

BAY FILL IN SAN FRANCISCO:
A HISTORY OF CHANGE

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Master of Arts

By

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TABLE OF CONTENTS

	Page
List of Maps	<u>vi</u>
INTRODUCTION	<u>1</u>
CHAPTER I: JURISDICTIONAL BOUNDARIES OF SAN FRANCISCO'S TIDELANDS	<u>4</u>
Definition of Tidelands	<u>5</u>
Evolution of Tideland Ownership	<u>5</u>
Federal Land	<u>5</u>
State Land	<u>6</u>
City Land	<u>6</u>
Sale of State Owned Tidelands	<u>9</u>
Tideland Grants to Railroads	<u>12</u>
Settlement of Water Lot Claims	<u>13</u>
San Francisco Loses Jurisdiction over Its Waterfront	<u>14</u>
San Francisco Regains Jurisdiction over Its Waterfront	<u>15</u>
The San Francisco Bay Conservation and Development Commission and the Port of San Francisco.	<u>18</u>
CHAPTER II: YERBA BUENA COVE	<u>22</u>
Introduction	<u>22</u>
Yerba Buena, the Beginning of San Francisco	<u>22</u>
Yerba Buena Cove in 1846	<u>26</u>
San Francisco's First Waterfront	<u>26</u>
Filling of Yerba Buena Cove Begins	<u>29</u>
The Board of State Harbor Commissioners and the First Seawall	<u>33</u>
The New Seawall.	<u>37</u>
The Northward Expansion of San Francisco's Waterfront	<u>40</u>
North Beach.	<u>41</u>
Fisherman's Wharf	<u>43</u>
Aquatic Park	<u>45</u>

	Pier 45	<u>47</u>
	Fort Mason.	<u>48</u>
	South Beach.	<u>49</u>
	The Southward Extension of the Great Seawall	<u>52</u>
	Conclusion: Yerba Buena Cove.	<u>56</u>
CHAPTER III:	HARBOR VIEW	<u>61</u>
	Early History and Description.	<u>61</u>
	Industrial Development	<u>65</u>
	Early Fill	<u>66</u>
	The Panama Pacific International Exposition	<u>67</u>
	San Francisco Park Commission Acquires	
	Marina Lands.	<u>72</u>
	Marina Gardens	<u>73</u>
	Improvement of Marina Park	<u>74</u>
	Conclusion: Harbor View	<u>78</u>
CHAPTER IV:	MISSION BAY	<u>81</u>
	In the Beginning	<u>81</u>
	Filling Begins	<u>84</u>
	The Railroad's Acquisition of Land.	<u>87</u>
	The China Basin Fill	<u>90</u>
	Mission Bay after the Earthquake of 1906	<u>92</u>
	Mission Rock.	<u>94</u>
	Conclusion: Mission Bay.	<u>96</u>
CHAPTER V:	POTRERO POINT.	<u>99</u>
	Early History and Description.	<u>99</u>
	Industrial Development of Potrero Point.	<u>99</u>
	The Pacific Rolling Mills	<u>101</u>
	The Union Iron Works.	<u>102</u>
	Conclusion: Potrero Point	<u>103</u>
CHAPTER VI:	ISLAIS CREEK.	<u>105</u>
	Early Fill	<u>107</u>
	Early Plans for Development.	<u>109</u>
	The Islais Creek Reclamation District.	<u>112</u>
	The Army Street Terminal	<u>117</u>
	Conclusion: Islais Creek	<u>120</u>
CHAPTER VII	INDIA BASIN	<u>123</u>
	Early Development	<u>123</u>

	First Fill	<u>124</u>
	The Boblitt Debris Dike	<u>125</u>
	The LASH Terminal	<u>126</u>
	Conclusion: India Basin.	<u>129</u>
CHAPTER VIII:	HUNTER’S POINT	<u>132</u>
	Early History	<u>132</u>
	The First Dry Dock	<u>134</u>
	The United States Navy Takes Interest	<u>135</u>
	The United States Navy Buys Hunter’s Point	<u>138</u>
	The Impact of World War II.	<u>139</u>
	Site Description	<u>140</u>
	Building the First Dry Dock	<u>141</u>
	Building the Second Dry Dock	<u>142</u>
	Construction and Bay Fill following America’s Entry into World War II.	<u>143</u>
	Conclusion: Hunter’s Point	<u>145</u>
CHAPTER IX:	BAY VIEW	<u>149</u>
	Early History and Description	<u>149</u>
	Early Fill	<u>151</u>
	World War II’s Impact	<u>153</u>
	Candlestick Park	<u>154</u>
	Conclusion: Bay View	<u>157</u>
CHAPTER X:	CONCLUSION	<u>159</u>
APPENDIXES		<u>161</u>
SELECTED BIBLIOGRAPHY		<u>183</u>

LIST OF MAPS

Map	Page
1. Map of San Francisco Shoreline Features, 1849	172
2. Map of San Francisco Grants and Boundaries	173
3. San Francisco Port Commission: Port of San Francisco, 1972	174
4. Map of San Francisco Water Lots.	175
5. Map of San Francisco Waterfront Piers, 1852 and 1972	176
6. Map of San Francisco's Great Seawall.	177
7. Map of Harbor View	178
8. Map of the Marina District	178
9. Map of San Francisco Bay Fill	179
10. Map of Mission Bay Railroad Lands	180
11. Map of Potrero Point.	181
12. Map of Islais Creek and Hunter's Point	182

INTRODUCTION

“Wherever men live they have operated to alter the aspect of the earth, both animate and inanimate, be it to their boon or bane.”¹ Man, the ecological dominant on the planet, needs to understand what has happened and what is happening to the earth under man’s influence. This thesis is concerned with man-made changes of the earth’s surface as they apply to the bayside waterfront of the City and County of San Francisco. In addition, it is concerned with those forces that caused the change.

The manner and extent that humans have manipulated the earth’s natural state was extensively analyzed by the American scholar, George Perkins Marsh, in his book: Man and Nature, published in 1864.² His basic theme was that man was subverting the balance of nature to his own detriment. This theme was reassessed in its contemporary relevance at the international symposium, “The Agency of Man on the Earth”, sponsored by the Wenner Gren Foundation for Anthropological Research, held in 1955.³ Marsh’s theme was again examined in a conference convened in 1965 by the Conservation Foundation, which met to consider the future environments of North America.⁴

The method by which twentieth century man changes his surroundings is far more complicated than ever before, particularly with respect to his urban environment. Change results from the interaction of four forces: technology, economic efficiency, public responsibility, and politics. In their interplay, one force usually emerges dominant, with the resulting change reflecting the character of the dominant force. This investigation demonstrates how these forces have interacted to change the physical environment of San Francisco, specifically along the bayside waterfront. It is imperative that man understands the nature of these forces, for without this knowledge he cannot hope to realistically plan or direct future change on the urban scene.

As in all things, understanding depends on definitions. So, in order to understand the forces that changed San Francisco's waterfront, it is necessary to define these forces:

Technology refers to the improvement of machines and techniques man uses to achieve his goals. It includes innovative tools as well as innovative methods, and applies to the attempts at the solution of problems, both technical and social.

Economic Efficiency refers to the concept of maximizing the productive capacity of an area to the detriment of all other considerations. Although this attitude is generally thought of as applying to private enterprise, it can also be applied to the public agencies such as state highway departments, transportation authorities, and the United States Corps of Engineers.

Public Responsibility refers to the social consciousness which gives goals and guide lines to man's developmental urge, so that he will shape his environment to his well being and satisfaction.

Politics refers to the pressures and influences of people, organizations, or coalitions attempting to influence decisions that favor particular interests.

George P. Marsh said: "... man is compelled to extend over the unstable waters the empire he had already founded upon solid land."⁵ With this statement in mind, this inquiry follows the progress of bay fill along the bayside periphery of the city and county of San Francisco. Its boundaries extend from Fort Point on the north to the San Francisco - San Mateo County line on the south, from the mean high tide mark to the San Francisco Pier Head Line. It covers a time period of 123 years, from 1849 to 1972 inclusive.

For the purpose of the study, San Francisco's waterfront has been divided into eight sections, with each examined as consistently as the records allow. Beginning with a description of its natural site, the inquiry continues with the investigation of the various events, influences, and decisions which led to the verdict to fill. The technical aspects of the fill projects are then explained in terms of the area involved, the source of fill material, the cost, and how it was financed, and finally the primary use of the newly created land. From this information a conclusion is drawn for each section as to the forces most dominant in producing change, and in the general conclusion the argument for the thesis is reasserted.

FOOTNOTES

¹Carl O. Sauer, "The Agency of Man on Earth," Man's Role in Changing the Face of the Earth, ed. William L. Thomas (Chicago: University of Chicago Press, 1956), p.49.

²George Perkins Marsh, Man and Nature, ed. David Lowenthal, (Cambridge, Mass.: The Belknap Press of Harvard University Press, 1965).

³William L. Thomas, ed., Man's role in Changing the Face of the Earth, op. cit.

⁴F. Fraser Darling and John P. Milton, eds., Future Environments of North America (New York: Natural History Press, 1966).

⁵Marsh, op. cit. p. 4.

CHAPTER I:

JURISDICTIONAL BOUNDARIES OF SAN FRANCISCO'S TIDELANDS

Both private individuals and public agencies have been responsible for filling the San Francisco Bay. Where fill has been placed on privately owned tideland, it has generally been accomplished through the efforts of the owner. In the case of public lands, fill was usually placed as the result of a reclamation project under the direction of some agency of the government.

Fill has been placed along the waterfront of San Francisco from Fort Point, at the Golden Gate, all the way south to the San Francisco-San Mateo County line. During San Francisco's infancy, filling of the bay was accomplished with little or no regard to land rights due to the lack of clear governmental guidelines and misunderstanding of the laws of the time. The problems which first arose dealt with land ownership and the validity of the methods of its conveyance; ownership, and control. These questions and their answers are, of course, complicated, but before a complete understanding of the evolution of bay fill in San Francisco can be gained, it is necessary to discuss the development of jurisdictional boundaries and the origin of titles to land in San Francisco.

Since this study is concerned with bay fill, it becomes necessary to understand the question of ownership as it applies to tidelands, for that is where the fill took place. However, it is impossible to understand ownership problems as they refer to tidelands without explaining some of the larger questions of land ownership in San Francisco.

Definition of Tidelands

In the case of tidelands, jurisdiction depends upon how the land is affected by tides. “Tidelands” is a general term used to designate all lands in San Francisco Bay: submerged lands, tidelands, and overflowed lands.

In legal terms, there are three types of “bay lands” ([see Appendix 1](#)):

1) submerged lands, which are always covered by water, even at low tide; 2) tidelands, which are covered and uncovered by daily tides, and are bounded by the mean high tide and the mean low tide; and 3) swamp and overflow lands, which are above the mean high tide but are subject to extreme high tides so that marsh grasses grow on them, and thus are commonly called “marsh lands.”¹

Evolution of Tideland Ownership

The evolution of bay land ownership and the rights pertaining to its use evolved from both Spanish and English law. The corporate boundaries of the City and County of San Francisco were established by these laws; as well as the rules governing tideland ownership. The establishment of San Francisco’s boundaries and the complexities of tideland ownership can be understood more clearly through a brief historical review of the city’s growth.

Federal Land

After the Treaty of Guadalupe Hidalgo, signed in 1848, all land in California not part of a Spanish or Mexican land grant was owned by the United States government. Land lying above the mean higher tide was declared public domain. The tidelands and submerged lands were held by the United States in trust for the future state. Swamp and overflow land (land lying between mean high tide and mean higher high tide) was also retained by the federal government.

