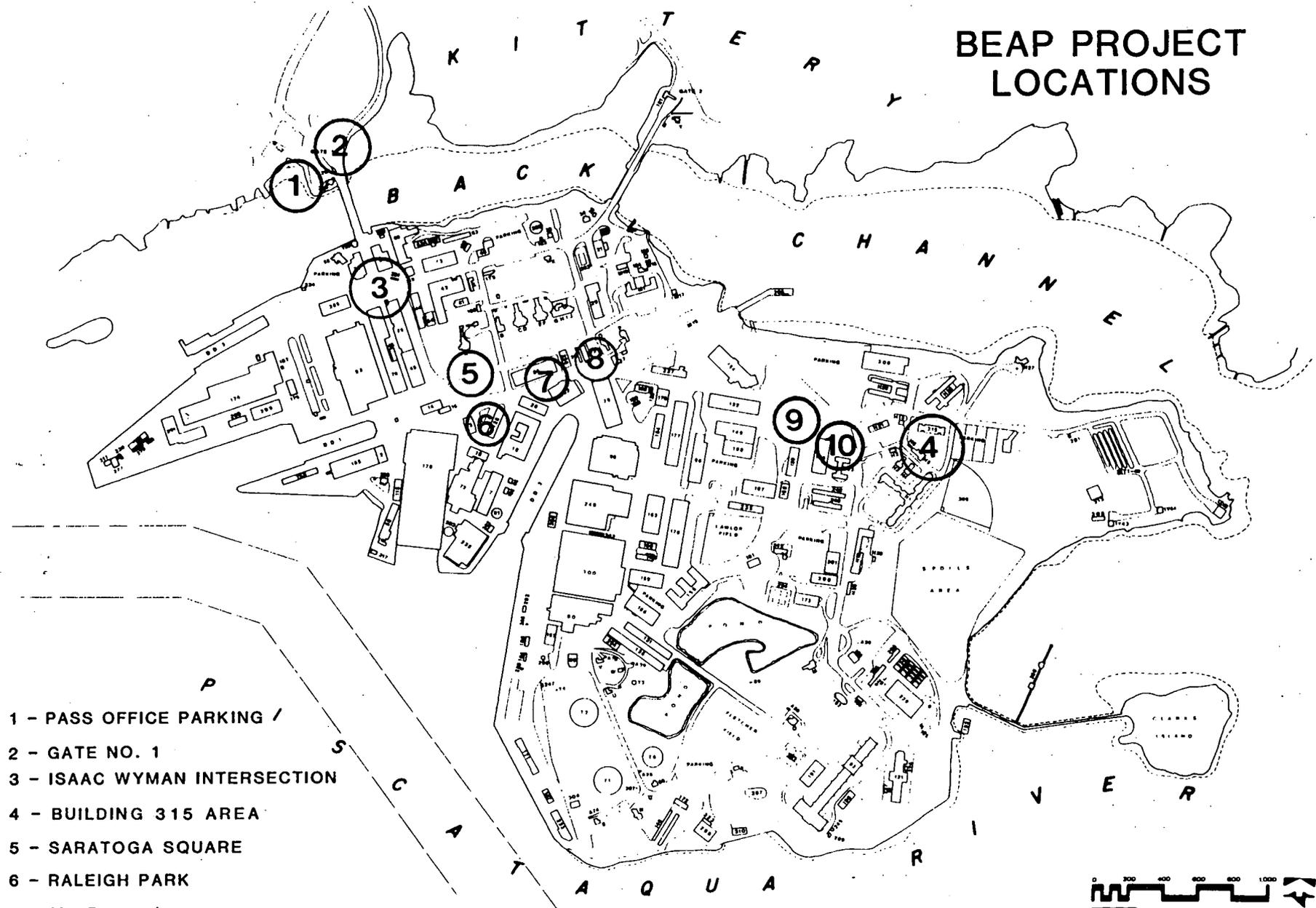
9) Goodrich/Porter Intersection

Delineate intersection by providing bollards and painted crosswalks.

10) Goodrich Avenue Parking

Provide curbed street planting, painted crosswalks, and pipe railing to channelize vehicular traffic and to define pedestrian flow. Provide 9' x 18' parking stalls, islands, and stripping to organize the open parking area. Install islands at grade to permit snow removal.

BEAP PROJECT LOCATIONS

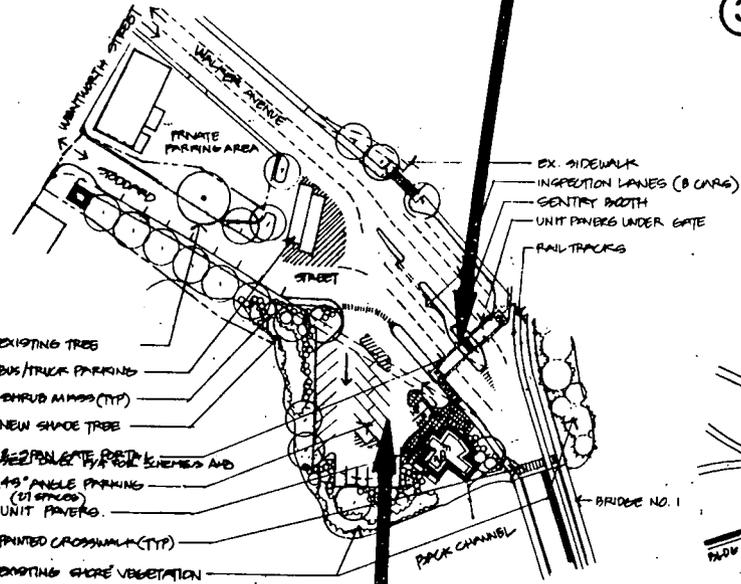


- 1 - PASS OFFICE PARKING /
- 2 - GATE NO. 1
- 3 - ISAAC WYMAN INTERSECTION
- 4 - BUILDING 315 AREA
- 5 - SARATOGA SQUARE
- 6 - RALEIGH PARK
- 7 - MacDonough
- 8 - WINSLOW STREET INTERSECTION
- 9 - GOODRICH/PORTER INTERSECTION
- 10 - GOODRICH AVENUE PARKING



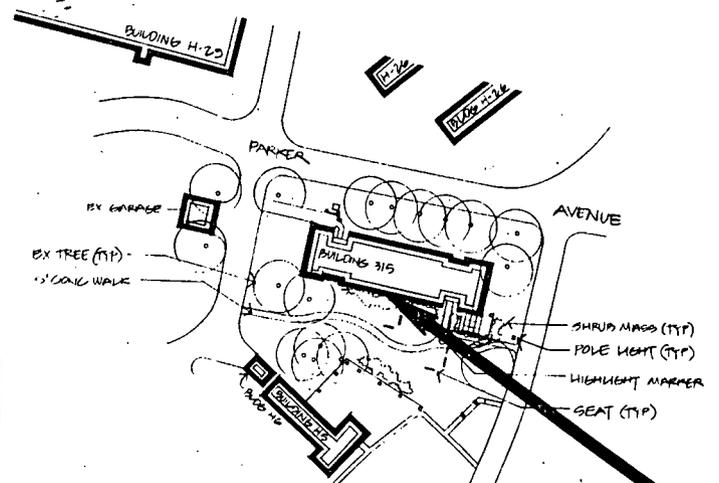
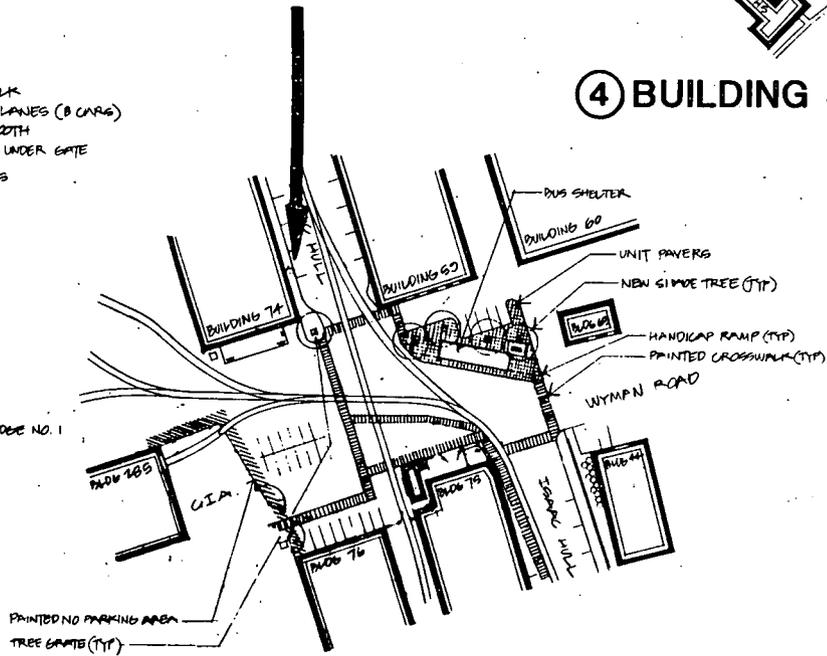
PLATE- 7A-A

② GATE NO. 1



① PASS PARKING

③ ISAAC WYMAN INTERSECTION



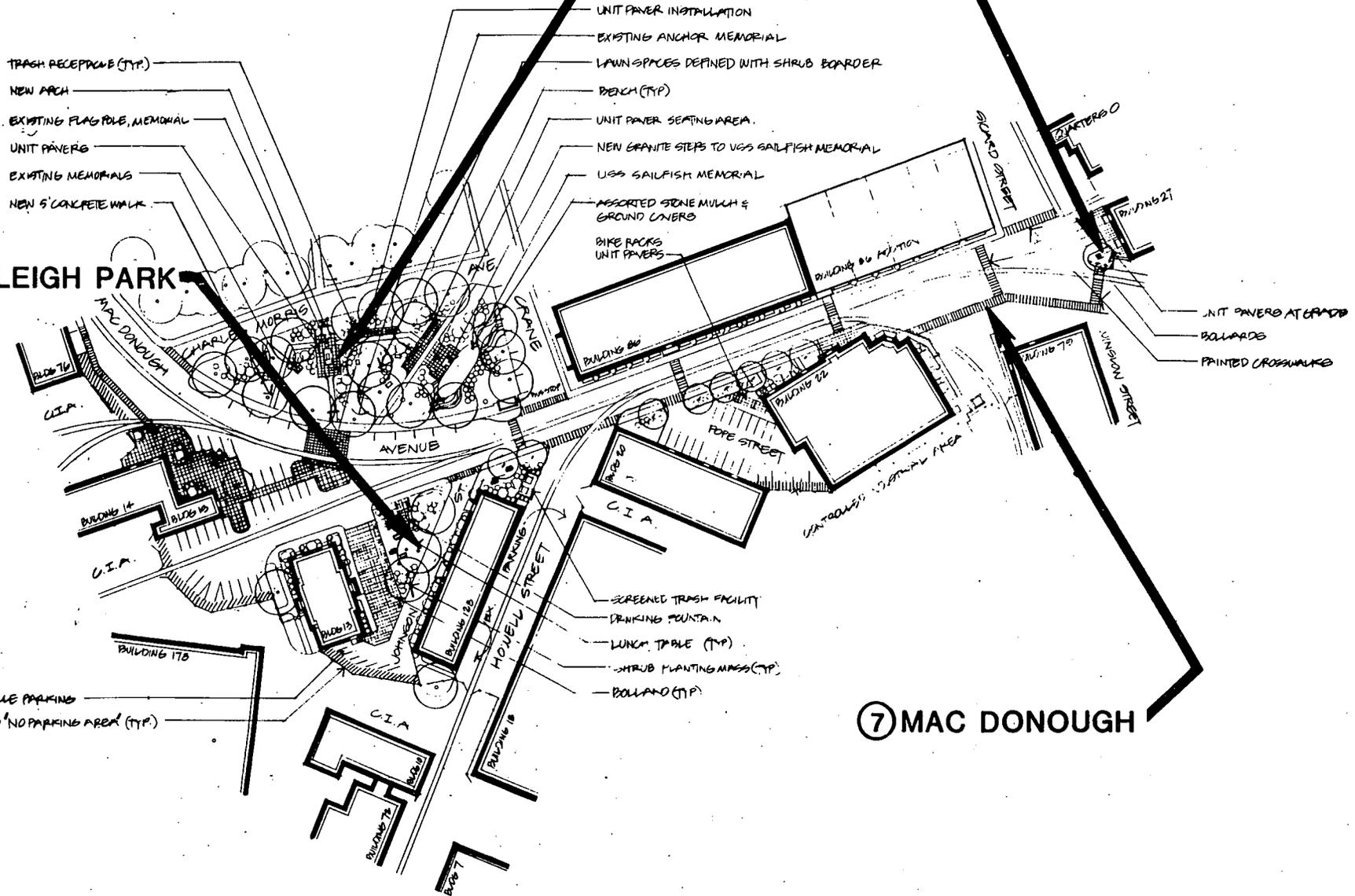
④ BUILDING 315 AREA

⑤ SARATOGA SQUARE

⑧ WINSLOW STREET INTERSECTION

⑥ RALEIGH PARK

⑦ MAC DONOUGH



- TRASH RECEPTACLE (TYP)
- NEW ARCH
- EXISTING FLAG POLE, MEMORIAL
- UNIT PAVERS
- EXISTING MEMORIALS
- NEW 5' CONCRETE WALK

- UNIT PAVEMENT INSTALLATION
- EXISTING ANCHOR MEMORIAL
- LAWN SPACES DEFINED WITH SHRUB BORDER
- BENCH (TYP)
- UNIT PAVEMENT SEATING AREA
- NEW GRANITE STEPS TO USS SAILFISH MEMORIAL
- USS SAILFISH MEMORIAL
- ASSORTED STONE MULCH & GROUND COVERS
- BIKE RACKS
- UNIT PAVERS

- UNIT PAVERS AT GRAB
- BOLLARDS
- PRINTED CROSSWALKS

- MOTORCYCLE PARKING
- PRINTED 'NO PARKING AREA' (TYP)

- SCREENED TRASH FACILITY
- DRINKING FOUNTAIN
- LUNCH TABLE (TYP)
- SHRUB PLANTING MASS (TYP)
- BOLLARD (TYP)

PLATE- 7A-C

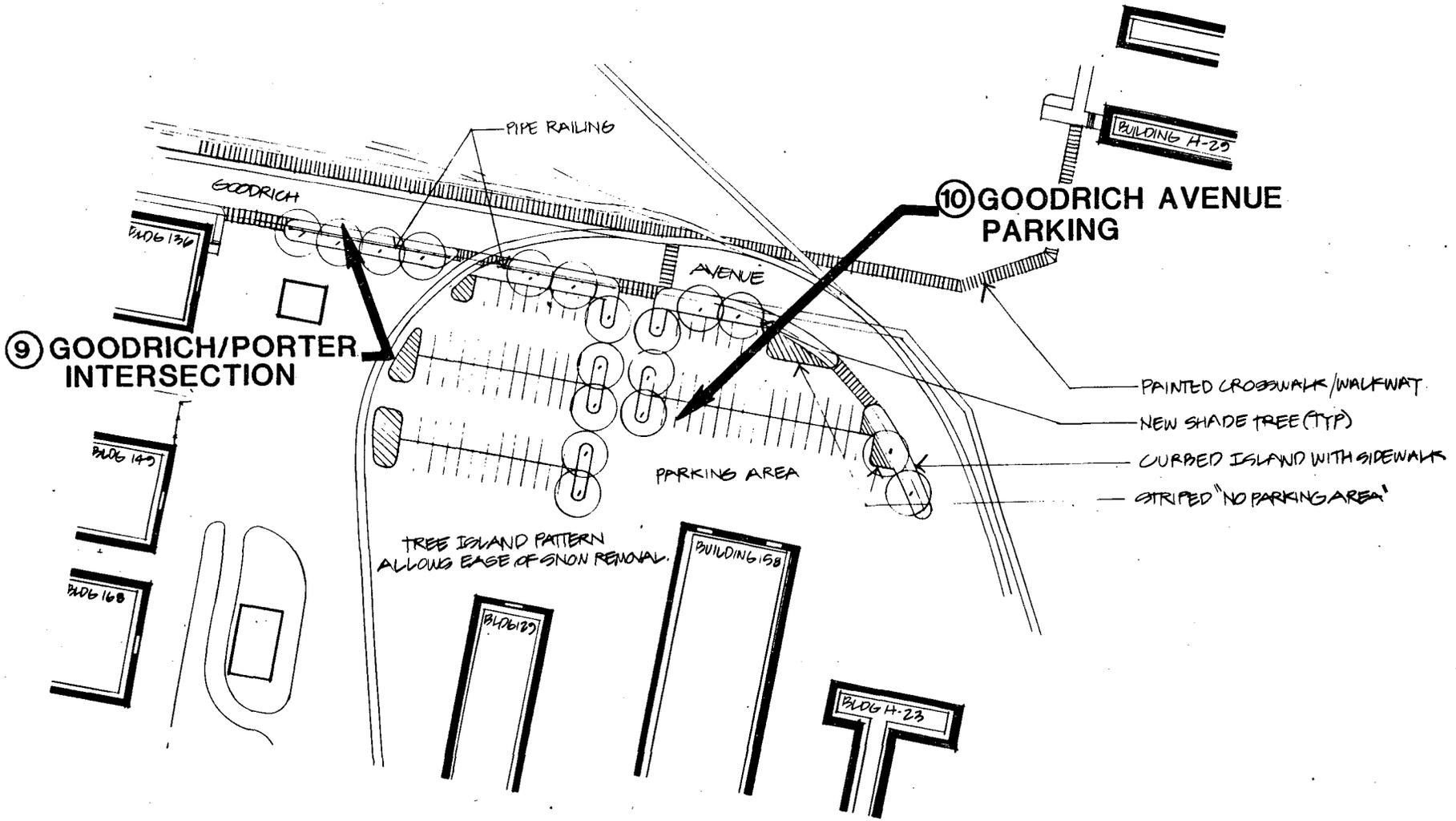


PLATE 7A-D

APPENDIX B

REVIEW PROCESS FOR PROJECTS INVOLVING HISTORIC RESOURCES.

The section 106 review is really a consultation process with the State Historic Preservation Officer and the Advisory Council on Historic Preservation. The review airs public interest concerns for preservation. The review also determines the requirements for preservation. In all cases, the Shipyards' national defense mission takes precedence over preservation if the two conflict. The final decision making authority rests with the Navy.

The review process begins with a description of the project, and the magnitude of its effect on the historic resource.

- . If there is no effect, the project proceeds as normal.
- . If there is an effect, an Environmental Assessment (EA) is prepared to determine the magnitude of the effect. If it is determined that there is no adverse effect, and the 106 review concurs with the EA findings, a Memorandum of Agreement (MOA) is prepared. The MOA is a legal document between the Navy and the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation. The MOA details how the project will be carried out so as to avoid or mitigate adverse effects on the historic resource. Once the MOA is signed the project can continue as normal.

- . If the EA determines that there is an adverse effect on the historic resource, (or if the SHPO and Advisory Council disagrees with a no adverse effect decision by the Navy), a consultation process takes place, bringing together members of the Advisory Council, the SHPO, and the Navy. Together they consider ways to avoid or to mitigate the adverse effect. An Environmental Impact Statement is prepared. If all agencies arrive at an agreement, a MOA is prepared, and the project continues.

- . If the EA determines that there is an adverse effect on a historic resource and the Navy and the preservation agencies cannot agree on a compromise or alternative solution, the Navy can continue with the project and prepare a report for the Advisory Council detailing the Navy position for continuing the project.

HISTORIC REVIEW PROCESS

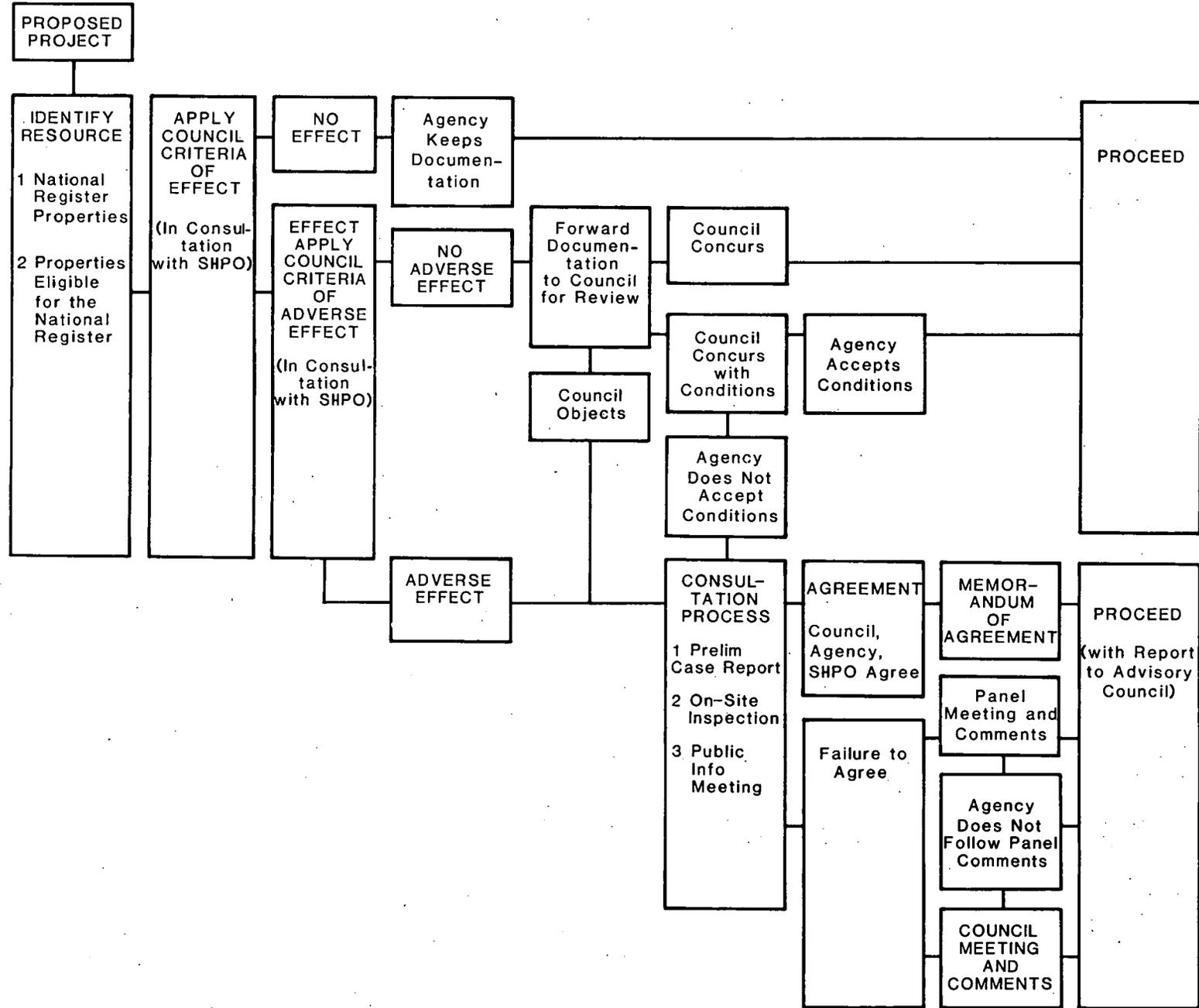


PLATE--7B-A

HISTORIC RECOMMENDATIONS

An essential part of the Navy's planning approach is effective interaction with Historic Preservation agencies. The Navy is legally mandated to take into account in the early stages of planning (prior to approval of funding) what effect its actions may have on all historic resources and to afford the Advisory Council and SHPO an opportunity for comment.

The plan recommends that the Shipyard prepare a Programmatic Memorandum of Agreement (PMOA) with the State Historic Preservation Officer and the Advisory Council on Historic Preservation. This document lists programs or classes of projects repetitive in character or similar in effect. The PMOA details the procedures the Shipyard will follow when undertaking the projects in order to ensure proper considerations for historic preservation. Such projects will not individually be referred to the 106 review process as long as stipulations set forth in the PMOA are met.

Examples of above would be standards of renovation, quality and style of new construction, color selections, signage, replacement window styles, and building demolition list. These types of changes and standards can be listed and agreed upon by all agencies involved in the Memoranda of Agreement. This agreement can be crafted to meet the Shipyard's particular needs within the Historic District for each project. The agreement will result in a speeding up of the review process, allowing the project documentation to continue without delay.

APPENDIX C

PORTSMOUTH NAVAL SHIPYARD HISTORIC DISTRICT

The Portsmouth Naval Shipyard Historic District comprises some 62 architecturally and historically significant buildings. Dating from the early 18th century the district's buildings are well preserved and protected. The district consists of the oldest part of the Naval Shipyard and contains most of the residential and historic industrial structures.

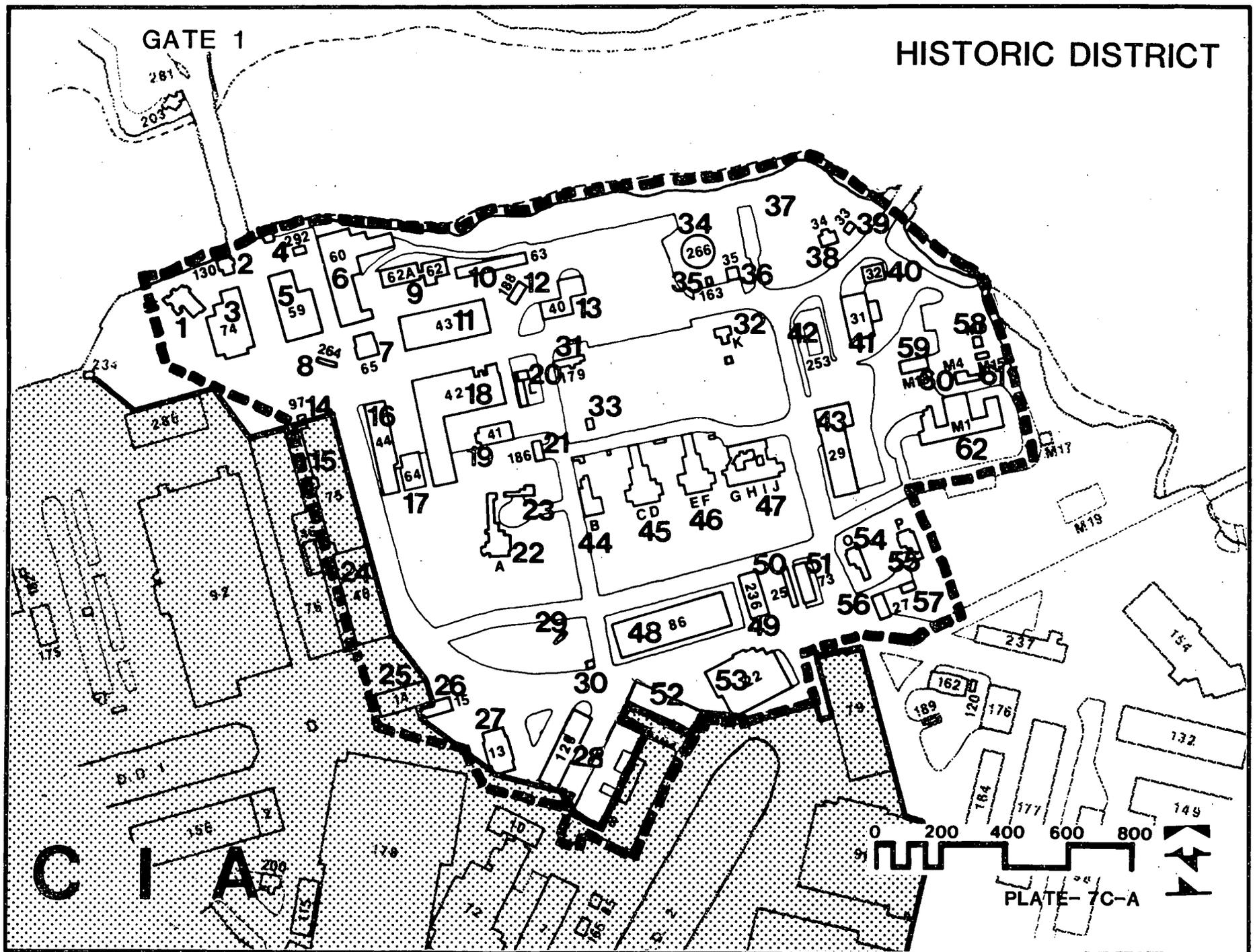
A number of structures in the district are not contributory to the district from an architectural point of view. They are not intrusions in the ordinary sense because they are a part of the whole physical entity in terms of their use as Navy Yard facilities. The structures that fall into this classification are marked with an asterisk on the following chart.

BUILDINGS AND SITES CONTRIBUTING TO THE HISTORIC DISTRICT

<u>HISTORIC REGISTER NUMBER</u>	<u>PORTSMOUTH BUILDING NUMBER</u>	<u>DESCRIPTION</u>
1*	55	Gas Plant
2*	130	Industrial Relations Office, Employee Services Division
3	74	Production Shop (Isaac Hull Street): mid-19th century, Greek revival, 2 stories, brick with stone trim, gable roof.
4*	292	Sewage Pumping Station
5	59	Administration Supply Storehouse (Isaac Hull Street): 1865, Greek Revival, 2 1/2 stories, brick with stone trim, gable roof, originally boathouse and carpenter shop.
*		Does not contribute to the Historic District.

GATE 1

HISTORIC DISTRICT



BUILDINGS AND SITES CONTRIBUTING TO THE HISTORIC DISTRICT cont'd

<u>HISTORIC REGISTER NUMBER</u>	<u>PORTSMOUTH BUILDING NUMBER</u>	
6	60	Production Shop Supply Storehouse (Isaac Hull Street): 1902, 2 stories, brick with stone trim, gable roof, stepped gable.
7	65	Storehouse (Wyman Avenue): 1874, Greek Revival, 2 1/2 stories, brick, gable roof, originally quarters.
8*	264	Bus Shelter
9	62	Public Works Shop
10	63	Public Works Storehouse
11	43	Public Works Supply and Storehouse (Wyman Avenue): mid 19th-century, Greek Revival, 1 1/2 stories, stone with match-boarded half story, gable roof, originally a stable.
12*	188	Storehouse
13	40	Storehouse (Wyman avenue): 1851, Greek Revival, 2 stories, brick with stone trim, gable roof, originally a stable for cattle.
14*	97	Scale House
15	75	Production Shop (Isaac Hull street): mid-19th century, Greek Revival, 2 1/2 stories, brick with stone trim, gable roof.
*		Does not contribute to the Historic District

BUILDINGS AND SITES CONTRIBUTING TO THE HISTORIC DISTRICT

<u>HISTORIC REGISTER NUMBER</u>	<u>PORTSMOUTH BUILDING NUMBER</u>	<u>DESCRIPTION</u>
16	44	Public works shop (Isaac Hull street): 1859, Greek Revival, 1 1/2 stories, brick with match-boarded half story, gable roof, originally a storehouse.
17*	64	Production Shop
18	42	Production & Public Works Shop
19	41	Administration Building
20	QTRS L	Quarters L
21*	186	Garage & Quarters
22	QTRS A	Quarters A, Commandant's Quarters (Charles Morris Avenue): 1724, 1818, Federal with Colonial components, 2 1/2 stories, clapboarded with vertical match-bordered one-story apses, gable roof; ornate facade featuring balustraded second-story porch.
23	A7	Tool House Quarters A
24	45	Production Shop
25	14	Admin. & Bank (MacDonough Avenue): 1853, Greek Revival, 3 1/2 stories, stone, gable roof; originally head house, boiler and engine house
*		Does not contribute to the Historic District

BUILDINGS AND SITES CONTRIBUTING TO THE HISTORIC DISTRICT contd.

<u>HISTORIC REGISTER NUMBER</u>	<u>PORTSMOUTH BUILDING NUMBER</u>	<u>DESCRIPTION</u>
26	15	Post office & Administration (MacDonough Avenue): 1855, Italianate, 2 stories with clock tower, brick with stone trim and wooden tower; originally machine shop and steam engineering house
27	13	Admin., Tel. Exchange, Police Station, Comm. Center
28	18	Supply Storehouse, Radiographic Space (Johnson Street): mid 19th century, Greek Revival, 2 stories, brick with stone trim
29	261	Memorial, USS SAILFISH
30*	263	Bus Shelter
31	179	Guest House (Wyman Avenue): early 20th century, Colonial Revival, 1 story clapboard
32	QTRS K	Quarters K (Wyman Avenue): Mid-19th century, Greek Revival, 2 stories, brick with stone trim, gable roof, colonnaded 1-story facade porch.
33*	TB 19	Garage & Storage, Quarters B
34*	266	Elevated Water Tank
35	163	Valve House for Water Tank
*		Does not contribute to the Historic District

BUILDINGS AND SITES CONTRIBUTING TO THE HISTORIC DISTRICT contd.

<u>HISTORIC REGISTER NUMBER</u>	<u>PORTSMOUTH BUILDING NUMBER</u>	<u>DESCRIPTION</u>
36	35	Garage (Qtrs. K) & Public Works Storehouse (Wyman Avenue): 1851, 1 1/2 stories, brick with stone trim, gable roof, originally a shell house.
37	--	Cemetery (Wyman Avenue): 1820 on, U.S. Naval Cemetery
38	34	Cold Storage Building (Wyman Avenue): 1857, 1 story, brick with stone trim, hip roof, originally a shell house.
39	33	Storehouse (Wyman Avenue): 1855, 1 story, brick with stone trim, hip roof, originally a shell house.
40	32	Radiographic Building (Wyman Avenue): 1848, 1 story, stone, hip roof, originally a magazine.
41	31	Navy Exchange, Service Station (Wyman Avenue): 1859, 1 story, stone, hip roof, originally a magazine.
42	253	Tennis Courts
43	29	Fire Station & Administration Building (Sicard Street): 1865 Greek Revival, 2 1/2 stories, brick with stone trim, gable roof with wooden double facade dormers.
*		Does not contribute to the Historic District

BUILDINGS AND SITES CONTRIBUTING TO THE HISTORIC DISTRICT contd.

<u>HISTORIC REGISTER NUMBER</u>	<u>PORTSMOUTH BUILDING NUMBER</u>	<u>DESCRIPTION</u>
44	QTRS B	Quarters B (Crane Street): 1849, Greek Revival, 2 1/2 stories, brick with stone trim, gable roof; formerly the Shipyard Commander's House.
45	QTRS C,D	Quarters C&D (Dennett Street): mid-19th century, Greek Revival, 2 1/2 stories, brick with stone trim, gable roof.
46	QTRS E,F,	Quarters E&F (Dennett Street): 1833, Federal, 2 1/2 stories, brick with stone trim, gable roof.
47	QTRS G, H, I, J,	Quarters G, H, I, & J (Dennett Street): mid-19th century, Greek Revival, 2 1/2 stories, brick with stone trim, gable; built as a row house with four entrances.
48	86	Administration Building, (MacDonough Street): c. 1900 Colonial Revival, 3 stories.
49	236	Administration Building
50*	25	Garage & Ambulance Station
51	73	Administration & Dental Clinic (Charles Morris Avenue): c. 1900 Colonial Revival, 3 1/2 stories, brick with stone trim, hip roof.
52	20	Material Test Laboratory, Quality Assurance, Print shop.
*		Does not contribute to the Historic District

BUILDINGS AND SITES CONTRIBUTING TO THE HISTORIC DISTRICT contd.

<u>HISTORIC REGISTER NUMBER</u>	<u>PORTSMOUTH BUILDING NUMBER</u>	<u>DESCRIPTION</u>
53	22	Officers' Club, Theater, and Library (Pope Street): 1857, Greek Revival, 3 stories, clapboarded, gable roof, originally the ordnance and armory building.
54	QTRS O	Quarters O (Sicard Street): mid-19th century, Greek Revival, 2 1/2 stories, brick with stone trim, gable roof.
55	QTRS P	Quarters P (MacDonough Avenue): late 19th century, Mansard, 3 stories, brick with stone trim, Mansard roof.
56	27	Administration (Goodrich avenue): 1864, Greek Revival, 2 1/2 stories, brick with stone trim, gable roof, originally the paint shop.
57*	A19	Garage Quarters O & P
58	M6	Maintenance Shop
59*	M18	Supply Office & Storehouse
60	M4	Armory & Gymnasium
61*	M15	Storehouse
62	M1	EM Barracks & Mess, Public Quarters (Burrows Avenue): mid-19th century, Italianate, 3 1/2 stories, brick, gable roof, veranda on First and Second stories at south side.

*

Does not contribute to the Historic District

APPENDIX D

AMHAZ NAVSHIPYD PTSMH #1-82

1. General statement of waiver requirement

Waiver is required to maintain submarine security, safety at sea and to permit testing of SSBN missile tubes during post-repair sea trials. This is a request for renewal of CNO waiver No. NAVSHIPYD PTSMH 1-78 granted by CNO ltr OP 411F/721560 of 8 Sep 1978.

2. Specific document containing the explosive safety standard to be waived

NAVSEA OP-5 Vol 1, Tables 5-15 and 5-17

3. Specific description of the conditions creating the need for waiver

a. Waiver is required to permit the off-load and reload of limited quantities of submarine security small arms ammunition and 10-12 rounds of submarine Emergency Identification Signals upon arrival at and departure from the Shipyard.

(1) Frequency: 6 times per year.

(2) Class 1 Division 4; quantity: 2000 rounds.
Class 1 Division 3; quantity: 9# new.

b. Waiver is also required to permit the installation of Fleet Missile system missile tube gas generators by Shipyard personnel at NAVSHIPYD PTSMH piers.

(1) Frequency: Semi-annual

(2) Class 1, Division 3, Quantity 1960# new

c. Number of personnel involved within the arc

Each specific berth has various miscellaneous permanent and portable buildings within the 100' ESQD arc for small arms ammunition or 115' arc for gas generator handling. These are generally used for Shipyard shop-crew shelters, lockers and toolbox storage. Number of personnel in each building is generally light, averaging about 10 per structure at any given time. Two-to-three structures will fall within the 100' or 115' ESQD arcs from any given berth.

d. Specific on-station facilities involved

(1) Berth 1

Building 150: Quality Assurance Office
Normal Occupancy: 177
Non-Working Hours: N/A
Civilians: 176
Construction: Brick

(2) Berth 4

Building 238: Production Shops/Admin Shops
Normal Occupancy: 140
Non-Working Hours: N/A
Civilians: 112
Construction: Brick

(3) Berth 5

Building 238: (See Berth 4 above)

Building 242: Chlorine Gas
Normal Occupancy: 0
Non-Working Hours: N/A
Civilians: N/A
Construction: Brick

(4) Berth 6B (Gas Generator Handling Berth)

Building 164: Head
Normal Occupancy: Not Normally Occupied
Non-Working Hours: N/A
Construction: Brick

Building 203: Hyperbaric Chamber
Normal Occupancy: Not Normally Occupied
Non-Working Hours: N/A
Civilians: N/A
Construction: Wood

(6) Berth 6C

Building 283: (See Berth 6B)

Building 286: Test Lab
Normal Occupancy: 0
Non-Working Hours: N/A
Civilians: N/A
Construction: Metal

(7) Berth 11B

Building 194: Flushing Dept.
Normal Occupancy: 3
Non-Working Hours: N/A
Civilians: 3
Construction: Wood

Building 289: Material Control Center
Normal Occupancy: 1
Non-Working Hours: N/A
Civilians: 3
Construction: Wood
Normal Occupancy: 0
Non-Working Hours: N/A
Civilians: N/A
Construction: Wood

Building 291: Radiological Control Facility
Normal Occupancy: 125
Non-Working Hours: N/A
Civilians: 125
Construction: Brick

(8) Berth 11C
Building 277: Steam Plant
Normal Occupancy: 1
Non-Working Hours: N/A
Civilians: 1
Construction: Metal

(9) Berth 13B
Building 291: (See Berth 11B)

(10) Berth 13C (Gas Generator Handling Berth)
Building 277: (See Berth 11C)

Building 239: Head
Normal Occupancy: 10
Non-Working Hours: N/A
Civilians: 10
Construction: Brick

Building 196: Tool and Locker, Shop 11
Normal Occupancy: 16
Non-Working Hours: N/A
Civilians: 16
Construction: Wood

4. Statement specifying reason why compliance with explosives safety standards cannot be effected

Submarine safety and security devices must be maintained on-board until arrival in port. Gas generators must be installed by Shipyard personnel prior to sea trials in order to test missile tubes during sea trials. Physical restraint of Shipyard prevents compliance with current safety standards while performing these operations.