State Land

By virtue of her admission to the Union on September 9, 1850, the State of California obtained title to all lands within its borders. This was due to the United States Supreme Court 1845 ruling that each new state would have the same right to land within its borders as the original states had. The original thirteen colonies, upon achieving independence, derived the rights to their land from the King under the common law of England. However, on September 28, 1850, a month after California's acceptance into the Union, Congress passed the Arkansas Swamp Lands Grant Act that said that all swamplands held by the federal government within certain states, including California, would be transferred gratis to those states. The states could sell the land and use the proceeds to reclaim the swamplands.² Thus California became the owner of all land within her borders except for the Spanish and Mexican land grants and lands held as federal reserves.

City Land

It has been argued successfully in the courts ³ that at the time of California's occupation by the United States military following the Treaty of Guadalupe Hidalgo, Yerba Buena (San Francisco) was a Mexican pueblo – that is, a duly recognized town governed by Mexican law with an alcalde and other appointed officials administering its municipal affairs. Mexican law allowed duly recognized pueblos to use all the land constituting its site plus any adjoining territory for a total of four square leagues for the benefit of its inhabitants. The alcaldes had the power to make land grants within pueblo boundaries to pueblo residents for building, cultivation, or other worthy uses; the remaining land was held for use as commons and civic purposes. However, where pueblos bordered oceans or bays, land could not be granted that was submerged nor was located within 200 varas (182.8 yards; 152.8 meters) of the high water mark.⁴ Furthermore, alcaldes could not grant lands lying outside pueblos.

When the United States forces took possession of California, the military commanders appointed American citizens to govern the pueblos in place of the Mexican officials. The newly appointed American officials believing that similar authority was vested in them, continued to grant land. It appears that many of them were unaware of the limitations of Mexican law regarding land grants. In San Francisco, the new governors granted both submerged land and tideland at Yerba Buena Cove, North Beach and Mission Bay ([see Map 1](#)).

When California was admitted to the Union, the question of title arose regarding those tideland lots granted or sold by the early American governors. Were the titles fee simple, and within the jurisdictional boundaries of San Francisco, or would they revert to the State of California because they lay below the mean high water mark? The answer to these questions was vital to San Francisco, for in April of 1850 the city was incorporated by an act of legislature, and as the successor to the pueblo, San Francisco claimed the lands of the pueblo as well as the adjoining territory, totaling four square leagues as being within the city limits. The claim included the submerged land lying in Yerba Buena Cove, in Mission Bay, and at North Beach.

Whether or not San Francisco, like Los Angeles and San Diego, was actually recognized as a pueblo by the Mexican government and therefore eligible to four square leagues of land is a question which still remains unsettled. However, the newly formed city based its claim upon the premise that the pueblo was duly recognized and thus entitled to the land.

When the United States acquired California, it assumed the responsibility of protecting the rights, interests, and claims of all persons to land lying within the new state. This responsibility extended not only to real persons, but also to corporations and communities. San Francisco pursued its land claim against the State of California through federal courts as a result of this responsibility.

San Francisco prosecuted her land claim through the Board of Land Commissioners created by an act of Congress in March 1851 to settle private land claims in the state.⁵ Long and involved litigation followed, and three years later, in December 1854, the board confirmed San Francisco's claim to a portion of the four square leagues, but denied the claim for the balance. However, the argument did not end there.

The city appealed to the District Court of the United States and the case remained there for some years. In September 1864, the case was transferred from that court to the Circuit Court of the United States, under the authority of an act of Congress designed to expedite the settling of titles to land in the State of California.⁶

In the following October, the court confirmed San Francisco's claim to four square leagues of land, subject to certain reservations.

The final decree of confirmation was not entered until a year later. On May 18, 1865, the Circuit Court of the United States stated the claim of the City of San Francisco to land had been upheld. The tract was described as the northern portion of the San Francisco peninsula situated above the high water mark of 1846,* and containing an area of four square leagues of land. The tract was bounded on the north and east by San Francisco Bay, on the west by the Pacific Ocean, and on the south by a line beginning:

*The waters of the Pacific Ocean rise .01 foot per year. Thus the land area of the City of San Francisco has been reduced 1.25 feet around its water periphery from 1864 to 1971 as far as it applies to this phenomena. See A.L. Shlowitz, Shore and Sea Boundaries, Vol. II, Pub. 10-1 (Washington, D.C.: U.S. Coast & Geodetic Survey, 1964), p. 59, footnote 41; p 262, footnote 81.

... in the boundary line of the County of San Francisco as it now exists at a point due east from a rock in the Bay of San Francisco, south westerly from Point Divisadero or Hunter's Point, which rock is designated on Wheeler's map of said county as Shag Rock; then running due west to said rock; then running westerly to a point in the county road, one quarter of a mile northeasterly in a straight line from the house known as the County House, kept and occupied by C.E. Lilly; thence in a straight line to the southeastern extremity of the southern arm of the Laguna de la Merced; thence due west to the Pacific Ocean, and then due west to the western boundary of the County of San Francisco ...

The southern boundary was readjusted in 1899 by an agreement between the counties of San Francisco and San Mateo so that the county line now runs due west from its intersection with the eastern boundary. At the time of this adjustment, the County of San Francisco extended further down the peninsula but for the sake of economies and convenience of administration, the City and County of San Francisco were merged into the same corporate limits.

Once the question of San Francisco's land title had been settled, the boundary between state and city property was more sharply defined. The city owned all the land above the high water mark of 1846 including those areas of tidelands in Yerba Buena Cove, Mission Bay, and North Beach described in the act of 1856, except for those lands held in reserve for the federal government. All the tideland below the high water mark of 1846 remained the property of the State of California.

Sale of State Owned Tidelands

In the meantime, the legislature had passed an act allowing the sale of tidelands into the private sector, prompted by the passage of the Arkansas Swamp Lands Grant Act. In 1855, the legislature passed an act providing for the sale of swamp and overflowed lands belonging to the state.⁸ The act said that any person who is a citizen of the state or entitled to become a citizen could purchase state land as long as the

greater portion of the land was swamp, or subject to inundation at the planting, growing, or harvesting seasons so as to endanger, injure, or destroy the crops. The limiting provisions stated that the amount of land could not exceed 460 acres, nor measure more than one-half mile front on any bay, lake, or navigable stream. The price of this land was set at one dollar an acre.

It was under the provisions of this latter act that the homestead associations secured waterfront adjacent to their property above the high water mark. In San Francisco, patents were issued to the South San Francisco Homestead and Railroad Association, the Golden City Homestead Association, and the North San Francisco Homestead Association ([see Map 2](#)).

In addition to the homestead grants, tidelands were granted to individual companies for specific purposes. In San Francisco grants were given to the California Dry Dock Company for submerged land lying off its holdings at Hunter's Point; to the Pacific Rolling Mill for underwater land at Potrero Point; and to William Dunphy and Associates, wholesale butchers, for tidelands near Islais Creek. The latter grant was for land to be used in connection with the firm's relocation of its animal slaughtering business. This grant was commonly referred to as Butcher's Grant, and the section of town near the granted property is referred to as "Butcher Town".

Up to 1868, most of the tideland in San Francisco still remained property of the state. So the legislature again passed an act designed to sell off the state owned tidelands that lay below the high water mark. It was named an "Act to Survey and Dispose of Certain Salt Marsh and Tide Lands Belonging to the State of California". The act created the Board of Tide Land Commissioners, whose duty it was to take possession of the state owned tidelands, survey them out to a depth of 24 feet (4 fathoms) below mean low tide, the maximum depth engineers thought could be safely built upon, and sell the surveyed land.⁹ In addition to, and part of the survey, the commissioners were to establish the waterfront line south of Second Street. This latter

directive was important, for prior to this time, since no bulkhead line had been designated south of the city boundaries established in March 1851.¹⁰

The following table lists the grants made prior to March 30, 1868, and to whom they were made. Except for the lands lying in Yerba Buena Cove and part of Mission Bay, the Board of Tide Land Commissioners' survey serves as the base upon which this report was made.

Special Grants by the State of California

Made Prior to the Establishment of the Board of Tideland Commissioners

<u>Date</u>	<u>Grant</u>
1863	South San Francisco Homestead and Railroad Association
1864	Golden City Homestead Association
1864	North San Francisco Homestead and Railroad Association
1868	California Dry Dock Company
1868	Pacific Rolling Mill Company
1868	William Dunphy and Associates
1868	U.S. Government, Customs House (amends 1854)

Tidelands Grants to Railroads

Included within the act to dispose of the state's tideland property in San Francisco was a provision granting sixty acres of land in Mission Bay to the Southern Pacific and Western Pacific railroads¹¹ on which to build a terminal. In addition, a 200 foot wide right of way was granted to allow access to the property. The provision for the grant reads in part:

. . . that there is hereby granted and donated to the Southern Pacific Railroad Company and the Western Pacific Railroad Company, for a terminus in the City and County of San Francisco to each of said companies, thirty acres, exclusive of streets, basins, public squares and docks, . . . lying southwardly of Channel Street, and outside of the line known as the red line waterfront of Mission Bay . . .¹²

The companies were to select the property individually or together within ninety days after the passage of the act. The only restrictions were that the selected land was not to extend beyond twenty-four feet of water at low tide, nor within 300 feet of the waterfront line. The companies were to spend \$100,000 each on the terminus within thirty months from the date of the passage of the act. If the companies defaulted, the property would revert to the state. The act also stated that if the companies abandoned or ceased to use the right of way, it would also revert to the state.

By mid-1870, the State of California had disposed of all its tideland property designated by the Board of Tide Land Commissioners except for those lands designated for public use – streets, squares, market places, navigational channels, and ship basins. In the following years the state bought back land, made other land grants sales, and in doing so, it created minor changes in the political jurisdiction of San Francisco's tidelands. However, for the most part, the administrative authority separating the city's property from that of the state had been established.

Settlement of Water Lot Claims

In the meantime, the question of title regarding the grants and sales of submerged lands lying in Yerba Buena Cove, Mission Bay, and at North Beach had been partially settled. Due probably to the circumstances of the times, and to the fact that much of Yerba Buena Cove had already been filled and occupied by 1851, the legislature found it expedient to grant to the City of San Francisco the lands lying in Yerba Buena Cove and Mission Bay for a period of ninety-nine years. This legislation passed on March 26, 1851, is commonly referred to as the “First Water Lot Bill.”¹³ It is important for four reasons:

1) It gave a ninety-nine year lease on any lands within the boundaries of the act that had been:

. . . sold by the authority of the Ayuntamiento, or Town or City Council, by any Alcalde of said town or city, at public auction , in accordance with terms of the grant known as Kearny’s Grant to the City of San Francisco, confirmed by the Ayuntamiento, or Town or City Council thereof . . .¹⁴

2) It established a permanent waterfront line of San Francisco ([see Appendix 2](#));

3) It called for the mapping of the area mentioned in the act by the city’s surveyor, with the boundary delineated by a red line (the city surveyor at the time was William Eddy, and his survey resulted in the famed “Eddy Red Line Map”); and

4) It provided for the establishment of a bulkhead or seawall and further stated that the city should “regulate the construction of wharves or other improvements, so that they shall not interfere with the shipping and commercial interests of the bay and harbor of San Francisco.”¹⁵

All land within the boundaries of the act not retained by the state, granted to the federal government as a reserve, or owned by private parties, became property of San Francisco to be sold at public auction. The revenue was to be used to defray the costs of city government.

San Francisco Loses Jurisdiction over its Waterfront

San Francisco lost jurisdiction over its waterfront lands in 1863, as a result of its inability to administer and control the development of the port. Since the city was unable to finance adequate wharf facilities in its early history, it allowed private investors to lease city streets lying under the waters of Yerba Buena Cove for the purpose of building wharves to serve the shippers. After a decade of highly profitable operation the lessees were dubious about the future of their investments, which resulted in their reluctance to keep the wharves in good repair. Thus the wharves became unsafe and hazardous for the handling of cargo. In addition, improvements in the seawall design were necessary which the city could not afford but private investors were willing to finance in return for control of the “front” for fifty years.

Private control of the city’s waterfront was unthinkable. The public’s reaction was one of utter dismay. The outcry was heard clear to Sacramento. The legislature responded with the passage of an act entitled an “Act to Provide for Improvement and Protection of Wharves, Docks, and Waterfront in the City and County of San Francisco”, and was signed into law by Governor Leland Stanford on April 24, 1863. The act placed San Francisco’s waterfront under the control of the state to be administered by the Board of State Harbor Commissioners, a three man commission, one elected by the electorate of the state, one elected by the members of the senate and assembly, and one elected by the electorate of the City and County of San Francisco.¹⁶

The board’s responsibility was to:

- 1) Keep in good repair seawalls, embankments, wharves, piers, landings, and thoroughfares for the accommodation and benefit of commerce.
- 2) Dredge the waters alongside the docks, piers and wharves.
- 3) Construct new docks, piers, and wharves.
- 4) Construct works necessary for the protection of docks, piers and wharves.

- 5) Allow for further construction along the waterfront.
- 6) Establish a harbor authority to administer the waterfront; and
- 7) Survey and estimate the construction of the seawall.¹⁷

The commissioners' area of jurisdiction was also spelled out in the act ([see Appendix 2](#) and [Map 3](#)). Roughly speaking, this area began from the city waterfront line established by the First Water Lot Bill of 1851 outward into the bay a distance of 600 feet from the Presidio Reservation on the north to Second Street on the south, which was the defined San Francisco waterfront in 1863. The commission's jurisdiction has been expanded and modified several times since 1863 as land was acquired down through the years. However, no land has been sold off except for a few small parcels to the San Francisco Redevelopment Agency and to the State of California Division of Highways.

A survey of Port Authority holdings taken by the United States Maritime Commission in 1939 showed a total of 1,912 acres of land under its jurisdiction. One hundred five acres were seawall lots and other reclaimed lands, 204 acres were in the Embarcadero and other streets, 491 acres of submerged land between the seawall line, and 1,112 acres of submerged land between the seawall and the pier-head line.¹⁸

San Francisco Regains Jurisdiction over its Waterfront

San Francisco's waterfront has been administered by this quasi-independent agency of the state's government for more than one hundred years. Several times efforts were initiated by local officials to get control back into city, but, they never got beyond the talking stage. The Harbor Commissioners were successfully carrying out their duties to the benefit of both the State of California and the City of San Francisco. However, in the 1950's things began to change. Twentieth century technology began to spread, particularly in the area of cargo handling methods. The long established harbor

in San Francisco began to encounter increased competition from other cities that wanted to become entrepôts. These new competitors such as Sacramento, Stockton, and Oakland, were building up their ports with the latest and most sophisticated cargo handling equipment. In addition, civic indecision, economic depression, labor strife and inept management helped widen the gap between new shipping technology and the port's facilities.¹⁹

San Francisco began to lose business to rival ports. The decline was relative rather than absolute, since the loss in cargo handling revenues was to be recouped through non-maritime oriented incomes. Port owned land was being rented for restaurants, offices, parking spaces, car washing concessions, and other privately run facilities. Dependence upon non-maritime revenues grew until fifty percent of the port's income was derived from non-maritime sources.²⁰

In the 1950s, despite this shift in function, it became obvious that San Francisco was losing its position as a major port of the Pacific Coast. Existing facilities were not suitable for handling pre-packed containers, and the rush to containerization was underway. Some authorities predicted that half of all ocean-borne general cargo could be containerized by 1975.

U.S. flag carriers in particular were adopting containers. Unless San Francisco could create facilities for handling these enormous new crates, it would not only lose its position on the coast, but possibly its dominance in the Bay Area. Oakland, with a vast reserve of flat industrial land, was grabbing the lead in containerization.

In the minds of the Harbor Commissioners, and a good many shippers and shipping executives, state management presented an almost insurmountable obstacle to the modernization of San Francisco's waterfront. The economy of the state was no longer tied to the efficient operation of San Francisco's waterfront as it had been in the past. The prime beneficiary to an economically successful and competitively alert

management of the port was the City of San Francisco, just as it could be the loser if the port remained under the unsympathetic state control.

Many downtown leaders including the mayor, and other San Francisco Port boosters, mounted a campaign to win back the ownership of the port from the state. After a series of hearings, the legislature agreed to relinquish state control of the port if the voters of San Francisco would accept all debts on the harbor, pledge themselves to a large improvement program, and give the state a heavy share of any future operating profits.

A transfer bill was authorized by Assemblyman John Burton, a Democrat from a district having a proprietary interest in the success of the port. The bill, commonly referred to as the Burton Act, was approved on August 14, 1968.²¹ The bill came to the San Francisco voters in the form of two propositions designated "B" and "C" on the November 1968 ballot. Proposition "B" sketched the financial arrangements and proposition "C" was an amendment to the city charter setting up a local port commission with almost autonomous powers to run the harbor.

The San Francisco Harbor Commission was duly constituted and established on January 16, 1969, by Section 48.2 of the city charter in conformity with the California Statutes of 1968, Chapter 1333. On January 24, 1969, the transfer of the Port of San Francisco from the State of California to the City and County of San Francisco was agreed upon between the two parties and was put into effect on February 7, 1969.

The San Francisco Harbor Commission's responsibility under the City of San Francisco was substantially the same as the San Francisco Port Authority had been under the State of California: to plan, build, develop, and maintain programs and facilities. Among the more specific responsibilities was to dredge ship berths and approaches, operate the Belt Railroad which serves the northern waterfront, collect all

rents and traffic charges, assign the use of its property, including ship berths and piers, and to provide police and fire protection for its own facilities.

The San Francisco Bay Conservation and Development Commission

Versus

The Port of San Francisco

With control of San Francisco's port returned to the city, it was believed that continued waterfront development would progress in keeping with the designs of the port planners and developers. Some of these plans included filling in port tideland property to provide sites for further development. However, prior to the passage of the Burton Act, public concern over the impact on environment resulting from continued filling in of San Francisco Bay had persuaded the California Legislature to Pass the McAteer-Ferris Act.²² This act, passed in 1965, was designed to guide the bay's development, and resulted in the creation of the San Francisco Conservation and Development Commission (BCDC), and all plans for the bay's development had to be approved by it. In some cases, BCDC interfered with the Port Commission's plans; in others it did not. In situations where work had already been initiated the project was allowed to continue. However, the most important achievement to come out of the creation of BCDC as far as San Francisco's waterfront was concerned was that no longer would indiscriminate filling and development be allowed.

The San Francisco Bay Conservation and Development Commission was made a permanent state agency by a law passed by the legislature and signed by Governor Ronald Reagan on November 10, 1969.²³ The legislature gave the commission three major responsibilities:

- 1) To regulate all filling and dredging in San Francisco Bay in accordance to law and the commission's bay plan.
- 2) To have limited jurisdiction over substantial developments within a 100 foot strip inland from the bay.

- 3) To have limited jurisdiction over any proposed filling of salt ponds and “managed” wetlands. ²⁴

The Bay Conservation and Development Commission is composed of a board of twenty-seven members that represent federal, state, and local governments, and the general public. It is empowered to issue or deny permits after a public hearing for any proposed project that involves placing fill, extracting materials, or making any substantial change in the use of any water, land or structure within the area of the commission’s jurisdiction. ²⁵

FOOTNOTES

¹San Francisco Bay Conservation, and Development Commission Ownership (San Francisco: S.F. Bay Conservation and Development Commission, 1968) p. 4.

²U.S. Statutes, 1850, Chap. 84.

³Circuit Court of the U.S. for the District of California, May 18, 1965

⁴People vs. Davidson, October 1866, pp. 30-279.

⁵U.S. Statues, 1851, Chap. 41.

⁶U.S. Statutes, 1864 . Chap. 194.

⁷California Statutes, 1856, Chap. 125.

⁸California Statutes, 1855, amended California Statutes, 1859, Chap. 314.

⁹California Statutes, 1868, Chap. 543.

¹⁰California Statutes, 1851, Chap. 41.

¹¹The Western Pacific Railroad Company was incorporated in California December 1862 (see Henry G. Langley, San Francisco Directory, 1864, p. 9), and its line from San Francisco to Sacramento formed part of the first transcontinental railroad. Western Pacific was absorbed into its parent company, the Central Pacific Railroad, in 1869(see Fredric B. Whitman, Western Pacific: Its First Forty Years (New York: The Newcomen Society in America 1950), p.14). This is not the same Western Pacific Railroad operating in California today. The latter was incorporated in California in 1903 (see Whitman, op. cit., p. 12).

¹²California Statutes, 1868, Chap. 543

¹³California Statutes, 1851, Chap. 41

¹⁴California Statutes, 1851, Chap. 41

¹⁵Ibid.

¹⁶California Statutes, 1863, Chap. 306

¹⁷Ibid.

¹⁸U.S. War Department and Maritime Commission, "The Ports of San Francisco, Oakland, Alameda, Richmond, and Upper San Francisco Bay, California", a report prepared by the Board of Engineers for Rivers and Harbors (Washington, D.C.: U.S. Government Printing Office, 1939).

¹⁹B.Brugmann and G. Sletteland, eds. The Ultimate Highrise: San Francisco's Mad Rush toward the Sky (San Francisco: S.F. Bay Guardian Books, 1971), p.93.

²⁰Ibid. p. 94

²¹California Statutes, 1968, Chap. 1333.

²²Senate Bill 309, California Government Code Title 7.2.

²³California Statutes, 1969, Chap. 713: Assembly Bill 2057 amended.

²⁴San Francisco Bay Conservation and Development Commission: "What It Is and What It Does" a pamphlet (San Francisco: S.F. Bay Conservation and Development Commission).

²⁵California Government Code Title 7.2 (S.F. Bay Conservation and Development Commission), Chap. 1, Paragraph 66604.

CHAPTER II:

YERBA BUENA COVE

Introduction

It is fitting that the story of bay fill in San Francisco begins with the history of Yerba Buena Cove, for here can be found a capsulized example of the interplay of change producing forces which shaped the changes in the other sections of the waterfront.

Here we see how the defects of San Francisco's site and situation were overcome through new technology, and in doing so completely changed the appearance of Yerba Buena Cove. We see how dry land was created and the seawall was built in order to maximize the utility of waterfront property in economic terms. We see how power groups use political influence to achieve decisions favorable to special interests. And finally, we see public responsibility acting as a reactionary force rather than as an aggressive force effecting change—one which operates in opposition to a development plan because it does not agree with the existing philosophy rather than proposing development that will shape the environment to the satisfaction and well being of man.

The histories of both North Beach and South Beach are also include in this chapter because they are related to Yerba Buena Cove in the sequence of fill—they shared an early historical development, and they were involved in the construction of the great seawall.

Yerba Buena, the Beginning of San Francisco

Even native San Franciscans may be surprised to learn that the shoreline of San Francisco Bay once extended as far inland as Montgomery Street, and that the lower

portion of downtown San Francisco from the Golden Gateway to the Rincon Annex Post Office is built on filled land. Yet this area, once known as Yerba Buena Cove, is probably the most famous section of fill in the city.

Viewing San Francisco today, it seems only natural that the pueblo site would be destined to become a mighty city. However, at the time of its founding, neither the site nor the situation was attractive.