5. Alternatives examined

There is no possibility of loading at anchor; transit to a Weapon Station to load would extend the overhaul cycle time for submarines; safety flares and security weapons must be on-board prior to leaving port.

6. Mission effect of a maximum credible explosive accident

An explosive accident is not a likely outcome. Heat generated by gas generators during a maximum credible accident would likely burn handling personnel, but it is unlikely that it would have far reaching effects on the NAVSHIPYD PTSMM mission.

7. Safety precautions to be enforced during period of waiver

In addition to all normal explosive handling safety practices, gas generators are not delivered to the Shipyard until minimum time prior to projected need. Transportation vehicles transporting gas generators on station are escorted by security and fire department personnel at all times until on-loading is completed. Non-essential personnel are excluded from the handling pier and all Shipyard departments are fully coordinated.

8. Resources required to eliminate waiver

Not applicable

9. Actions initiated or to be initiated to eliminate waiver and estimated time to completion

There is little indication that changes in operations or physical facilities at NAVSHIPYD PTSMM will significantly affect the requirement for this waiver.

10. AMHAZ Board action:

The Board finds the requirement for this waiver to remain valid and it is continued to expire 31 July 1986 subject to review by the next CNO sponsored AMHAZ Review Board for the area.

11. Commander, Portsmouth Naval Shipyard concurs with the AMHAZ Board action.

APPENDIX E

ACRONYMS AND ABBREVIATIONS USED IN THIS PLAN

Admin.	Administration, Administrative
AFB	Air Force Base
AQCRI	Air Quality Control Region I
bbl	Barrel
BEAP	Base Exterior Architecture Plan
BLDg.	Building
CB	Citizen's Band
CFH	Cubic Feet per Hour
CIA	Controlled Industrial Area
CIP	Capitol Improvements Plan
Class VI Store	Liquor and Beverage Store
CNO	Chief of Naval Operations
CPO	Chief Petty Officer
dB	decibel
DD-2	Drydock #2
DEP	Department of Environmental Protection
DLA	Defense Logistics Agency
DM-4	Design Manual 4
DFDO	Defense Property Disposal Office
Drwg.	Drawing
EA	Environmental Assessment
ECIP	Energy Conservation Investment Program
EM	Enlisted Men
EMR	Electromagnetic Radiation
EPA	Environmental Protection Agency
ESQD	Explosive Safety Quantity Distance
EXCH	Navy Exchange
FEMA	Federal Emergency Management Command
FTZ	Foreign Trade Zone
Gal.	Gallon
GPM	Gallons per Minute
HERO	Hazards of Electromagnetic Radiation to Ordnance
IPE	Industrial Production Equipment
KVA	Kilovolt Amperes or One-Thousand Volt Amperes
KW	Kilowatts (1,000)
lbs./hr.	Pounds per Hour
lube	lubricant
MAJ	Major
MAPP	Methyl Acetylene Propadiene
M & P	Maintenance and Production
MESPE	Maine State Police
MHW	Mean High Water

MILCON RL	Military Construction Requirements List
MOA	Memorandum of Agreement
MP	Military Project
NAF	Non-Appropriate Funds
NAVFACENCOM	Naval Facilities Engineering Command
NAVMAT	Chief of Naval Material
NAVMECL	Naval Medical Clinic
NAVOSH	Naval Occupational, Safety and Health
NAVSEA	Naval Sea Systems Command
NAVSHIPYD	Naval Shipyard
NEDSA	Naval Sea Systems Command Repository
NEPA	National Environment Policy Act
NHSP	New Hampshire State Police
NIF	Navy Industrial Fund
NIS	Naval Investigative Service
NPDES	National Pollution Discharge Elimination System
OSHA	Occupational, Safety, Health
PCR	Pollution Control Requirement
PEA	Preliminary Environmental Assessment
PERA	Planning, Estimating, Repair and Alterations
PF	Power Factor
PMOA	Programmatic Memorandum of Agreement
POL	Petroleum, Oil and Lubricant
PSD	Personnel Support Detachment
Psig	Pounds per square inch gauge
PTSMH	Portsmouth
P.W.	Public Works
ROICC	Resident Officer in Charge of Construction
S & S	Supply and Storage
SCEN	Shipyard Commander's Emergency Net
SEPS	Shore Facility Planning System
SHPO	State Historical Preservation Officer
SSBN	Submersible Ships, Ballistic, Nuclear or Fleet Ballistic, Submarine, Nuclear
SYWO	Shipyard Watch Office
TRF	Transducer Repair Facility
Temp.	Temporary
UEPH	Unaccompanied Enlisted Personnel Housing
UOPH	Unaccompanied Officers Personnel Housing
VAC	Volts, Alternating Current

APPENDIX F

Base Radio Transceivers

DESCRIPTION	MODEL #	WATTS	LOCATION (BLDG.)	CODE	DESCRIPTION	MODEL #	WATTS	LOCATION (BLDG.)	CODE
Converta Com	NM1244		86	100	MOCOM	T43BBN1100K	30	29	834
MOCOM 70	T33BBA1300k	30		105	"	"	30	29	834
BASE	L53BBB1190M	45	14	105	"	"	30	29	834
BASE	L53BBB1190M	45	14	105	"	"	30	29	834
MAXAR	L43TRB1130M	45	14	105	"	"	30	29	834
MAXAR	D33TSA1300AK	45	14	105	"	"	30	29	834
BASE	L53BBB1190M	45	20	135	"	"	30	29	834
MAXAR	L43TSB1100M	25	238	270.3	"	"	30	29	834
MAXAR	L43TRN1130M	25	174	300	MOTRAC	T43HHT1103K	45	29	834
MOCOM 70	T33BBA1300AK	30	174	300	BASE	L53BBB1100M	45	29	834
ELEXAR BASE	L43TRK1130AN	45	237	424	BASE TRANS/ RECEIVER	C73RTB1105	100	29	834
BASE	L53BBB1100	45	154	452	MITREK	T43JJA1000K	30	29	834
MOCOM	T43BBA1000BA	30	154	452	BASE	UNKNOWN	45	29	834
MOCOM	T43BBA1000BK	30	154	452	BASE	L43MHB1100	45	74	906
BASE	C73RTB1196B	45	154	452	BASE	L53BBB1190DM	45	92	926
ANTENNA	TAD6071A		154	452	TRITON	D33A1120AK	25	7	972
MAXAR	D33TSA1300AK	25	154	452	TRITON	D33A1120AK	25	7	972
MAXAR	D33TSA1300AK	25	154	452	BASE	L53BBB1190M	45	45	999
BASE	L43BBB1190AN	45	272	453	MAXAR	L43TAB1100M	25	Rad Com Trailer	ECC
BASE	WM56RA555	60	44	457	BASE	L53BBB1190	45		ECC
BASE	L53BBB1190DM	45	44	457	TRITON MODAR	D33ABA1625A	25		ECC
BASE	L53BBB1190BM	45	153	500	BASE	T1600AM	45		IWO
SONAR TRANS AR	230		153	570.1	BASE	L53BBB1100AN	45	M-1	MAR BKS
SONAR TRANS CK	230		153	570.1	BASE	C73RT131145C	110		MESP
BASE	L43TSB1130M	45	153	570.1	BASE	201CDG0636			NHSP
MAXAR	D33TSA1300K	25	153	570.1	TRANSMITTER	Mosel CMEK7RJA	100	73	NIS
MAXAR	D33TSA1300K	25	153	570.1	BASE	L53BB1190M	45		SCEN
MAXAR	L43TSB1100AM	45	170	580	MAXCAR	L433TRB1100M	25		SCEN
BASE	L43JJB1190AM	45	153	590					
ANTENNA CK	TAD6073A		153	590	MESP -	MAINE STATE POLICE			
BASE	L43BBB1190DM	45	86	800	NHSP -	NH STATE POLICE			
TRITON	K33ABA1625AK	25	238	812	NIS -	NAVAL INVESTIGATIVE SERVICE			
TRITON	D33ABA1620CK	25	238	812	SCEN -	SHIPYARD COMMANDERS EMERGENCY NET			
RAYTHEON CK	48A		238	812	SYWO -	SHIPYARD WATCH OFFICE			
TRITON	D33ADA1020AK	25	238	812	*	LIST EXCLUDES HAND HELD TRANSCEIVERS			
MITREK	T43JJA1900BK	30	238	812					
BASE	L53BBB1100M	45	13	830					
TRANSMITTER	AN/FRC-59	60	13	830					

Bas Radio Transceivers cont'd

MODEL #	WATTS	LOCATION (BLDG.)	CODE
Consolette:			
L53BB1190M	45	170	
L43BBB1190AN	45	72	453
L53BBB1190BM	45	153	500
L43MHB1100	45	174	365
L53BBB1100	45	13	813
AN/FRC 59 TRANS	60	170	500
AN/FRC 59 TRANS	60	163	453
L54BBB1100M	45	29	834
L433TRB	45	RADCON Trailer	
L53BBB1190	45	14	105.3
L53BBB1190	45	170	500
L53BBB1100	45	154	
AN/URL-80	25	Tug 602	
D33ABA1120	10	Captain's Gig	
D33ABA1120	10	Diving Barge X72	
D33ABA1120	10	7	972
WM56RAS55	60	44	457
URC32	1000	13	813
#9 URC32	500	240	951
URC32B	500	170	500
URC32B	500	170	500
URC32A	500	171	Naval Reserve
TR-4C-DRAKE	300	170	500
KWM 2-A TRANS	300	170	500
C53MHX1100R TRANS	55	178	
L53BBB1190M	45	18	135
C73RTB-1145C	110	170	500
L43TAB-1100M	25	RADCON Trailer	
L43TRB1130M	25	RADCON Trailer	
L43BBB1190DM	30	86	
L53BBB1190M	45	45	906/99
SBA-301	150	238	967
AN/URL-80	25	238	812
#1, #2, #3 UHF (3)	50	240	67
#4, #5 RADAR (2)	3500*	240	67
#6 SRC-20	100	240	67
#7 WSC-30	100	240	67
#8 WRT-4	5000	240	67
#10 HF	1000*	240	67

* Inactive

HERO Separation Distances from the Transmitting Equipments

EQUIPMENT	HERO UNSAFE ORDNANCE		HERO SUSCEPTIBLE ORDNANCE	
	METERS	FEET	METERS	FEET
AN/FRC-59	24	80	6	20
AN/URC-32	823	2700	82	270

APPENDIX G

PORTSMOUTH #5 TR 14

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APPENDIX H

PORTSMOUTH NAVAL SHIPYARD
INDEX OF STRUCTURES

<u>BLDG</u> <u>No.</u>	<u>LOC.</u>	<u>CURRENT USE</u>	<u>QTY.</u>	<u>U.M.</u>
A	F-5	PUBLIC QUARTERS	1	FA
B	G-5	PUBLIC QUARTERS	1	FA
CD	G-5	PUBLIC QUARTERS	2	FA
EF	G-5	PUBLIC QUARTERS	2	FA
GHIJ	G-4	PUBLIC QUARTERS	4	FA
K	G-4	PUBLIC QUARTERS	1	FA
L	F-4	PUBLIC QUARTERS	1	FA
M	J-8	PUBLIC QUARTERS	1	FA
N	H-10	PUBLIC QUARTERS	1	FA
O	H-5	PUBLIC QUARTERS	1	FA
P	H-5	PUBLIC QUARTERS	1	FA
Q	J-9	PUBLIC QUARTERS	1	FA
S	H-10	PUBLIC QUARTERS	1	FA
U	H-9	PUBLIC QUARTERS	1	FA
V	H-8	PUBLIC QUARTERS	1	FA
W	H-8	PUBLIC QUARTERS	1	FA
X	I-10	PUBLIC QUARTERS	1	FA
Y	J-2	PUBLIC QUARTERS	1	FA
2	E-6	PRODUCTION SHOP/ELECTRICAL SUBSTATION NO. 1	10,900	SF
7	G-6	RIGGERS SHOP	45,000	SF
10	F-6	SERVICE SHOP	12,000	SF
13	F-6	ADMINISTRATION/TELEPHONE EXCHANGE/POLICE STATION/COMM. CENTER	14,500	SF
14	F-5	ADMINISTRATION/BANK	22,700	SF
15	F-6	POST OFFICE/SAFETY OFFICE	4,050	SF
18	G-6	PRODUCTION SHOP/RESTAURANT/ADMINISTRATION	47,100	SF
20	G-5	MATERIAL TEST LABORATORY/PRINT SHOP	33,000	SF
22	G-5	OFFICERS CLUB/THEATER/LIBRARY/ADMINISTRATION	33,000	SF
25	G-5	GARAGES	2,000	SF
27	H-5	CONSTRUCTION CONTRACT ADMINISTRATION	3,800	SF
29	H-4	FIRE STATION/ADMINISTRATION	26,650	SF
31	H-4	NAVY EXCHANGE/SERVICE STATION	7,700	SF
32	H-4	RADIOGRAPHIC BUILDING	1,800	SF

33	H-3	STORAGE	680	SF
34	H-3	COLD STORAGE	1,500	SF
35	G-4	GARAGE (QUARTERS K)/PUBLIC WORKS STORAGE	1,800	SF
40	F-4	STORAGE	13,000	SF
41	F-4	ADMINISTRATION	3,200	SF
42	F-4	PRODUCTION AND PUBLIC WORKS SHOP	50,500	SF
43	F-4	SUPPLY AND PUBLIC WORKS STORAGE	21,700	SF
44	F-4	PUBLIC WORKS SHOP	19,000	SF
45	F-5	PRODUCTION SHOP	22,000	SF
46	E-5	STORAGE/DISINTEGRATOR	3,000	SF
55	E-4	INDUSTRIAL GAS PLANT	3,000	SF
59	E-4	ADMINISTRATION/INDUSTRIAL RELATIONS	19,800	SF
60	E-4	SUPPLY STORAGE/PRODUCTION SHOP	34,650	SF
62	F-4	PUBLIC WORKS SHOP/ADMINISTRATION	6,200	SF
63	F-4	PUBLIC WORKS STORAGE	5,100	SF
64	F-5	PRODUCTION SHOP	4,100	SF
65	F-4	PUBLIC WORKS SHOP	5,700	SF
68	H-10	PUBLIC QUARTERS	1	FA
69	I-9	PUBLIC WORKS STORAGE	250	SF
72	F-6	CENTRAL POWER PLANT	86,400	SF
73	H-5	DENTAL CLINIC ADMINISTRATION	10,400	SF
74	E-4	PRODUCTION SHOP	19,300	SF
75	E-5	PRODUCTION SHOP	34,400	SF
76	E-5	PRODUCTION SHOP/SUPPLY STORAGE	38,500	SF
79	H-5	ADMINISTRATION/SUPPLY STORAGE	85,600	SF
80	H-8	PRODUCTION SHOPS	136,300	SF
85	G-6	LATRINE	740	SF
86	G-5	ADMINISTRATION	84,600	SF
89	E-7	PRODUCTION SHOP	24,800	SF
91	G-7	PUMP WELL, DRYDOCK NO. 2	52,500	GM
92	E-5	PRODUCTION SHOP	159,000	SF
93	J-10	DISCIPLINARY BARRACKS	264,300	SF
96	H-6	PRODUCTION SHOPS/FOUNDRY	63,700	SF
97	E-4	SCALE HOUSE	570	SF
98	I-6	SUPPLY STORAGE (COMBUSTIBLES)	22,800	SF
99	G-8	TRAINING/ADMINISTRATION	16,250	SF
102	D-3	WATER METER HOUSE	500	SF
106	K-9	GARAGE (VACANT)	1,150	SF
111	H-7	STORAGE	3,720	SF
115	E-6	QUALITY AND RELIABILITY ASSURANCE	6,100	SF
120	H-5	ADMINISTRATION STORAGE	460	SF

121	K-10	SUPPLY STORAGE	19,800	SF
125	K-9	CONDENSATE PUMP STATION (INACTIVE)	530	SF
128	G-6	SUPPLY STORAGE/RADIOGRAPHIC SPACE	10,900	SF
129	J-6	PRODUCTION SHOP	9,200	SF
130	E-4	ADMINISTRATION	4,000	SF
131	H-8	SUPPLY STORAGE	16,200	SF
132	I-5	SUPPLY STORAGE	21,700	SF
136	H-8	SUPPLY STORAGE	22,600	SF
146	H-10	SUPPLY STORAGE	6,600	SF
149	I-6	SUPPLY STORAGE	20,200	SF
150	D-6	ADMINISTRATION	13,200	SF
151	G-8	AUX. FIRE STATION/F. O. PUMP HOUSE	7,100	SF
153	H-7	SUPPLY STORAGE/ADMINISTRATION	134,000	SF
154	I-5	TRANSPORTATION EQUIPMENT MAINTENANCE	29,200	SF
155	E-6	PRODUCTION SHOP	44,150	SF
156	I-8	UNACCOMPANIED ENLISTED QUARTERS	59,300	SF
157	D-5	ADMINISTRATION	640	SF
158	J-6	TRANSPORTATION SHOP	20,350	SF
159	H-7	SUPPLY STORAGE	18,500	SF
160	H-7	EQUIPMENT MAINTENANCE (SUPPLY)	6,100	SF
161	H-2	GATE HOUSE NO. 2	3,000	SF
162	H-5	ELECTRICAL SUBSTATION NO. 2	7,200	SF
163	G-4	VALVE/PUMP HOUSE	690	SF
164	G-8	LATRINE	870	SF
165	G-6	SHIPS TEST FACILITY (ELECTRICAL)	1,130	SF
166	H-8	SUPPLY STORAGE	23,100	SF
167	J-6	SUPPLY STORAGE	23,900	SF
168	I-6	SUPPLY STORAGE	16,800	SF
169	J-6	SUPPLY STORAGE	4,600	SF
170	I-7	SUPPLY STORAGE, ADMINISTRATION	222,150	SF
172	I-10	SUPPLY STORAGE (BULK STORAGE HOPPERS)	2,000	SF
173	J-8	RECREATION BUILDING	12,100	SF
174	D-5	PRODUCTION SHOPS/ADMINISTRATION / RESTAURANT	142,300	SF
175	D-5	ELECTRICAL SUBSTATION NO. 3	3,600	SF
176	H-5	RADIOGRAPHIC FACILITY	8,640	SF
177	I-6	SUPPLY STORAGE	28,900	SF
178	F-6	SHIPBLDG. WAYS/FAB. BLDG./PROD. STOR.	176,000	SF
179	F-4	GUEST HOUSE	1,450	SF
180	G-8	PRODUCTION SHOP/RECOMPRESSION CHAMBER	1,500	SF

181	I-7	CHAPEL	3,000	SF
183	C-6	PRODUCTION STORAGE	560	SF
184	H-6	WELDING LABORATORY/WELDING SCHOOL	10,000	SF
185	K-8	REHAB. CENTER	2,300	SF
186	F-4	GARAGE AND QUARTERS	2,300	SF
188	F-4	PUBLIC WORKS STORAGE	1,000	SF
189	H-5	PROPANE GASE CONTROL BUILDING	160	SF
190	K-10	LAUNDRY (VACANT)	5,600	SF
191	J-10	UNACOMPANIED ENLISTED QUARTERS	44,708	SF
192	J-9	PUBLIC QUARTERS	2	FA
193	L-9	BOAT HOUSE (VACANT)	2,600	SF
195	K-8	SUPPLY STORAGE	4,100	SF
196	C-6	PRODUCTION SHOP	4,900	SF
200	E-6	PROPANE GAS BUILDING	1,900	SF
201	M-6	LATRINE	450	SF
202	J-4	SAIL CLUB	450	SF
203	E-3	SECURITY PASS OFFICE	2,900	SF
206	K-8	SUPPLY STORAGE	2,300	SF
207	H-10	TRANSFORMER STATION	120	SF
209	J-10	GARBAGE HOUSE (VACANT)	360	SF
223	K-9	SUPPLY STORAGE	4,100	SF
225	K-9	SUPPLY STORAGE	4,100	SF
226	K-10	MAINTENANCE SHOP (VACANT)	480	SF
227	K-10	PAINT SHOP (VACANT)	630	SF
228	J-9	GATE HOUSE (VACANT)	360	SF
229	K-9	SUPPLY STORAGE	24,800	SF
230	K-8	SUPPLY STORAGE	4,000	SF
233	G-10	PRODUCTION STORAGE	9,600	SF
234	D-4	A.C. SWITCHING STATION	1,000	SF
235	I-7	SUPPLY STORAGE	8,000	SF
236	G-5	ADMINISTRATION	4,300	SF
237	I-5	PUBLIC WORKS ADMINISTRATION	9,200	SF
238	F-7	PRODUCTION SHOP/ADMINISTRATION	77,000	SF
239	8-6	LATRINE	900	SF
240	H-7	ELECTRONICS/ELECTRIC SHOP	137,000	SF
241	J-7	SUNDAY SCHOOL	3,200	SF
242	F-7	SCREEN AND CHLORINATING BUILDING	1,200	SF
243	H-7	TRANSFORMER STATION	2,300	SF
245	J-10	TRASH HOUSE (VACANT)	400	SF
246	G-8	FUEL OIL LOADING STATION	1	EA
247	G-9	FUEL OIL PUMP AND HEATER BUILDING	700	SF
248	J-7	C.P.O. CLUB	4,300	SF
249	J-7	ADMINISTRATION (VACANT)	4,750	SF

250	I-9	MAGAZINE (VACANT)	10	SY
253	H-4	TENNIS COURT	1	EA
254	J-8	TENNIS COURTS	2	EA
260	F-5	FLAGPOLE	1	EA
261	G-5	MEMORIAL, USS SAILFISH	1	EA
263	G-5	BUS SHELTER	200	SF
264	E-4	BUS SHELTER	600	SF
266	G-4	ELEVATED WATER TANK	1,000,000	GA
267	J-10	RESERVOIR (INACTIVE)	500,000	GA
268	I-10	SEA WALL	300	LF
272	M-7	ANTENNA POLE	1	EA
273	N-7	ANTENNA POLE	1	EA
274	M-7	ANTENNA POLE	1	EA
275	M-7	ANTENNA POLE	1	EA
276	M-7	ANTENNA POLE	1	EA
277	B-6	SHIPS TEST FACILITY (STEAM)	2,400	SF
278	C-6	SHIPS TEST FACILITY (ELECTRICAL)	11,250	KVA
280	M-9	ACOUSTIC RADIATION MEASUREMENT FACILITY	1	EA
281	E-3	SENTRY BOOTH, GATE 1	60	SF
283	G-8	TRANSFORMER STATION (FATIGUE TEST FACILITY)	3,750	KVA
284	H-8	DEFENSE PROPERTY DISPOSAL OFFICE	4,100	SF
285	E-4	ABRASIVE BLAST FACILITY	14,200	SF
286	G-9	FATIGUE TEST FACILITY	1	EA
288	G-7	PRODUCTION STORAGE	3,600	SF
289	D-6	PRODUCTION STORAGE	3,600	SF
291	C-6	RADIOLOGICAL CONTROL FACILITY	24,400	SF
292	E-4	SEWAGE PUMPING STATION	3,300	GM
293	G-8	TRANSFORMER STATION	1,500	KV
294	K-9	SALLYPORT & GUARD HOUSE (VACANT)	900	SF
295	K-8	SUPPLY STORAGE	4,000	SF
296	G-8	SEWAGE LIFT STATION	600	GM
297	K-9	SEWAGE EJECTOR STATION (INACTIVE)	200	GM
298	I-10	INDUSTRIAL WASTE TREATMENT BUILDING	15,200	SF
299	D-6	WATERFRONT SUPPORT FACILITY	9,600	SF
300	H-7	MACHINE/CENTRAL TOOL SHOP	56,320	SF
301	J-7	PLAYING COURTS	9,000	SF
302	J-9	TENNIS COURTS	2	EA
303	F-7	HYDROPHONE TEST TANK	1	EA
304	G-10	REFUSE TRANSFER STATION	1,350	SF
305	M-7	SALT/SAND STORAGE BUILDING	1,770	SF

306	K-5	TRANSDUCER REPAIR FACILITY BUILDING	26,000	SF
307	D-5	HIGH PRESSURE AIR BUILDING	670	SF
308	J-7	BOWLING ALLEY	8,530	SF
309	L-7	JAMAICA ISLAND PLAYING FIELD	1	--
310	I-10	HOSE HANDLING FACILITY	3,200	SF
311	B-6	SALT WATER PUMP HOUSE	1,100	SF
313	M-6	HAZARDOUS WASTE STORAGE FACILITY	4,900	SF
315	K-6	UNACCOMPANIED OFFICERS QUARTERS	13,800	SF
317	E-7	FIXED CRANE	1	--

IKTI-9	M-6	HIGH EXPLOSIVE MAGAZINES	540	SY
IKTI5-40	M-6	HIGH EXPLOSIVE MAGAZINES	1,560	SY
1Y43	N-7	RADIO RECEIVING BUILDING	920	SF
1Y44	N-7	RECREATION GROUNDS BUILDING	920	SF
1Z45	O-7	RECREATION GROUNDS BUILDING	3,100	SF
A-1	F-5	GREENHOUSE QUARTERS A	240	SF
A-2	F-5	GREENHOUSE QUARTERS A	500	SF
A-3	F-5	GARDEN HOUSE QUARTERS A	150	SF
A-6	F-5	GARDEN HOUSE QUARTERS A	50	SF
A-7	F-5	TOOL HOUSE QUARTERS A	1,500	SF
A-9	G-4	GARAGE AND GREENHOUSE QUARTERS B	630	SF
A-10	F-4	UTILITY BUILDING, QUARTERS C	300	SF
A-12	G-4	GARAGE AND UTILITY BUILDING QUARTERS D AND E	700	SF
A-15	G-4	UTILITY BUILDING, QUARTERS F	300	SF
A-19	H-5	GARAGE QUARTERS O AND P	4	VE
A-20	H-10	GARAGE AND GREENHOUSE QUARTERS N	750	SF
A-24	J-8	GREENHOUSE QUARTERS M (INACTIVE)	150	SF
A-25	H-10	GARAGE QUARTERS 68	1	VE
A-26	K-8	WATCH TOWER (VACANT)	--	--
A-38	H-9	GARAGE QUARTERS U	1	VE
A-39	H-8	GARAGE QUARTERS W	1	VE
A-44	H-2	GARAGE QUARTERS Y	2	VE

A-58	J-9	GARAGE QUARTERS Q	1	VE
A-74	H-10	GARAGE QUARTERS S	1	VE
A-75	I-10	GARAGE QUARTERS X	1	VE
A-76	H-8	GARAGE QUARTERS V	1	VE
A-83	H-4	FLAMMABLE STORAGE	160	SF
BR-1	E-3	BRIDGE NO. 1	0.057	MI
BR-2	H-3	BRIDGE NO. 2	0.026	MI
DD-1	E-6	DRYDOCK NO. 1	42,336	SY
DD-2	G-6	DRYDOCK NO. 2	57,440	SY
DD-3	C-5	DRYDOCK NO. 3	32,227	SY
H-3	K-6	PUBLIC QUARTERS	1	FA
H-4	K-6	PUBLIC QUARTERS	1	FA
H-5	K-6	PUBLIC QUARTERS	1	FA
H-6	K-6	GARAGE QUARTERS H-5	1	VE
H-13	K-6	GARAGE QUARTERS H-3 AND H-4	2	VE
H-23	J-6	UNACCOMPANIED ENLISTED QUARTERS	14,900	SF
H-25	K-8	SPECIAL SERVICES STORAGE	1,600	SF
H-26	L-5	CHIEF PETTY OFFICERS QUARTERS	13,450	SF
H-27	M-5	PUBLIC QUARTERS	1	FA
H-29	K-5	ADMINISTRATION OFFICES	520	SF
M-1	H-4	PUBLIC QUARTERS	4	FA
T-1	H-10	FUEL OIL TANK	150,000	BL
T-2	H-9	FUEL OIL TANK	150,000	BL
T-3	H-9	DIESEL OIL TANK	5,500	BL
T-4	G-9	RECLAMATION TANK	--	--
T-6	H-9	DIESEL OIL TANK	55,000	BL
TB4	E-6	PRODUCTION SHOP	540	SF
TB13	E-6	LATRINE	730	SF
TB19	G-4	GARAGE AND STORAGE QUARTERS B	1,000	SF
TB63	E-6	PRODUCTION STORAGE	620	SF
TB65	E-6	TIDE GAUGE HOUSE	80	SF
WH1	E-6	WELDING HOUSE NO. 1	2,450	KW
WH3	D-4	WELDING HOUSE NO. 3	5,250	KW

MARINE BARRACKS

M1	H-4	EM BARRACKS AND MESS	34,360	SF
M4	H-4	ARMORY AND GYMNASIUM	2,350	SF
M6	H-4	MAINTENANCE SHOP AND SPECIAL SERVICES	1,380	SF
M9	H-4	SMALL ARMS AMMUNITION MAGAZINE	130	SF
M10	H-4	COLD STORAGE	390	SF
M11	H-4	STORAGE	210	SF
M15	H-4	STORAGE	420	SF
M16	H-4	GARBAGE HOUSE	160	SF
M17	I-4	GARAGE	3	VE
M18	H-4	SUPPLY OFFICE AND STORAGE	1,950	SF
M19	I-4	BASKETBALL COURT	1	EA

NAVAL MEDICAL CLINIC

H-1	K-7	DISPENSARY/ADMINISTRATION/ DEPENDENTS CLINIC	74,400	SF
H-2	K-6	EMPLOYEE ASSISTANCE	1,100	SF
H-10	K-7	AMBULANCE GARAGE/FINANCE/HOBBY SHOP	26,200	SF
H-21	K-6	UNACCOMPANIED ENLISTED QUARTERS	9,400	SF
H-30	K-7	FLAMMABLE STORAGE	520	SF
H-31	K-7	FLAGPOLE	1	EA

NAVAL RESERVE TRAINING CENTER

171	G-9	TRAINING CENTER	16,000	SF
187	G-10	CLASSROOMS	6,400	SF

8. CAPITAL IMPROVEMENTS PLAN

A. GENERAL

The Portsmouth Naval Shipyard was authorized by the Federal government in 1799 and established in 1800. In view of the deep water harbor surrounding the island, the principal function of the Shipyard was to build and repair ships. However, in recent years, the Shipyard has focused its attention on the overhaul, conversion, and repair of nuclear propulsion fleet ballistic missile and attack submarines.

The Portsmouth Naval Shipyard provides support and/or host activity to 17 Navy and non-Navy activities.

B. MAJOR FACILITIES

The Base encompasses about 298 acres including the non-contiguous 25-acre family housing site. The Base has three drydocks ranging up to SSBN and SSN-688 class capability and 6,500 lineal feet of berthing. The berthing is comprised of six submarine berths (of varying class capability) ranging from only parking capability with no services to repair berths with near total repair and test capabilities, plus berths for yard and service craft. There are 376 buildings and structures with 3,560,000 square feet of floor space.

C. Planning Objectives

The objective of this Master Plan is to provide a realistic and orderly development scheme for the Portsmouth Naval Shipyard.

Planning Proposals

- a. Increase capacity and flexibility for support of the fleet.

- P-107 Medical Clinic
- P-172 New Drydock
- P-181 Mods. to Berths 11, 12, & 13
- P-195 Mods. to Berth 6
- P-217 Abrasive Blast Facility
- P-222 TRF Supply Facility
- P-225 Refueling/Defueling Crane
- P-233 Integrated Repair and Test Facility
- P-240 Naval Manufacturing Process Test and Evaluation Facility

- b. Remove non-essential functions from the CIA.

- P-145 Admin/Engineering Management Addition
- P-199 Training Facility

- c. Consolidate functions to increase efficiency of operations.

- P-127 Quality Assurance Facility
- P-131 Temporary Service Shop Modernization
- P-145 Admin/Engineering Management Addition
- P-196 Controlled Material Storage Facility
- P-199 Training Facility
- P-215 Hazardous/Flammable Material Storage Facility

P-218 Metal Test and Storage Facility
P-230 Propeller and Shaft Shop Modernization
P-235 Public Works Facility
P-236 Consolidated Supply Warehouse

d. Upgrade and renovate industrial facilities to modern standards.

P-120 Structural Group Improvements
P-125 Rigger Shop Modernization
P-232 Battery/Transducer Shop Modernization
P-237 Pass and Security Office
P-238 Electrical/Electronics Shops Mods.
P-239 Automated Containerized Supply System

e. Relocate functions occupying sites having a higher and better use.

P-231 Pipefitting Shop

f. Rehabilitation of underutilized facilities.

P-172 New Drydock Facility
P-199 Training Facility
P-239 Automated Containerized Supply System

g. Improve quality of life.

P-147 Indoor Swimming Pool
P-199 Auto Hobby Shop
P-211 CPO Club

D. INTRODUCTION

Previous sections of the Plan have established the direction for land use and facility development at the Portsmouth Naval Shipyard. The discussions on existing conditions, requirement analysis, and conceptual development all support the proposed land use plan. These sections of the Master Plan should remain fairly constant over the long-range.

The CIP provides a link between the proposed long-range land use plan and the plans for construction of individual short-range and long-range major projects. It provides an easy means to update the Master Plan. It is anticipated that the activity will periodically initiate changes to this CIP, based on the availability of funds and changing priorities.

1. Funding Sources

The Activities at the Portsmouth Naval Shipyard have several funding sponsors. However, the Shipyard is funded primarily by the Navy Industrial Fund (NIF). About 91% of the money to be spent on planned projects is in the Special Projects category. These include maintenance projects in excess of \$75,000, repairs from \$75,000 to \$500,000; equipment installation in excess of \$15,000 not including the procurement of the equipment itself; and finally, minor construction from \$25,000 to \$200,000. Some of the Special Projects are paid for with Non-Appropriated Funds (NAF), Naval Occupational, Safety and Health (NAVOSH) funds, Energy Conservation Investment Program (ECIP), and Public Work's Navy Industrial Fund (NIF).

2. Projects Addressed in This CIP

The following is a list of all military construction projects by year of proposed implementation. A host of activities submit various projects based on their requirements and are listed on the Military Requirements List, Report 1360. The programmed projects are candidates for implementation in a specific program year but are subject to cancellation or rescheduling based on Shipyard requirements. The unprogrammed projects are valid projects that have not yet been designated for funding in a specific program year. A project shown with an (*) is regarded by the activity as a critical project while a project with a (Z) means complete documentation has not yet been received. A project shown with a (Y) means those projects recommended by the Shipyard Modernization Study and endorsed by the Shipyard to be supportable military construction projects.

All critical projects are discussed in more detail at the end of this chapter.