Historians agree¹ that the founder of Yerba Buena, the original name of San Francisco, was William A. Richardson, a pioneer in California when it was under Mexican rule. However, it was the Mexican governor of California, Jose Figueroa, desiring to establish a settlement at Yerba Buena Cove for the convenience of public officers in performing their duties for arriving vessels, who appointed Richardson as harbor master and instructed him to locate there. Figueroa had learned from reporting ship captains that the waters off Yerba Buena Cove offered a safer anchorage than those off the Presidio or along the northern edge of the peninsula opposite Alcatraz Island.²

The fact that the shore of Yerba Buena Cove was a poor selection for a town site has been documented by several historians of the time. Henry Langley, publisher of the San Francisco City Directory from 1853 until 1878, described the site in the following uncomplimentary terms:

The site of the village of Yerba Buena in 1846 was on a steep hillside, cut up by a tract of sand, which lay in a succession of steep parallel hills, from twenty to forty feet high, covered with stunted and tangled bushes. The place was inaccessible for the heavily laden wagon, and when reached it offered no broad expanse for the erection of a great city. But it was destined, nevertheless, that the great city should be built here and the work has been done.³

Another historian to realize the disadvantages of the town site was John S. Hittell. He described the site as follows:

In 1846, the only place apparently suitable for town purposes was an area of perhaps forty acres surrounding Portsmouth Square. Elsewhere no considerable expanse of land, level or nearly level, was to be found without going to the Presidio in one direction, or the Mission in the other. Hill and ravine, chaparral and sand, high rocky bluff, mud flat and swamp, covered thousands of acres now densely populated, and seeming by their flat or gently sloping surface to have been admirably fitted by nature to be the heart of a city.⁴

Not only were there recorded disadvantages in Yerba Buena's selection as a town site, but also its disadvantages of situation as compared with other locations within the immediate bay region. Frank Soule said:

The situation happens to be about the most barren part of the district (San Francisco Bay Area); and the immediate vicinity consists chiefly of low sand hills, covered with coarse shrubs and scattered patches of grass.⁵

The most critical evaluation of San Francisco's location was made by General Persifer F. Smith, commander of the United States military forces in California in 1849. In appraising San Francisco as a location for headquartering his troops, he reported: "San Francisco is in no way fitted for either commercial or military purposes." He rejected San Francisco for the following reasons: poor water supply, lack of decent harbor, no supply of provisions, inclement weather, isolation from the rest of the country by land except for a long circuit around the southern extremity of the bay, and in case of war, an enemy could land on Ocean Beach miles south of the Golden Gate and cut the city off with a barricade across the peninsula.⁶ General Smith's alternative site was a location on the north shore near Carquinez Strait.

Considering its disadvantages, San Francisco might not have become the important metropolis it is today had it not been for two important events which took place during its beginnings: the discovery of gold in California, and the change of its name from Yerba Buena to San Francisco. The former brought gold seekers to the previous Mexican territory, and the latter assured that the new arrivals to famous San Francisco Bay would land in the city that bore its name.

Yerba Buena's name was changed to San Francisco on January 30, 1847, by order of Alcalde Washington A. Bartlett.⁷ The change was adopted as a solution to help check the aspirations of Francisca, a rival town located further inland near Carquinez Straits. Because of its advantageous location on the bay between the Great Valley and the Golden Gate, Francisca vied with San Francisco to become California's center of commerce. Later renamed Benicia, Francisca briefly won appointment as the seat of government of the state before the capitol was established in Sacramento. However, the momentum generated by San Francisco's reputation and the efforts of local businessmen to protect their investments already started in San Francisco proved too great to overcome, and Benicia remained a small community.

The establishment of San Francisco at Yerba Buena Cove can be attributed to several factors, though none of them had anything to do with future growth or commerce. The Spanish padres came to the tip of San Francisco's peninsula and established a mission; the military selected a site for a presidio at the Golden Gate because of their concept of defensibility. The settlement of Yerba Buena, later to become San Francisco, was the result of Governor Figueroa's decision to have his officials located where they could efficiently carry out their duties of state.

Many of San Francisco's problems, from the leveling of the great sand dunes to the filling of the bay, and from construction of the Hetch Hetchy aqueduct system to today's port problems, are a consequence of the city's poor location.

Yerba Buena Cove in 1846

In 1846, Yerba Buena Cove was the northernmost of several crescent shaped indentations along the bay side of the San Francisco peninsula. It measured about a mile across and covered approximately 336 acres. The cove was shallow inshore, gradually sloping to a depth from twelve to eighteen feet where it converged with San Francisco Bay. At low tide, broad mudflats lay exposed along its northern rim, while the southern shore was sandy. Clark's Point, named by Captain J.F. Hutton in 1849,⁸ punctuated its northern limit and Rincon Point its southern limit.

The ship anchorage was located in the deep water offshore from the cove, and until wharves were built across its shallow waters, cargo was either discharged at Clark's Point⁹ or lightered across the cove on favorable tides.

The pueblo of Yerba Buena was located just inshore from Yerba Buena Cove. Since there was so little level area into which the town could expand, the settlers immediately set to work to remedy the situation. They first built piers out over the water of the cove to support buildings used for both stores and for lodgings. Then they leveled the huge dunes of sand from the immediate town site, dumping the sand into Yerba Buena Cove. This accomplished two things: it provided more level area inshore which could be used for building sites, and it filled Yerba Buena Cove with dry land.

San Francisco's First Waterfront

Under the colonization laws of Mexico, the alcalde of a pueblo by virtue of the authority vested in him by the governor of the province could grant town lots to qualified settlers within the surveyed limits of the pueblo. The alcaldes of Yerba Buena exercised that authority; however, they had no power to grant tidelands nor land within 200 varas (185 feet) of the shoreline. As a result, when the Americans took possession of San Francisco, there were no facilities such as piers, wharves, or quays for expedient

handling of cargo from arriving vessels. With the increased shipping arriving in San Francisco, it became imperative that adequate facilities be constructed for handling cargo. This meant building piers across the great mudflats of Yerba Buena Cove, extending them to the deep water anchorage so that arriving ships could lie alongside and discharge their cargo.

So, in 1847, Edwin Bryant, the American mayor of San Francisco, made application to General Kearny, the Governor of California, for permission to sell tideland lots lying in Yerba Buena Cove to private investors. General Kearny, knowing that California would ultimately become a state of the Union, released to the City of San Francisco all rights, title and interest of the United States government and of the Territory of California to the tidelands between Rincon Point and Clark's Point, except for a few parcels which were held in reserve for future use by the United States government. General Kearny's stipulation was that the ceded land be divided into lots and sold at public auction to the highest bidder and the proceeds from the sale to be used "for the benefit of the town of San Francisco".¹⁰

Under this authority, Alcalde Edwin Bryant, accepting in behalf of the town of San Francisco title and possession of the property granted, ordered a survey of the area. A survey was conducted by Jasper O'Farrell, in July, 1847. He surveyed out four hundred and forty-four beach and water lots. They measured fifty varas by sixteen and two-thirds varas, or 137 feet six inches by 45 feet ten inches. These lots appear on William M. Eddy's map as lots numbered from one to four hundred and forty-four inclusive ([see Map 4](#)).

The sale of the beach and water lots by the City of San Francisco took place on July 20, 1847, and was considered the most important event in the history of the town up to that time. Frank Soule said of the sale:

. . .The lots were all contained between the limits of low and high water

mark; and four-fifths of them were entirely covered with water at flood tide. The size of the lots was sixteen and a half varas in front, and fifty varas deep . . . There were about four hundred and fifty of these lots in all, of which number two hundred were disposed of at the public sale above mentioned. . ."¹¹

There were no further grants or sale of beach and water lots until January 3, 1850, when Mayor John White Geary, by order of the Ayuntamiento (city council) gave public notice that another sale would be held on that date.¹² Another survey was conducted at that time, adding 328 lots to those previously surveyed. They appear on the Eddy Map as lots 445 to 772. Three hundred and forty-three lots were sold at the second auction.¹³

In the fall of 1852, a third sale of tideland lots was ordered by the Commissioners of Funded Debt ([see Map 4](#)). The reason for this sale was that these water lots were granted by G.O. Colton, Justice of the Peace of San Francisco in 1849 and 1850 and the grants were made by petition of the grantees instead of being sold at public auction. Since Colton was a justice of the peace instead of an elected alcalde, and since the sale of the property was made without consent of an official body, the town council in a meeting held March 18, 1850, resolved:

That this Town Council regard all titles to land made by grants or sales in any form, within the jurisdiction of San Francisco, by any person or persons whatever, other than the legally elected Alcade, and Town Council thereof, as illegal and of no effect.¹⁴

The benefit of General Kearny's decree to the City and County of San Francisco was twofold: it provided for funds to run the city government, and it gave the city title to the streets that lay submerged in Yerba Buena Cove, North Beach and South Beach (Mission Bay). The city was then able to lease the streets to investors who would build the desperately needed wharves.

The city leased the land it owned lying beneath the waters of Yerba Buena Cove to private individuals for a period of ten years. The investors would build the wharves and then pay the city a percentage of the gross receipts earned by the wharf. Title to the premises would be surrendered upon termination of the lease.¹⁵

Since construction costs were high, there was no great rush to obtain leases. However, once it was learned what great profits could be made, leases were eagerly sought. Broadway Street Wharf was the first built; constructed in 1847, it extended into Yerba Buena Cove from the foot of Broadway Street near Clark's Point ([see Map 5](#)). By 1850, nine wharves jutted into Yerba Buena Cove, all built on submerged city streets. In addition, three others had been built on private land north of Clark's Point. The total wharfage exceeded 6,000 feet in length, the length of individual piers varying from 250 to 975 feet long. It has been estimated that their cost totaled about \$1,000,000.¹⁶ Pacific Street Wharf, Jackson Street Wharf, Clay Street Wharf, Vallejo Street Wharf, and Washington Street Wharf were completed in 1852, while Broadway Street Wharf, Flint's Wharf, Battery Street Wharf and Market Street Wharf were completed in 1853." ¹⁷

As the wharves were being built, owners of some of the inshore water lots began to improve their property. James Parker, editor of the San Francisco Directory in 1852, described the scene of 1850 in the following:

During the summer the city began to stretch into the bay.
The houses were built on piles and no attention was paid to
filling in.¹⁸

Filling of Yerba Buena Cove Begins

After the wharves had been built out from shore for some distance, cross connections or streets on piles were built connecting one wharf with the next. Soon the enclosed areas became filled with sand or other material and the shore-line began to advance bay-ward.

The first fill of note to occur at Yerba Buena took place at Laguna Salida, a pear shaped saltwater inlet located at Jackson and Montgomery Streets ([see Map 1](#)). The lagoon was filled in 1849 ¹⁹ upon removal of the Montgomery Street Bridge, which spanned the narrow channel that connected the lagoon with Yerba Buena Cove.

Filling of Yerba Buena Cove was gradual at first, gathering momentum as the months went by. Soule said that the waters of Yerba Buena were

. . . yearly continuing to be encroached upon as the cove gets filled up with sand and rubbish, excavated from the sand-hills and the foundations of the limits behind, and as new and houses are pushed further out into the bay. ²⁰

By 1852, filling of Yerba Buena Cove was being carried out with planned precision. Manual labor and horse carts were first employed to accomplish the job. Soon these methods were augmented by mechanized equipment. James Cunningham imported a steam shovel, switch engine, and hopper cars that traveled on rails from Worcester, Massachusetts, and the equipment was contracted to help with the fill operations. Temporary rail lines were extended into the areas to be filled, then relocated as each job was completed. ²¹

The Le Court and Strong: San Francisco City Directory for 1854 described the scene as follows:

A steam excavator better known as a 'Steam Paddy' was set to work on the sand hills in Happy Valley, back of the Oriental Hotel, and the cars laden with sand ran on a railroad of descending grade along Battery Street, disposing their freight from California to Clay streets. The stagnant water which accumulated in the docks above the newly formed streets became very offensive, giving rise to immense quantities of sulphureted hydrogen gas, which blackened the painted signs along Sansome and Battery streets to render them nearly illegible.²²

The following is one of Soule's statements about the filling of Yerba Buena Cove:

. . .steam paddy and railway wagons , and horse carts without number,
were incessantly bearing hills of sand piecemeal to fill up the hollows,
and drive the sea far from the beach. ²³

Fill consisted mostly of dune sand, accessible everywhere. A tremendous volume was removed from the lower Market Street area, and the thoroughfare did not reach the bay until the dunes were leveled. One dune, located along Market Street between Second and Third streets, measured eighty feet high and another at the corner of Grant Avenue reached a height of eighty-nine feet above mean sea level.

Other fill included rubbish, building rubble, abandoned ships, and anything else that had no immediate value.

The amount of filling necessary for a given piece of property was based upon the need to bring it to the level of the established city grade. Thus in 1850, urgent pressure was brought upon the city by Yerba Buena Cove property owners for some official guidance for fixing a foundation level. The city council arbitrarily, without careful study of the terrain or consideration of the city's future expansion, adopted grades for the city's most busy streets. If the waterfront remained where it was in 1850, the established grade may have been adequate; however, continued filling of Yerba Buena Cove moved the shoreline a thousand feet further east. The result was that rain water would not drain into San Francisco Bay but would accumulate in some areas, making them virtually impassable. Finally in 1853, the city council decided to provide for all future expansion of the city by providing a comprehensive system of grades. Milo Hoadly, City Engineer, and William P. Humphries, City and County Surveyor, were commissioned to make a survey and prepare a system of grades. Their system was adopted by the city council on August 26, 1853, and though it was changed afterwards in various minor points, it was well devised and proved workable. ²⁴ The official grades

were established and computed from base or zero, which is six and seven tenths feet above the high water mark on a wooden pile at the boat stairs located at the corner of Pacific and Davis streets. San Francisco's city grade is still computed from this reference point, although the boat stairs have long since disappeared.²⁵

The depth of fill varied throughout the cove depending upon the depth of the water. At Market and Spear streets, the depth of the fill was thirty-one feet; at Market and Fremont the depth was fifteen feet; at Market and Battery it was twenty-six feet; and at California and Sansome streets it was ten feet. Although these precise depths were not recorded at the time, evidence has been gathered from modern surveys.²⁶

There is no official figure on the amount of fill dumped into Yerba Buena Cove. However, various estimates have been made. Hittell assumed that with a given area of 3,000 acres nine feet above or below the original surface, a transfer of twenty-one million cubic yards of fill was necessary,²⁷ while Bancroft, calculating from the same assumption, arrived at twenty-two million cubic yards of fill.²⁸ The San Francisco City Engineer, in his report of 1854,²⁹ estimated fifteen and one half million cubic yards of fill would be required to fill Yerba Buena Cove between the shore and the established waterfront line of the city. He based his calculations on the assumption that an average of twenty-one feet of fill would be needed to completely fill the cove.³⁰

All of these estimates may be conservative, for when the city sold some of its property in Yerba Buena Cove in 1853, it was covered by twenty-five feet of water at low tide. This meant that thirty-five cubic feet of fill was required to bring each square foot of property up to city grade.

The Board of State Harbor Commissioners and the First Seawall

Once the question of city grades had been settled, property owners in Yerba Buena Cove felt their troubles were over, but it soon became clear that buildings constructed on land fill in Yerba Buena Cove tended to sink, crack, tilt and break up. It was quickly realized that the problem lay in the instability of the soil. In this case the instability was caused by differential settlement due to the varying compacting qualities of the materials used for fill as well as the instability of Yerba Buena Cove's mud bottom, which composed the fill's substratum, coupled with serious shore line erosion from rain water run-off and the constant action of tides washing away loose sand.

The solution to the problem was to build a seawall along the waterfront to contain the fill. In 1855, the Annals of San Francisco proclaimed the necessity of building a wall across Yerba Buena Cove to protect the "beach and water lots". It also recommended driving piles to support larger buildings being built in filled areas.³¹

The city surveyor, in his April 1856 report, stated:

Any improvement in the lower Wharf portion of the city is materially affected by the insecurity of the foundations, which can only be remedied by filling in with earth secure in its place, and the harbor protected from invasion by a Bulkhead or Seawall, constructed for present purposes from Rincon Point to the eastern base of Telegraph Hill. The necessity for such a work immediately should be paramount to every other consideration.³²

Although San Francisco's waterfront line had been permanently established by the California Legislature in 1851, [\(see Chapter I, page 13\)](#) plans for the construction of a bulkhead across Yerba Buena Cove were delayed by several schemes to extend the front line further out into the bay. These schemes finally culminated in the legislature in 1853.

Influenced by profit motivated speculators and the prospect of a \$6,000,000 gain in the state's treasury, the assembly passed a bill calling for the extension of San Francisco's waterfront 600 feet beyond the line established in 1851. San Francisco's governing body, seeing little financial gain from the proposition, joined a citizens' protest against the bill. Their opposing argument was that the extension of the waterfront was in violation of the rights and guarantees of property owners along the waterfront, and that it would also injure the property owners located further inland because of the costly change of city grades necessary to ensure proper drainage of the inshore area. In addition, any extension of the shoreline further east would move ship berthing to an area more exposed to the severe southerly winds and seas that accompany winter storms. The public outcry was great enough to cause the defeat of the bill in the senate, however, by only one vote.³³

Whether or not the defeat of the waterfront extension bill concluded speculation on any further plans to extend San Francisco's waterfront at Yerba Buena Cove is not clear. However, discussion of the city's waterfront at Yerba Buena Cove does not appear in the record again until the early 1860's when an association of wharf owners offered to build a seawall financed with private capital.

Since the wharfage business was so lucrative, and because the city wharf franchises would soon be coming due, the wharf owners' association lobbied the state legislature to introduce the "Bulkhead Bill", designed to keep the wharfage business in private hands. The terms of the bill were that in return for a privately financed construction of a stone seawall across Yerba Buena Cove, the association would continue its wharfage business of collecting tolls and revenues for the next fifty years.³⁴ The legislature passed the bill despite strong public opposition, but it was vetoed by Governor Downey.³⁵

The wharf owners, uncertain of the future of their investment, were remiss in maintaining the wharves resulting in their physical deterioration. Graft and collusion

between the wharf owners and city officials allowed the maintenance of the wharves to decline until the situation became so deplorable that it came to the attention of the legislature. Since San Francisco was the major entrepot in California and vital as the trans-shipment point for cargo arriving by river boats from the interior of the state, optimum maintenance of the port was crucial to the welfare of the whole state. Therefore, the legislature moved to take control of San Francisco's waterfront away from the city and private businessmen, and appointed a State Board of Harbor Commissioners to take control of the port and administer its affairs ([see Chapter I, page 15](#)).

The first meeting of the board was held on April 24, 1863, but complete control of the port was not gained until 1866 due to the varying expiration dates of wharf leases.

For the first order of business after the Harbor Commissioners obtained complete control of the port was to begin planning the seawall. It was to follow the bulkhead line of the Eddy Survey from Chestnut to Harrison Street, a distance of 8,337 feet.

In April 1866, the board advertised a prize of \$1,000 to be paid to the person who submitted the best design for a seawall. Thirty-six plans were submitted. The winner was A.H. Houston, and a contract was awarded him for the construction of the first two sections.

Although some modifications were made in the design entered by Houston, briefly the seawall was constructed in the following way. First, a trench twenty feet deep and 100 feet wide was dredged along the bulkhead line; it extended twenty-five feet bay-ward from the bulkhead line and seventy-five feet from the line toward shore. Then huge rocks were dumped into the trench; after they had settled to a firm foundation, more rock was dumped on top of the first until a wall had been built as high as the established city grade in that locale. The outer or bay side of the wall had a steep slope – a little more than forty-five degrees. Large rocks were placed along the

wall's outer or bay side to protect it from the erosive action of the bay's waters. The water's depth along the wall was dredged to twenty-five feet at mean low tide.³⁶

Construction of the first two sections of seawall began in September 1867. One section ran along Front Street between Union and Vallejo streets, a distance of 650 feet. The other ran 740 feet between Pacific and Washington streets along East Street (Embarcadero). The first section cost \$142,050, and the second \$206,554.³⁷ The third section was built along East Street from Washington to Market Street, a distance of 729 ½ feet, and cost \$166,760. Construction on the fourth section was started in May 1868. It was supposed to extend southward from Market Street to Harrison Street, but was only completed as far as Mission Street, a distance of 632 feet ([see Map 6](#)).³⁸

It is interesting that the first section of seawall was not built across Yerba Buena Cove, but built north of it off the base of Telegraph Hill. Why was it placed here? Why did it not connect with the other sections of the wall? Since the answer is not clear, it must be assumed that political influence was exerted so that the first section was placed to the advantage of some waterfront landowners.

There is no question about the success of the wall's ability to reduce the problem of stabilizing the waterfront and helping to overcome the subsidence problem: however, another problem arose which eventually changed the shape of the whole waterfront from North Beach to South Beach. Since the bulkhead line was plotted to conform with the city's waterfront, established by the legislature in 1851 ([see Chapter I, page 13](#)), some sections of the front lay at right angles to the tidal- current which sweeps close to shore in this vicinity. The flow of water was interrupted from its normal course by the angular irregularities of the new shore line, causing back eddies in the angles. As the current slowed, the sediment held in suspension would fall out, causing shoaling along the piers to a point where a ship with normal draft would go aground.

The immediate solution to this problem was to dredge the affected areas. However, dredging was a continuous and expensive operation, and it was soon realized that modification of major proportions would have to be made in the seawall's configuration to overcome this major drawback. Rather than reconstruct the existing seawall, the Board of Harbor Commissioners, decided to build a new wall outside the old which would not interfere with the flow of the tide.

The New Seawall

In order to build a new seawall, a new bulkhead line had to be established. The State Board of Harbor Commissioners, supported by Andrew J. Bryant, Mayor of San Francisco, and William Irwin, Governor of California, submitted to the legislature a new bulkhead line for ratification. The line was to extend from the San Francisco Presidio on the north around the peninsula to the San Mateo line on the south, and would lie 200 feet off the old waterfront line. The legislature approved the proposed change in the line, except for a part that extended from Taylor Street to the Presidio, on March 15, 1878.

This adjustment of the bulkhead line added another 577,946 square feet of San Francisco Bay which would eventually become filled.³⁹ The legislative act designated that this land would be administered by the State Board of Harbor Commissioners and that all resulting revenues would be used for the common benefit of the Port of San Francisco.

Financing of the new seawall had been provided by the legislature when it established the State Board of Harbor Commissioners to administer San Francisco's waterfront back in 1863. The provision stated that each year the commission's secretary would estimate the surplus income from the port's operation over and above the expenditures exclusive of seawall construction, and the state treasurer would then place

this amount in the San Francisco Harbor Protection Fund. When \$25,000 had been accumulated, bids were let for the construction of another section of the wall.

Construction techniques used in building the new seawall were similar to those used on the old one. First, a trench was dredged. Then large rocks were dumped into it and allowed to settle, followed by the building up of the wall with more rock, and finally leveling it to city grade. However, in the sections south of the Ferry Building, piles were driven after the rock had settled and then a reinforced concrete wall was laid on top of the piles.

All the rock used in the old seawall came from Telegraph Hill as well as the rock used in the first six or seven sections of the new wall. As a matter of fact, so much was excavated during those years for use in construction and ballasting of ships that the hill should have completely disappeared. In the city directory of 1870, Langley commented:

This old landmark, which was so often gazed upon by our early pioneers with anxious faces and throbbing hearts for signals of coming steamers bringing news of friends at home, is now fast disappearing before the drill and pick of the laborer. On the northern corner of Montgomery and Broadway streets, a mass of 72,000 cubic feet of rock has been removed.⁴⁰

The citizenry, alarmed over the possible deterioration or complete loss of the famous landmark, caused the Harbor Commissioners to search for other sources of rock. Suggestions that rock be brought from Sacramento or Folsom were rejected because of the expense. Finally, arrangements were made to take rock from Sheep Island (Brooks Island) a privately owned fifty-two acre island located near Point Richmond across the bay from San Francisco⁴¹ [\(See map 6\)](#).