MILCON PROJECTS

<u>FY</u>	<u>PROJECT #</u>	<u>PROJECT TITLE</u>	<u>COST (\$000)</u>
*85	P-145 Z	ADMIN./ENGR.MGMT. BLDG. ADDITION	11,800
*85	P-215	HAZARDOUS/FLAMMABLE MATERIAL STORAGE FACILITY	2,000
*87	P-127	QUALITY ASSURANCE FAC.	12,000
*87	P-181	PIER MODERNIZATION, BERTHS 11,12, AND 13	44,500
*87	P-195 Y	PIER MODERNIZATION, BERTH 6	9,650
87	P-199 Z	TRAINING FACILITY	8,800
*88	P-172 Y	NEW DRYDOCK FACILITY	300,000
*88	P-196 Z	CONTROLLED MTL.STORAGE FACILITY	1,050
*89	P-120 Y	STRUCTURAL GROUP IM- PROVEMENTS	15,800
89	P-107	CLINIC REPLACEMENT	7,674

* Critical Projects

Y Shipyard projects recommended by the Shipyard
Modernization Study

Z Incomplete Documentation

UNPROGRAMMED

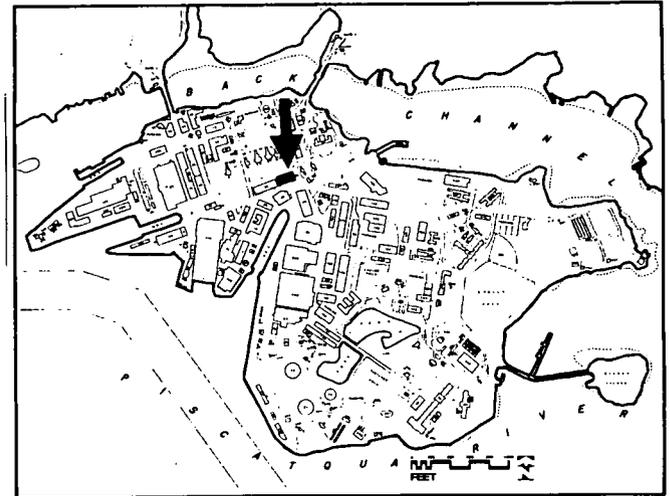
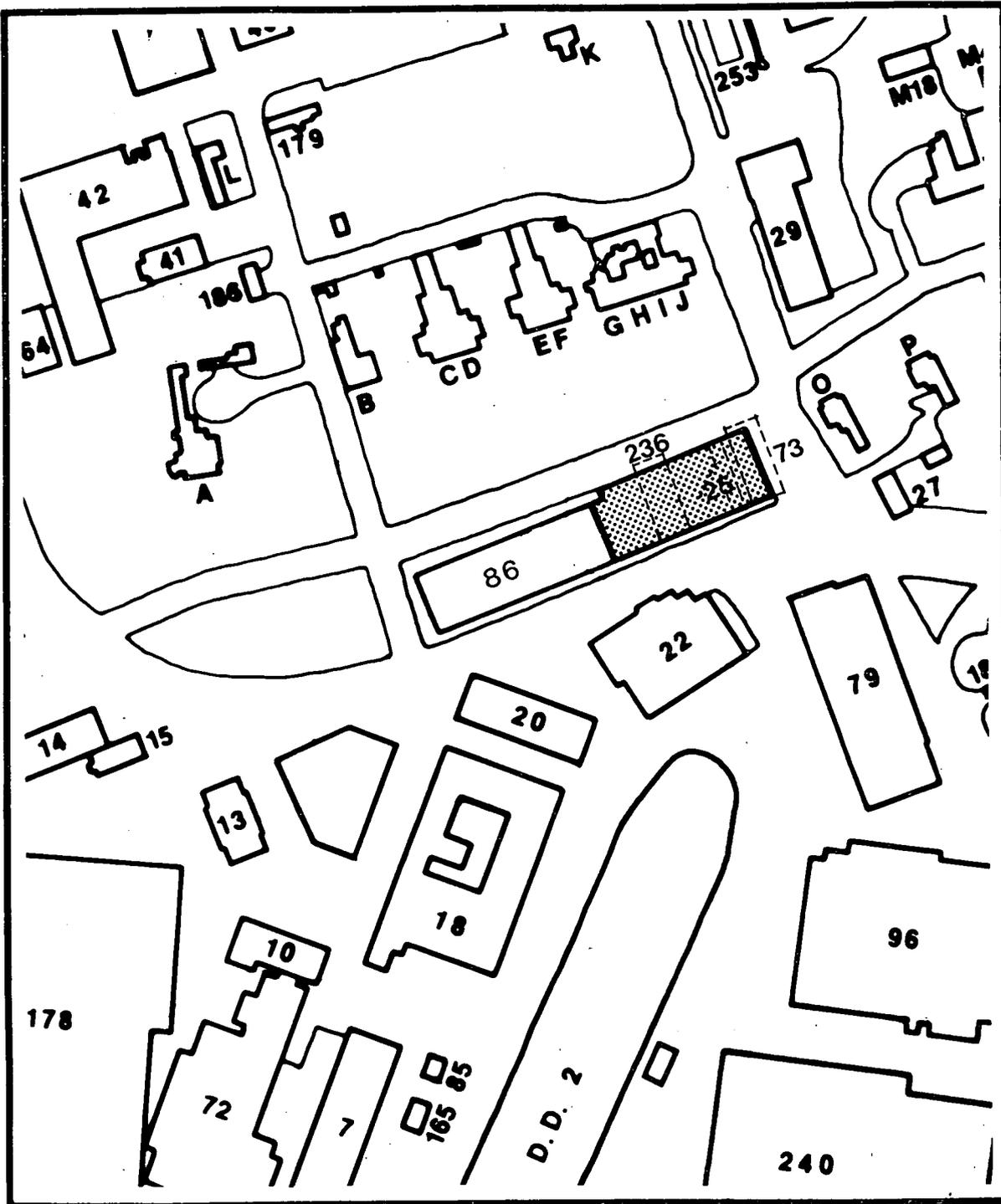
<u>PROJECT #</u>	<u>PROJECT TITLE</u>	<u>COST (\$000)</u>
P-125 Y	RIGGER SHOP MODERNIZATION	400
P-131 Y	TEMPORARY SERVICE SHOP MODIFICATIONS	2,400
P-147	INDOOR SWIMMING POOL	2,200
P-190	AUTO HOBBY SHOP	NAF
P-211	NEW CPO CLUB	400
*P-217 Y	ABRASIVE BLAST & PAINT FACILITY	6,350
*P-218	MTL. TEST & STORAGE FACILITY	7,400
P-220	STEAM PLANT BOILER COMBUSTION & INSTRUMENTATION	2,400
P-221	ENERGY MONITORING & CONTROL SYSTEM WITH LOCAL/REMOTE METERING	1,612
P-222	TRF SUPPLY FACILITY	(N.A.)
*P-225	REFUELING/DEFUELING CRANE AT DD 2	5,200

SHIPYARD MODERNIZATION PROJECTS

*P-230 Y	PROPELLER AND SHAFT SHOP	13,800
*P-231 Y	PIPEFITTING SHOP	24,400
P-232 Y	MODERNIZATION OF BATTERY/ TRANSDUCER SHOP	270
P-233 Y	INTEGRATED REPAIR & TEST FAC.	27,200
P-235 Y	PUBLIC WORKS FACILITY	7,500
*P-236 Y	CONSOLIDATED SUPPLY WAREHOUSE	18,500
P-237 Y	PASS AND SECURITY OFFICE	660
P-238 Y	MODERNIZATION OF ELECTRICAL/ ELEX SHOP	3,600
P-239 Y	AUTOMATED CONTAINERIZED SUPPLY SYSTEM	20,000
P-240 Y	NAVAL MANUFACTURING PROCESS TEST & EVALUATION FACILITY	12,000

* Critical Projects
Y Shipyard Projects recommended by the
Shipyard Modernization Study

**FY85
MCON
PROGRAM**



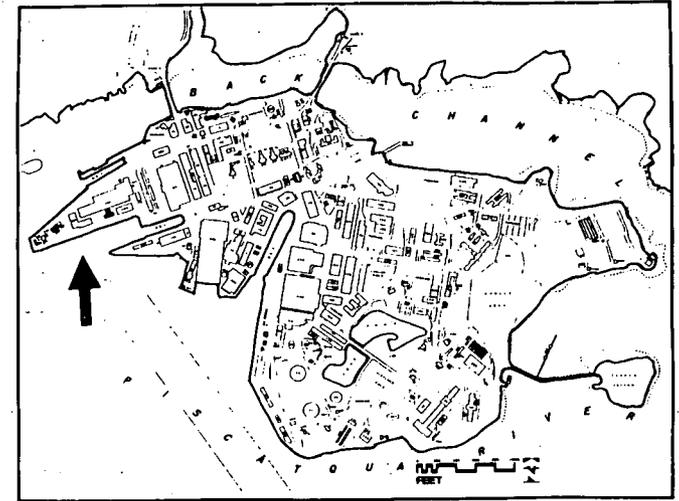
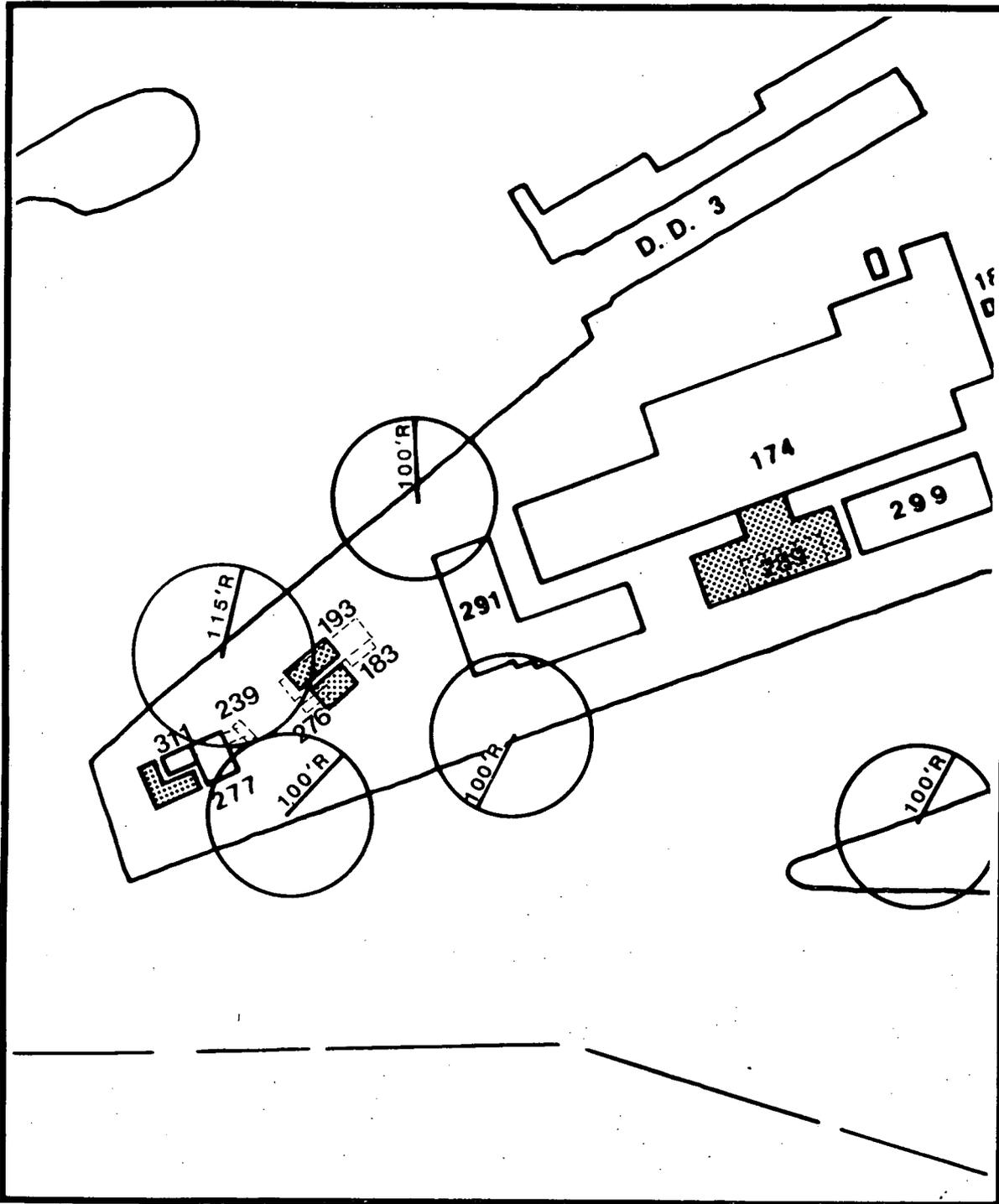
P-145 ENGINEERING/MANAGEMENT BUILDING
ADDITION

Scope: 114,000 S.F.
\$11,800,000

The proposed addition to Building 86 will reduce administrative office space deficiencies. This project will consolidate administrative engineering/management functions presently housed in five separate buildings, provide new office space for personnel presently occupying inadequate space and modernize existing space in Building 86. The project also will renovate a portion of Building 29 for those displaced by the demolition of Building 73. Other buildings to be demolished are Buildings 236 and 25. The project is located within the Historic District.

FY86
NONE
PROGRAMMED

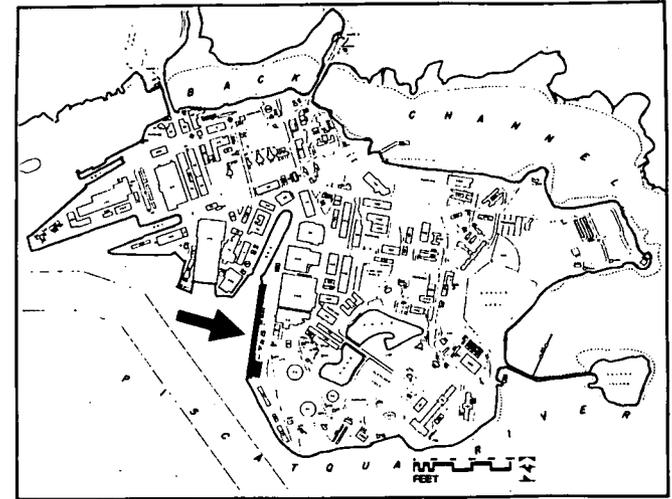
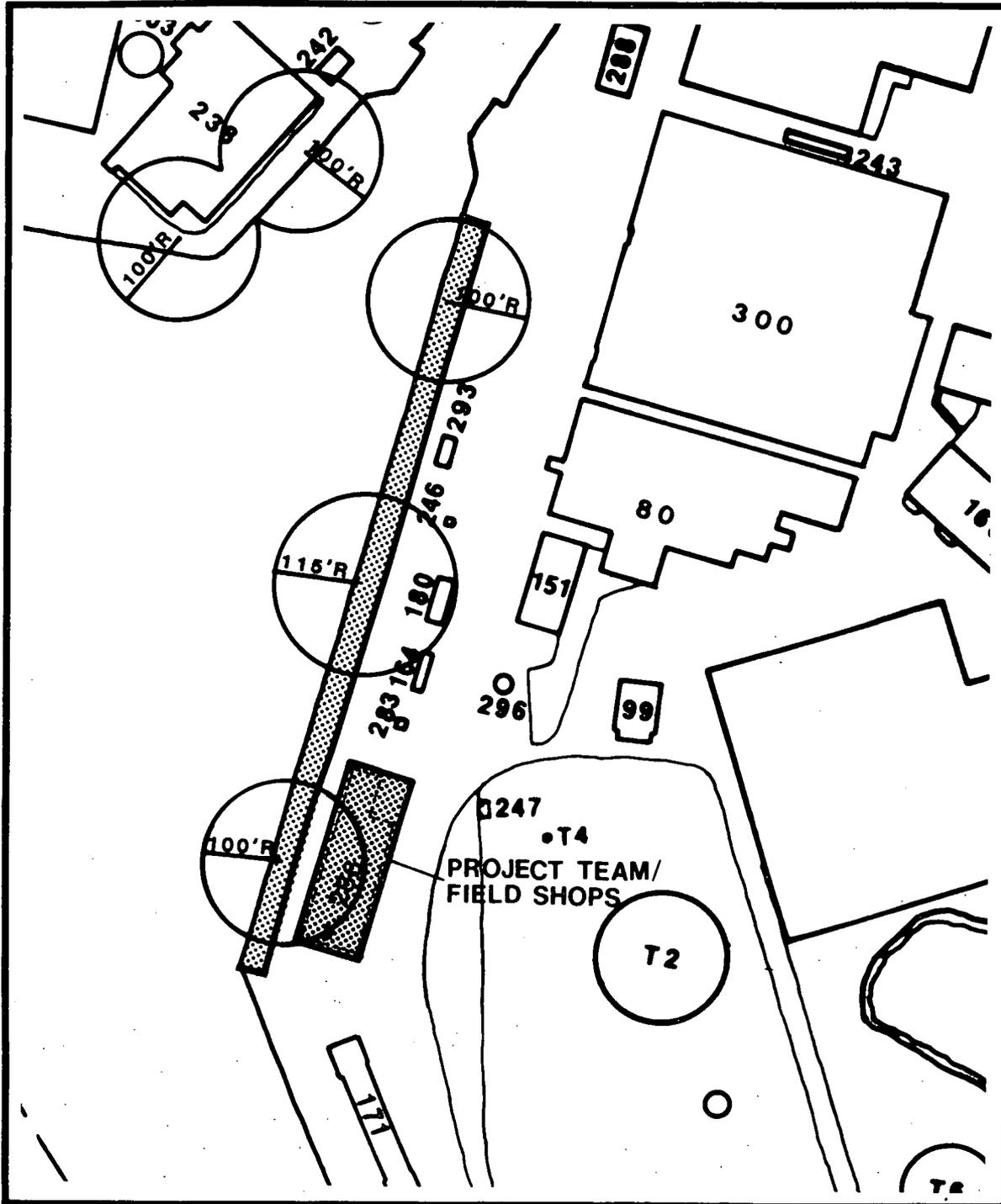
FY87
MCON
PROGRAM



P-181 PIER MODERNIZATION, BERTHS 11, 12, and 13

Scope: 37,356 S.F. - Buildings
 2,300 L.F. - Utility Tunnels
 \$44,500,000

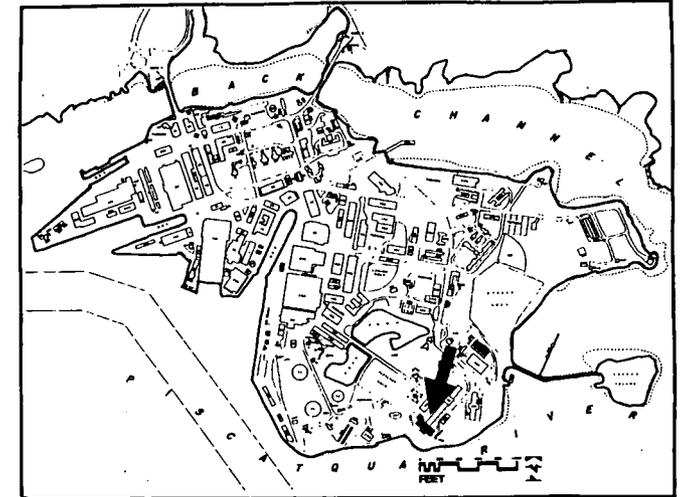
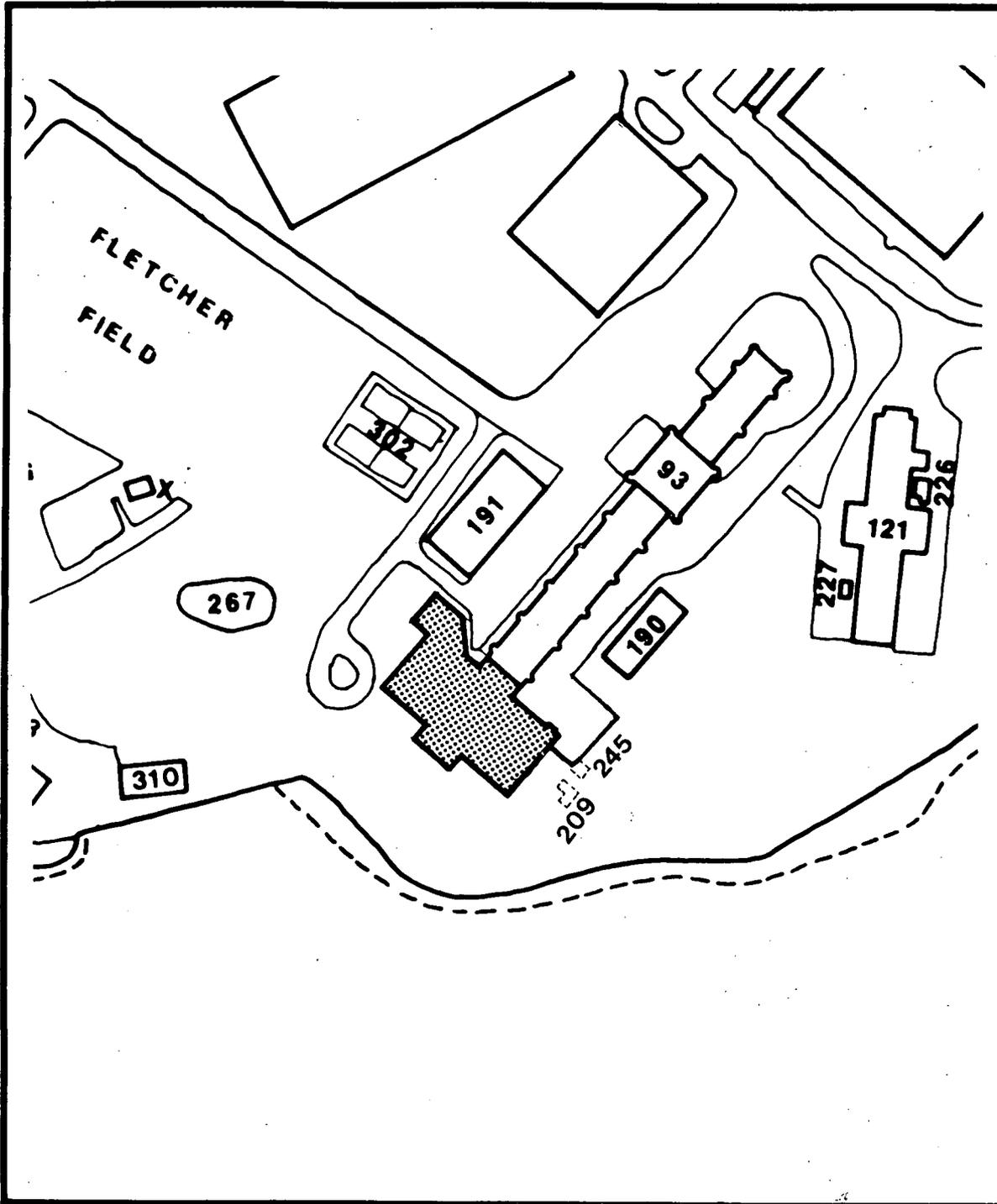
This project will construct four new buildings for project team offices, field shops, restaurant, new utility tunnels and upgrade a portion of the existing utilities at Berths 11, 12, and 13. Buildings 289, 196, 183, 278 and 239 will be demolished to provide a site for new construction. Some administrative personnel from Building 174 will be relocated elsewhere to provide the vacated space for field shops and a project team office.



P-195 PIER MODERNIZATION, BERTH 6

Scope: 36,000 S.F.
\$9,650,000

The project will upgrade and modernize Berth 6 from parking hotel berth into a repair/overhaul berth. The project includes the necessary utilities required to support the 688 class submarines. In addition, this project will construct a new field shop and project teams office. Building 286, the fatigue test facility will be demolished to provide the construction site.

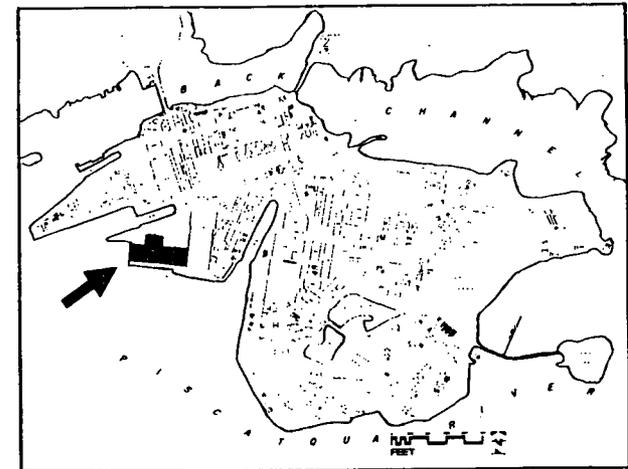
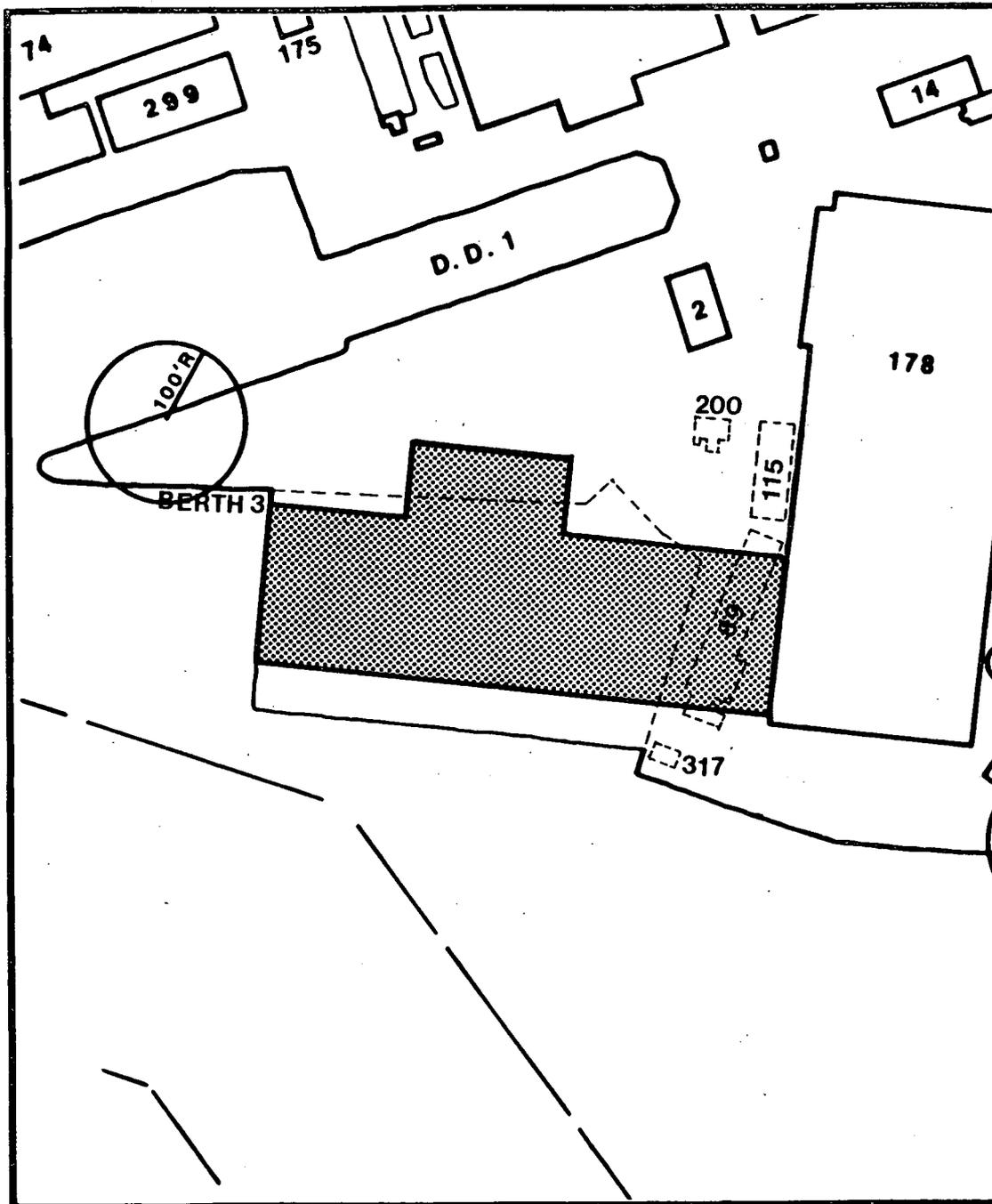


P-199 TRAINING FACILITY

Scope: 107,000 S.F.
\$8,800,000

Present training in the Shipyard is being conducted in Buildings 94, 14, and in 32 other locations. This project will consolidate and provide for the expansion of the academic and applied training functions into one facility. This project will renovate several floors of the Southwest wing of Building 93 and construct an addition for a total of 107,000 S.F. Buildings 245 and 209 will be demolished.

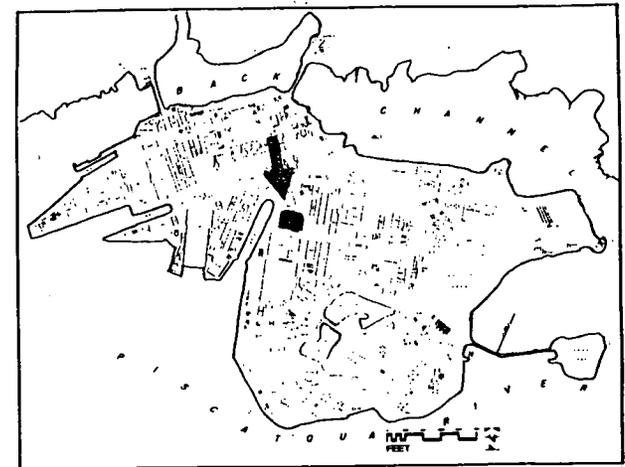
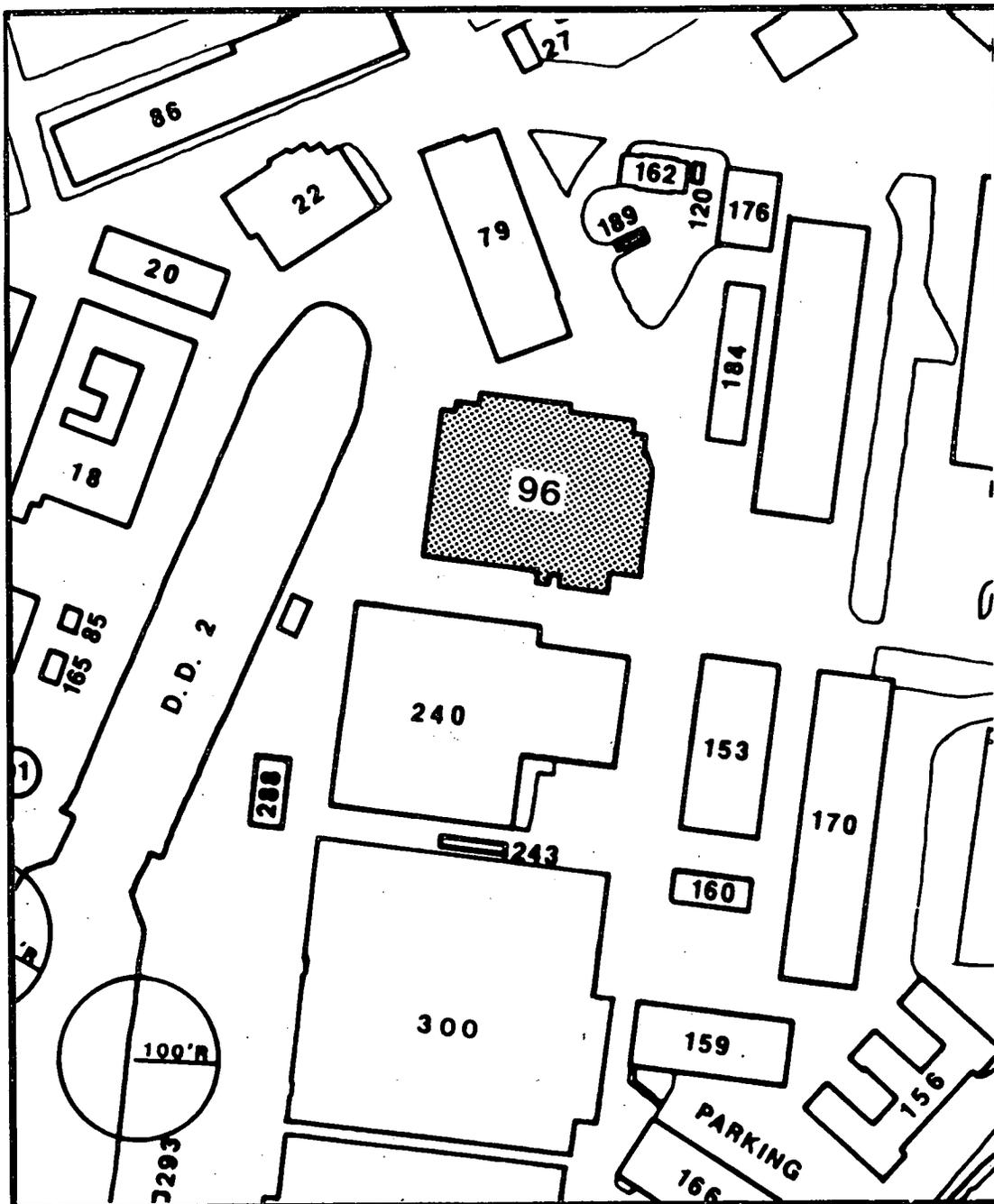
**FY88
MCON
PROGRAM**



P-172 NEW DRYDOCK FACILITY

Scope: 270,000 S.F.
300,000,000

This project will construct a new submarine repair facility designed specifically to overhaul the present SSN 688 and the incoming SSNX class submarines. The facility will consist of a graving dock with the associated utilities and hardware support. The new drydock will be covered for weather protection. Buildings 89, 200 and 115 will be demolished to provide the site for construction. Structure number 317, a fixed crane, will be relocated. Berth 3 will be eliminated.

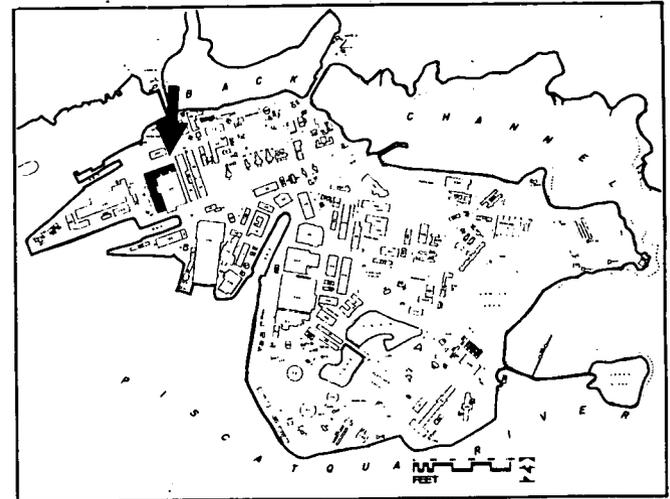
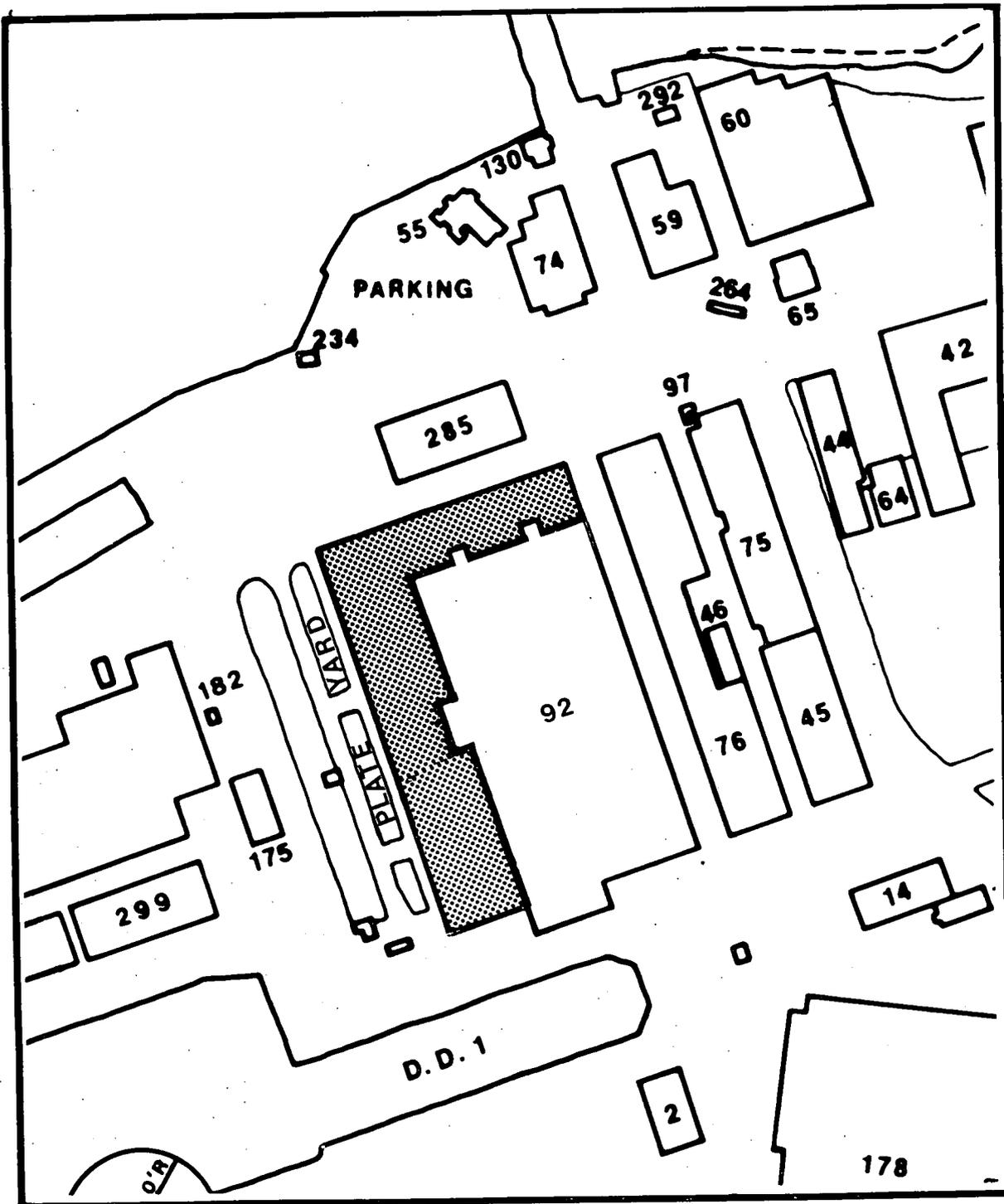


P-196 CONTROLLED MATERIAL STORAGE FACILITY

Scope: 50,000
\$1,050,000

Controlled materials are presently stored and handled in Building 96 and other locations throughout the Shipyard. This results in inefficient and costly handling and transportation of controlled materials. The proposed project will be a secured, consolidated facility with material handling equipment suited for the storage, receipt/in-progress inspection and minor repair of controlled materials. Building 96, located with the CIA will be renovated for this project.

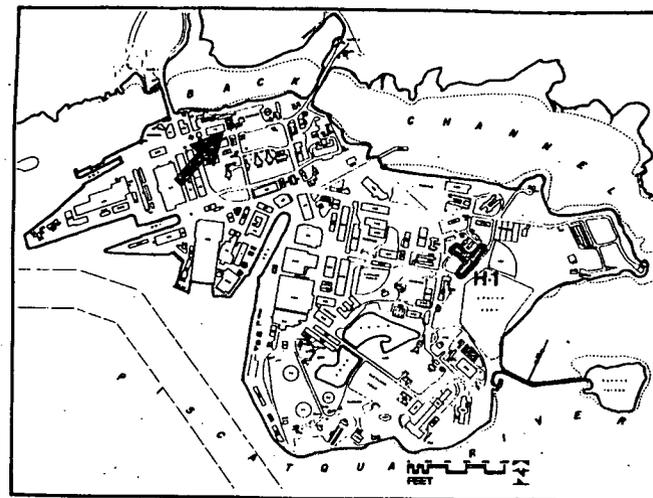
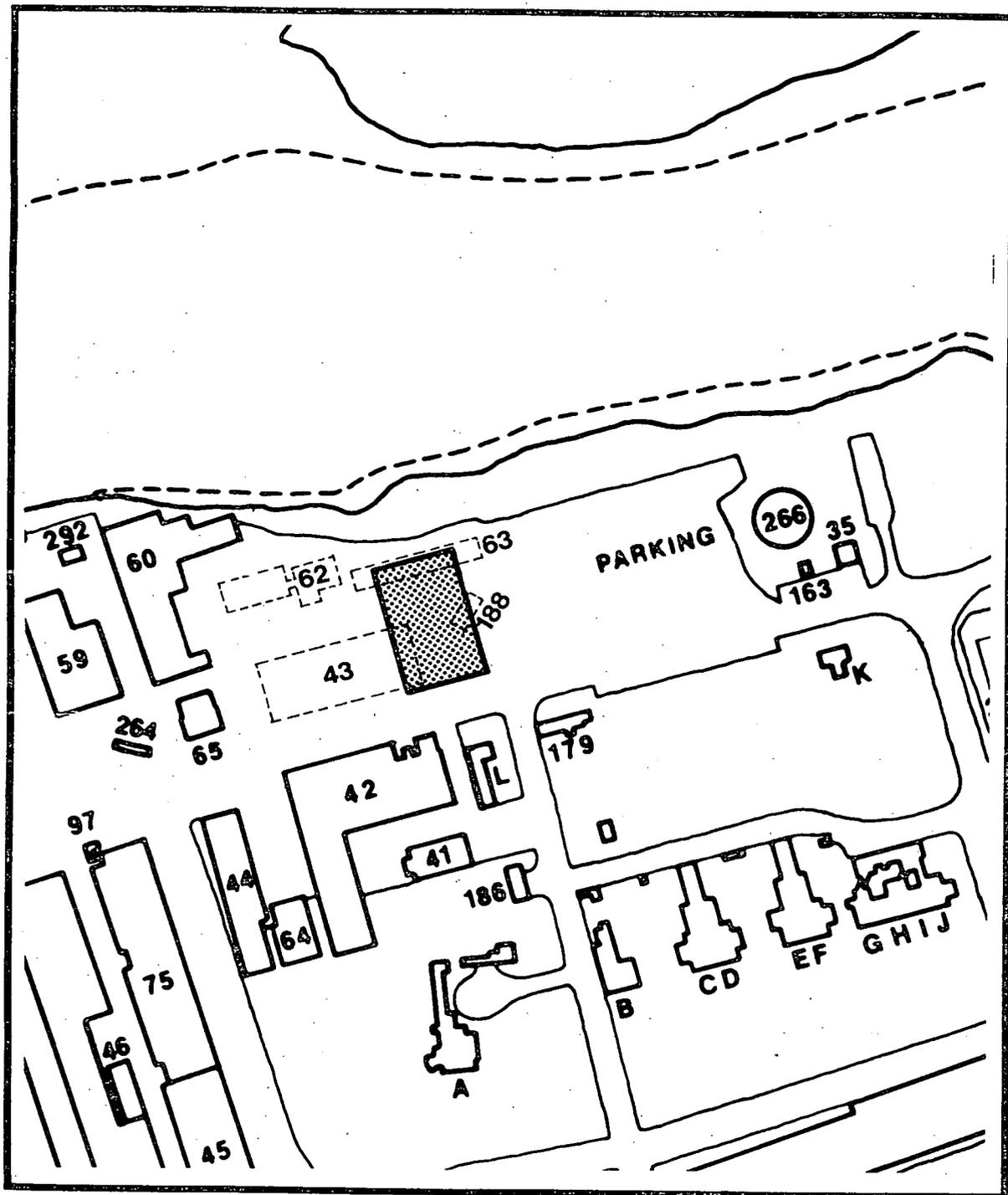
**FY89
MCON
PROGRAM**



P-120 Structural Group Improvements

Scope: 47,000 SF
 \$15,800,000

Provide a modernization program for Building 92 by expanding the building in two directions and constructing second and third levels within the bays. Refurbishing of Building 76 and the plate yard adjacent to Building 92 is also included.