Construction of the new wall began at the foot of Telegraph Hill north of Yerba Buena Cove and continued southward toward South Beach. The first section was

started on September 13, 1878, from Kearny Street to Stockton Street, a distance of 1,000 feet. The second section was started in November of the same year and was built southward from Kearny Street for 1,000 feet. [Appendix 6](#) shows the dates that construction was started and completed for each seawall section around the waterfront. Note that the numbering of each section of wall does not correspond to beginning or completion dates but rather as it runs consecutively around the front from north to south.

Sections six and seven were completed in the late 1880's, extending the wall as far as the Ferry Building. As can be seen from [Map 6](#), this portion of the new wall lay just outside of the old one; as a result, the amount of new land gained was about four acres.

The final section of seawall enclosing Yerba Buena Cove was completed on October 13, 1910, forty-three years after the first contract was awarded. The seawall, which was originally designed to stabilize the fill in Yerba Buena Cove, now extended from the foot of Taylor Street at North Beach over two and one-third miles southward to the foot of Harrison Street at Rincon Point. The cost of the wall to this point was \$3,039,092; the amount came solely from port revenues. The money used to build the wall to the foot of Market Street came from surpluses accumulated in the San Francisco Harbor Protection Fund; south of Market Street, obligation bonds provided immediate funds for the wall's continuation.

The seawall is literally the foundation of San Francisco's waterfront. It serves as the base upon which the Embarcadero is built and the roadbed for the trucks and railcars which supply the wharves. It does this in addition to the job for which it was originally designed: to stabilize the fill in Yerba Buena Cove. The seawall has played a major role in San Francisco's harbor development from Aquatic Park to Channel Street, and has always been associated with bay fill; it is, in fact, fill its self.

The Northward Expansion of San Francisco's Waterfront

Expansion of San Francisco's waterfront northward from Yerba Buena Cove toward North Beach was predicted early by Soule. Writing in 1850, he said:

The deepening water (off Yerba Buena Cove) will prevent the city from moving much further into the bay, while the steep rising grounds in the rear will equally prevent it from climbing and spreading over the sandy irregular country beyond them. The city will probably therefore be forced to proceed northward toward North Beach, where there is already a long pier formed, but where there is remaining but limited building room at best.⁴²

The pier referred to here is Meiggs' Wharf, built by Henry Meiggs, a San Francisco lumberman and investor, with the expressed purpose of competing with the wharves located at Yerba Buena Cove and the development of the North Beach area. Before the pier was completed, Meiggs had financed a road located on partially filled ground around the base of Telegraph Hill connecting his wharf with the commercial center of the city.

Building along the eastern base of Telegraph Hill on filled land is shown on the United States Coast Survey Charts as early as 1853,⁴³ and Soule noted that a "huge excavation" of Telegraph Hill at Clark's Point provided "valuable" building spaces.⁴⁴

In 1850, Telegraph Hill rose abruptly from the waters of San Francisco Bay that lapped at the foot of its northern and eastern slopes, while the base of its southern slopes was buried in dunes of sand. By 1853, a sizeable amount of fill had been placed along the hill's eastern shore, pushing back the bay and providing level ground for building sites. Filling was limited and sporadic here for many years. Even after the completion of the new seawall along this section of waterfront in the mid-1880's. It was not until about the turn of the century that the area inside the wall was completely reclaimed.

The exact source of fill material used along this part of the waterfront is difficult to determine. A study of the geology of the area ⁴⁵ indicates the fill material was composed mainly of dune sand but also includes silt, clay, rock waste, man-made debris, and organic waste. Core samplings taken in the vicinity of North Point, Taylor, and Bay streets showed thirty-four feet of blue mud but no sand. Others taken at the southwest corner of Beach Street and Grant Avenue showed twelve to sixteen feet of black mud. ⁴⁶

Bay mud was used for fill behind the seawall whenever possible because it saved transporting fill material from another location while at the same time providing a dumping place for the mud dredged in preparation of the seawall's foundation, and for the mud dredged to maintain a proper depth for safe berthing of ships. In regard to filling the area behind the seawall along the foot of Telegraph Hill (seawall sections 1, 2, 3, 4 and 5), a dredging report which appeared in the Biennial Report of the Board of State Harbor Commissioners ending June 30, 1879, states:

About 80,000 cubic yards (of dredged mud) have been deposited on the inner side of Section I of the new seawall. Wherever the depth of water will permit loaded scows to pass behind the wall, this plan will be pursued. ⁴⁷

With this as our only evidence, it is sage to assume that most of the fill behind the seawall stretching from Clark's Point to Grant Avenue is composed of mud dredged from San Francisco Bay, rock from the slopes of Telegraph Hill, and dune sand transported there from adjacent areas

North Beach

North Beach, as its name implies, is a section of San Francisco's waterfront lying along the city's northern shores. Originally, it was a narrow strip of sandy beach that

stretched from North Point at the foot of Telegraph Hill to Point San Jose; later renamed Black Point. As [Map 6](#) shows, the beach was rather irregular and measured just under one and three eighths miles long.

According to the Eddy Survey, North Beach contained about thirty blocks of beach and water lots. Title to these lots was first granted by Alcalde T.M. Leavenworth in 1847, and Justice of the Peace G.Q. Colton in 1849. However, because of the nature of these grants ([see Chapter I, page 6](#)), their titles were rescinded by order of the town council to be resold at auction in 1852.

Development at North Beach was mostly limited to the shoreline until after the seawall was built in the 1880's and 1890's.

The early pioneers of bay development were three major commercial enterprises of the day: Selby Smelting and Lead Company, Pioneer Woolen Mills and Meiggs' Wharf. Henry Meiggs selected a site near the foot of Telegraph Hill and built a wharf from the beach to deep water 2,000 feet from shore in an attempt to compete with the wharves in Yerba Buena Cove. In 1865, Thomas Selby chose a factory site at the tip of a sand covered point that lay about midway along the beach. The advantage of this site was that deep water lay immediately offshore avoiding the necessity of building a pier to unload arriving ore ships. The Pioneer Woolen Mills located its factory at North Beach in 1859. The site is known today as Aquatic Park.

The first fill took place along the eastern shore of a tiny point that projected into the bay from a location midway along North Beach's shoreline. This was the same point on which Selby located his smelter; however, there is no record for the fill occurring in early photographs before the smelter was built.

Construction of the seawall off the foot of Telegraph Hill in the early 1880's focused attention on the easternmost part of North Beach since waterfront property

located near the seawall had the greatest commercial potential while the shore line further west remained relatively undisturbed. Completion of Section "A" of the seawall early in 1881 enclosed the shallow waters of North Beach as far as Powell Street, only one half block east of Meiggs' Wharf. In May 1883, Section "B" was completed extending the wall another 1,000 feet further west and enclosing almost half the water lots at the beach.

In 1900, the Board of State Harbor Commissioners decided to construct four new wharves along the waterfront between Union and Lombard streets. But before the project could begin, a new home had to be found for the Italian fishing fleet that had moored there for many years. Since these fishermen utilized small sailing vessels in their work, the board decided to locate its new harbor at a point along the front not likely to be required for general shipping. They selected a site further west along the front, well out of the way of any planned harbor development and a mile and a half closer to the Golden Gate than the old wharf had been. It was located in a small, shallow cove at the foot of Taylor Street just west of Section "B" of the seawall.⁴⁸

Fisherman's Wharf

To protect the small fishing boats from the surge of the bay's ground swells, Section "B" of the seawall was extended westward 481 feet to serve as a breakwater. Another breakwater was built 304 feet out from the foot of Jones Street to complete the project. This snug little harbor is known the world over as Fisherman's Wharf.

The contract for the new Fisherman's Wharf was signed on May 22, 1900 with the City Street Improvement Company.⁴⁹ The cost of the rock placed in the breakwater was \$4,990.⁵⁰

Within a short time after the completion of Fisherman's Cove, as it was then called, an abnormal amount of shoaling within the harbor was noticed by the boat

owners. It was soon discovered that garbage and debris was being dumped on the private land lying immediately inshore from the cove, causing the underlying mud to flow beneath the fill and out into the boat harbor.⁵¹

How the Harbor Commissioners coped with the problem of shoaling is not clear; however, periodic dredging was the probable solution. In 1914, the Harbor Commissioners ordered the construction of two bulkhead wharves. These were deep stone seawalls designed to contain the plastic flow of mud and at the same time serve as wharves on which the fishermen could mend their nets, sell their fish and make dockside repairs. One of the new bulkhead wharves was built along Jefferson Street for a distance of 411 feet; the other was built along Tonquin Street from Jones to Leavenworth, a distance of 400 feet. Today, Tonquin Street no longer appears on San Francisco City Maps. It can be found at the western most extension of The Embarcadero at the bulkhead line of Pier 45.

Berthing space at the wharf was almost doubled in 1917 with construction of two new breakwaters. One was built on the north side of the cove along a projected line of the seawall from Jones to Hyde Street, a distance of 625 feet. The other was placed along a projected line of Hyde Street from the point it is intersected by Jefferson Street. The length of the latter jetty was 550 feet.⁵²

Comparison of U.S. Coast and Geodetic Survey Chart Number 5532, dated 1906, with its revised edition dated 1915 reveals that most of the tideland fill at North Beach occurred during those nine years.⁵³

There is little information about fill at North Beach. No records seem to have been kept as to the composition of the fill material nor where it came from. However, Jack Brady, an eighty-two year old resident of Telegraph Hill and lifetime member of the South End Rowing Club located at Aquatic Park, recalls tons of debris from the 1906 earthquake and fire being dumped in the tidelands along North Beach.⁵⁴

A newspaper article appearing in one of the San Francisco's newspapers describing the Aquatic Park dedication tells how the bathing beach was "utterly ruined" after the catastrophe of 1906 by dumping 15,000 truck loads of red brick there from the ruins of the Palace Hotel.⁵⁵

The Panama Pacific International Exposition of 1915 played a small part in the story of fill at North Beach. To provide transportation of materials used in its construction, the state owned California Belt Line Railroad was extended along Jefferson Street to the exposition site. To accomplish this, it was necessary to build a trestle across Aquatic Cove and then mine a mile long tunnel under Fort Mason (Black Point) before reaching the fairgrounds. Rock removed from the eastern end of the tunnel was used to make an embankment across a portion of Aquatic Cove from Hyde to Larkin Street.⁵⁶

Aquatic Park

The last fill of any significant proportion to occur at North Beach was in connection with building a public water sport complex at Aquatic Cove. The plan formulated in the early 1920's took fifteen years to complete. The first step came in 1923 when the city persuaded the state to cede three blocks of its land at Aquatic Cove to San Francisco to be used for recreational development.⁵⁷

The city then arranged to exchange three blocks of land it owned at Fifth and Channel streets for lands at Aquatic Cove held by the Southern Pacific Railroad Company. Southern Pacific had intended to develop the site into a shipping terminal for its subsidiary, the Pacific Mail Steamship Company. However, interest in the venture waned after the death of the company's president, who was the project's main supporter.⁵⁸ Since Southern Pacific was anxious to acquire more land for its freight yards south of Channel Street, the deal was consummated. The city owned land was

valued at \$850,768.75, and Southern Pacific's holdings at Aquatic Cove were valued (appraised) at \$457,695.45. The difference was paid to the city in cash.

In March 1928, the President of the United States, Calvin Coolidge, signed a bill giving permission to the City of San Francisco to utilize a small section of the shore lands of Fort Mason for the land end of a proposed recreational pier to be erected at Aquatic Cove.⁵⁹

To purchase the last remaining parcel of land for Aquatic Park, the San Francisco Board of Supervisors approved a \$31,500 appropriation in May 1929.⁶⁰

This final purchase resulted in a total acquisition of 28.5 acres by the city for the bay side recreational area called Aquatic Park. It is the only city owned public access to San Francisco Bay not designed exclusively for yacht owners.