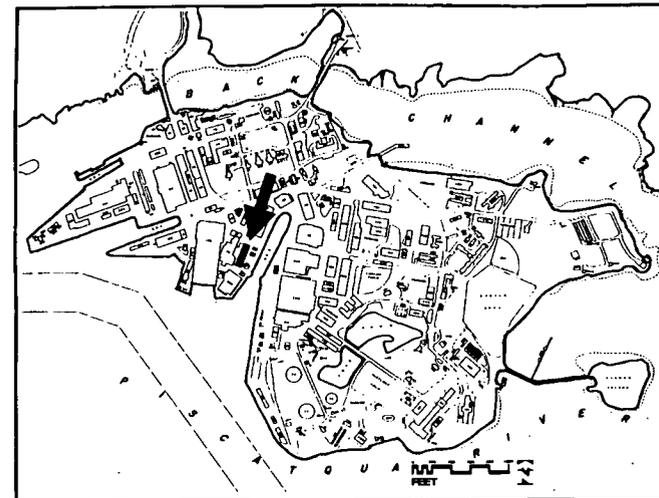
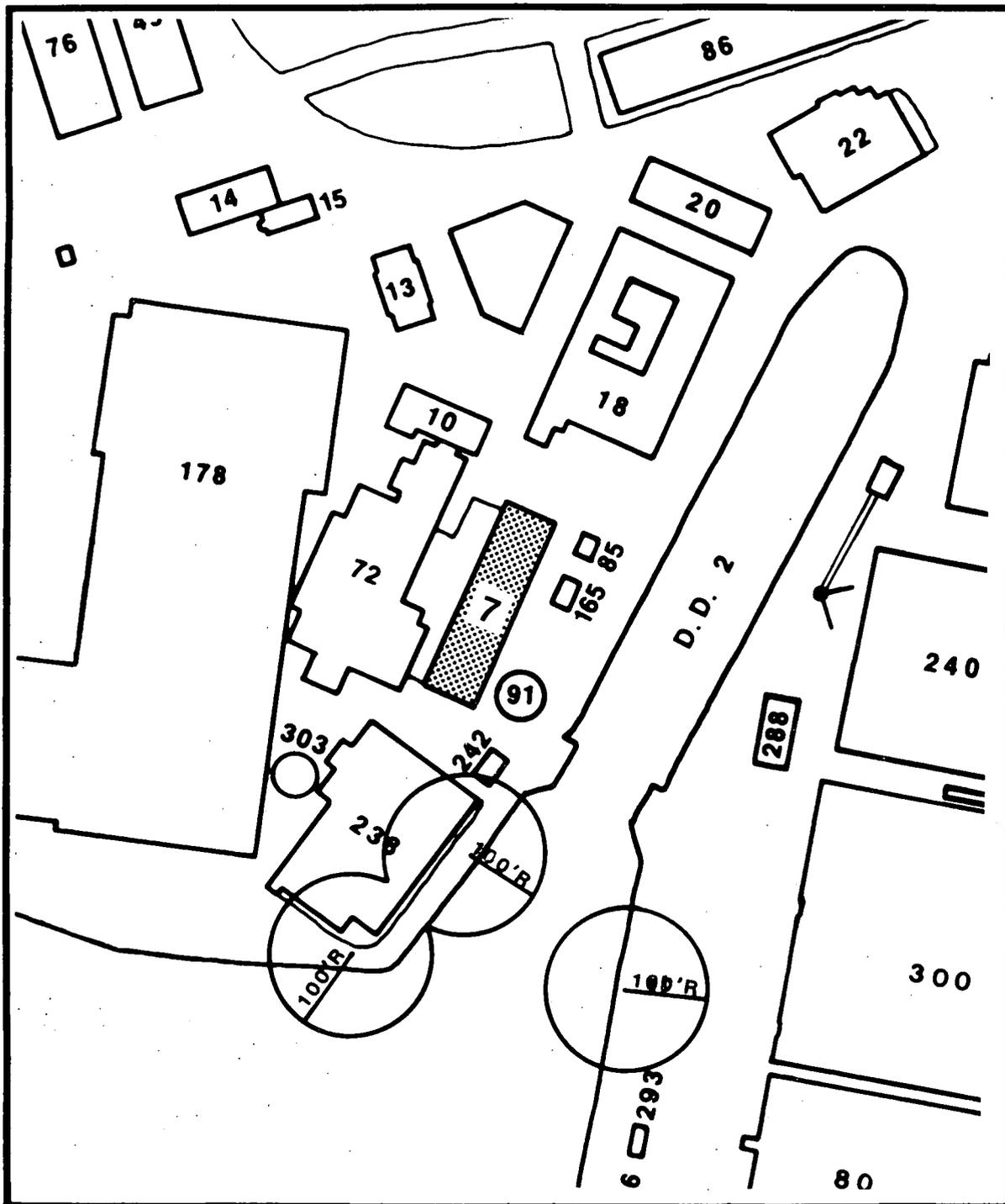


P-107 Clinic Replacement/NAVMEDCL

Scope: 62,000 SF
\$7,674,000

Provides for better patient/user functional flow, a close location to the Industrial Area and Main Gate, and consolidates the Medical, Dental, Optometry, Audiology, and Occupational Safety and Health Office into one facility. Existing Building H-1 will be modernized to provide administrative/engineering space. Buildings 43, 62, 63, and 188 will be demolished to make space for this project. Because this project is located within the Historic District, all new exterior construction must be historically compatible.

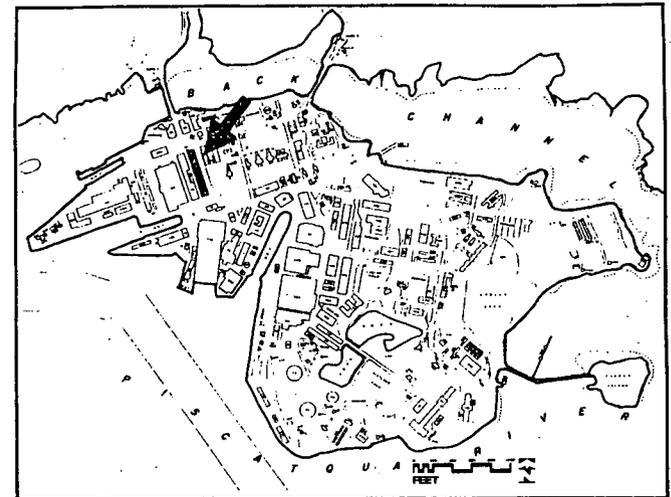
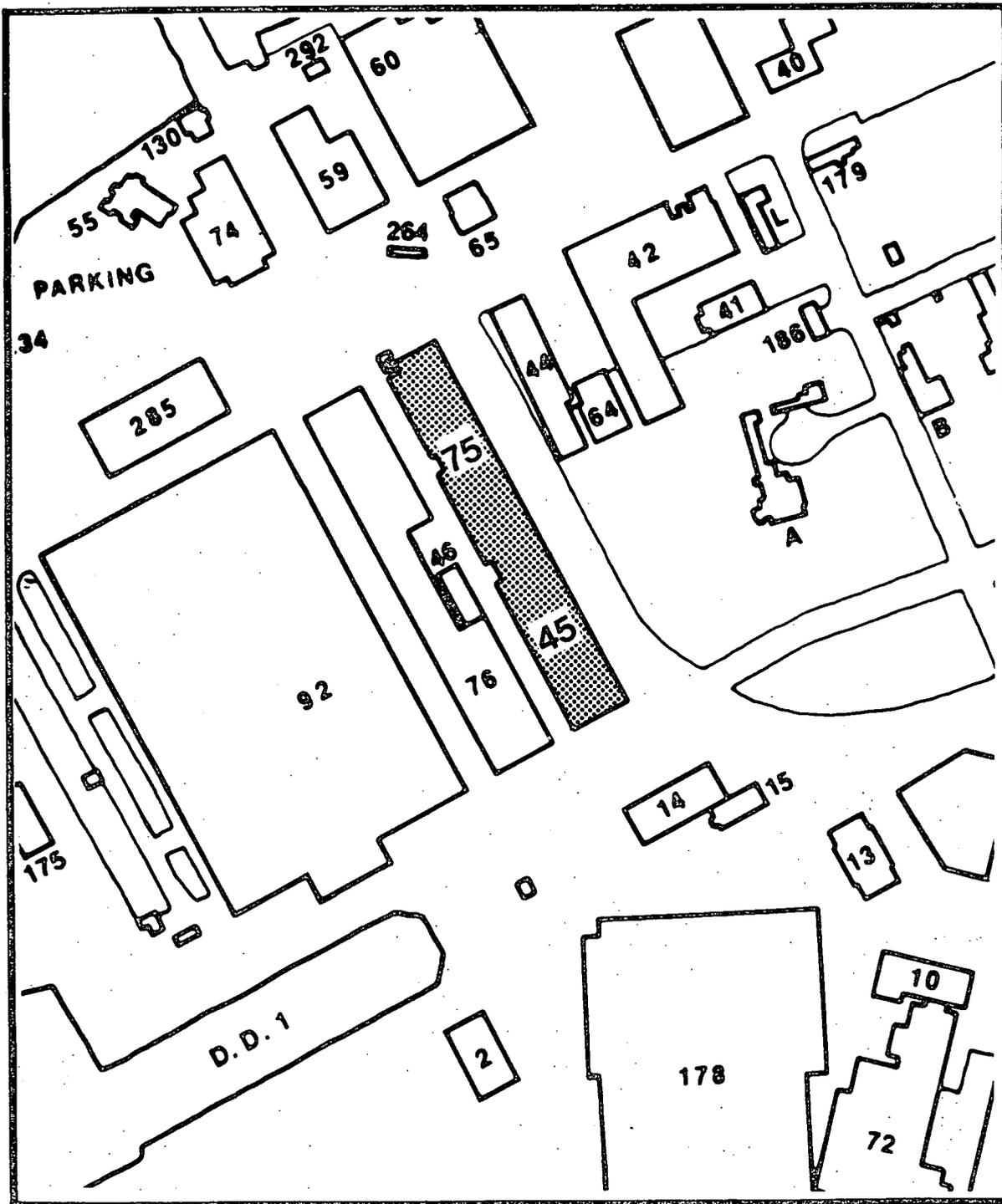
**UNPROGRAMMED
PROJECTS**



P-125 Rigger Shop Modernization

Scope: 45,000 SF
\$400,000

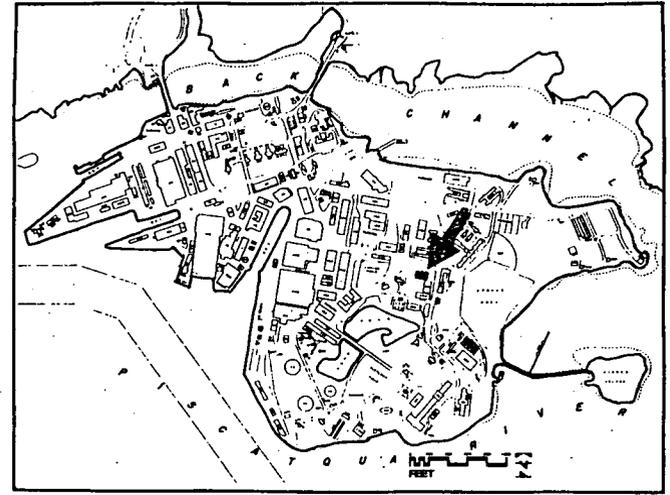
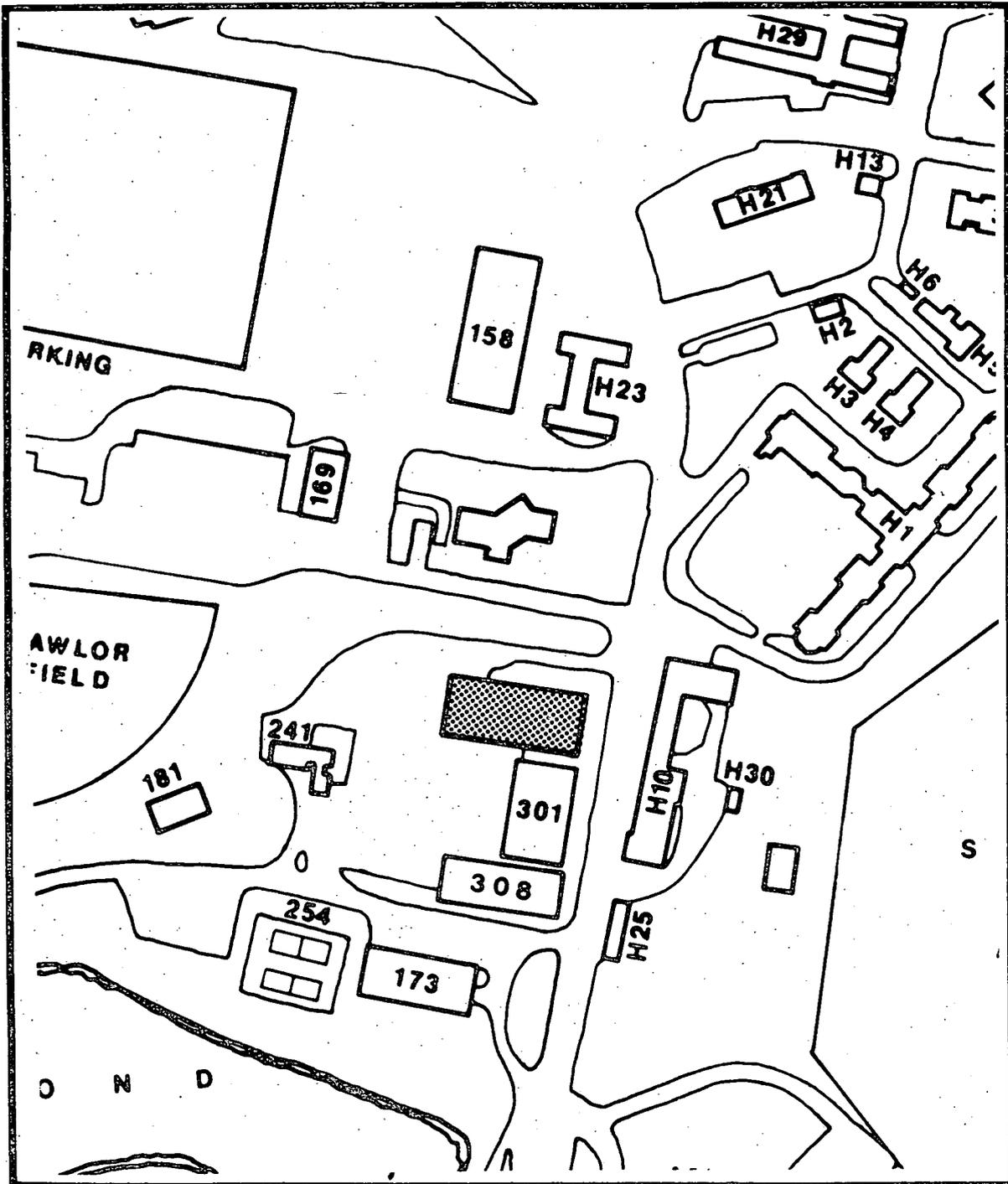
Upgrade and remodel Building 7 to effect a more efficient operation and consolidation of storage areas. This can be achieved by reinforcing the second floor, relocating shop equipment, providing a 2,000 lb. monorail, installing a P.A. system, and remodeling miscellaneous work areas.



P-131 Temporary Service Shop Modification

Scope: Lump Sum
\$2,400,000

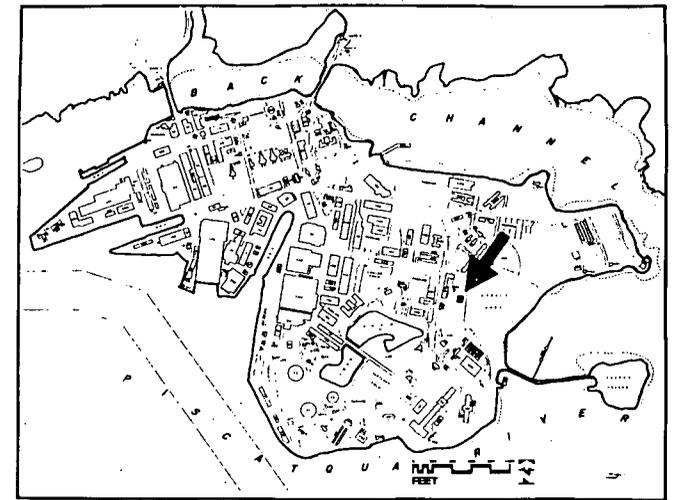
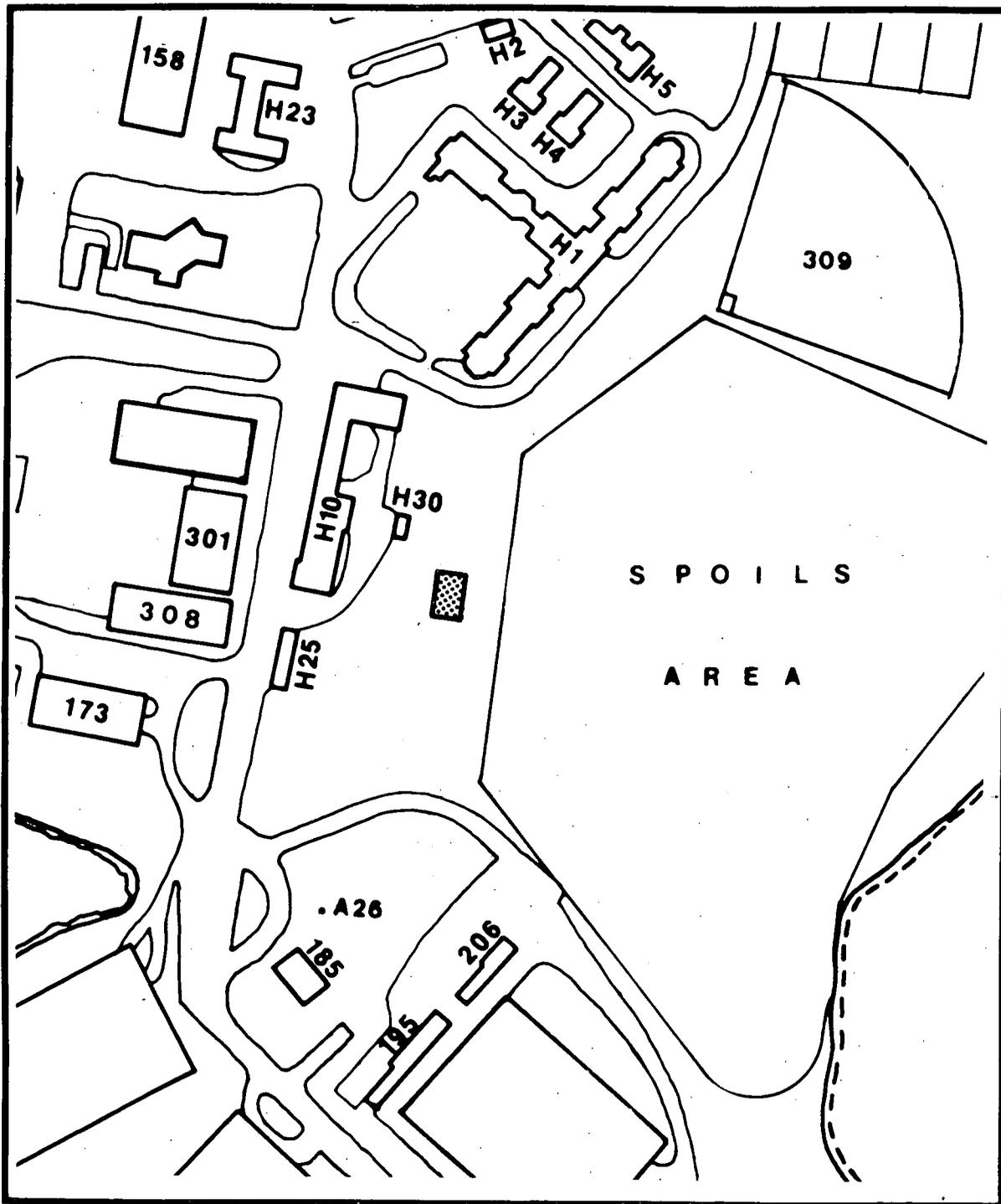
Consolidate all outlying storage and maintenance into one control shop to simplify the overall storage operation. Demolish brick wall dividing Buildings 45 and 75, providing structural supporting members where necessary, and reroute utilities as required to provide one continuous facility. Install crane rails in Building 45. All wooden additions attached to the basic brick structure will be demolished and a new administrative complex will be constructed within.



P-147 Indoor Swimming Pool

Scope: 1 ea
 \$2,200,000

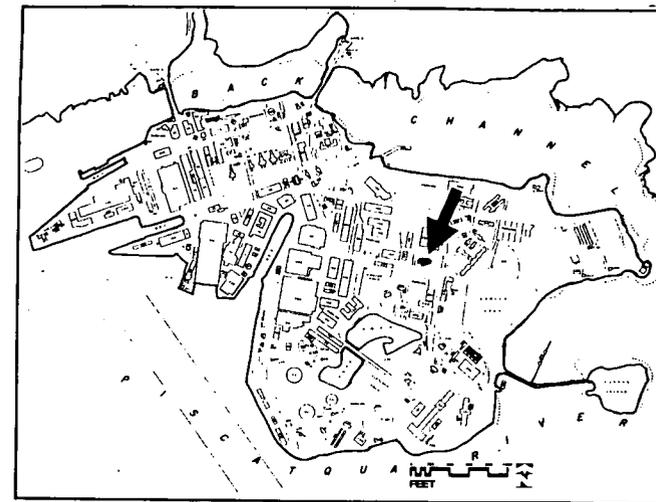
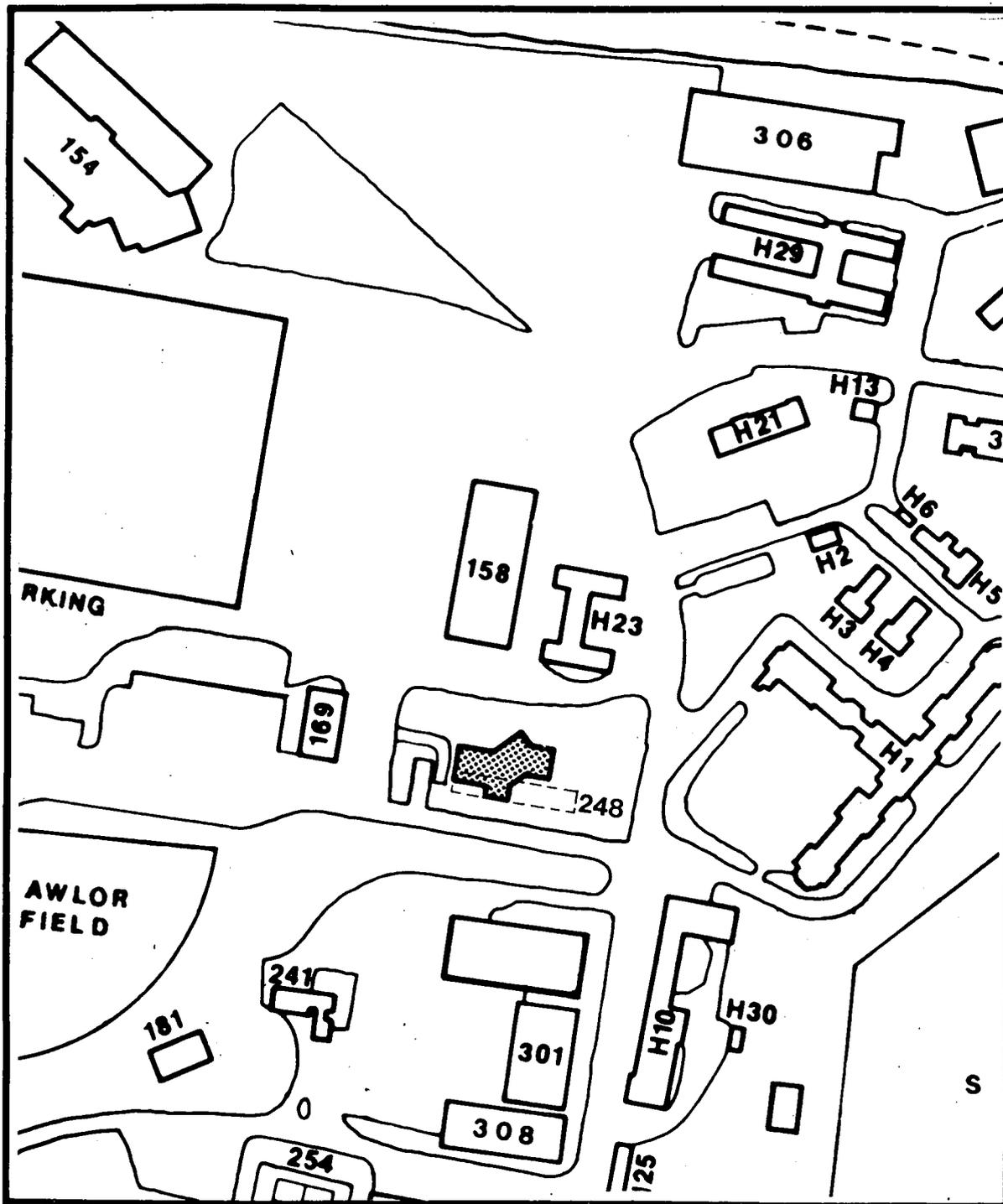
Provide for an indoor swimming facility by constructing a concrete foundation, masonry walls, insulated roof and related utilities including a lighted parking lot.



P-190 (NAF) Auto Hobby Shop

Scope: 4,000 SF
\$250,000

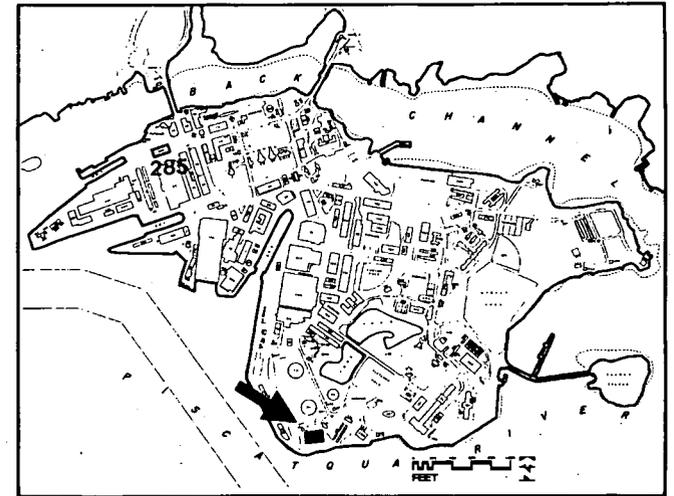
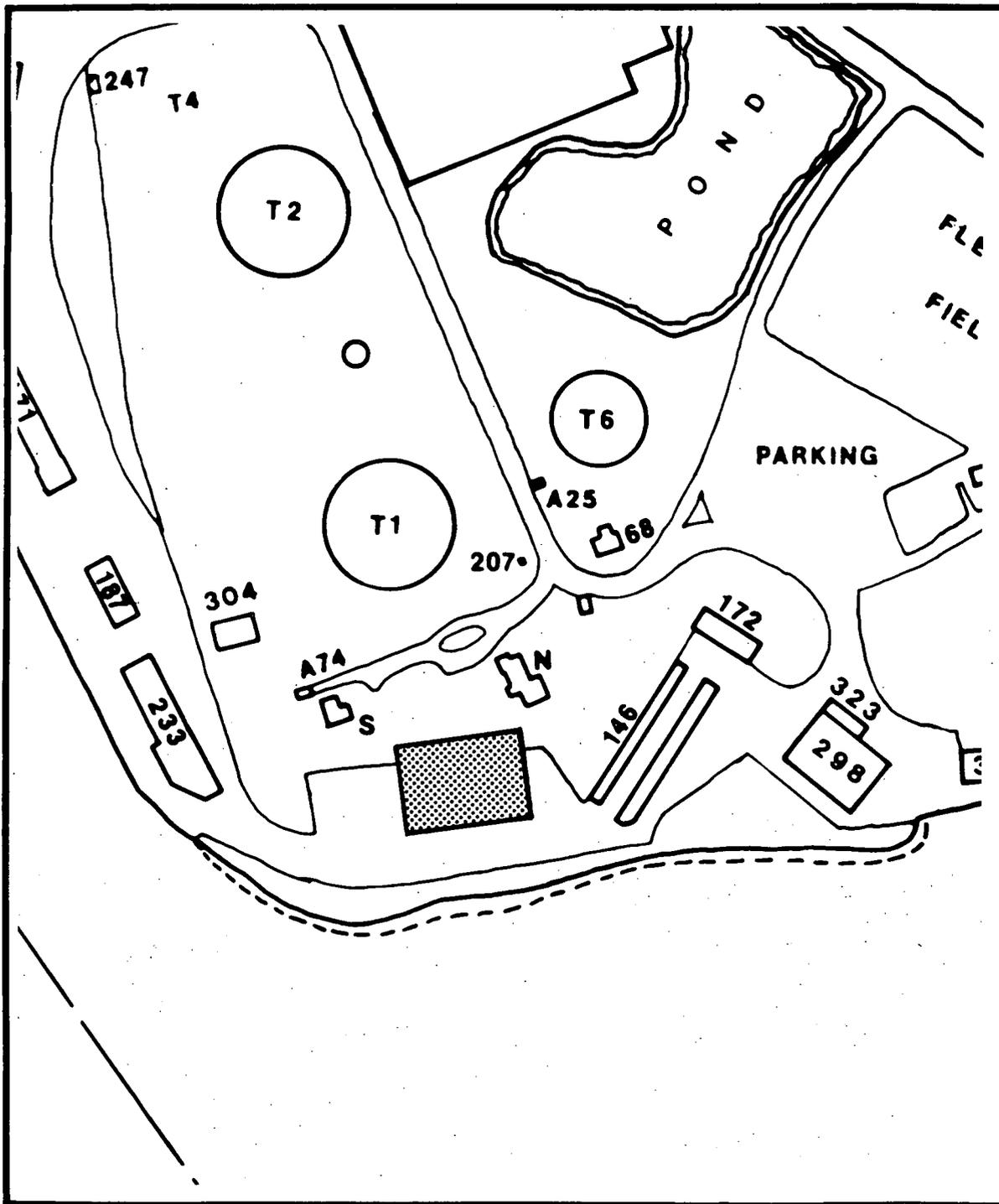
Provide for an efficient, safe, indoor auto hobby shop. The 4,000 S.F. facility includes 8 automotive stalls, area for general repairs, tune-up, muffler, tire, and body work.



P-211 CPO Club

Scope: 23,692 S.F.
\$2,198,000

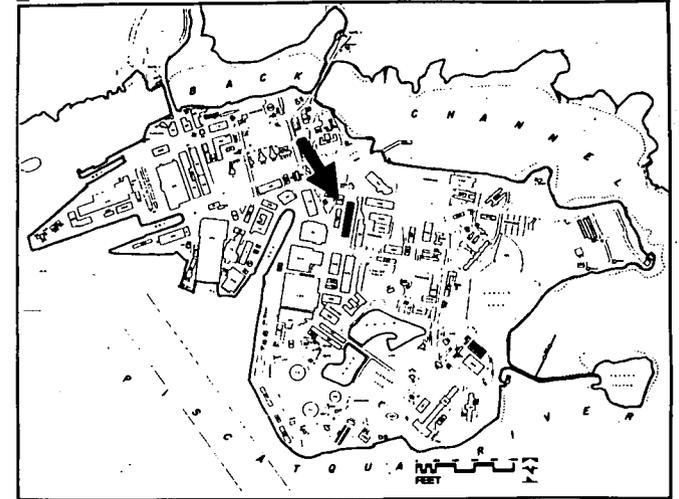
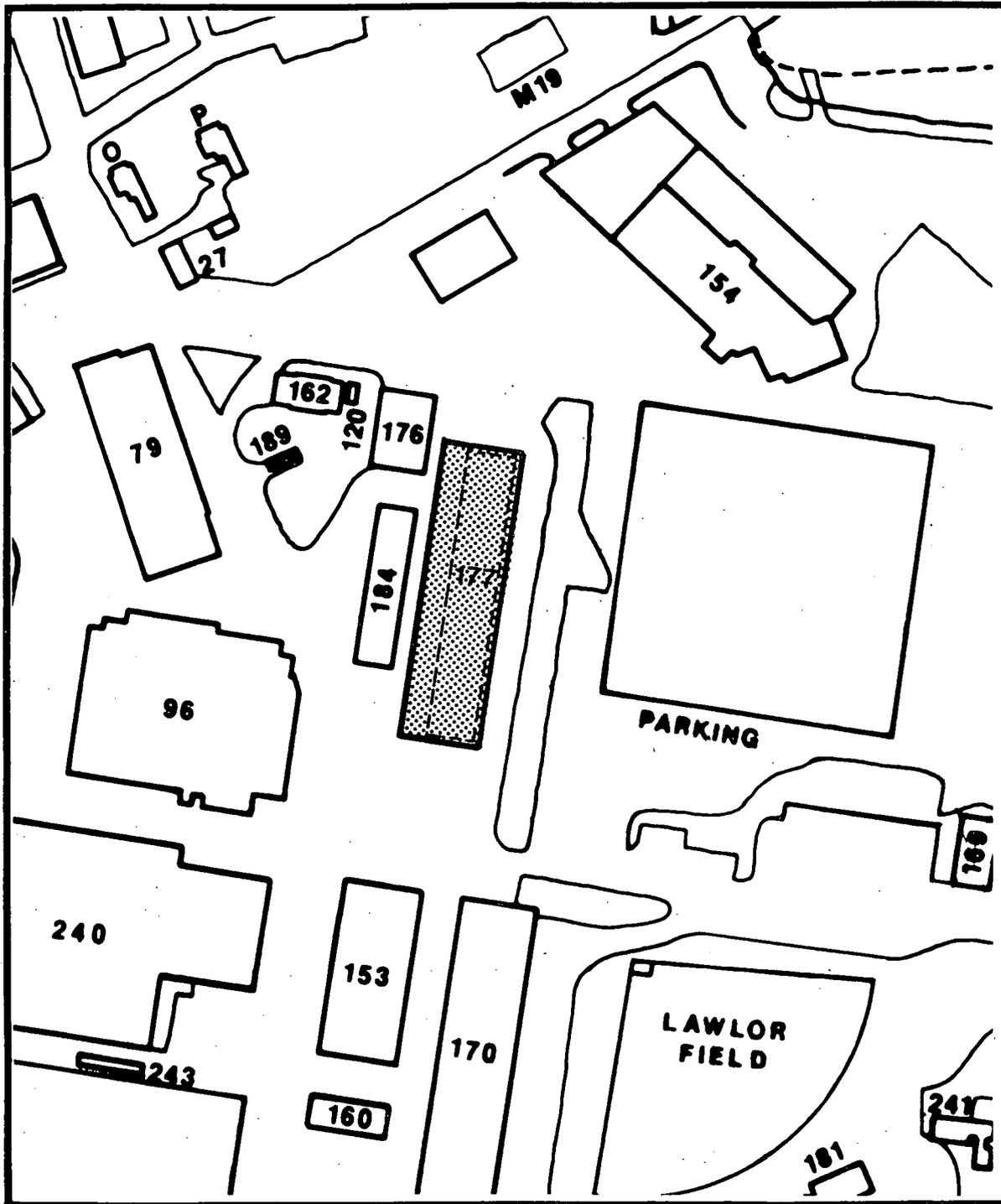
The current CPO Club is located in Building 248, a substandard and temporary structure that is beyond its economic life. The project will provide a new dining and recreational facility for E7-E9's. Building 248 will be demolished to provide the site for construction.



P-217 ABRASIVE BLAST AND PAINT FACILITY

Scope: 41,800 S.F.
\$6,350,000

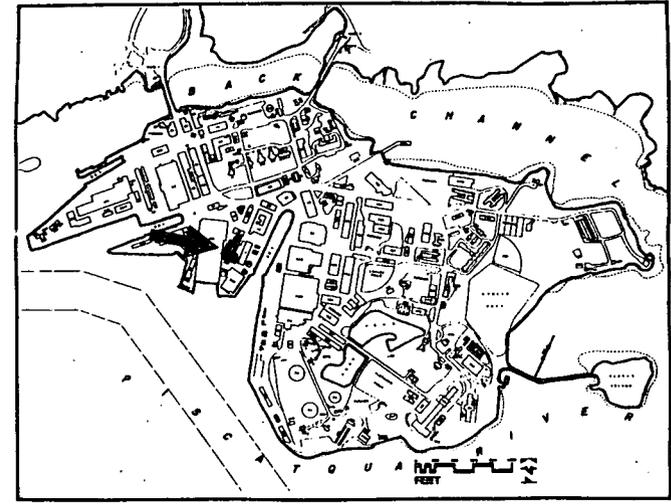
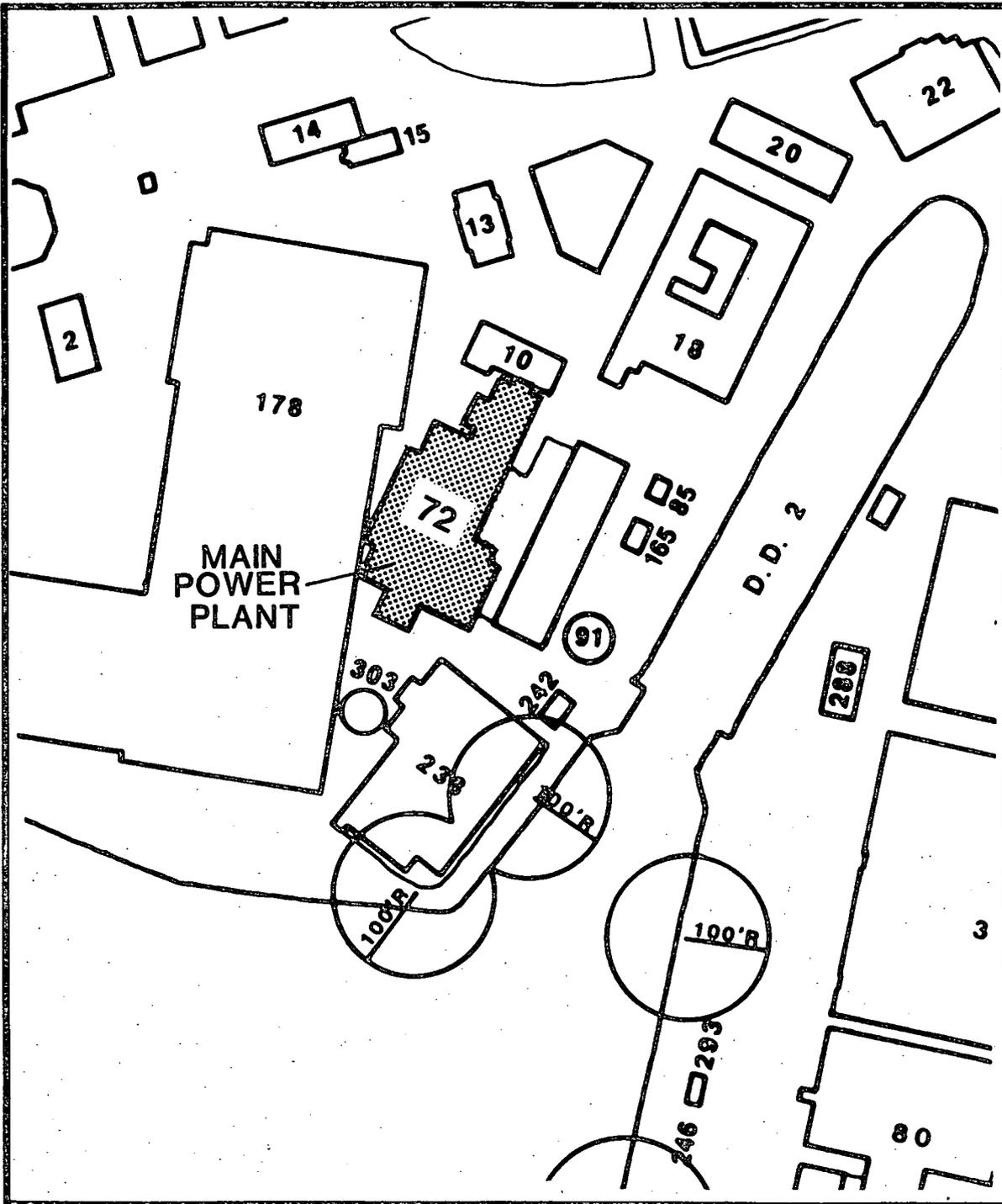
The abrasive blasting and painting operations being performed in Building 285 can not accommodate the present heavy workload. The shop and its heavy equipment are over stressed, causing frequent downtime for routine maintenance. The Building lacks proper environmental control for dust. This project will construct a new Abrasive Blast and Paint Facility. Vacated space in Building 285 will be used for maintenance and production shops.