Development of Aquatic Park began with the construction of the municipal pier in the early 1930's. It stretched across Aquatic Cove in a long, sweeping curve from its shore anchorage at the foot of the newly filled extension of Van Ness Avenue. This was the only improvement of Aquatic Park since its conception some ten years earlier. The concept of a water oriented public recreational park was finally realized upon completion of the beach and pavilion on January 22, 1939. This final project was built by labor supplied by the Works Progress Administration at a cost of \$1,500,000. It included construction of a 1,800 foot seawall and a four storied pavilion. The building was erected on filled land behind the seawall.⁶¹

Prior to the dedication of Aquatic Park, twenty-four railcar loads of pure white sand were shipped from the beaches of Monterey and dumped along the seawall at the park to make a beautiful bathing beach. Unfortunately, it was swept away during a severe storm several years later.⁶² Even today, additional sand must be brought in to replace that which is washed away during winter storms. Almost 9,000 cubic yards of

sand were dumped at the beach in 1941. This sand came from the excavation for a new parking garage located under Union Square.

Pier 45

In an endeavor to meet the insistent demands of San Francisco shipping companies for additional pier accommodations and to keep pace with the rapidly growing port business, in 1928 the Board of State Harbor Commissioners decided to construct a new pier at the foot of Taylor Street at Fisherman's Wharf. This new wharf, called Pier 45, was the largest on San Francisco's waterfront at the time with a capacity to berth four ships simultaneously. What made this pier unique was that it was built on filled land, a first for San Francisco's harbor.

Pier 45 was not only designed to berth two ships on each side at once, but it also included a ferry slip at its very end. Its long length required that the pier project obliquely from the waterfront so as not to extend beyond the pier-head line. The pier-head line lies 1,200 feet from the bulkhead line at Tonquin Street. Also, these requirements led to the irregular dimensions of the pier. It measures 1,313 feet long on its east side, and 1,200 feet long on its west side. The pier's width is 382 feet.

The pier contained a total area of one half million square feet. It was built on a block of fill 210 feet wide sloping to 382 feet at the foundation's bottom. The block extended 1,000 feet into the bay from the waterfront bulkhead line.⁶³

Construction of the pier began with the placement of a loose rock retaining wall around the perimeter of the area to be filled. The core was filled with sand dredged from alongside, accomplishing two jobs at once: deepening the water in the berthing area and providing the necessary fill for the pier. Around this concrete center, reinforced concrete piles were driven, and finally a concrete pier was laid on top. Pier 45 was completed early in 1929 at an approximate cost of two million dollars.⁶

Fort Mason

At the foot of Van Ness Avenue, immediately west of Aquatic Park, lies the military reservation named Fort Mason. Early U. S. Coastal Charts show it named Port San Jose; later it was renamed Black Point, supposedly because of the dense laurel thickets that grew there. The military reservation was named Fort Mason in honor of Colonel Richard B. Mason, who was military governor of California from 1847 to 1849.⁶⁵

The land at Black Point was set aside for the military in 1850, however, it was not until 1863 that troops were located there because of prolonged litigation over boundary lines, private land claims, and water rights. As a result of this litigation, the original 100 acre site was reduced to seventy acres; its present size.⁶⁶

In 1908, the United States Army finalized plans to build a new supply depot including wharves and warehouses at Fort Mason for the quartermaster's department. The plan required filling about 6.5 acres of submerged land lying adjacent to Black Point's west side, an area popularly known as Gas House Cove.

The reclaimed area took 1,030 feet of shoreline and extended 300 feet into the bay. The old shoreline curved here in such a manner that by extending the seawall westward from the tip of Black Point and then shoreward (south), an area of six acres was enclosed. This was the area that was filled. The depth inside the seawall varied from ten to seventeen feet at low tide. Beyond the wall the water's depth rapidly increased to twenty-five feet at the outer end of the wharves.

Exposure of the site to the strong westerly winds which prevail through the Golden Gate, the heavy ground swell, and the swift flowing tide made the use of floating equipment for construction impossible. Thus the machinery used had to be located on shore. The wall was constructed from the shore side outward.

Construction began with the job of dredging away the bay mud down to hard rock along the line of the seawall, and filling it with concrete. A suction dredge was used to remove the bay mud and then it was delivered to a reclamation project underway at the Marina.

Fill behind the wall was partly furnished from dredging the seaward side of the seawall to a depth of thirty-one feet below mean low tide.

The contract for building the seawall, reclaiming the site, constructing the wharves, and the footings for the warehouses, was awarded to the San Francisco Bridge Company in November 1908, and work was begun early in 1909.⁶⁷

South Beach

South beach, like North Beach, derived its name from its location in reference to Yerba Buena Cove. Lying southwest of Rincon Point, this sandy beach stretched southwestward three quarters of a mile to a tiny peninsula called Steamboat Point. For about two-thirds of the distance from Rincon Point, the beach curved inward, giving the appearance of a shallow cove, while the last third of the way was a straight run to Steamboat Point ([see Map 1](#)). Similar to most of San Francisco's bay frontage, the offshore waters along the beach were shallow, ranging in depth from one to three feet at mean low tide. This shallow depth extended bay-ward for about 700 feet before dropping abruptly to five fathoms.

[Map 4](#) shows South Beach more a part of Mission Bay than a distant part of San Francisco's shoreline. However, because Steamboat Point juts out so prominently, and because the sandy nature of the beach was so different from the neighboring locales, South Beach was recognized as having a geographic character of its own.

The tidelands immediately offshore from the beach lay within the boundaries of San Francisco as defined by the California Legislature in March 1851 ([see Chapter I, page 13](#)). The tidelands beyond the city boundaries, up to the bulkhead line, belonged to the State of California and were administered as part of the Port of San Francisco.

The first notable change in the shoreline configuration at South Beach occurred in the mid 1850's. At that time a wharf was built on a half block bounded by Bryant, Harrison, Front and Spear streets. This wharf may have been located on filled land rather than built on wooden piles, which was normal for that time. Bache's map of San Francisco dated 1856-57⁶⁸ indicates that the wharf is part of the shore line rather than a wharf, being a wooden structure extending out over the water supported by wooden piles. The United States Coast Survey Chart No. 621, dated 1859,⁶⁹ indicates the latter. The wharf probably belonged to Ham and Hathaway, listed in the 1858 city directory as being in business at Spear Street at the corner of Harrison, Rincon Point.⁷⁰

The first fill to take place at South Beach was in connection with the 1864, construction of the Citizen's Gas Company. At that time the company began to fill the dock bounded by Townsend, King, Second, and Third streets. Langley gave the following description of the procedure:

Piles were driven along the outer edge of the block, some 350 feet from shore, and wooden bulkheads sunk; the hills were then dug away and used in filling up the land surrounded by the bulkhead, until the entire space was raised some six feet above high tide – securing a firm and substantial foundation. Upon this, a brick building sixty feet wide and 170 feet in length has been erected. . .⁷¹

A short time later, the Pacific Mail Steamship Company began looking for a new wharf site because its old one at the foot of Folsom Street was being threatened by the reclamation occurring in Yerba Buena Cove. The company decided to build a new wharf at the foot of First Street at South Beach.

Naming the waters of South Beach “China Basin” may have resulted from the decision of the Pacific Mail Steamship Company to locate its new pier there. The line was a major carrier of freight between San Francisco and the Orient, and the arriving “China Clippers” frequently lay in the basin waiting to discharge their cargo at the Pacific Mail Line’s wharf.

In 1867, the Union Lumber Association, a subsidiary of the Southern Pacific Railroad Company, began to fill and improve its property at South Beach. Langley gave the following account of the project:

The improvements made and in progress under the direction of the latter company (Southern Pacific) have quite changed the topography of the western portion of the city. . . They have constructed wharves which have required 1,200 piles, 3,000,000 feet of sawed lumber, 35 tons of iron bolts, and 300,000 cubic yards of earth to complete. They have erected a two-story brick warehouse, 195 feet deep by 230 feet wide, cut down hills and filled up swamps to such an extent that what had been the most useless portion of the city front has become a center of an extensive business. Hundreds of men and teams are at present engaged cutting down hills in the vicinity and filling up the shallow bay with the materials extending the area of the city hundreds of feet over what had heretofore been useless territory.⁷²

The area referred to was a block of tideland bounded by First, Second, Townsend, and Brannan streets, about twelve fifty vara lots. The material used for this fill came from a 111 foot hill which was located at Steamboat Point and bounded by Second and Third streets between Brannan Street and the bay. The hill was probably a huge sand dune, since there is no evidence to indicate otherwise.

In the following years, the railroad continued to improve its property at the foot of Second Street. By 1871, it had added more wharves, built a ferry slip to facilitate the

transshipment of railroad freight, and extended its track to the Pacific Mail Steamship wharf.⁷³

By the mid-1880's, the whole character of South Beach had changed, even its name. Where once sandy beach stretched, now lay acres of filled land, shipping wharves, a railroad, ferry slip, and a large gas works that produced coal gas to light the streets of San Francisco. Steamboat Point had disappeared under the bridge that now extended out across Mission Bay. However, this was only the beginning of the changes to occur at South Beach; the extension of the great seawall south of Rincon Point was yet to come.

The Southward Extension of the Great Seawall

By 1902, the Board of State Harbor Commissioners had successfully directed the construction of the great seawall along San Francisco's waterfront from the foot of Taylor Street at North Beach to a point just south of the Ferry Building, a distance of 9,203 feet. It now considered continuing the wall southward to Channel Street at China Basin, the old South Beach ([see Map 6](#)).

The board argued that the extension of the seawall southward from its present terminus at Mission Street would:

. . . be of incalculable benefit to commerce, inasmuch as it would do away with the long stretch of wooden bulkheads and roadways, over which the immense traffic has to pass, on that portion of our waterfront where the seawall does not extend. The expense for repairs would cease. . .

In view of the activity of our wide-awake competitors of the North, it behooves us to be alive to the situation and to the consequences that may follow our failure to provide, in advance, accommodations of the most modern and improved character.

The seawall must be extended sooner or later. Until it is, no permanent improvements of any consequence can be made on the south end.”⁷⁴

In addition to overcoming the problem and expense of keeping the southern waterfront in repair, the southward extension of the seawall would bring the state into possession of an additional twenty-four fifty vara lots which could then be leased, bringing in new revenues to help continue the port’s activities. Also to be gained was the realignment of the southern waterfront, making room for seven additional piers.

There seemed to be no objection to the plan except the problem of how it was to be financed. Heretofore, seawall construction was financed through the San Francisco Harbor Protection Fund. However, it was estimated that \$2,000,000 would be required to finance the modernization of the southern waterfront since it would be necessary to replace the wharves that would be enclosed by the realignment of the bulkhead line.

The problem of financing was overcome through the efforts of the California Legislature, which passed a bill submitting to the people of California the question of financing the plan by selling general obligation bonds for an amount of \$2,000,000. The act was approved by the California voters in the election held in November, 1903.

The first section of seawall to be constructed south of the Ferry Building was Section 13, 600 feet along the foot of King and Berry streets ([see Map 6](#)). It was started on December 30, 1903, and was completed on April 27, 1905. The other sections, number eight through twelve, were completed at various times in the following twelve years. A complete list of the seawall sections and the dates of its beginning construction and completion appears in [Appendix 2](#).

The state gained over ten acres of reclaimed land as the result of extending the seawall to Channel Street, not counting the seawall itself. The record does not indicate

the source of the fill material; however, since a great deal of work was accomplished after the earthquake and fire of 1906, the ruins of San Francisco probably composed a large part. Mud dredged from the bay floor was probably another source of fill as was the case with previously filled lots along the seawall.

The final section of seawall to be built south of the Ferry Building was Section 13a, which extended the wall from the south side of Berry Street to Channel Street, a distance of 600 feet. It was built between February 1922 and January 1924, in preparation for the construction of Pier 46. In addition to seawall Section 13a, a secondary seawall was constructed at the same time along the north side of Channel Street. The Channel Street section extended eastward from Third Street to connect with Section 13a where it intersects with Channel Street.