P-218 METALS TEST AND STORAGE FACILITY

Scope: 112,800 S.F.
\$7,400,000

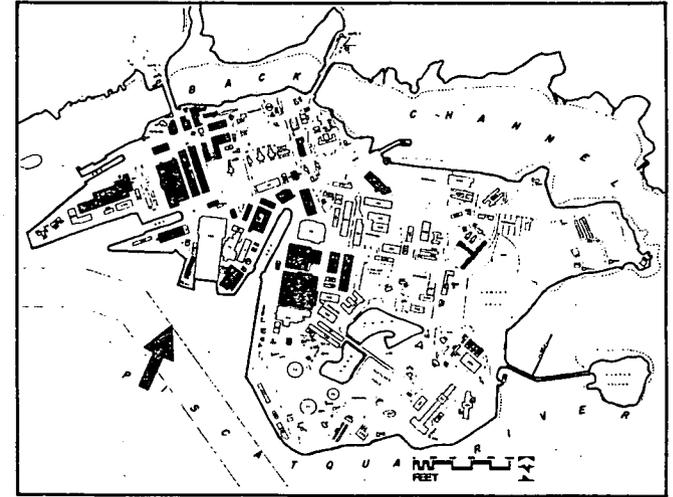
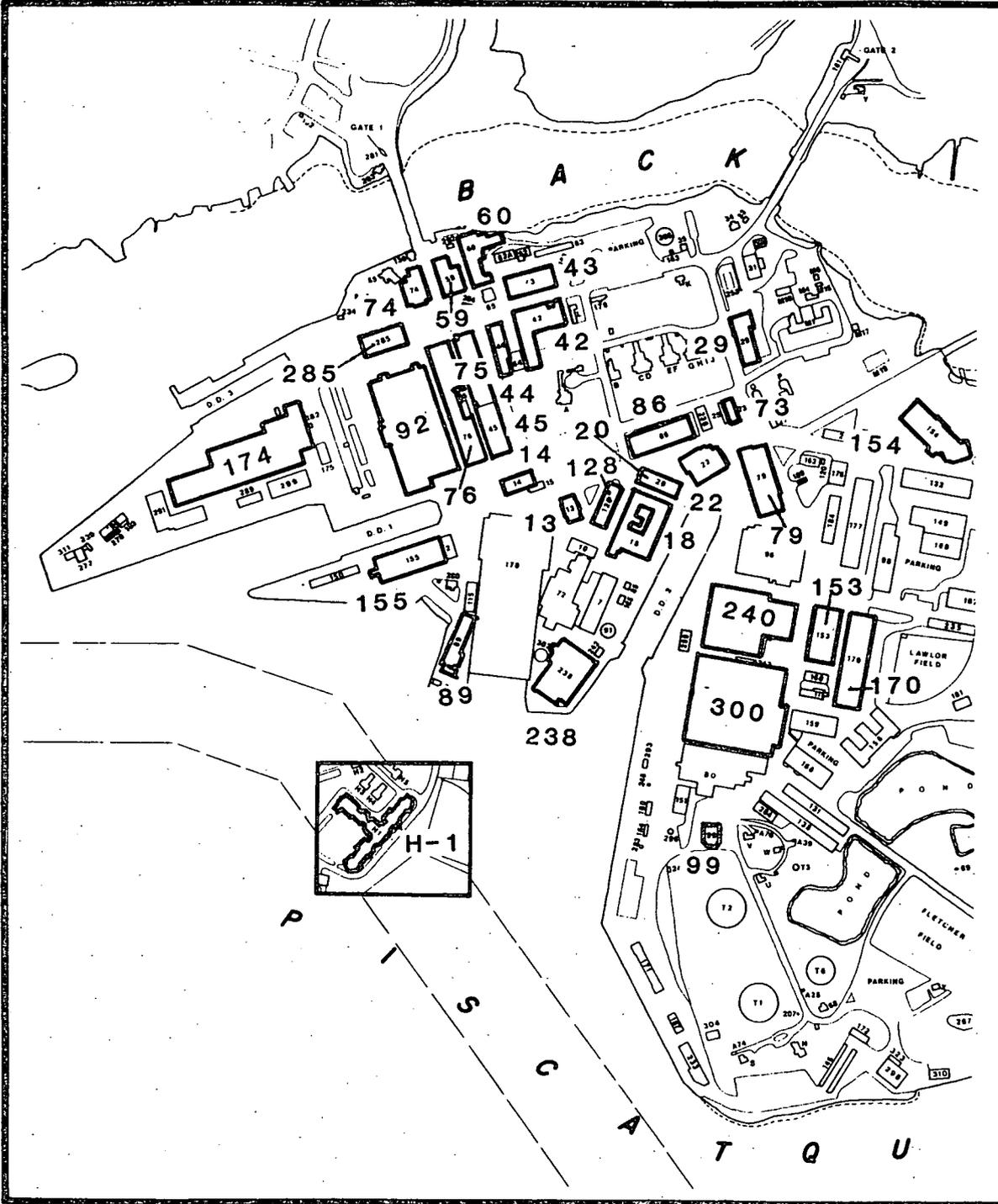
The project will consolidate all metal material testing and storage into one facility. Present metal testing and warehousing are conducted in several buildings resulting in an inefficient operation and duplication of effort. Building 98 and 177 will be demolished to provide site for construction. Testing and storage functions in Buildings 79, 132 and 149 will be relocated to the new facility.



P-220 Steam Plant Boiler Combustion and Instrumentation System Modification

Scope: Lump Sum
\$2,000,000

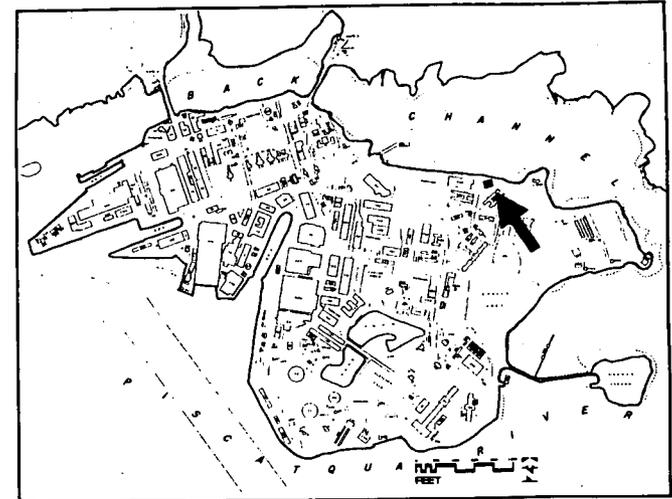
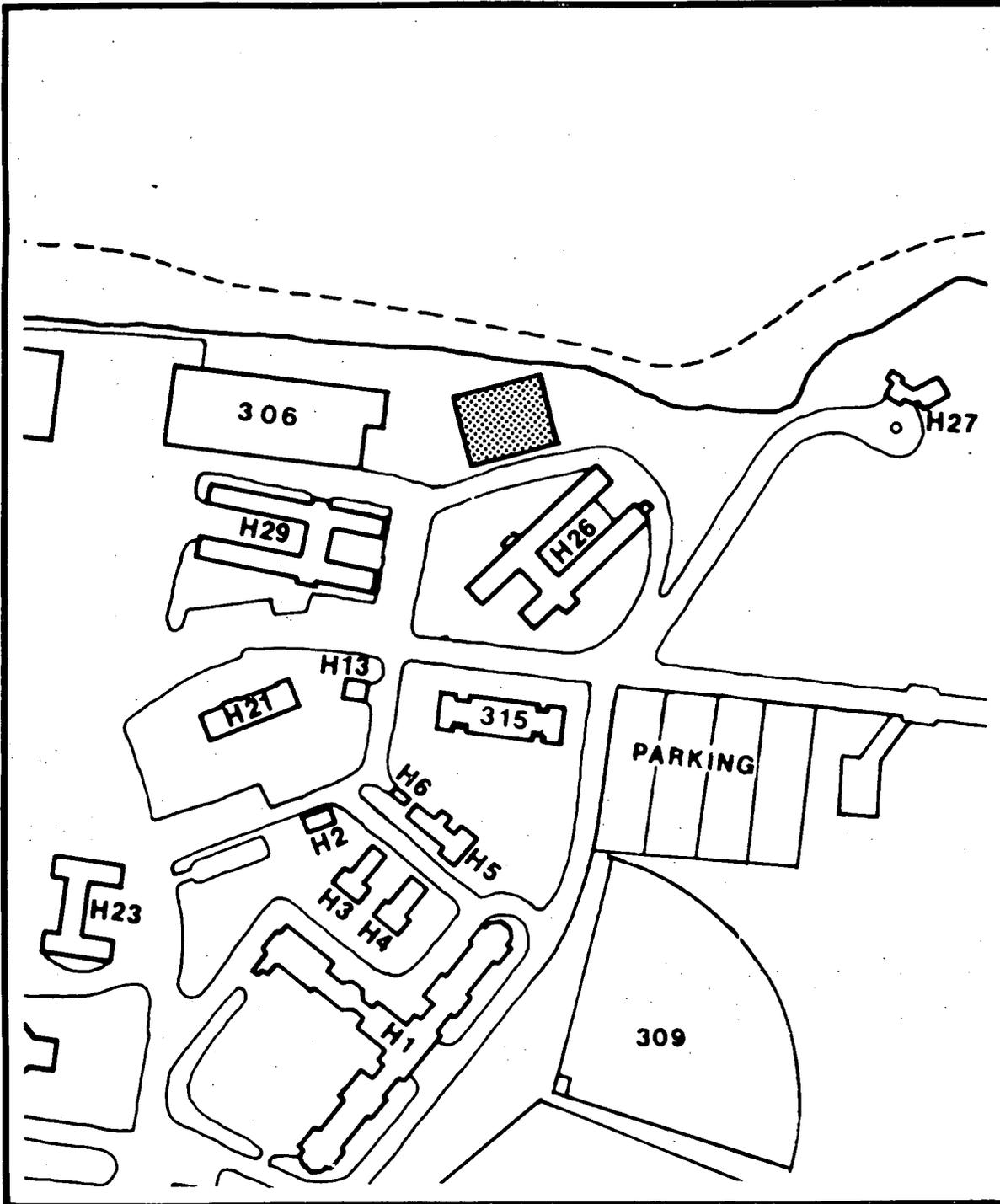
Provides for the installation of a distributed digital system for boiler plant monitoring; installation of variable frequency drives for combustion air fan and induced air fan for Boiler #2; replacement of existing burners for Boilers #3, 4, and 5 with low excess air type burners and the replacement of existing combustion controls and transmitters with dedicated microprocessor based digital control system.



P-221 Energy Monitoring and Control System with Local/Remote Metering

Scope: 1 EA
\$1,612,000

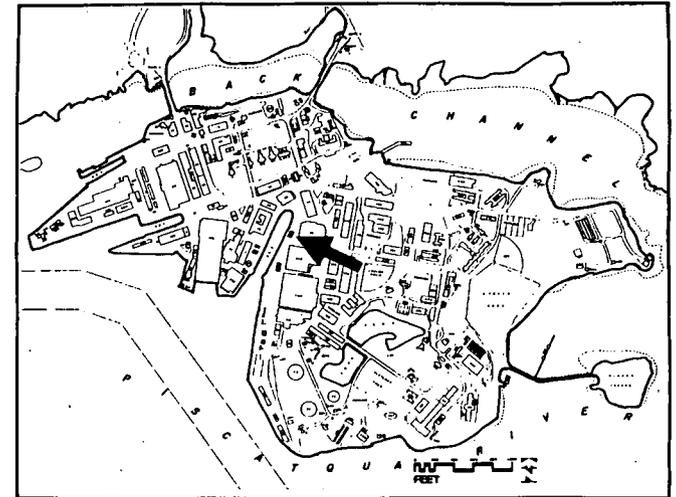
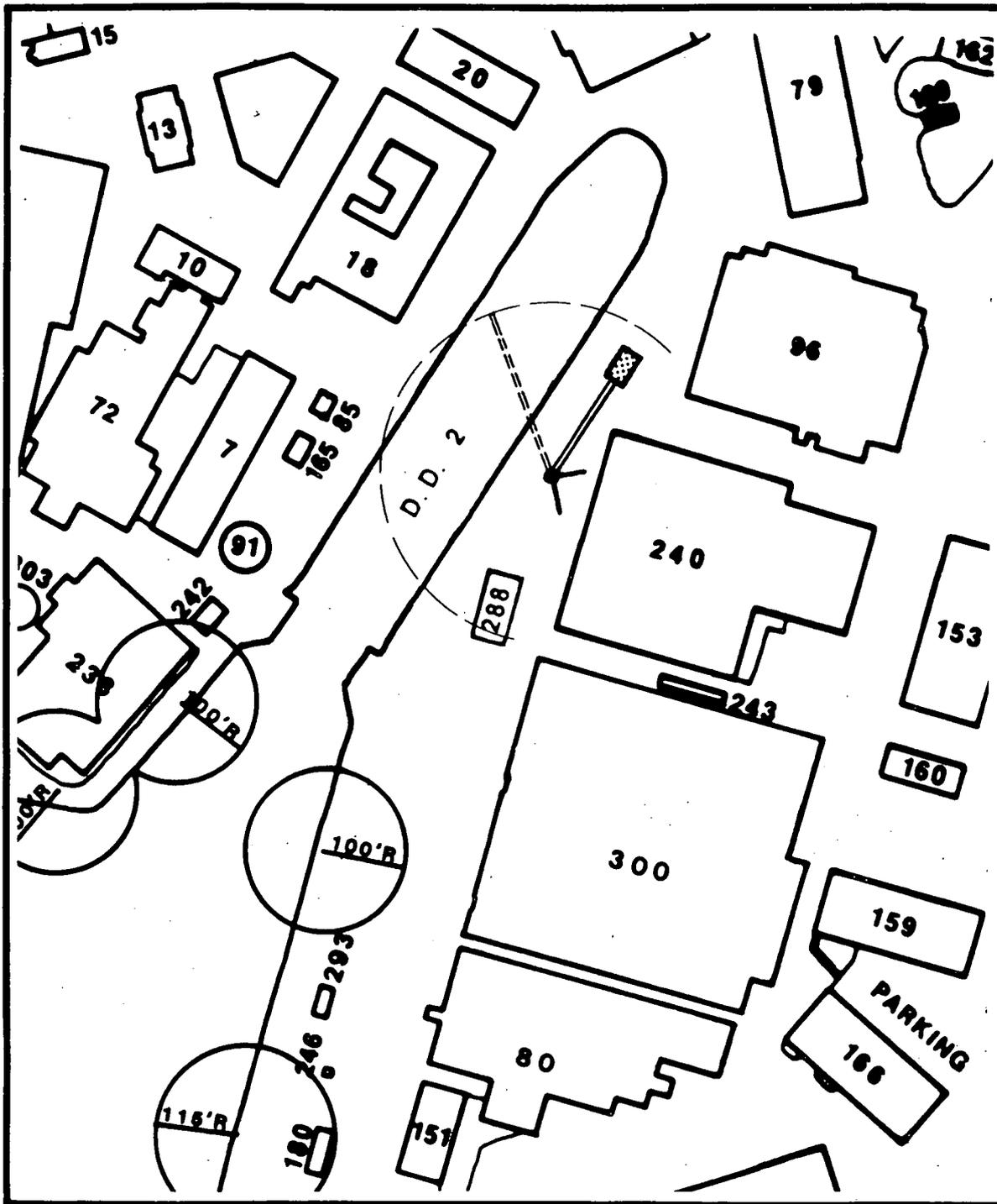
The project will install an energy monitoring and control system with local/remote metering capability for 32 buildings. Project will control space temperatures and lighting, meters heat and electricity usage in each building.



P-222 TRF Supply Facility

Scope: 12,000 SF

The proposed facility will provide supply and storage facility to support the Transducer Repair Facility in Building 306.

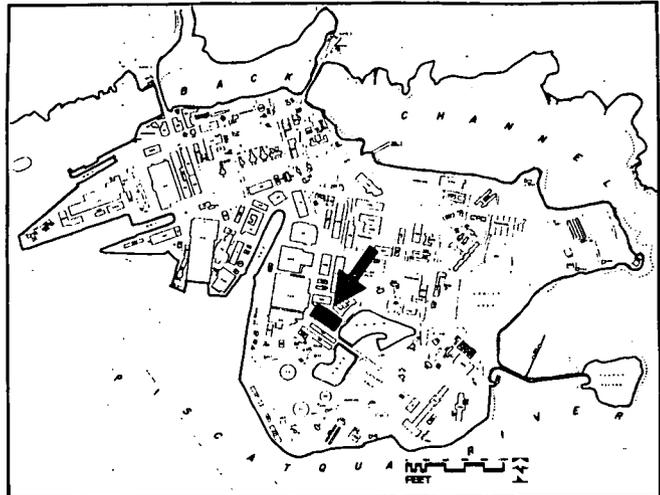
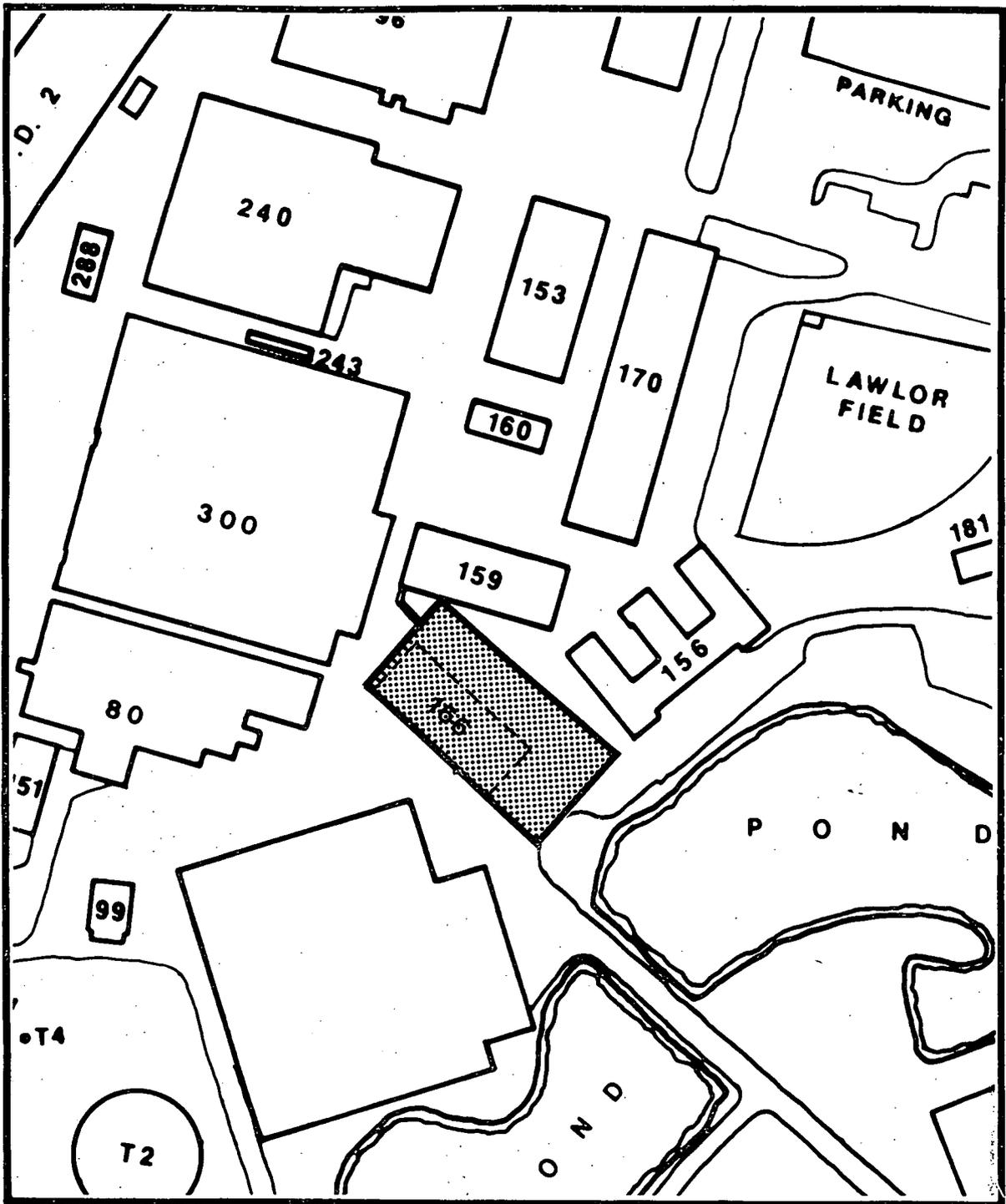


P-225 REFUELING/DEFUELING CRANE AT DRYDOCK

Scope: 1 Crane
\$5,200,000

This project will provide a stiff leg derrick, 165 tons atop a reinforced concrete tower. The derrick will provide the weight handling capacity to perform refueling/defueling for 688 class submarines starting in FY 1992.

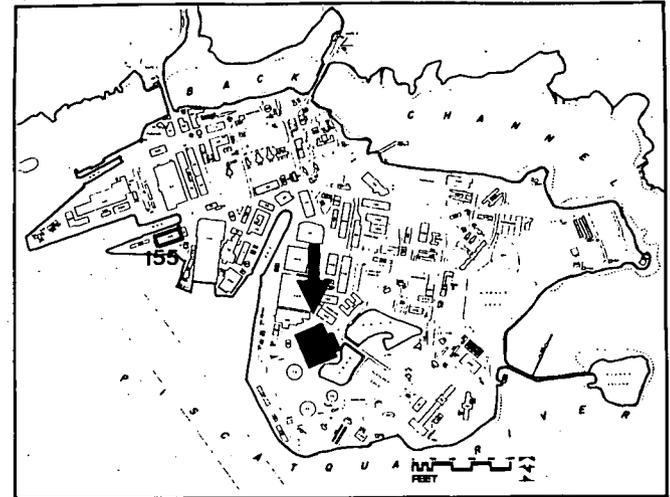
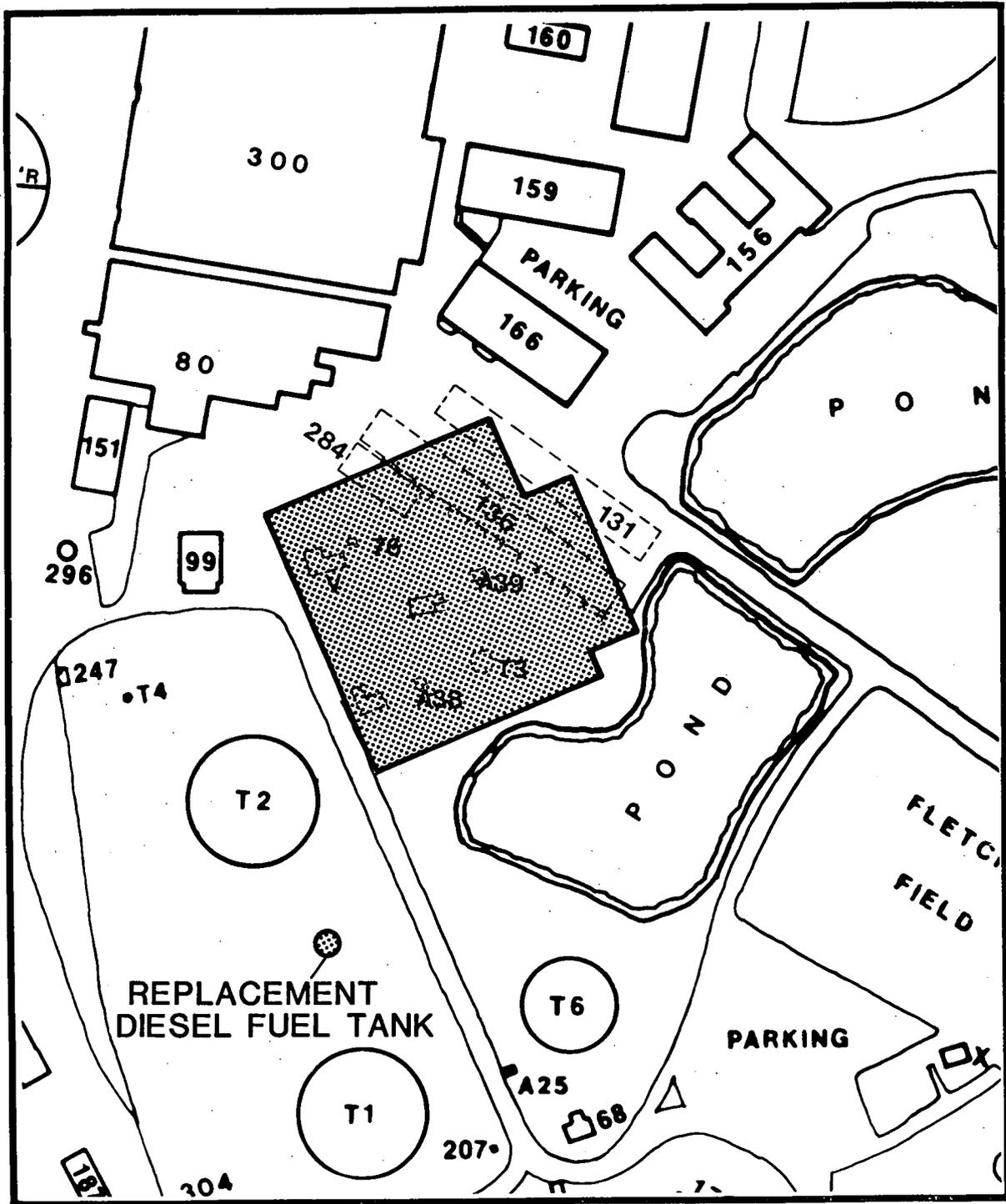
**SHIPYARD
MODERNIZATION
STUDY
RECOMMENDED PROJECTS**



P-230 PROPELLER AND SHAFT SHOP

Scope 51,200 S.F.
\$13,800,000

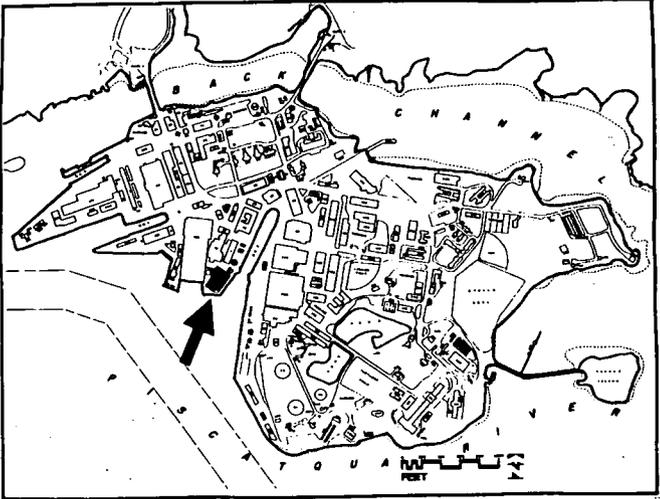
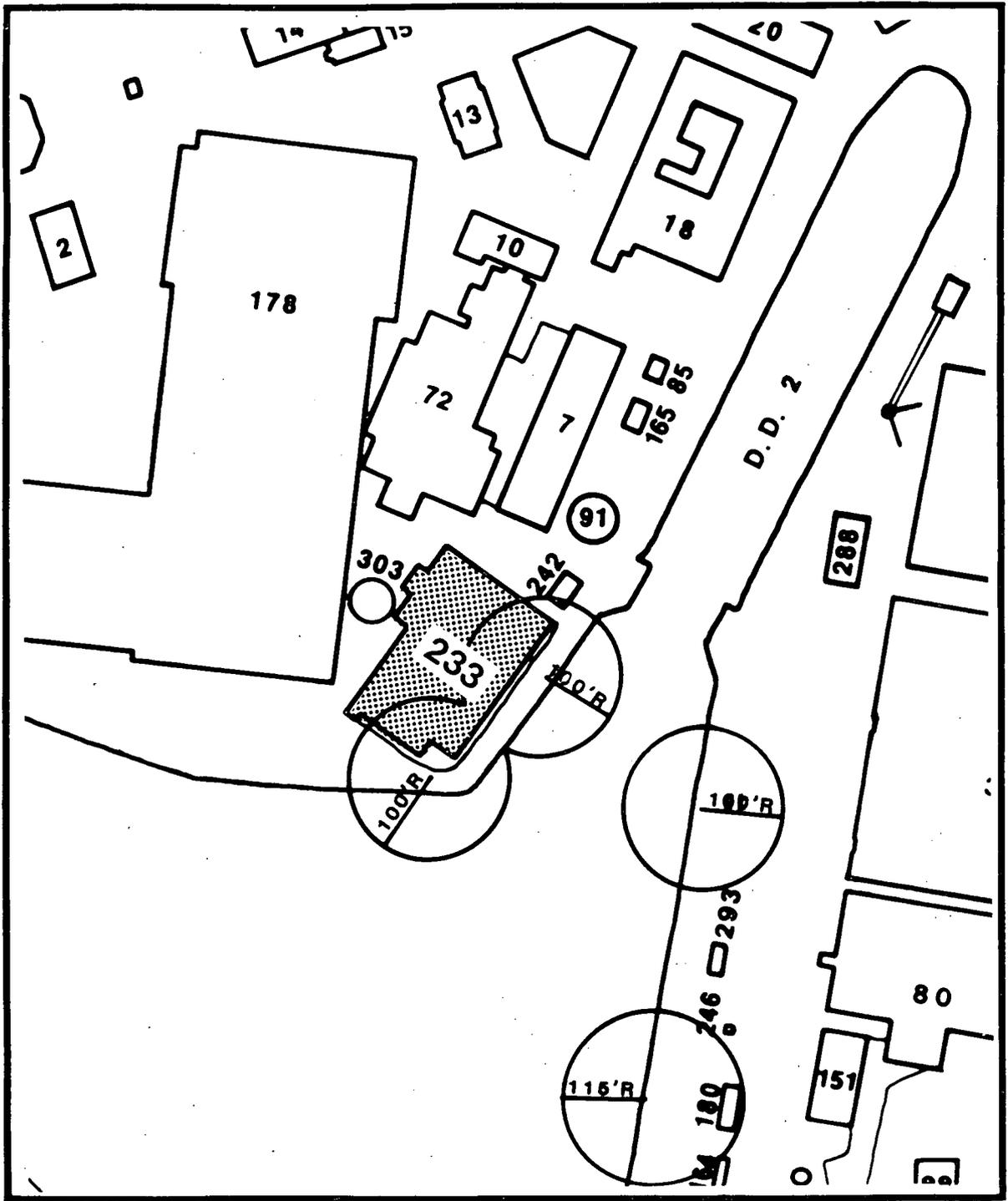
This project will provide a modern facility by consolidating all propeller and propulsion shaft rework into one building. Propeller and shaft rework are presently performed in Buildings 178, 240, and 300 which require excessive handling and transportation. Building 166 will be demolished to provide a site for the proposed project. Material storage function in Building 166 will be relocated in a new consolidated supply warehouse, P-236.



P-231 PIPEFITTING SHOP

Scope: 150,000 S.F.
\$24,400,000

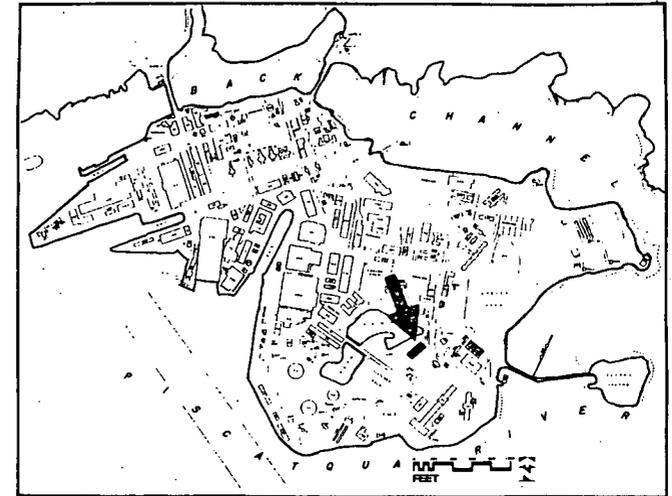
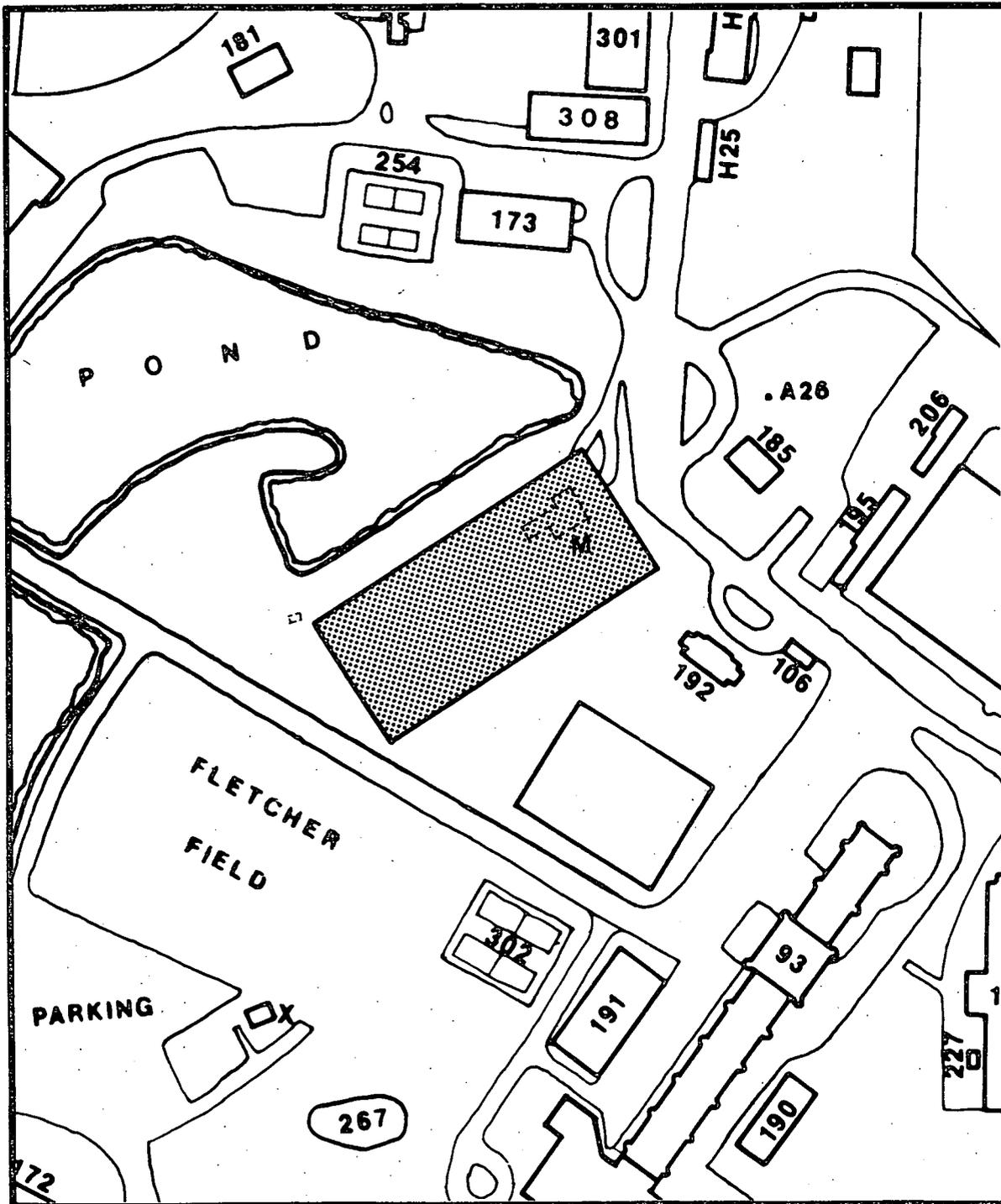
This is a replacement project for the Pipefitting Shop in Building 155 which will be demolished to accommodate the necessary access area for a new drydock MCON P-172. The project will construct a one-story building with mezzanine to provide shop, office, and administrative space for the Pipefitting Shop. In addition, demolish buildings 131, 136, 284, A76, A39, A38, Quarters U, V, W, and diesel fuel tank T3.



P-232 MODERNIZATION OF BATTERY/TRANSDUCER SHOP

Scope: Lump Sum
\$270,000

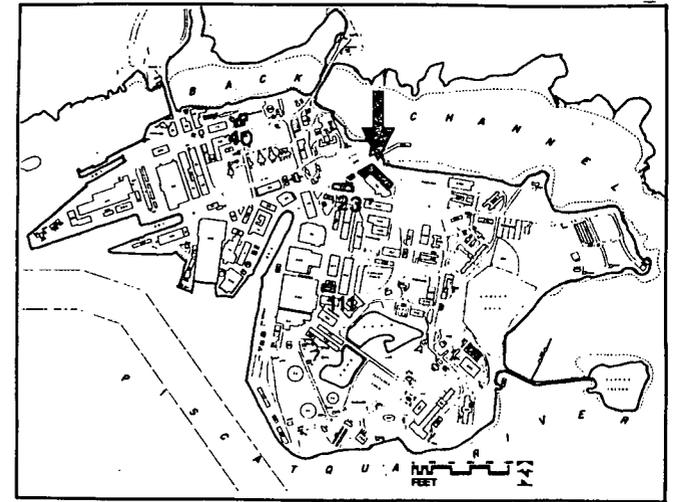
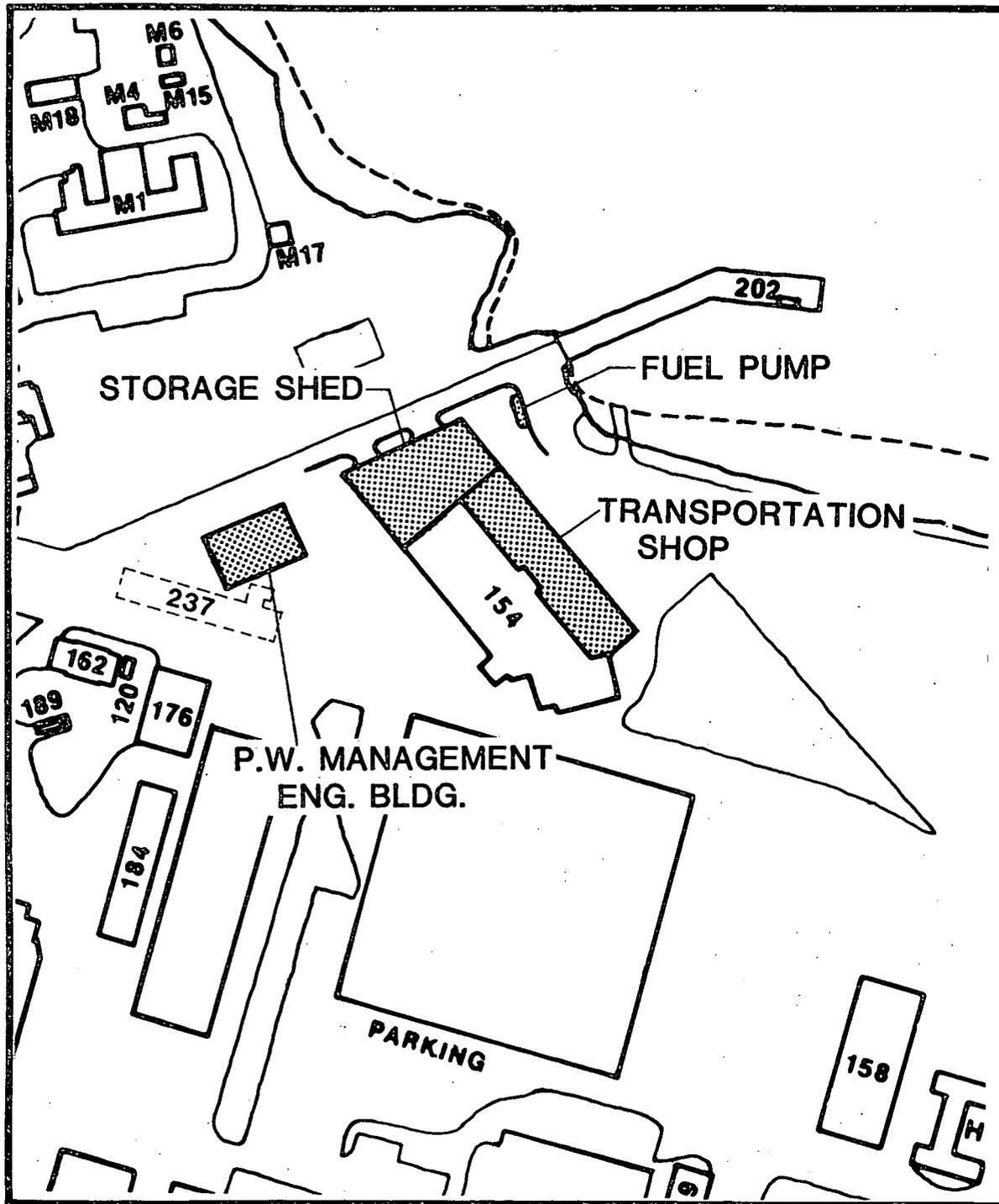
This project will modernize the Battery Shop in Building 238 and will also repair the computer/control room and in-line wet test tank for transducers. The project will facilitate a more functional, efficient, safe and environmentally acceptable operation with the use of modern, semi-automated equipments for filling and charging of submarine batteries.