The whole purpose of the project was to modernize the Third Street Pier and incorporate it into the proposed Pier 46 terminal, adding 516,530 square feet of cargo area and storage space to the port.

What actually occurred was the tearing down of the Third Street Wharf that extended along Berry Street and Channel Street, just east of Third Street ([see Map 5](#)) enclosing the block by seawalls, and filling it in. Thus today, Pier 46 is composed of two sections: Section "A" which extends out from the bulkhead line and is built upon pilings, and Section "B" which is built on filled land between Channel and Berry streets east of Third Street.

Another accomplishment of the Pier 46 terminal fill project was to fill Berry Street east of Third Street, allowing Embarcadero traffic to curve around the waterfront at this point and intersect Third Street at the Third and Channel Street Bridge.

The seawall along Channel Street was a type not previously built in San Francisco. A series of precast reinforced concrete caissons were set approximately

fifteen feet apart along the Channel Street perimeter. The openings between were then closed with precast concrete curved curtain walls. The caissons measured 7.5 feet thick, twenty feet thick at right angles to the axis of the walls. Their depth below the level of the deck was fifty-four to fifty-seven feet.

The caissons were set in holes excavated in the hardpan, upon level beds of crushed rock. After being allowed to settle, fifteen piles were driven in the bottom of each caisson and then it was filled with concrete. The tops of the caissons were anchored with heavy reinforced concrete ties that extended across the fill area behind the wall.⁷⁵

After construction of the seawall was complete, the area inside was filled with material dredged up from the bottom of Channel Street. The nine hundred and ninety foot wharf was dredged to thirty-four feet alongside at low tide.⁷⁶

Pier 46 and the terminal were built from proceeds gained from the sale of a \$1,000,000 San Francisco Harbor Improvement Bond as authorized by an act of the legislature in 1913. The bonds were sold by the State Treasurer in 1921.

Conclusion: Yerba Buena Cove

The most exciting story in the development of San Francisco's waterfront is the history of fill at Yerba Buena Cove. It is exciting because it clearly reveals man's ability to overcome any obstacle in his determination to change his habitat to suit his needs. It must be remembered that at the time most of the fill occurred, San Francisco was a fledgling community, isolated from the resources of the rest of the nation except by sailing ships which required months to complete a round trip. The city lacked money to pay for improvements, it lacked sophisticated technology, and it lacked inanimate energy. Yet within fifteen years of its incorporation, most of Yerba Buena Cove had been filled and development of South Beach and North Beach was well underway. By today's standards, this progress may not seem so very impressive, but let us look at the changes that took place through the eyes of a man who was there in 1862:

"The site of the village of Yerba Buena, in 1846, was on the steep hill side, cut up by numerous gullies, and bounded on the south by a tract of sand, which lay in a succession of steep parallel hills, from twenty to forty feet high, covered with stunted and tangled bushes. The place was inaccessible for the heavily laden wagon, and when reached it offered no broad expanse for the erection of a great city. But it was destined, nevertheless, that a great city should be built here and the work has been done. The cove, a mile across from Rincon to Clark's Point, and half a mile deep, has been filled in, the hills have been cut down to gentle slopes to obtain material for encroaching upon the sea; gullies have been filled up; the sand hills have been leveled down; the bay and marsh have been changed into dry ground. There never was a city in which changes so great have been made by man in the topography of its site; and he who now sees the place for the first time, can scarcely conceive how such great labors should have been accomplished. The earth that has been moved in leveling the site of San Francisco would make a mountain beside which all the pyramids and artificial mounds would, as to size sink into insignificance."⁷⁷

FOOTNOTES

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CHAPTER III:

HARBOR VIEW

Early History and Description

Harbor View was the old name given to that section of San Francisco's waterfront that stretches from Fort Mason to Fort Point at the Golden Gate. Today the eastern half of the section is called the Marina and the western part lies within the Presidio, home of the United States Sixth Army.

In the early days, Harbor View was an area of extensive salt marsh, backed by steep bluffs rising to higher ground. Not quite halfway along, the shoreline formed a broad, sweeping point referred to as Sand Point on the United States Coast Survey charts up to 1884. A long, meandering tidal slough dominated the lowland, and at times of high tide Sand Point was cut off from the mainland, becoming an island. Since strawberries grew plentifully there, the island was known locally as Strawberry Island.¹

East of Sand Point the shoreline curved inland to a point where today Bay and Fillmore streets intersect, forming a cove of shallow waters ([see Map 7](#)).

The salt marsh was similar to that found in Mission Bay, and is best described in the Directory of the Pacific Coast of the United States for the year 1862.² This government publication gave sailing directions and information about the Pacific Coast, and it was used extensively by mariners sailing these waters. It said:

It is a curious and interesting fact that the sand beach between Fort Point and Point San Jose (the old name for Black Point) has been thrown up by the surf upon an extensive alluvial deposit which has the character of a peat-bog or swamp. When the tide is very low, the edge of this peat formation may be seen. Large masses of the peat are also

broken out during storms, and thrown up on the sand of the beach. This sand and all the loose round boulders, from three to eight inches or more in diameter, rest upon a foundation of peat; and the continuation of the peat is found in the swamp under conditions like those at present existing.³

Offshore from Harbor View lies Presidio Shoal, a narrow area about 700 yards long that sounds a depth of three and one-half fathoms. Since the shoal lies within the four-fathom isobath, it has always been given special notice on charts of San Francisco Bay. The first ships arriving at San Francisco anchored off Presidio Shoal until the more favorable anchorage off Yerba Buena Cove was discovered.

Harbor View is unique in the contest of waterfront development in San Francisco. It is unique for two reasons: 1) it lies outside the jurisdiction of the State Board of Harbor Commissioners, resulting in its exclusion from plans for the port's development; and 2) it is one of the few areas of San Francisco's shoreline where the land use pattern emphasized recreational and residential development rather than commerce and industry.

The name Harbor View was given to the area east of the Presidio by Rudolph Herman in 1860 when he acquired land there just north of where the Palace of Fine Arts now stands. He built a hotel, shooting gallery and other amusement facilities there that were known throughout San Francisco.⁴

Fort Point, the northernmost tip of the San Francisco peninsula, derived its name from the fact that the Mexicans built a small fort there called Castillo de San Juan. When the Americans took over in 1848, the point was a bold, narrow promontory of serpentine rock towering 107 feet above the bay. However, a few years later the Americans leveled the point within a few feet of the water in preparation for construction of a new fort. The project was begun in 1853 by the Army Corps of

Engineers and completed in 1861, in time for the Civil War. The fort still stands today and has been designated a national historic site.

Change was slow to come to Harbor View primarily because of its relative isolation from the rest of the San Francisco waterfront; however, its development probably was further delayed because the United States army held the land to the west, thus limiting the amount of shoreline that could be utilized. When change finally did come, it was both awe inspiring and world renowned, for Harbor View and the adjacent Presidio property became the site of the Panama Pacific International Exposition.

Today Harbor View is called the Marina, and has been transformed into an extensive area of city owned waterfront recreational property backed by a district of upper middle class housing, a distinction that no other section of San Francisco's waterfront can claim.

The Marina is part of the Western Addition; that is, it was not included in the city limits under the act to incorporate San Francisco passed by the legislature on April 15, 1850.⁵ This act set the southern boundary of San Francisco two miles south of a point located in the center of Portsmouth Square, on a line parallel with Clay Street. Today, this line is identified as being about Sixteenth Street. The western boundary was described as a line parallel to Kearny Street one and one-half miles west of the center of Portsmouth Square, or about where Webster Street lies today.

A year later, the city was reincorporated and its boundary lines were extended one half mile further in two directions: west and south.⁶ This act passed on April 15, 1851, and set the new boundaries about where Twenty-Second Street lies on the south and Divisadero Street lies on the west. Since these lands were added to the city, the lands lying west of the boundary of the 1850 incorporation are popularly known as the

Western Addition. The Marina lies west of the 1850 boundary line and within the Divisadero line; thus it is considered part of the Western Addition.

The Presidio lands were declared exempt and reserved from sale in a proclamation by President Millard Fillmore in 1850, which set aside certain lands in California for public purposes. The order reserved all the land 800 yards south of Point San Jose (Black Point) to a point even with the southern boundary of the Presidio (Vallejo Street) and then westerly to Mountain Lake, and finally following Lobos Creek to the Pacific Ocean. A year later, on December 1, 1851, President Fillmore modified his declaration, dividing the area into two tracts and establishing new boundaries. The Presidio's eastern boundary was fixed as a line running parallel and adjacent to Lyon Street; the western boundary of the Point San Jose reservation (Fort Mason) was set to lie along the eastern edge of Laguna Street. Thus the lands north of the southern boundary of the Presidio lying between Lyon and Laguna streets were returned to the State of California and claimed by the City of San Francisco as lying within its incorporated limits set in April 1851 ([see Map 7](#)).

The lands offshore from the Presidio lying beneath San Francisco remained the property of the State of California. Then, in 1897, California legislators enacted a bill which ceded the land adjacent to the Presidio from the high water mark to a point 300 yards beyond the low water mark to the United States Government.⁷ The federal government may hold this land as long as it maintains its property ashore.

Transfer of Harbor View tidelands belonging to the state to the private sector began in 1864 with a grant of approximately 448.75 acres to the Northern California Homestead and Railroad Association. The land was bounded by the Presidio, Tonquin Street (Marina Boulevard), Webster Street, and Lombard Street, and was granted for one dollar per acre ([see Map 2](#)).⁸ No development resulted from the association's acquisition except to transfer ownership to the private sector.

Title to the remaining tidelands at Harbor View was sold as a result of public auction held on Tuesday, March 4, 1873, under the direction of Greenbaum and Company, auctioneers. The sale was ordered by the Board of Tide Land Commissioners, under the conditions set forth by the legislature in 1868, to dispose of about ten blocks of submerged land lying north of Tonquin Street (Marina Boulevard) between Webster Street and the Presidio. This sale resulted in the transfer of title to the last state owned lands at the Marina and helped establish the waterfront line.⁹

Industrial Development

Up to the time of the Tide Land Commissioner's sale of state tidelands, development at Harbor View had been limited to the shoreline above the high water mark. The Pacific Distillery had built a plant on the shores of the tidal slough where today Chestnut and Pierce streets cross. The Santa Cruz Power Company had built a small wharf off Sand Point, and Fillmore Wharf, a 400 foot pier, had been built at the foot of Fillmore Street in 1863 to allow loading of dairy products from Cow Hollow on shoal-draft ships which traded around the bay. In addition, an omnibus line had been extended to Rudolph Herman's Harbor View Baths, and to the east gate of the Presidio.

Industrialists began seriously to consider Harbor View as a site for factories in the early 1880's. The first big factory to move to Harbor View was the Phelps Manufacturing Company. It was located on a triangular site bounded by Fillmore, Bay, and Buchanan streets. The company, known for the manufacture of screw bolts, built a new plant at this location in 1882 when it expanded its manufacturing to include heavy forgings, railroad cars, and cable for bridges and cable cars.¹⁰ The reason for the company's decision to locate there is not clear; possibly it was that Harbor View offered undeveloped bay-side property next to the Fillmore Street Wharf, which facilitated shipments of raw material and finished goods.

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The following year, a plan was formulated whereby the State Emergency Relief Administration would supply the labor to engineer, supervise, and survey the construction of a new seawall at the Marina Park and Yacht Harbor. All the city would have to do was supply the materials. A letter from John T. Punnett, Supervising Engineer, to the Park Commission provided an inexpensive source of material to build the seawall. He proposed that a seawall could be constructed from the basalt paving blocks which were being removed from San Francisco's streets in preparation for asphalt paving. Although his suggestion was directed to solving the seawall problem at Aquatic