P-233 INTEGRATED REPAIR AND TEST FACILITY

Scope: 122,500 S.F.
\$27,200,000

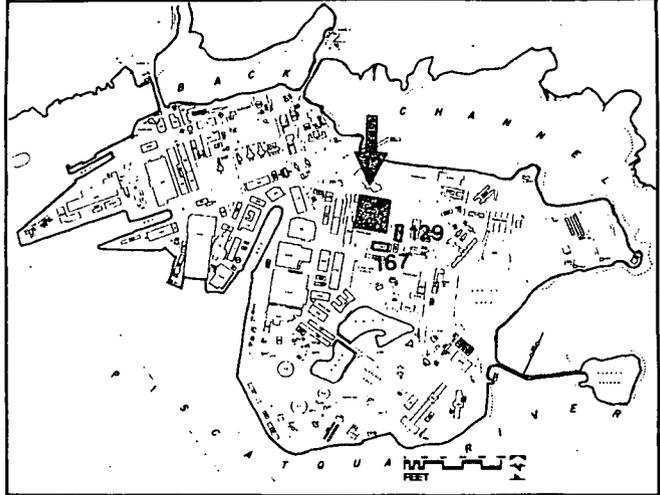
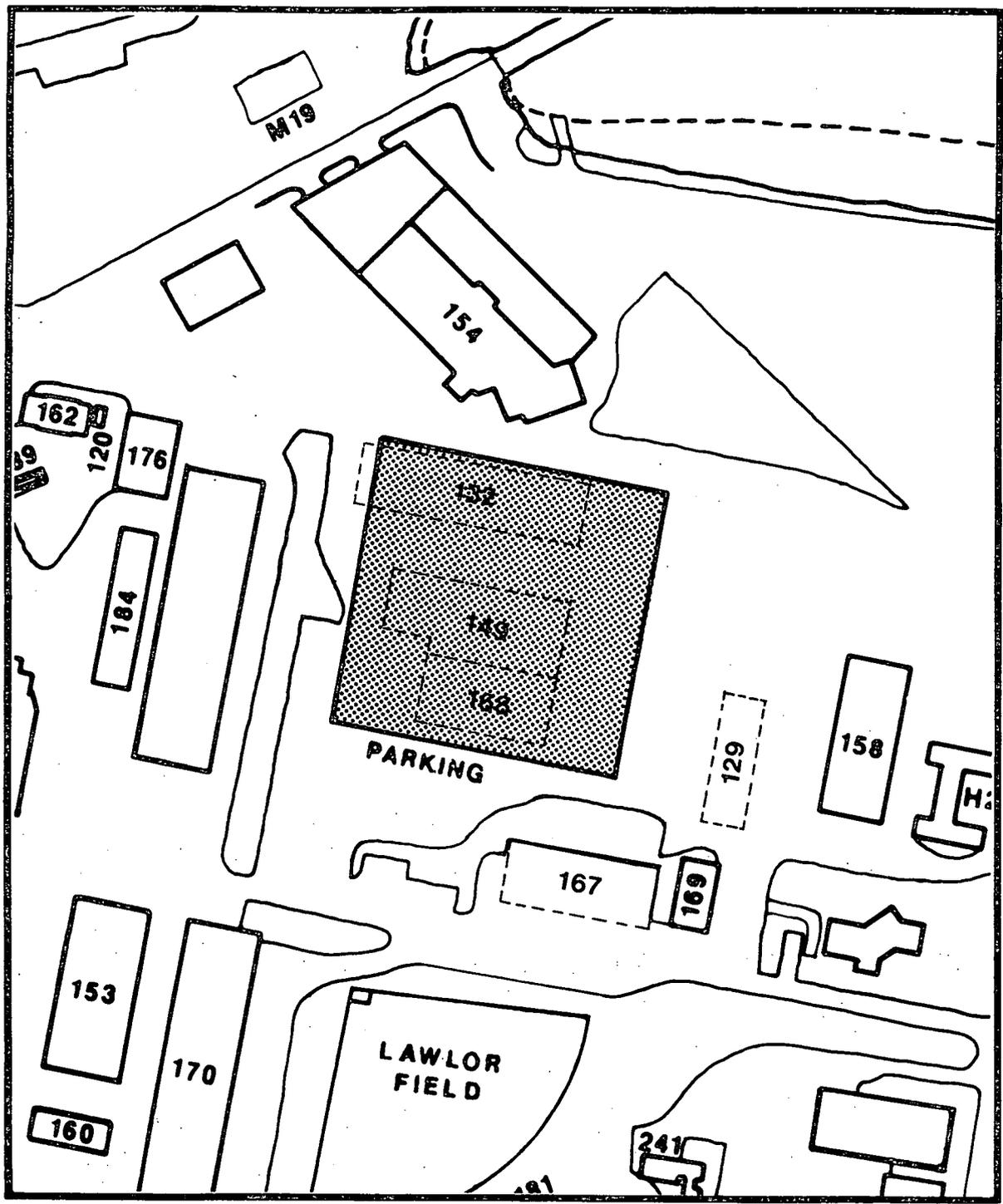
The proposed building will be of permanent construction which will contain offices, shops, laboratories, integrated system test areas and climatically controlled storage space to perform the rip-out, overhaul/repair, reassembly, tests, and reinstallation for all combat systems and electrical/electronics related assemblies aboard submarines.



P-235 PUBLIC WORKS FACILITY

Scope: 53,140 S.F.
\$7,500,000

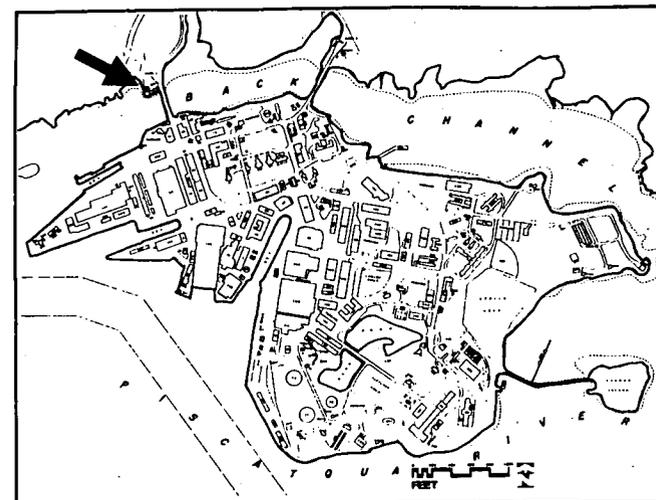
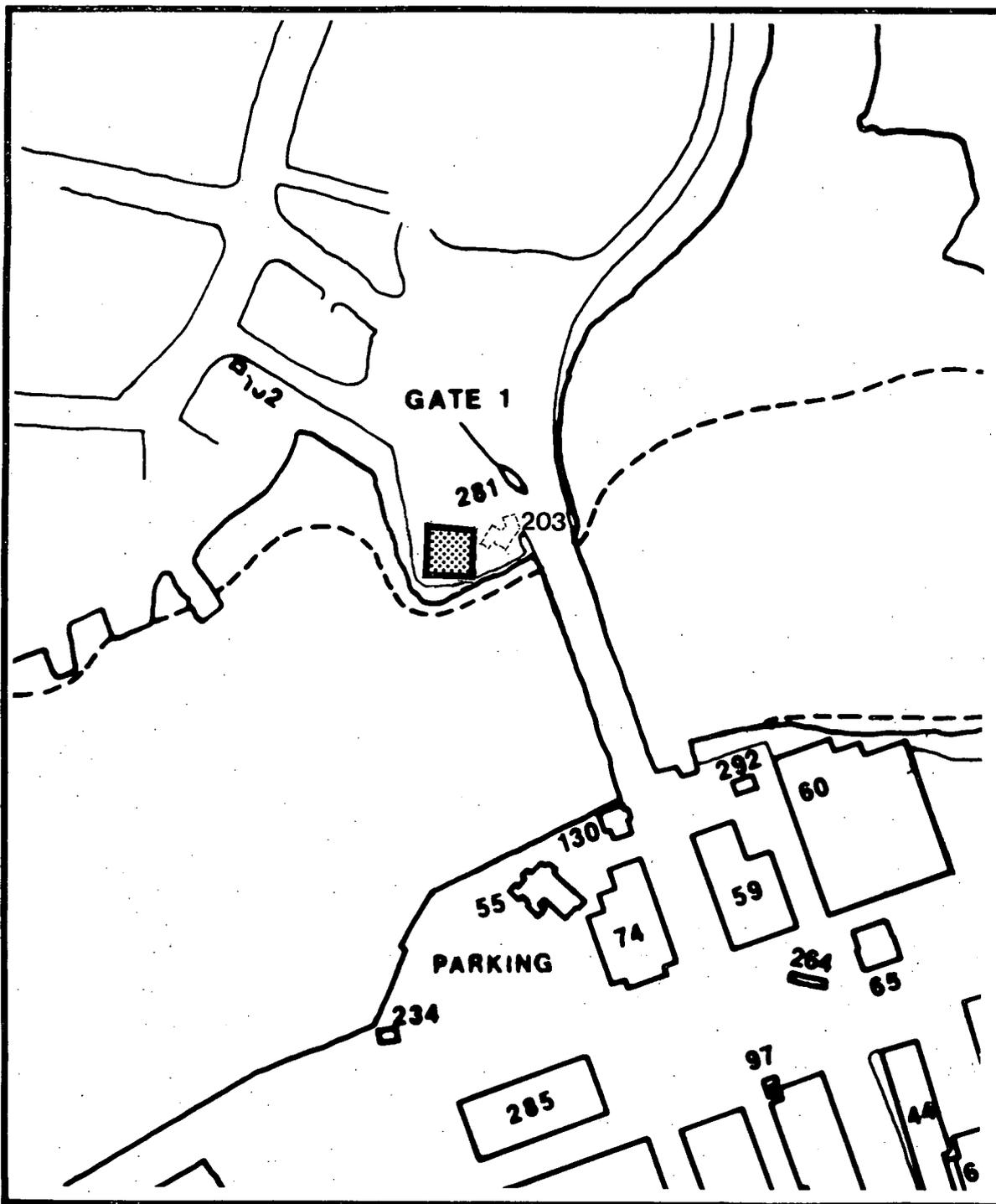
This project will consolidate the present scattered Public Works facilities into one general area. The project will construct a new Public Works Management/Engineering Building, transportation shop building, maintenance storage building, and convert the existing transportation shop building into a facilities maintenance shop and storage building. Buildings 237, 111, 40, will be demolished. Buildings 62, 63, and 188 will be demolished by MCON P-107. Building 40 is located within the Historic District.



P-236 CONSOLIDATED SUPPLY WAREHOUSE

Scope: 129,600 S.F.
 \$18,500,000

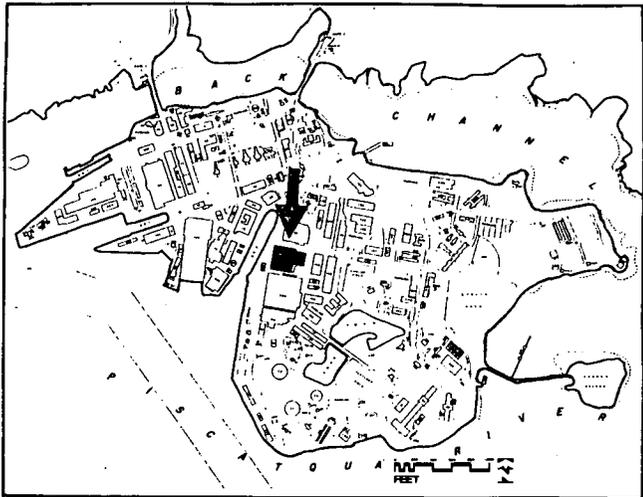
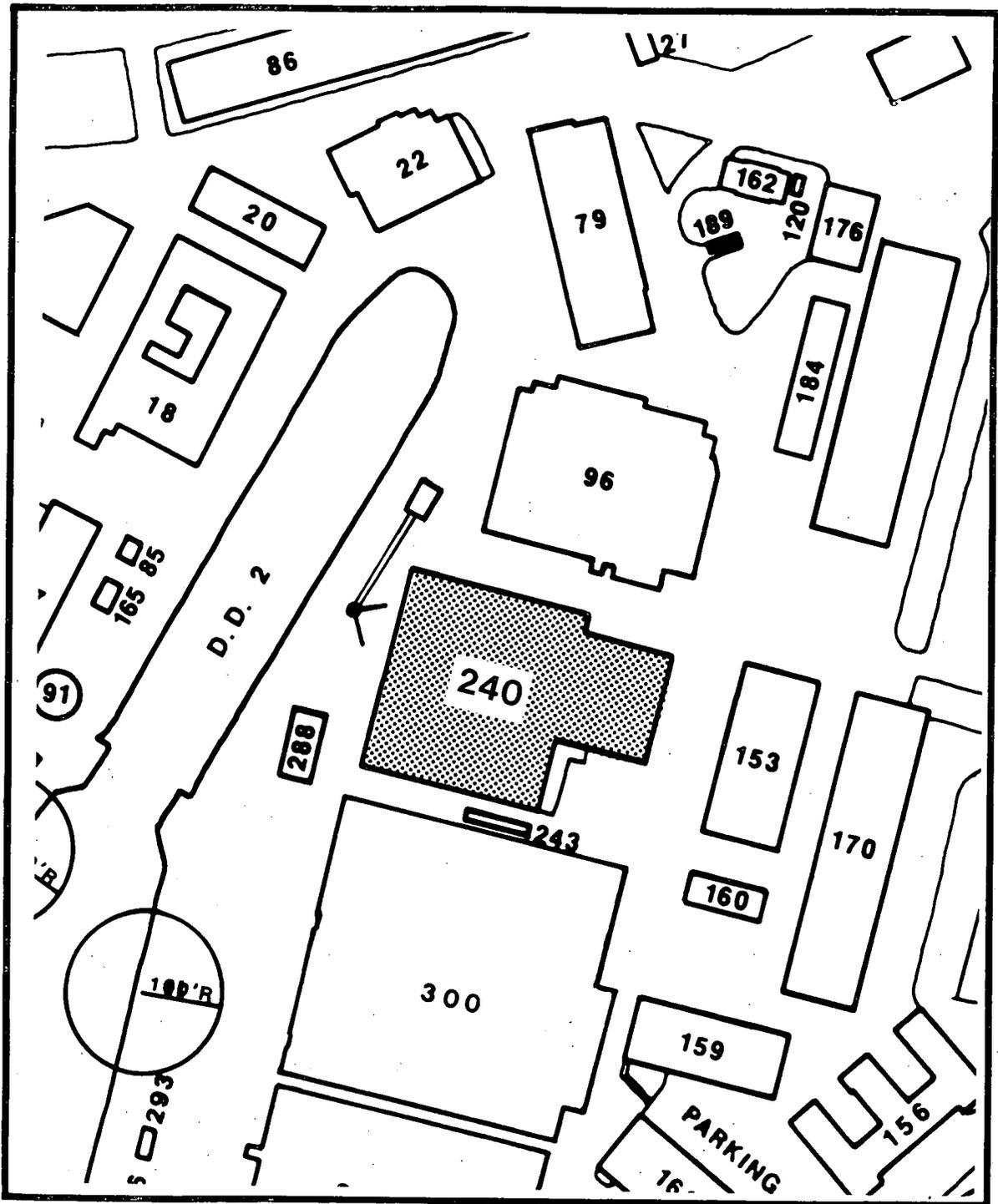
The Supply Department currently stores its materials in over 20 locations. Most of these facilities are substandard, overage, have low stacking heights, and were not designed to accommodate modern material handling equipment. This project will provide a high-bay consolidated supply warehouse with automated, semi-automated and manual material handling systems. Demolish Buildings 129, 132, 149, 167, and 168.



P-237 PASS AND SECURITY OFFICE

Scope: 4,100 S.F.
\$660,000

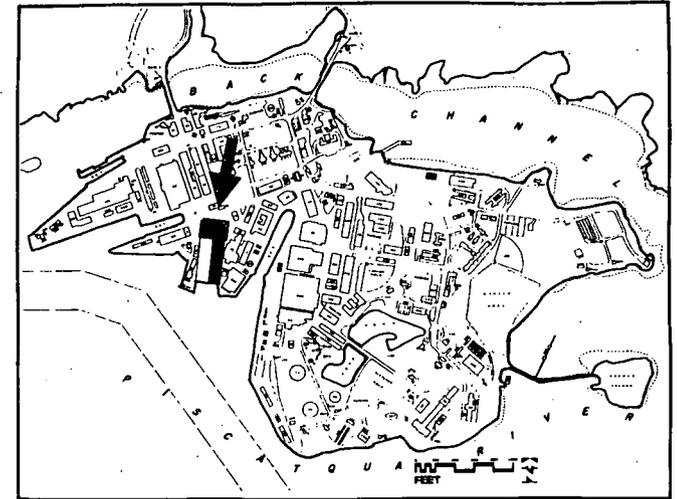
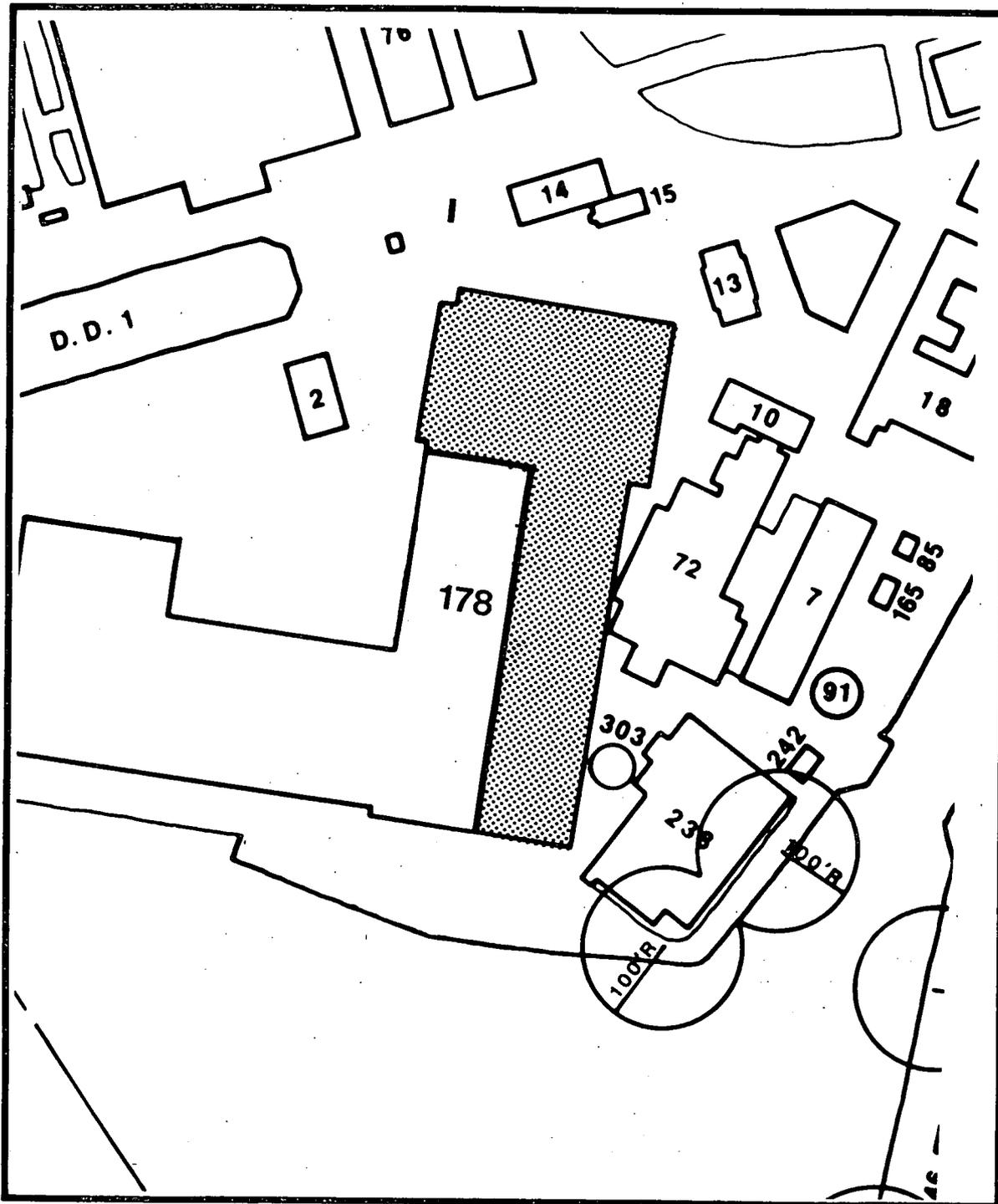
The current facility, Building 203, is not adequate to provide services to visitors, contractors, and potential employees such as students and temporaries. Inefficiency of the building interior plan impedes proper circulation which causes excessive waiting periods and discomfort to those being served. This project will be a replacement facility in the vicinity of the present facility. Building 203 will be demolished.



P-238 MODERNIZATION OF ELECTRICAL/
ELECTRONICS SHOPS

Scope: 130,000 S.F.
\$3,600,000

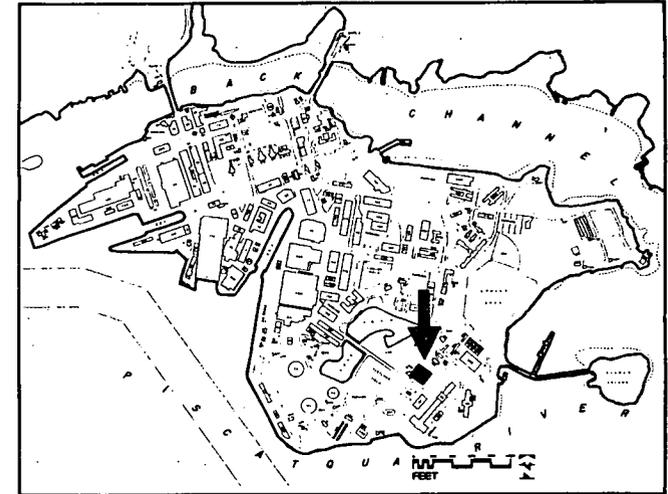
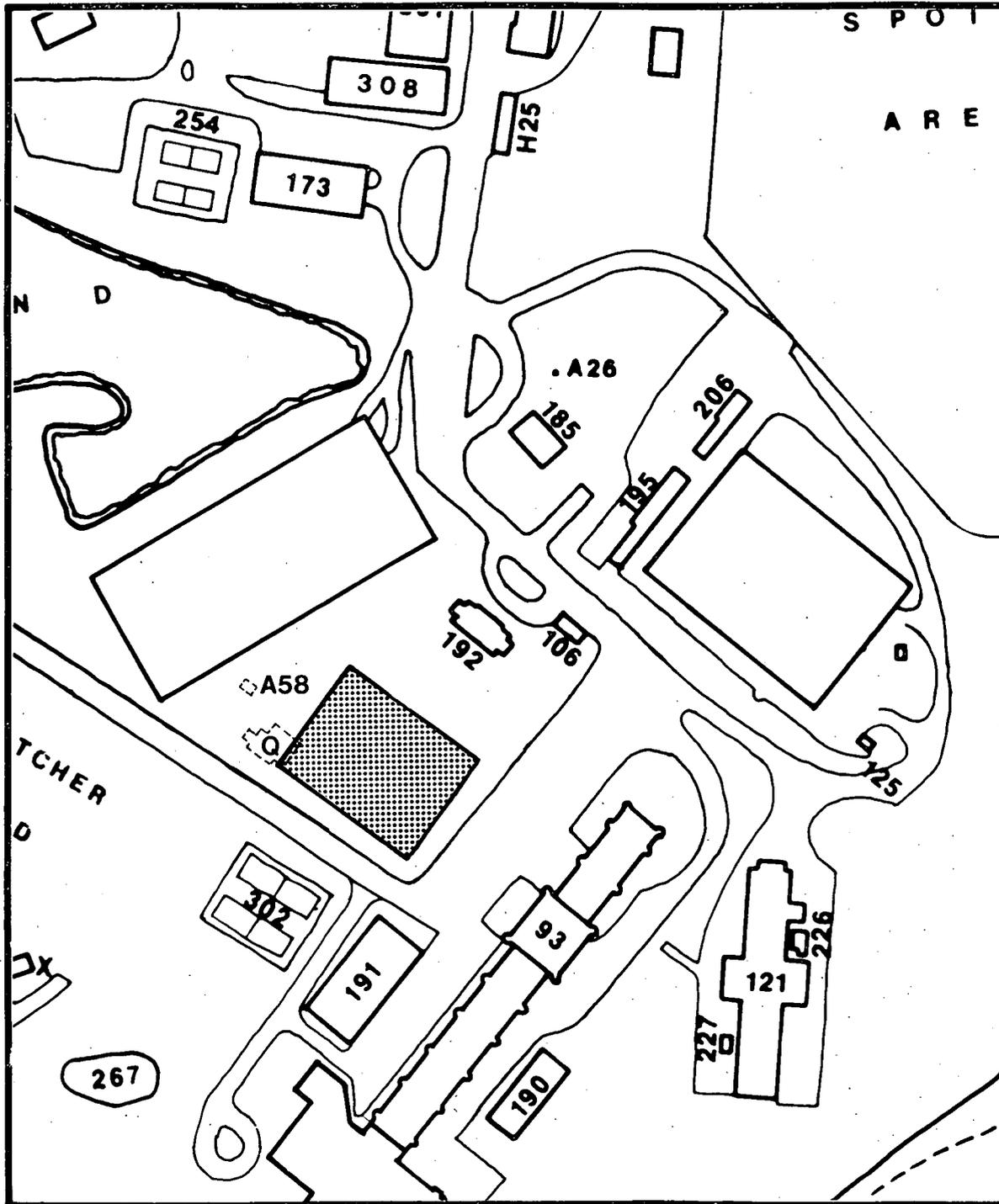
The Electrical/Electronics Shop in Building 240 will be modernized and provided with automated equipment, vertical storage, improved training center, integrated systems test facilities, staging and kitting facilities, NTDS test area, and a local area network (LAN). The emphasis will be on developing totally integrated systems repair and test facilities in conjunction with Integrated Repair and Test Facility (IRTF) program. Refer to MCON P-233.



P-239 AUTOMATED CONTAINERIZED SUPPLY SYSTEM

Scope: 80,000 S.F.
\$20,000,000

Materials removed from a ship for repair and storage are presently stored in a portion of Building 178 on pallets and shelves and in other buildings. This present system of storage is inefficient in both control and utilizing storage space. This project will modify 80,000 square feet of existing space in Building 178 to accommodate an automated vertical, containerized storage for materials removed from the ships during overhaul.



P-240 NAVAL MANUFACTURING PROCESS TEST AND EVALUATION FACILITY

Scope: 74,000 S.F.
\$12,000,000

The proposed facility will be two-story permanent structure with a mezzanine to house the necessary offices, laboratories, test equipment, and shop rooms to perform tests and evaluation of various new manufacturing process methods, technique and exotic materials.

**CRITICAL
PROJECTS**

TITLE: P-145 ENGINEERING/MANAGEMENT BUILDING
ADDITION

SCOPE: 114,000 SF
\$11,800,000

REQUIREMENT:

Administrative Engineering/Management Divisions are currently housed in seven separate buildings. This situation creates excessive and unnecessary movement of personnel and a loss of productivity. The project provides a 114,000 SF six-story addition to Building 86 to reduce administrative space deficiencies. The project will consolidate and centralize engineering management functions, replace inadequate space, modernize Building 86, and renovate a portion of Building 29 for occupants replaced by the demolition of Building 73. If not provided, the Shipyard will continue to have a large lack of adequate administrative space and current inefficiencies will continue.

Siting Considerations:

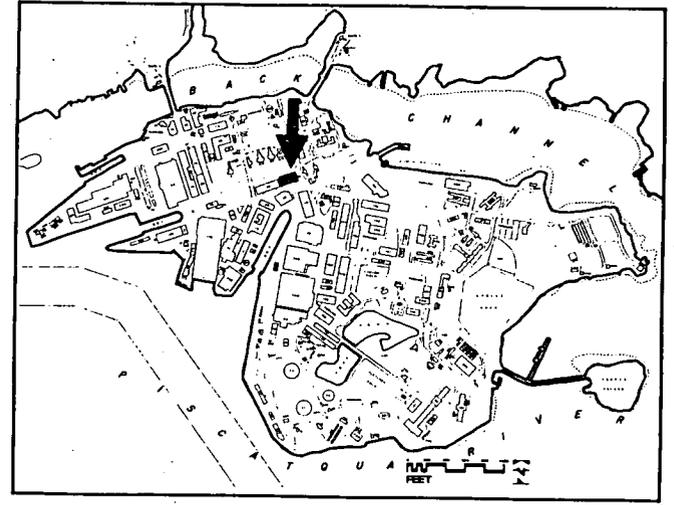
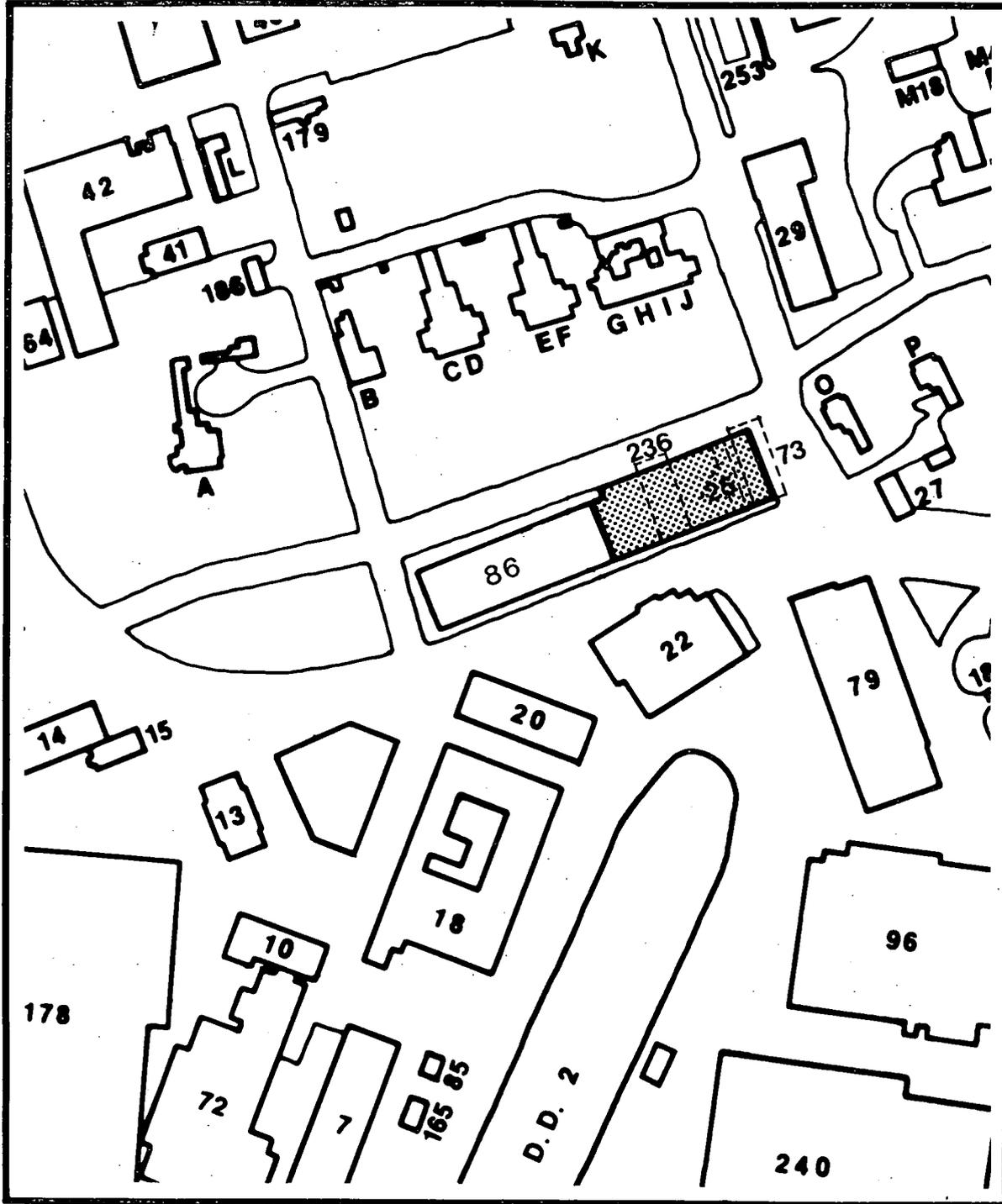
The demolition of three structures, Buildings 236, 25, and 73 is required to provide the site for the new addition. During construction, functions from these buildings will be housed in Building H-1 and portable facilities.

Design Considerations:

This project is located within the historic district, all new exterior construction will be compatible with historical Building 86.

Special Considerations:

The project is located in the historic district. Under the provisions of the National Environmental Policy Act (NEPA) of 1969, and Navy guidelines implementing NEPA, any proposed action which may adversely affect historical or cultural properties either currently listed or deemed eligible for listing on the National Register of Historical Places requires that an Environmental Assessment (EA) be prepared. Due to the nature of MILCON P-145, an EA is being prepared.



P-145

**ENGINEERING/MANAGEMENT
BUILDING ADDITION**

SCOPE: 114,000 S.F.

\$11,800,000

TITLE: P- 215 HAZARDOUS/FLAMMABLE MATERIAL
STORAGE FACILITY

SCOPE: 60,000 SF
\$2,800,000

REQUIREMENT:

The purpose and need of this project is the provision of an adequate hazardous/flammable material storage facility. All hazardous material management functions are presently being performed in substandard buildings which have structural, safety and ventilation conditions that have resulted in OSHA deficiencies. The present spaces in Buildings 98 and 169 are not sufficient to meet present and future projected hazardous material management.

This project will provide a one story prefabricated metal building with the required square footage and physical plant that will facilitate the performance of the Shipyard hazardous material management functions in a manner consistent with both Navy and OSHA regulations. Several buildings will be demolished to provide site for construction. Building 297, sewage ejector pumping station, will be reactivated as part of this project.

Four alternatives were considered - these include structural rehabilitation and addition to Building 98; transferring some of the stored hazardous material in Building 98 to other existing buildings and structurally rehabilitating Building 98; relocation to an existing larger building; and construction of a new facility at a site other than Building 98 area.

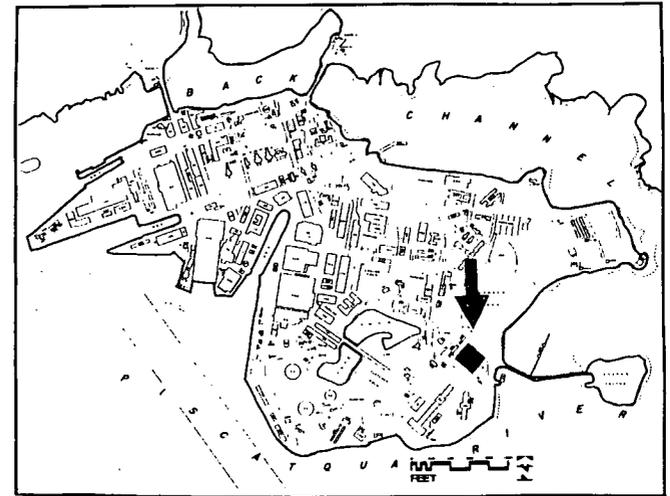
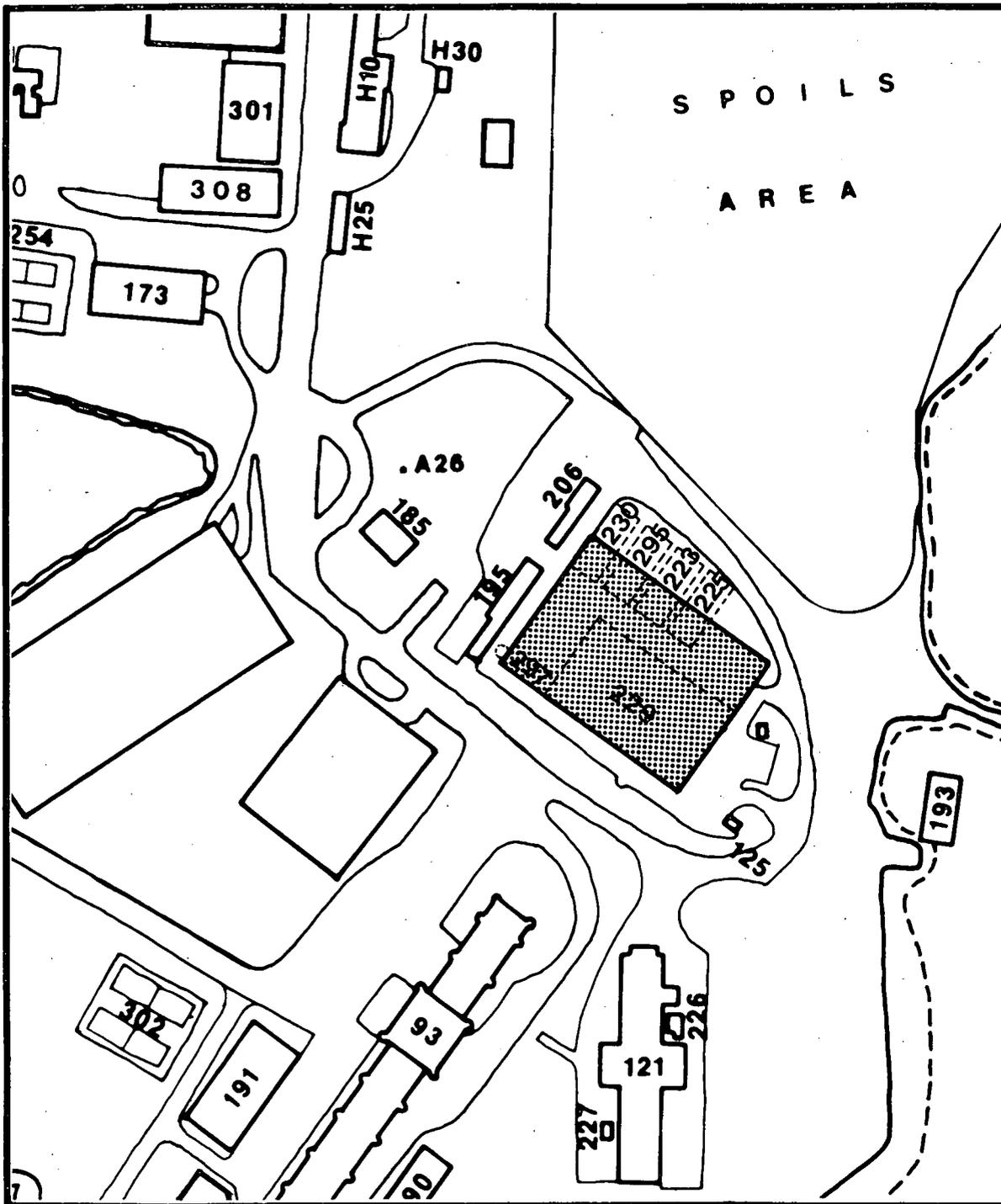
The renovation and addition to Building 98 proved economically excessive because of foundation damage and limitations of the site. There are no existing larger buildings to accommodate the hazardous material functions. Finally, other sites were examined and the selected site proved most feasible. If this project is not implemented, the Shipyard will continue to be in non-compliance with Navy and OSHA regulations regarding hazardous material operations.

Siting Considerations:

The new construction will demolish some inadequate and substandard buildings to provide space for the new facility. These are: Buildings 223, 225, 229, 230, and 295.

Design Considerations:

The design of this facility must meet the Navy and OSHA standards for hazardous material transfer, handling, and storage facilities.



P-215

**HAZARDOUS/FLAMMABLE
MATERIAL STORAGE**

SCOPE: 60,000 S.F.

\$2,800,000

TITLE: P-127 QUALITY ASSURANCE FACILITY

SCOPE: 141,000 SF
\$12,000,000

REQUIREMENT:

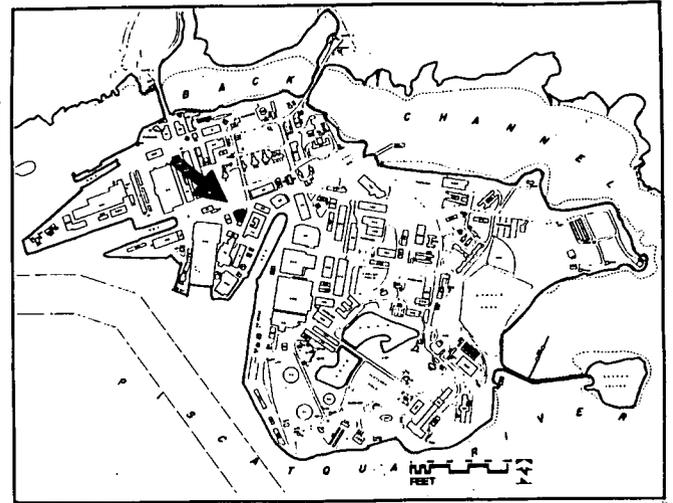
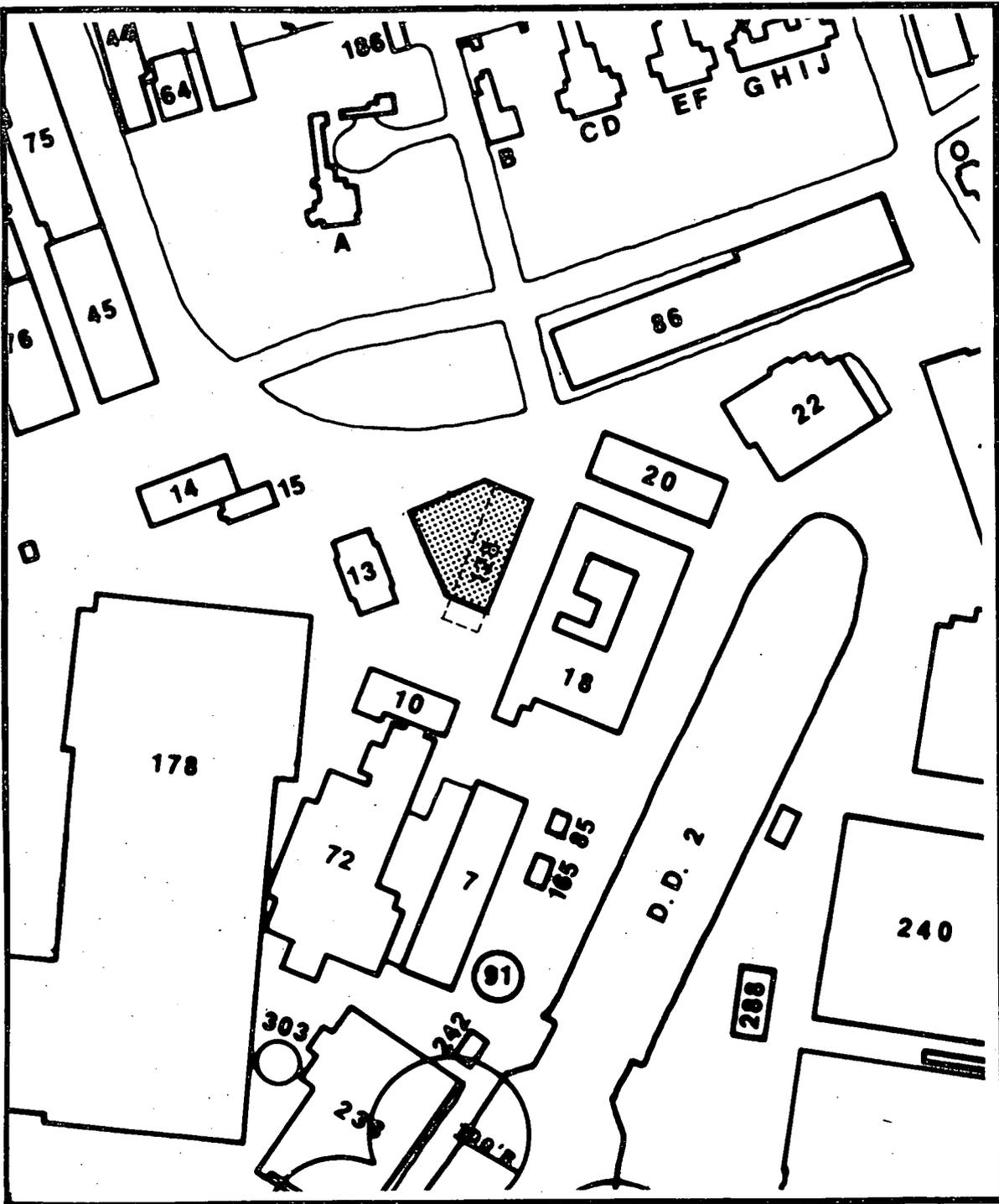
This project will construct a four-story building and modernize an existing building. Facilities will be provided with laboratories, bridge crane and all necessary support systems. This project will provide for the consolidation of various scattered Quality Assurance and Quality Control locations. The result will be new and uncrowded lab space and efficiency in operation and management for engineering testing, inspection, analysis and evaluation of the Shipyard's quality assurance and control programs. No other alternatives were considered, and if not provided, the existing inefficient operations in inadequate facilities will continue.

Siting Considerations:

Building 128 is located within the Historic District and will be demolished to provide the site for construction. The building has been evaluated by NORTHNAVFACENGCOM as non-contributing to the Historic District. Building 150, the main QAO, is inadequate and will be demolished.

Design Considerations:

The design of the facility should reflect a compatibility with the surrounding architecture and adjacent historic buildings.



P-127

QUALITY ASSURANCE
FACILITY

SCOPE: 141,000 S.F.

\$12,000,000

TITLE: P-181 PIER MODERNIZATION, BERTHS 11, 12,
and 13

SCOPE: 37,356 SF 2,300 LF UTILITY TUNNEL
\$12,200,000

REQUIREMENTS:

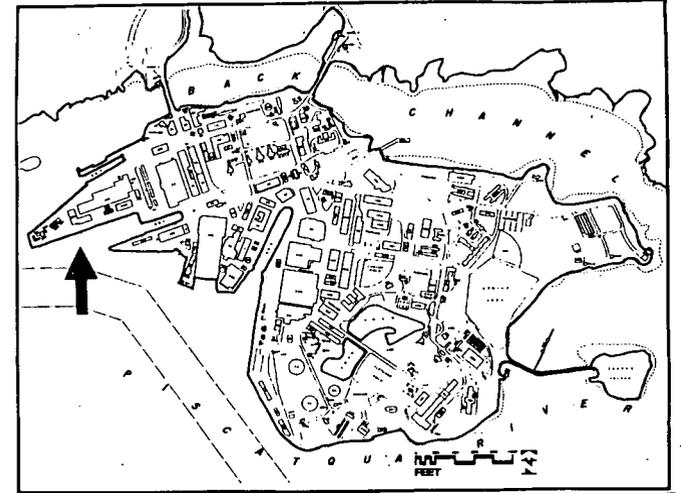
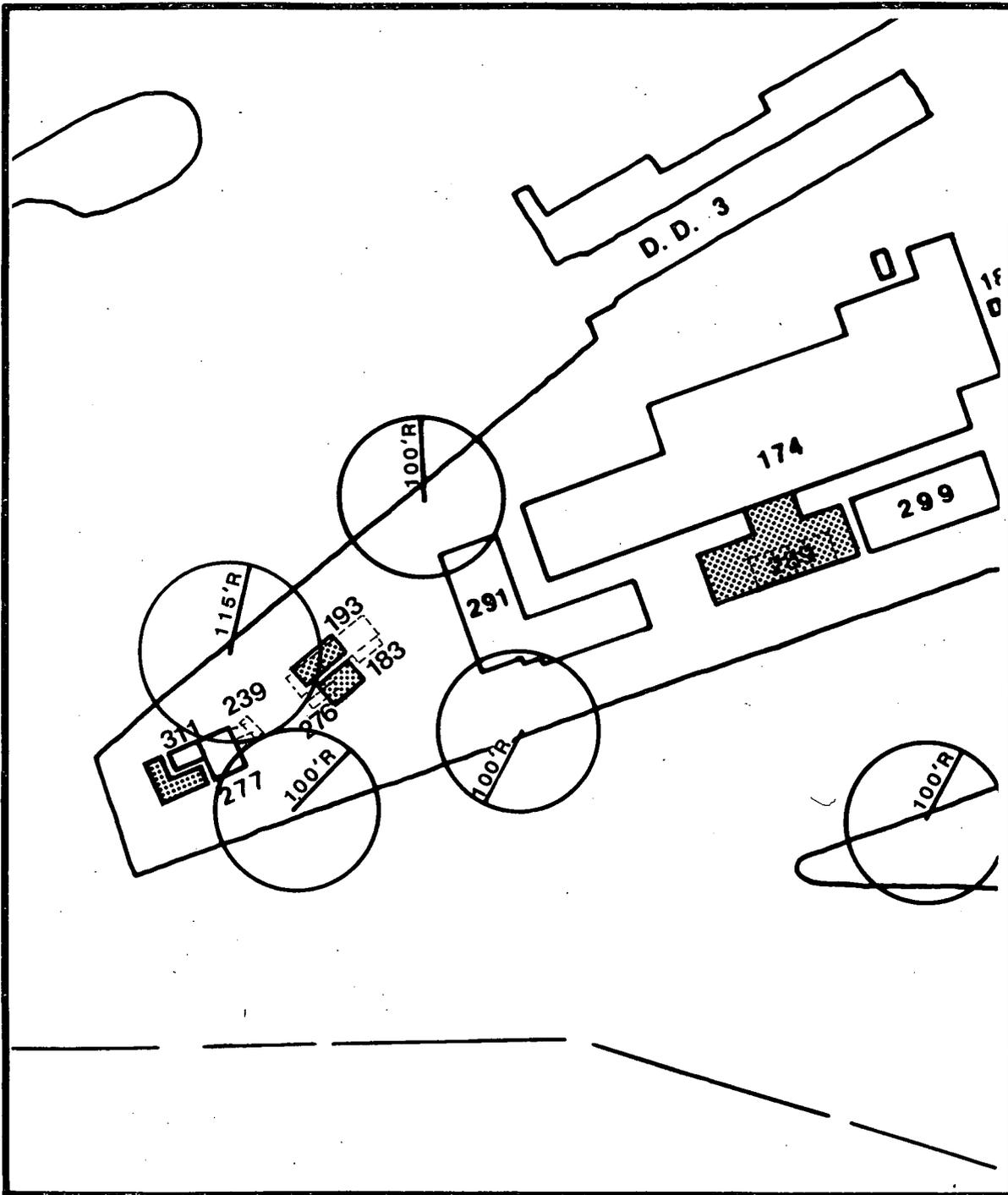
Berths 11, 12 and 13 area support highly active industrial usage during the final stages of submarine overhaul. Project team offices and production shops conducting overhauls require immediate access to the work site, and the existing portable utilities require consolidation for efficient operations. This project will construct four new buildings for project teams, field shops restaurant, and new utility tunnels will replace and upgrade existing utilities, provide new utilities and centralize some portable utilities. The alternative is to construct the utilities above ground, but this would interfere with the existing crane system and reduce required laydown area. If the project is not provided, the Shipyard will continue using expensive and inefficient production methods and existing portable utilities. Deficiencies in existing permanent utility systems will remain uncorrected. The lack of project team and field shop space at the waterfront will continue to exist.

Siting Considerations:

Buildings 183, 196, 239, 278, and 289 will be demolished to provide the site for new construction. Some administrative personnel from Building 174 will be relocated elsewhere and the vacated space will be used for field shops and a project team office.

Design Considerations:

A watertight utility tunnel is required and phasing of construction is necessary to limit the disruption on production at the berths.



P-181

**PIER MODERNIZATION,
BERTHS 11,12 AND 13**

SCOPE: 37,356 S.F.-BUILDINGS

**2,300 L.F.-UTILITY
TUNNELS**

\$44,500,000

TITLE: P-195 PIER MODERNIZATION BERTH 6

SCOPE: 36,000 SF 1,000 LF UTILITY TUNNEL
\$24,000,000

REQUIREMENTS:

The Shipyard has two repair berths, Berths 11 and 13. Berth 6 is used as a parking berth for loading and unloading stores and only those utilities required to provide hotel accommodations for submarines are available. With the lengthy overhaul periods of submarines and with only two berths with repair capabilities, berthing flexibility is extremely limited. With an expansion in mission to include SSN 688 class submarines in the long range workload it is necessary to outfit another berth with overhaul capability.

This project will provide supershore power, hotel power and D.C. power in sufficient capacity to support testing of SSN 688 class submarines at Berth 6. It will provide new high pressure steam and condensate return facilities and upgraded compressed air, fresh water and low pressure steam facilities as necessary to support testing of SSN 688 class submarines at Berth 6. All mechanical and electrical utilities will be distributed in a pierside utility tunnel. This project will include the construction of a consolidated field shop building, and a project team facility.

The alternative of the construction of a new repair berth was investigated and was found, due to the constraints of the waterfront, to be prohibitive in cost.

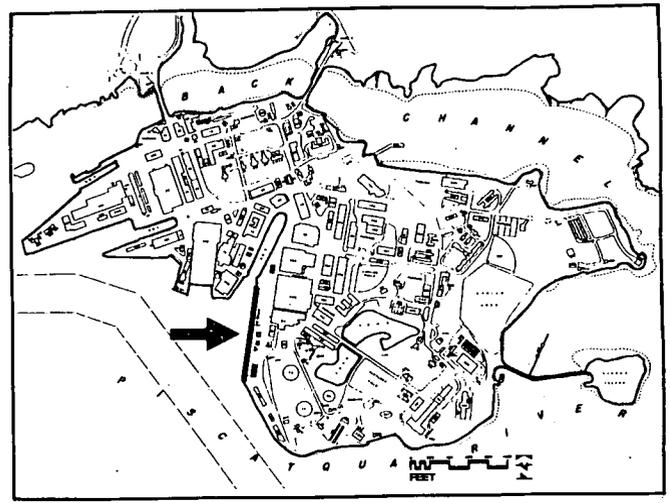
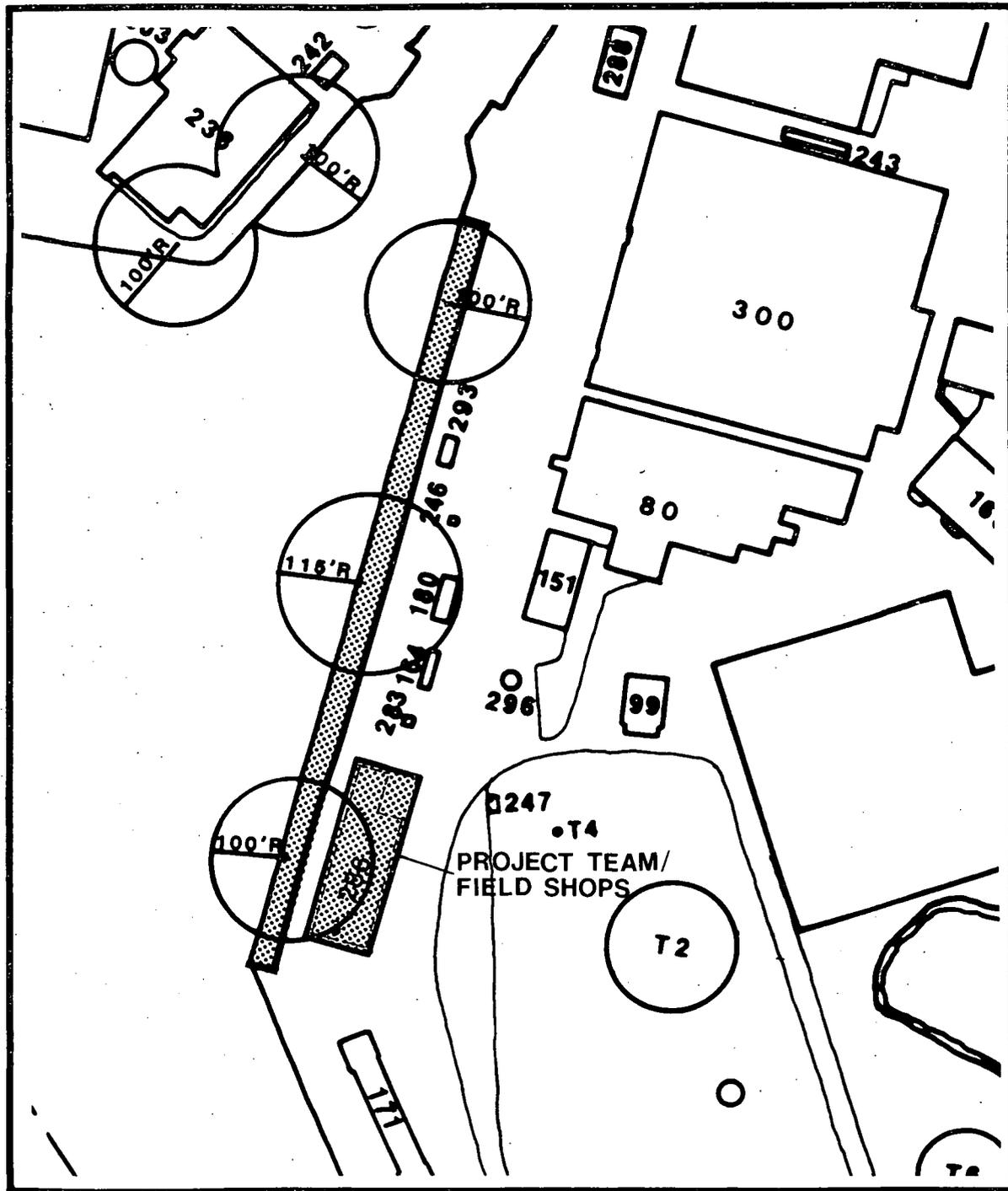
If not provided, the Shipyard cannot efficiently meet the expanded mission of the repair and overhaul of SSN 688 class submarines.

Siting Considerations:

The project is located at Berth 6. The consolidated field shop and the project team facility is adjacent the berth. Building 286, a fatigue test facility no longer used, will be demolished as a part of this project.

Design Considerations:

Water tight utility tunnel is required.



P-195

PIER MODERNIZATION,
BERTH 6

SCOPE: 150,000 S.F.

\$24,400

TITLE: P-172 NEW DRYDOCK FACILITY

SCOPE: 413,000 SF
\$300,000,000

REQUIREMENT:

Drydock 1 is presently limited to docking smaller, older classes of submarines. It is unable to handle SSBN, SSN 688 or SSNX class ships due to their length and draft. The usefulness of Drydock 1 is presently marginal and will become less useful as the older ships are retired and the makeup of the attack submarine fleet becomes all SSN 688 and SSNX ships.

The Shipyard must have three drydocks capable of accommodating SSN 688 and SSNX class submarines. Because SSN 637 and SSN 688 class ships presently comprise the majority of the attack type submarine fleet and in the future the fleet will be all comprised of SSN 688 and SSNX classes and others of similar configuration, it is advantageous to design the new facility specifically for this configuration and take advantage of modern applicable industrial processes, techniques, and equipment, thereby effecting substantial savings in both time and mandays for overhaul and repairs.

This project will construct a new submarine repair facility designed specifically to overhaul SSN 688 and SSNX class submarines. Four alternatives were studied for the location of the new facility (refer to Fay, Spofford and Thorndike, Inc., Analysis of Alternative Sites; April 1984.) The facility will consist of a graving dock and adjacent decking with built-in utilities, crane

facilities, laydown area, pump stations, electrical substation, capstans, cleats, bollards and specialized production equipment. Facility will be covered for weather protection. Building 178 will provide support for the new Drydock. Project includes necessary trunk utility connections and the waterfront approach cleared and dredged to 43 ft below MHW.

The alternative to building a new drydock is to deepen and lengthen drydock 1. The limitations of the Drydock 1 site preclude the construction of adjacent project team spaces and production shops. Most important is the fact that the Shipyard will be limited to two active drydocks during construction.

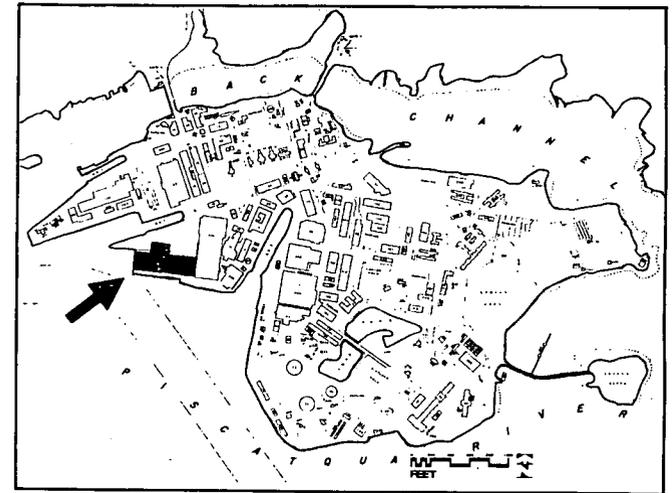
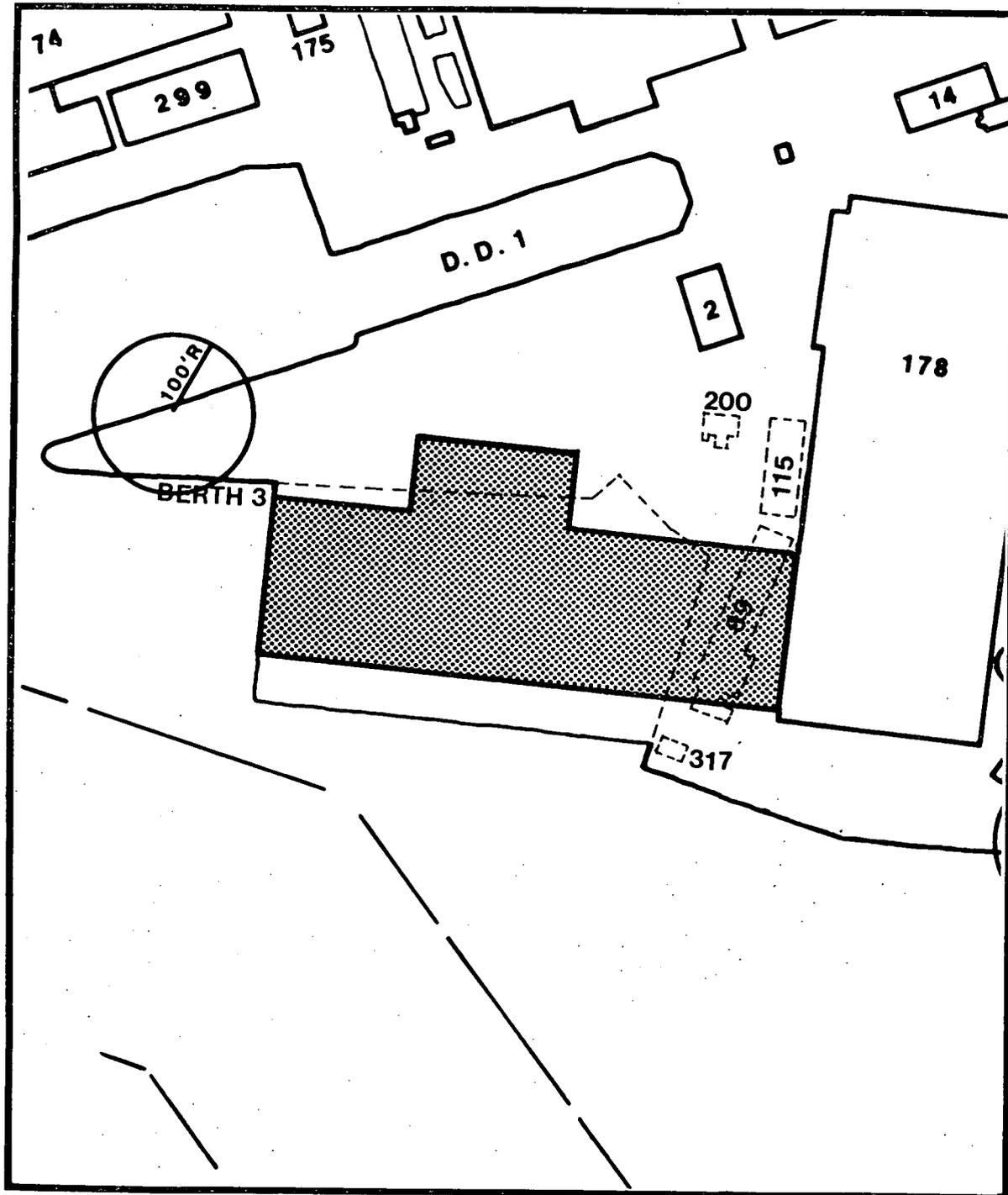
If a new drydock is not provided, the Shipyard will be unable to sustain the present magnitude of workload with the forecast mix of ship types and types of availabilities. This will have an adverse effect on both the Fleet maintenance requirements and the present level of work force.

Siting Considerations:

The construction will take place at Berth 2. Buildings 89, 115, and 200 will be demolished and structure number 317, fixed crane, will be relocated.

Design Considerations:

The design will include the renovation of Building 178 to house supply and support facilities for the new drydock.



P-172

NEW DRYDOCK FACILITY

SCOPE: 270,000 S.F.

\$3,000,000,000

TITLE: P-196 CONTROLLED MATERIAL STORAGE
FACILITY

SCOPE: 50,000 SF
\$1,050,000

REQUIREMENT:

There is a need to provide a secure, consolidated facility with the proper material handling equipment, effectively suited for the storage, inspection, and minor repair of controlled materials. This project will renovate Building 96 and provide a consolidated storage facility within the Controlled Industrial Area (CIA) for controlled materials. Combining controlled material functions into a single facility will improve production operations by reducing the number of times this material must be handled and transported prior to the time it is needed for overhaul work. Alternatives included the demolition of Building 96 and the construction of a new facility. The renovation of Building 96 proved to be the most economic alternative.

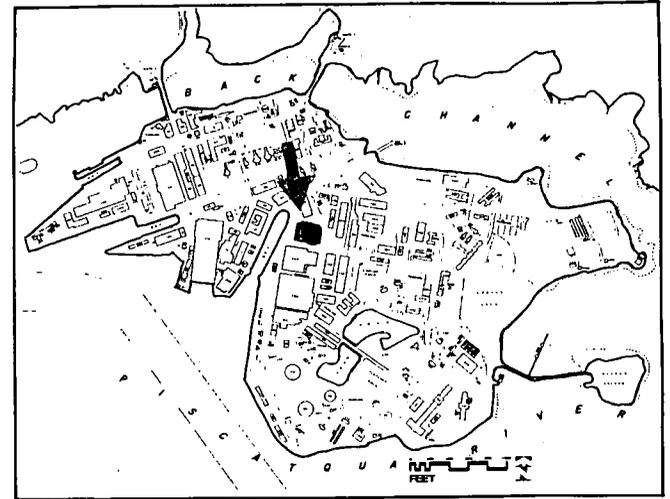
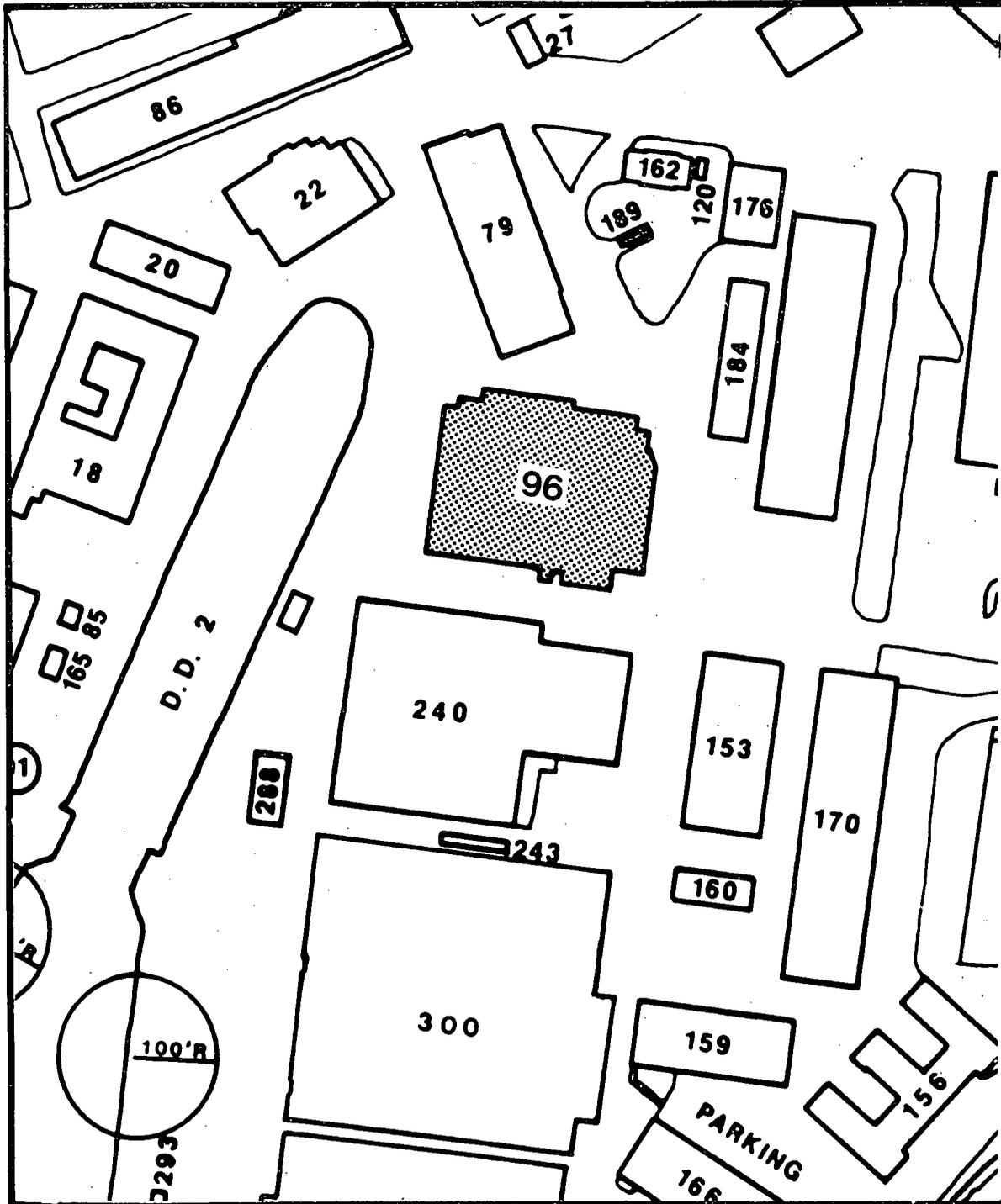
If this project is not provided, Shipyard production will continue to be hampered by poor material handling flow, expensive transportation costs, and inefficient use of manpower. The majority of controlled material will continue to be stored outside the CIA, in areas which are not properly designed for these functions.

Siting Considerations:

There are no special siting considerations.

Design Considerations:

Materials stored in this facility are critical and must be secured from unauthorized access.



P-196

**CONTROLLED MATERIAL
STORAGE FACILITY**

**SCOPE: 50,000 S.F.
\$1,050,000**

TITLE: P-120 STRUCTURAL GROUP IMPROVEMENTS

SCOPE: 270,563 SF
 \$15,800,000

REQUIREMENT:

The Structural and Sheet Metal Shops are suffering from problems related primarily to operational inefficiencies and severely limited space. Poor work area layout results in inefficient production and material flow and storage areas are scattered and the shops lack the proper storage equipment for effective material handling. This project will provide for the expansion and modernization of Building 92 to accommodate the operations presently in Buildings 75, 76, 92 and the Plate Yard. A 33,000 SF addition to the west side and a 60 feet wide bay by 200 feet will be constructed to the north side of Building 92. New floors will be built within Building 92.

The alternative was to relocate the shops to a new facility. After preliminary investigation, it was concluded that the cost for construction and relocation of equipment would greatly exceed the cost to expand Building 92 and would not significantly improve productivity.

The expansion of Building 92 to incorporate the structural and sheet metal operations into an efficient and economical layout which would improve productivity and limit costly expenses of construction and relocation of equipment.

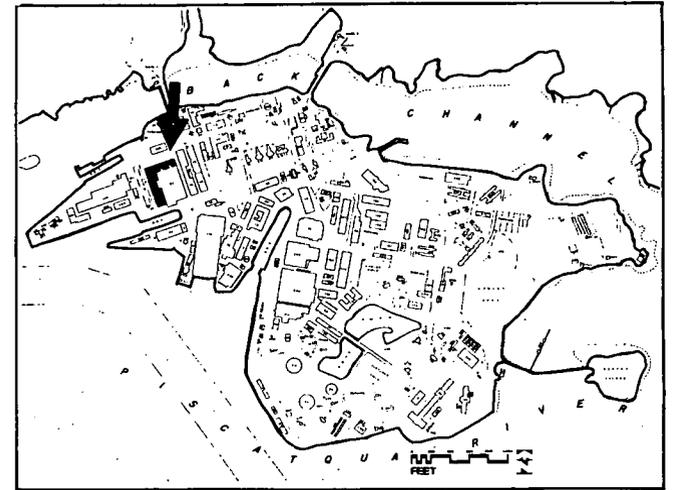
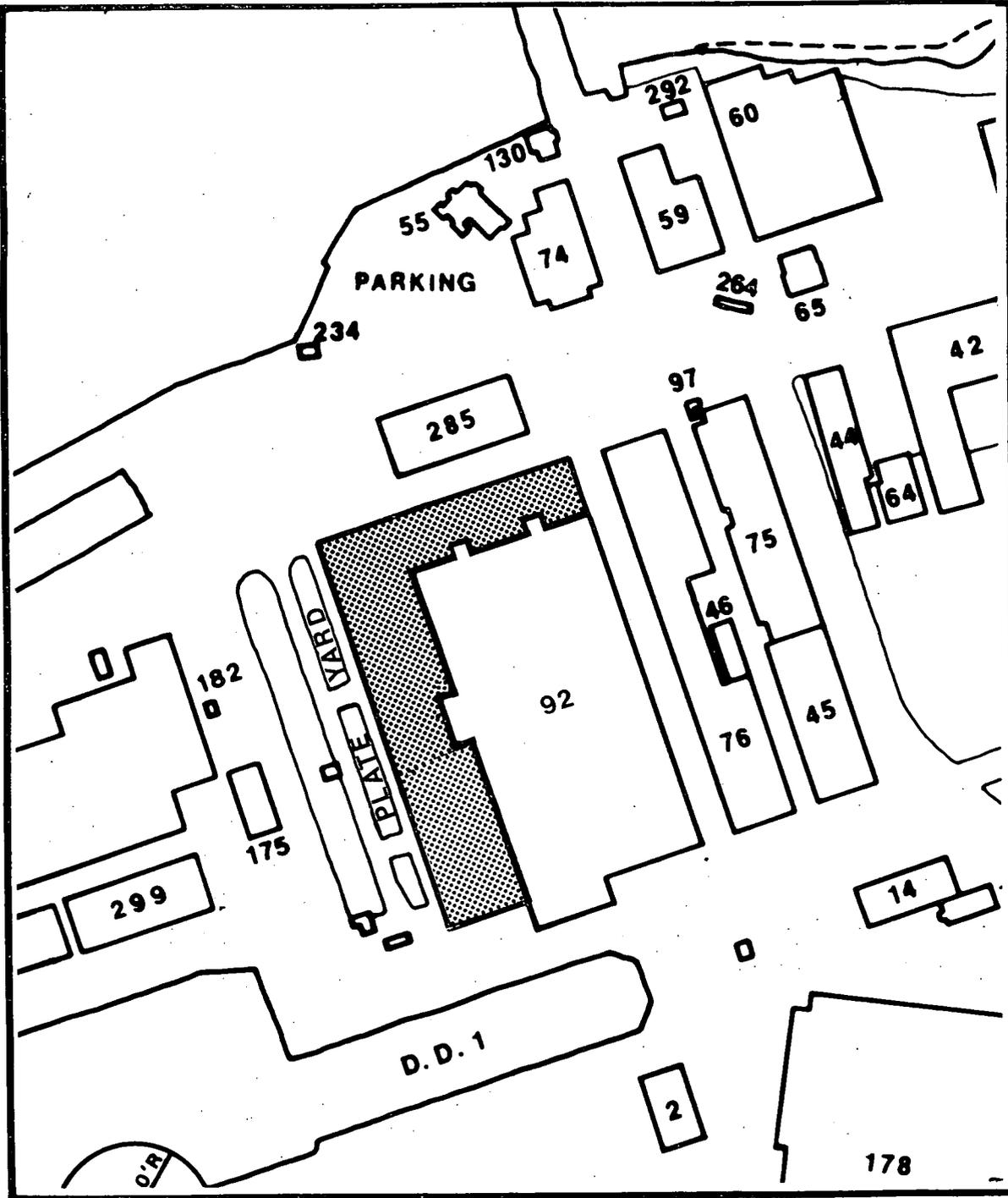
If not provided, the Navy would be unable to fulfill production requirements as forecast. It would be unable to install and implement programs of advanced technology for machine layout or manufacturing systems, both being required for increased production and for improved quality control performance. The Shipyard Modernization Program will be delayed and the Structural Group functions will not be accomplished in an efficient manner.

Siting Considerations:

There are no special siting considerations.

Design Considerations:

The design should be flexible to incorporate proposed and plan for future state-of-the-art production methods.



P-120

**STRUCTURAL GROUP
IMPROVEMENTS**

**SCOPE: 270,563 S.F.
\$15,800,000**

TITLE: P-217 ABRASIVE BLAST AND PAINT FACILITY

SCOPE: 41,800 SF
\$6,350,000

REQUIREMENT:

The Abrasive Blast and Paint operations have insufficient space and equipment for the present heavy workload and forecasts require significantly increased capacity. The shop and its equipment are now heavily overstressed, causing increased downtime, even for routine maintenance, adversely affecting the backlog and support of affected shops. The use of one craneway for staging of material to and from blasting as well as painting allows for serious quality problems in painting due to lack of environmental control of dust.

The construction of a new Abrasive Blast and Paint Facility will make decisive improvements in plant layout, material handling and quality control in addition to productivity improvements for increased capacity.

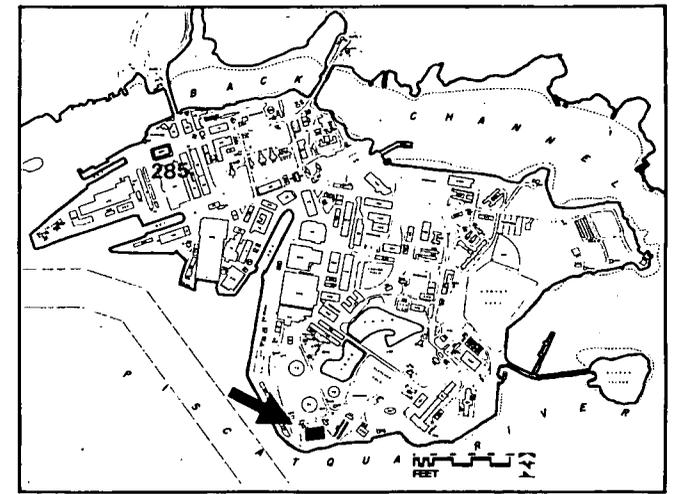
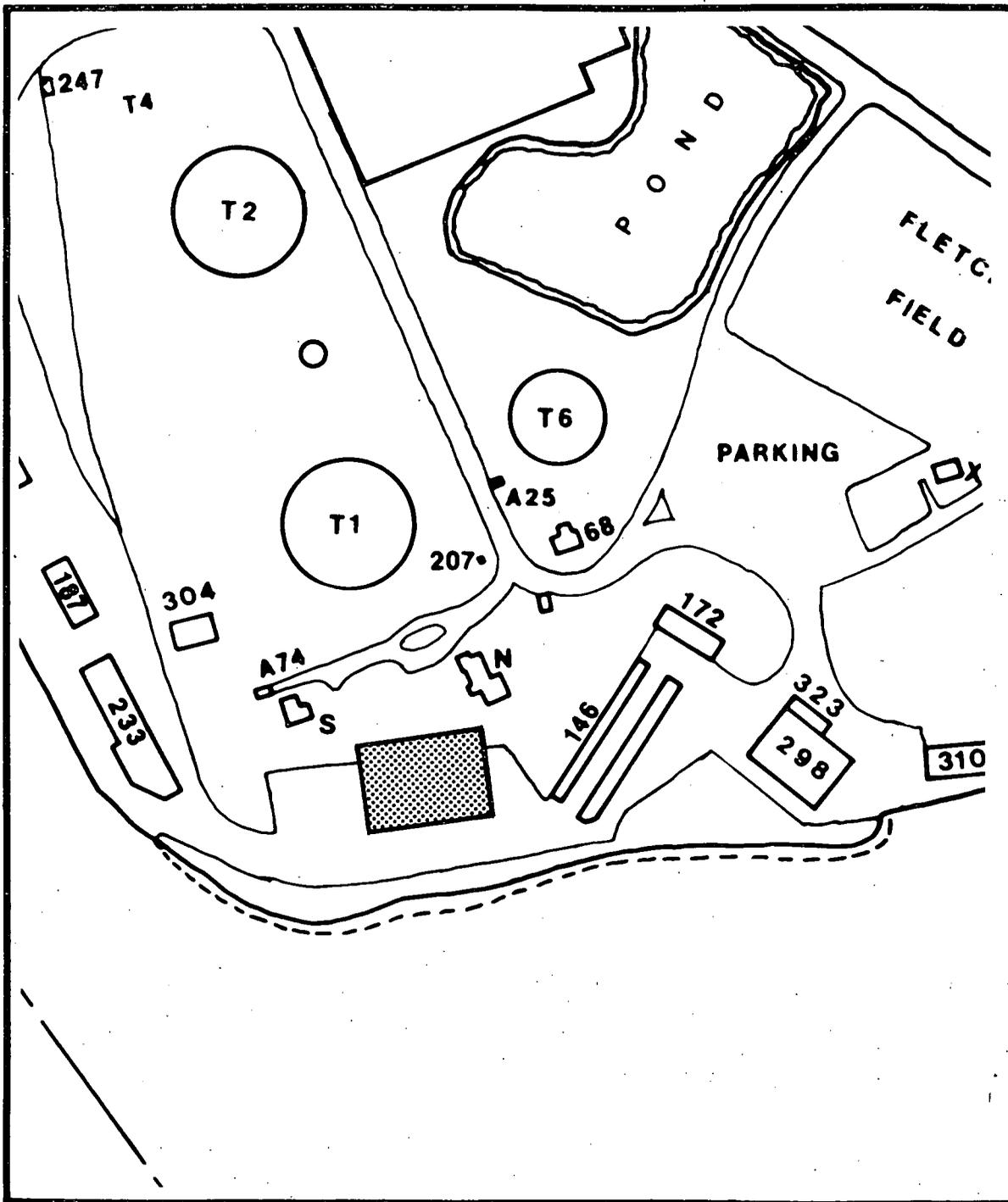
The alternative is to enlarge the existing facility Building 285. The existing structure and site constraints make reconfiguration for optimum work flow economically unfeasible. The building also uses valuable waterfront real estate for an operation that can be performed in a remote location. If not provided, the Shipyard will be hampered by the inability to handle increased workloads while maintaining quality work.

Site Considerations:

There are no special site considerations.

Design Considerations:

There are no special design considerations.



P-217

**ABRASIVE BLAST AND
PAINT FACILITY**

SCOPE: 41,800 S.F.

\$6,350,000

TITLE: P-218 METALS TEST AND STORAGE FACILITY

SCOPE: 112,800 SF
\$7,400,000

REQUIREMENT:

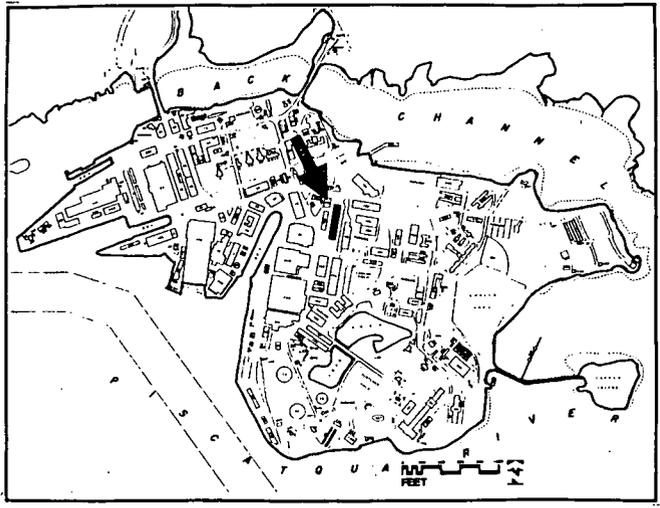
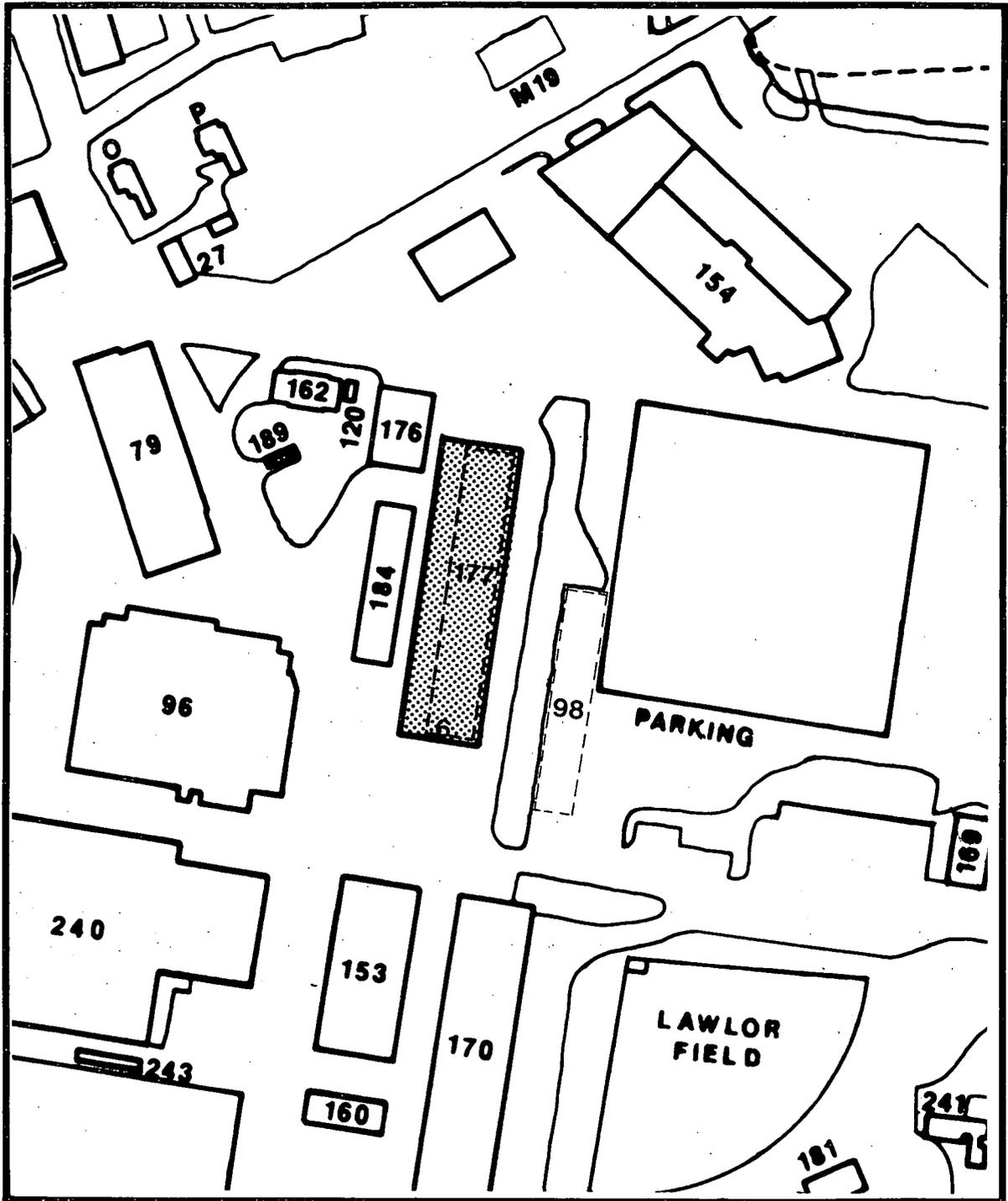
The Shipyard's testing and warehouse facilities are presently scattered in four buildings resulting in inefficient duplication of effort. This project provides for the consolidation of metal material testing and storage and general warehouse storage in a new 112,800 SF building. Building 98 and 177 will be demolished and testing/storage functions in Buildings 79, 132, and 149 will be consolidated into the new facility. If this project is not provided, efficient metals materials testing and storage cannot be accomplished.

Siting Considerations:

Buildings 177 and 98 will be demolished to provide the site for new construction.

Design Considerations:

There are no special design considerations.



P-218

**METALS TEST AND
STORAGE FACILITY**

SCOPE: 36,000 S.F.

\$9,650,000

TITLE: P-225 REFUELING/DEFUELING CRANE AT
DRYDOCK 2.

SCOPE: 1 CRANE
\$5,500,000

REQUIREMENT:

The purpose and need for this project is to provide the weight handling capacity to perform refueling/defueling for 688 Class submarines starting in FY 1992. Drydock refueling/defueling is preferred over berth refueling/defueling because of easier access and greater stability. Drydock 2 has been selected for this project as Drydock 1 is too small to perform refueling/defueling and Drydock 3 is committed to SSBN refuelings. This project will provide a stiff leg derrick, 165 tons at 165 feet atop a reinforced concrete tower. The steel derrick will have a boom height of 45 feet. A machinery house will be constructed approximately 150 feet from the mast leg.

Two alternatives were considered - a tower mounted revolving crane and a mobile crane. The procurement cost of a tower mounted revolving crane is approximately twice that of a stiff leg derrick. While the cost of a mobile crane is roughly equivalent to the cost of a stiff leg derrick, the low elevation of the boom hinge on a mobile crane is not compatible with the height of adjacent facilities. Both the tower mounted and mobile cranes would require a 60 ft. roller circle for adequate capacity. This size circle is too large for the available space, therefore a stiff leg derrick was chosen.

If this project is not provided, the Shipyard will not be able to comply with the requirement to perform refueling/defueling of SSN 597 and SSN 688 Class submarines.

Siting Considerations:

The site selected is adjacent Drydock 2.

Design Considerations:

The design is a stiff leg derrick crane.

TITLE: P-230 PROPELLER AND SHAFT SHOP

SCOPE: 51,200 SF
\$13,800,000

REQUIREMENTS:

Propeller and shaft rework is presently performed in several locations that require excessive handling and transportation. Machine tools in Building 300 are poorly located with minimal work space for both proper machine tool operations and in-process material laydown.

The new facility will provide the consolidation of all propeller and propulsion shaft rework activities located in Buildings 178, 240 and 300 into one facility. Propeller gauging and repair is presently performed in a temporary structure located in Building 178. Sand unpacking and repacking of propeller shafts is also performed in the same building. Space vacated in Building 178 will be used for storage of rip out materials. Dynamic propeller balancing is performed in a 1,500 SF area in Building 240. With the completion of P-230 propeller balancing will relocate to the new facility and the remaining dynamic balancing operations will expand into the spaces vacated by the propeller balancing operations. Building 300 serves as the primary facility for Inside Machining Shop Operations which include propeller shaft repair and rework. With completion of the new facility, all propeller shaft rework equipment will relocate to the new facility and the space vacated in Building 300 will allow various Inside Machining work sections to acquire adequate space.

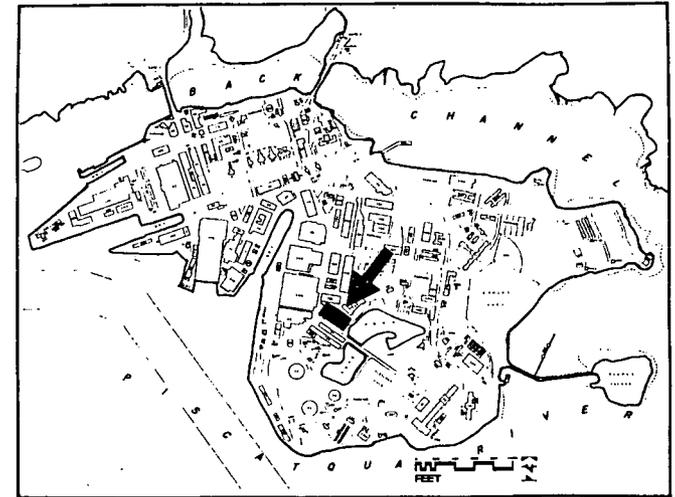
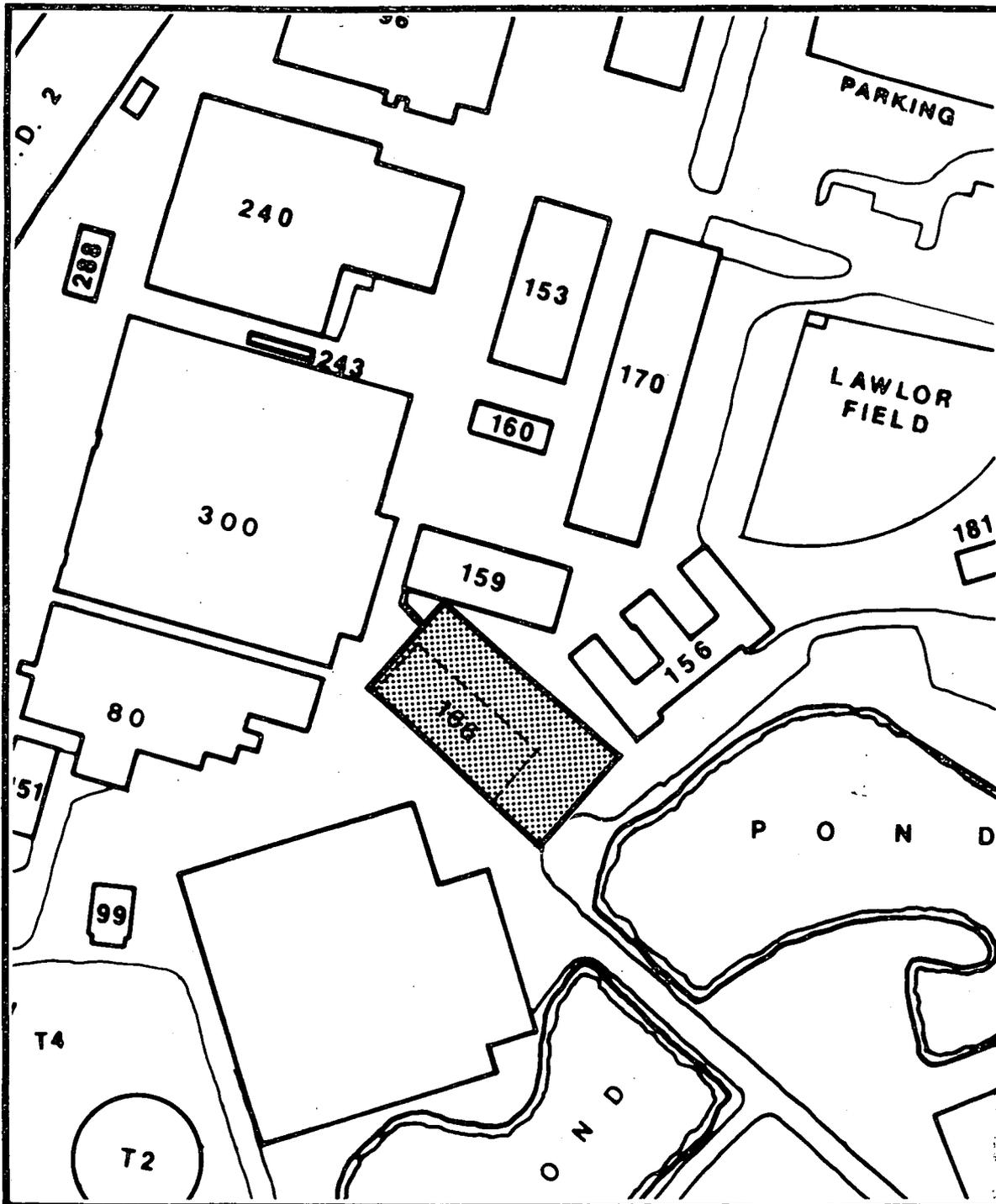
If this project is not provided, rework of propellers and shafts will continue to require excessive handling and transportation and major submarine assembly rework will continue to be done incurring excessive costs and delays in ship turnaround time.

Siting Considerations:

Building 166, a Supply Warehouse, will be demolished to provide the site for construction. Functions in the building will be relocated to a new consolidated Supply Warehouse (P-236).

Design Considerations:

The primary facility requires a footprint of 160 feet by 320 feet, 50 feet high with one high bay area 90 feet high. Since the site available has a very limited area, individual designers may be required to change the required footprint into a comparable footprint to suit the site.



P-230

**PROPELLER AND
SHAFT SHOP**

SCOPE: 51,200 S.F.

\$13,800,000

TITLE: P-231 PIPEFITTING SHOP

SCOPE: 150,000 SF
\$24,400

REQUIREMENTS:

An access area for a new drydock, to be constructed under P-172, necessitates the demolition of Building 155 which presently is occupied by the Pipefitting Shop.

Present work to fabricate pipe assemblies in Building 155 is performed in a work space where equipment is crowded and poorly laid out for efficient work flow. Pipe bending equipment, welders and work layout tables are located too close together to allow for required access. The cleaning tank is badly corroded and the ventilation system must be replaced to control cleaning chemical fumes and meet OSHA standards. Recent additions to shop planning staff has necessitated the taking of shop work space, thus creating even more equipment crowding. A substantial amount of pipe fabrication is now performed in Building 288 near Drydock 2. When overhauling refrigeration and air conditioning systems, final system checking must be done in Building 178 where "jury rigged" environmental control is only marginally met.

This project will provide required work space for shop and administration support functions. The project also provides updated equipment for pipe cleaning, and testing of refrigeration, air conditioning, pipe, and hose components and assemblies.

If the modernized facilities are not provided, not only will access to new drydock be restricted but congestion in the pipe shop will cause high cost operations to continue. Lack of centralized shop work areas will allow occupancy of inadequate facilities to continue and the attendant problem of equipment and management duplication.

Pipefitting Shop equipment will be moved from Building 155, 178 and 288 into the new facility.

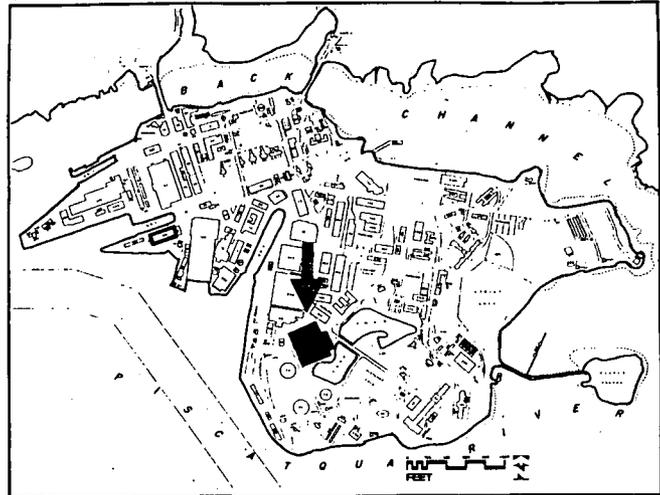
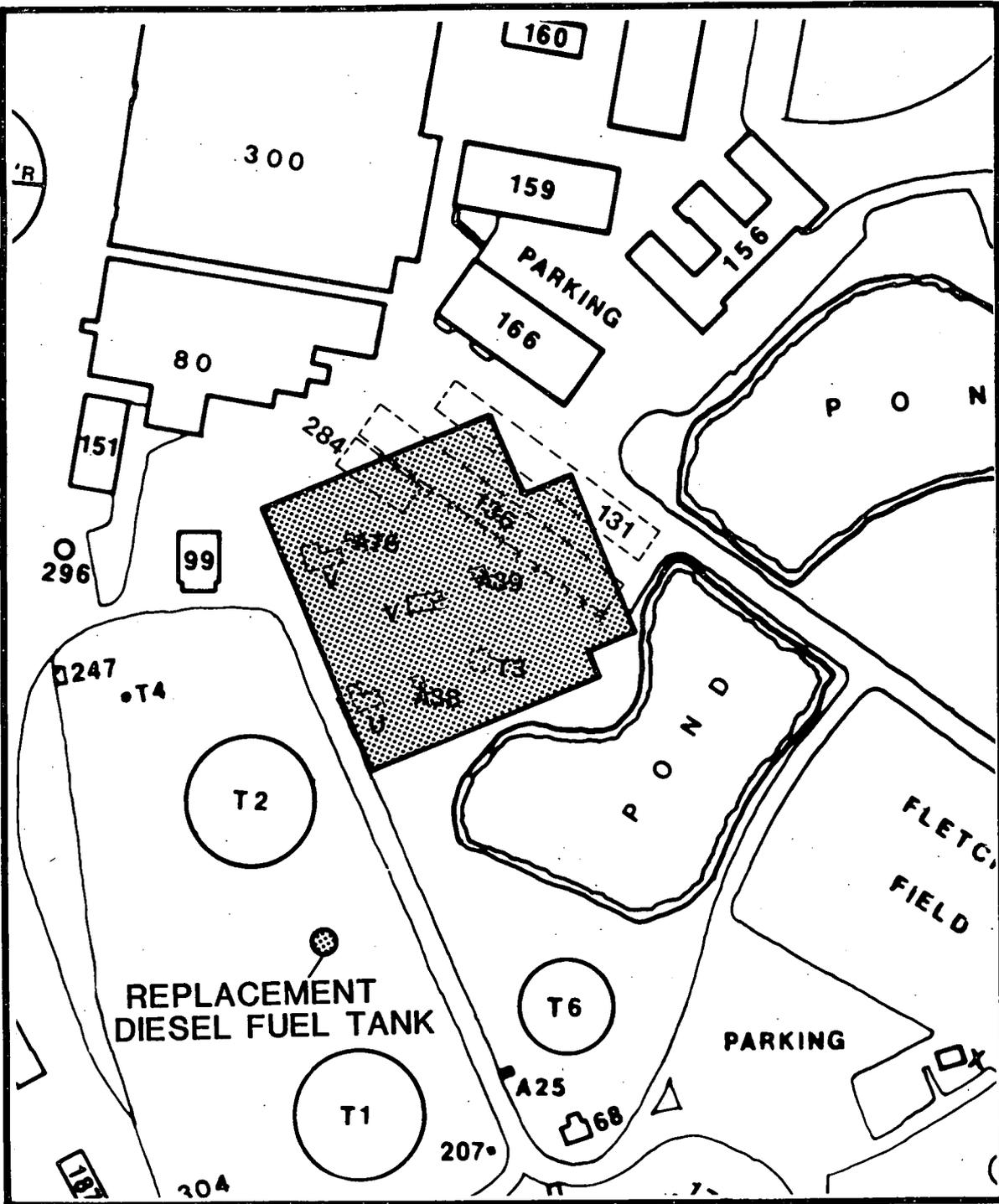
Siting Considerations:

In addition to demolition of Building 155, the following buildings will be demolished to provide the site for construction:

<u>Building</u>	<u>Function</u>
A38	Garage Quarters
A39	Garage Quarters
A76	Garage Quarters
V	Family Housing
U	Family Housing
W	Family Housing
131	Supply Storage
136	Supply Storage
284	Supply Storage
T-3	Diesel Fuel Storage

Design Consideration:

The proposed facility requires a 300 foot wide by 400 foot long footprint with a 100 foot wide by 300 foot long mezzanine. The proposed site cannot accommodate this footprint since the area is limited. The Master Plan proposes the footprint as shown.



P-231

PIPEFITTING SHOP

SCOPE: 129,600 S.F.

\$18,500,000

TITLE: P-236 CONSOLIDATED SUPPLY WAREHOUSE

SCOPE: 129,600 SF
\$18,500,000

REQUIREMENTS:

Repair of ships is dependent not only on the productivity of the shipyard work force but also on the timely delivery of materials to production shops, waterfront activities and vessels under repair. To consistently provide timely material delivery, the Shipyard Supply Department must have a warehouse capable of using modern material handling systems. This Project will provide a high bay consolidated Supply Warehouse with automated, semi-automated and manual material handling systems.

The Supply Department now stores its material in over 20 locations. Most of these warehouses were constructed in the early 1900's through World War II. With the exception of two permanent, high-rise storage buildings, the warehouses have exceeded their expected life, are in poor condition and, in some cases, are without heat or sanitary facilities. In addition, the building configurations, with low ceiling limiting stacking heights and column spacing restricting movement, precludes the use of modern automated and semi-automated equipment. Material is stored in bins, racks, or on the floor on pallets. Material must be picked manually and, even though material is addressed in sequence by store location and by customer to reduce movement to the minimum, the staging of large amounts of material is a labor intensive task.

It is not feasible to upgrade the existing facilities to the point where modern material handling equipment could be installed. Even if possible, the Shipyard would still have scattered and redundant storage locations that would not reduce traveling distances and would perpetuate the inefficient, slow response material handling.

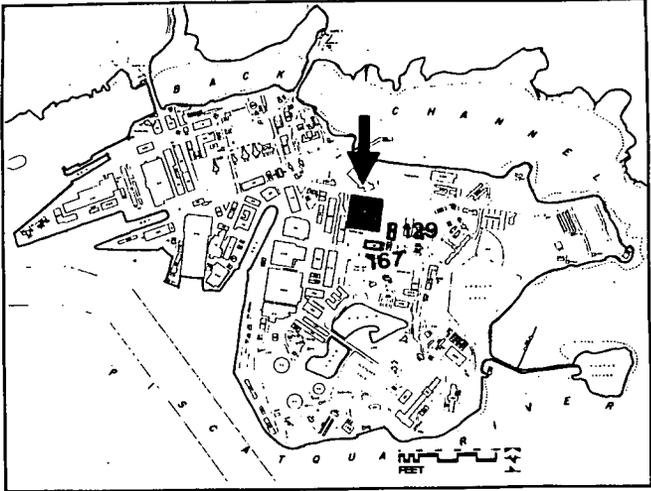
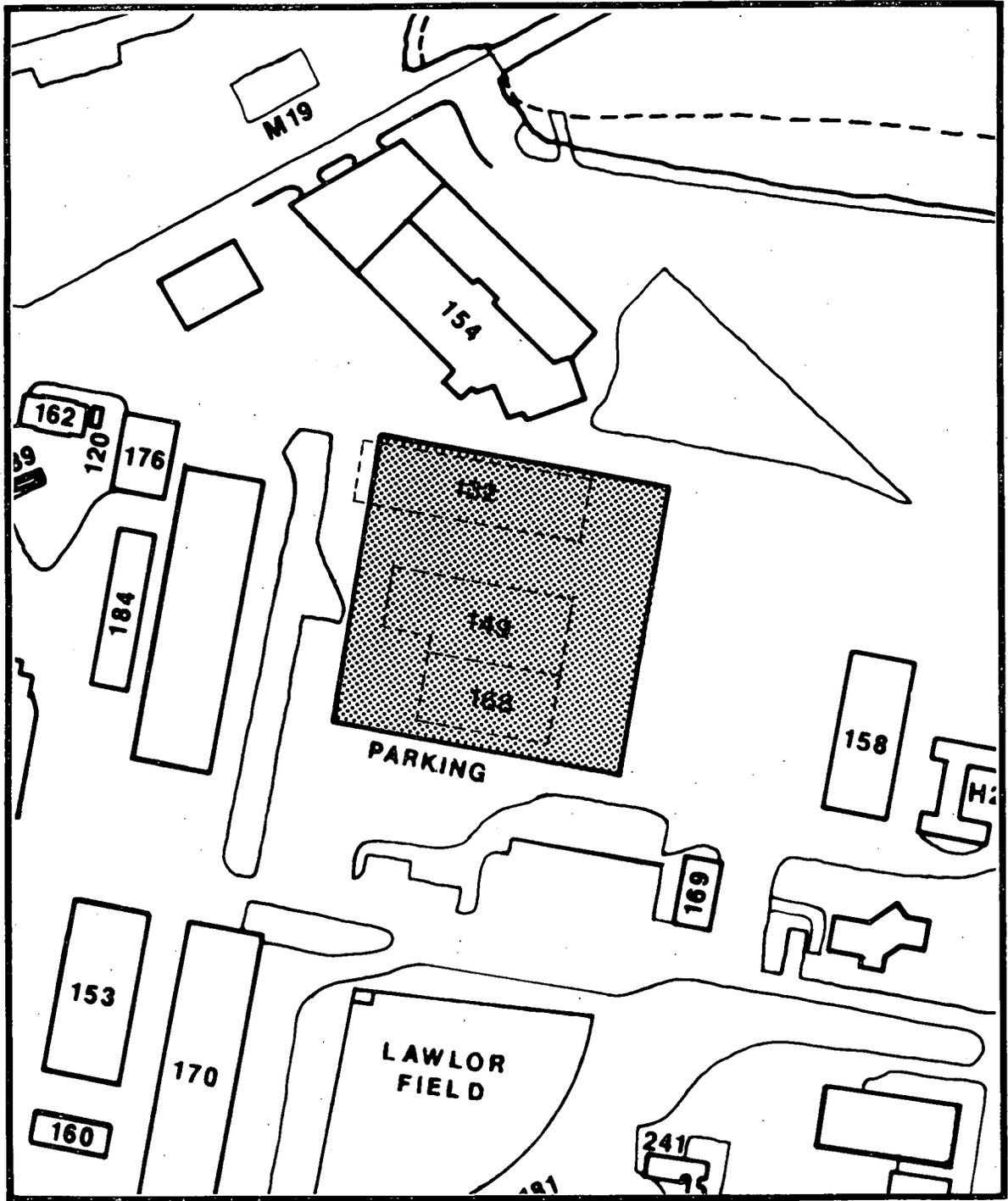
If this project is not implemented, inefficiencies in the present method of storage and handling of materials will continue to impede the Shipyard's ability to perform the material functions economically and to provide the production forces with timely and adequate material support.

Siting Considerations:

The new facility will replace existing Buildings 132, 149, 167 and 168.

Design Considerations:

The new facility will be a high bay structure designed with a combination of automated, semi-automated and manual supply operation with computerized systems control.



P-236

CONSOLIDATED SUPPLY
WAREHOUSE

DEMOLITION LIST

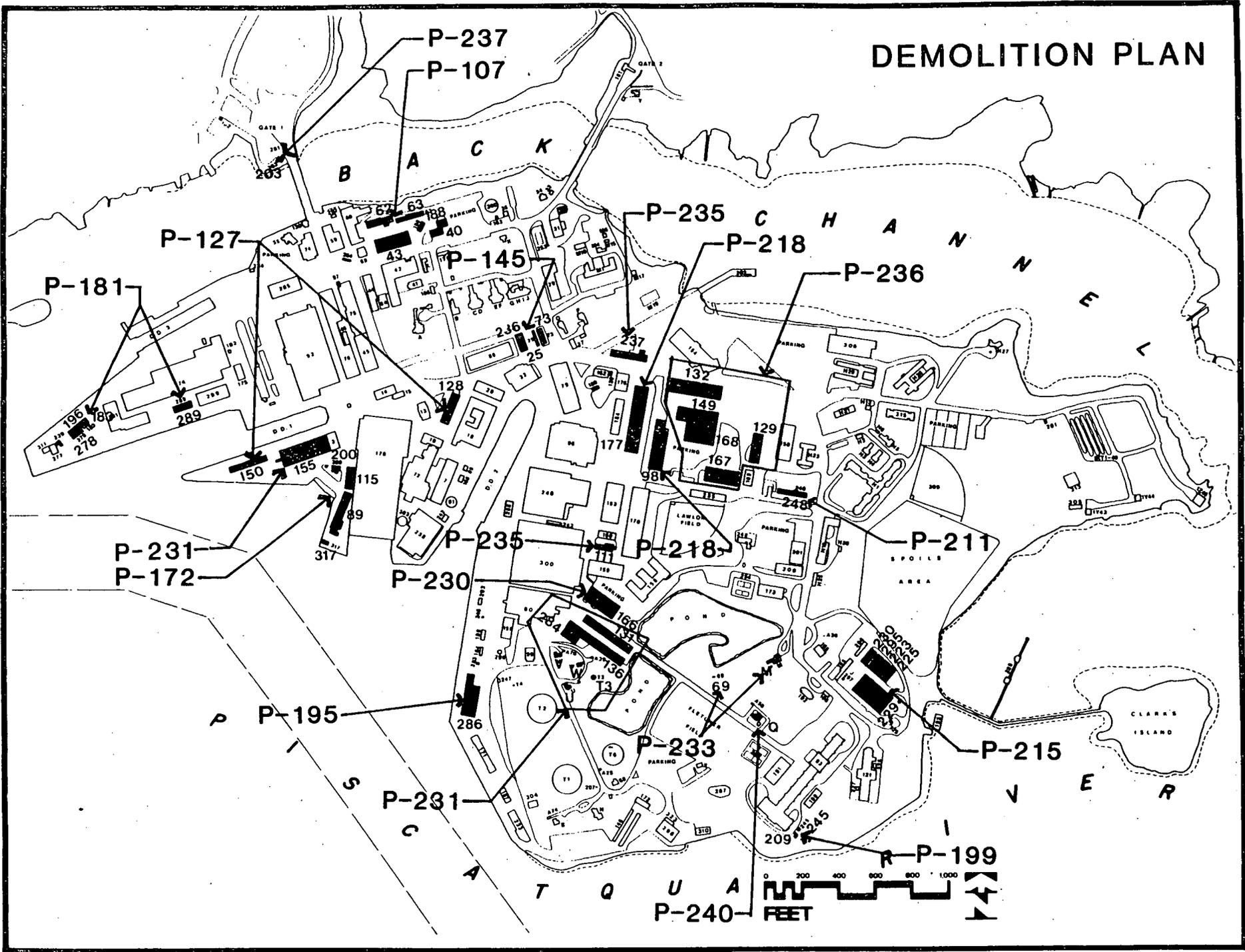
SHORT TERM

BUILDING NUMBER	CURRENT USE	CONDITIONS	REPLACED BY	COMMENTS
25	Garages	Adequate		Proposed Site of P-145
43	P.W. Maint.Storage	Adequate	P-235	Proposed Site of P-107
62	PAV/Grounds			
	Equip. Storage	Inadequate	P-235	Proposed Site of P-107
62A	P.W. Maint.Shop	Inadequate	P-235	Proposed Site of P-107
63	P.W. Maint.Storage	Adequate	P-235	Proposed Site of P-107
73	Dental Clinic/ Admin.	Inadequate	P-107	Proposed Site of P-145
89	Production Shop	Adequate	P-172	Proposed Site of P-172
98	Haz. Flam. Sthse	Inadequate		As Part of P-218
115	Quality Assurance	Adequate	P-127	As Part of P-225
128	Supply Storage	Adequate	P-127	Proposed Site of P-127
150	Quality Assurance	Inadequate	P-127	Laydown Area for P-172
183	Production Storage	Substandard	P-235	Proposed Site of P-181
188	P.W. Storage	Substandard	P-235	Proposed Site of P-107
200	Propane Gas Storage	Adequate		Proposed Site of P-172
209	Trash Storage	Inadequate		As Part of P-199
223	Supply Storage	Inadequate		Proposed Site of P-215
225	Supply Storage	Inadequate		Proposed Site of P-215
229	Supply Storage	Inadequate		Proposed Site of P-215
230	Supply Storage	Inadequate		Proposed Site of P-215
236	Admin.	Adequate		Proposed Site of P-145
239	Latrine	Substandard	P-181	Proposed Site of P-181
245	Unassigned	Inadequate		As Part of P-199
278	Test facility	Substandard	P-181	Proposed Site of P-181
286	Ship & Marine Structure	Adequate		Proposed Site of P-195
289	Material Control	Adequate		As Part of P-181
295	Supply Storage	Adequate		Proposed Site of P-215
317	Fixed Crane	Adequate		As Part of P-172

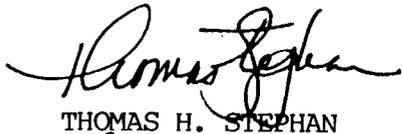
LONG TERM

<u>BLDG. NUMBER</u>	<u>CURRENT USE</u>	<u>CONDITIONS</u>	<u>REPLACED BY</u>	<u>COMMENTS</u>
69	P.W. Storage	Adequate	P-240	Proposed Site of P-233
106	Garage	Vacant	P-240	Proposed Site of P-240
111	P.W. Storage	Substandard	P-235	As Part of P-235
129	Production Shop	Inadequate		As Part of MP Central Supply
131	Supply Storage	Adequate	P-231	Proposed site of P-231
132	Supply Storage	Adequate		As Part of MP Central Supply
136	Supply Storage	Adequate	P-231	Proposed Site of P-231
149	Misc. Storage	Inadequate		As Part of MP Central Supply
155	Production Shop	Substandard	P-231	Site for lay down area, P-172
166	Supply Storage	Adequate	P-230	Proposed Site of P-231
167	Supply Storage	Adequate		As Part of MP Central Supply
168	Supply Storage	Substandard		As Part of MP Central Supply
177	Supply Storage	Adequate		Proposed Site of P-218
192	Family Housing	Adequate		Proposed Site of P-240
203	Security/Pass Office	Substandard	P-237	Proposed Site of P-237
229	Supply Storage	Adequate		Proposed Site of P-215
237	Public Works	Adequate	P-235	Site of New Public Works
248	CPO Club	Substandard	P-211	Proposed Site of P-211
284	DPDO Office	Adequate	P-231	Proposed Site of P-231
A38	Garage	Adequate	P-231	Proposed Site of P-231
A39	Garage	Adequate	P-231	Proposed Site of P-231
A58	Garage	Adequate	P-240	Proposed Site of P-240
A76	Garage	Adequate	P-231	Proposed Site of P-231
Qtrs M,Q,	Family Housing	Adequate	P-233, P-240	Proposed Site of P-240 Proposed Site of P-233
Qtrs U,V,W,	Family Housing	Adequate	P-231	Proposed Site of P-231
T3	Diesel Storage Tank	Adequate	P-231	Proposed Site of P-231

DEMOLITION PLAN



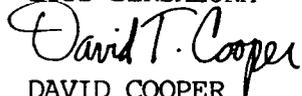
THIS MASTER PLAN HAS BEEN PREPARED AT
NORTHERN DIVISION, NAVAL FACILITIES
ENGINEERING COMMAND BY:



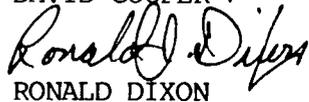
THOMAS H. STEPHAN



LUIS BERSALONA



DAVID COOPER



RONALD DIXON

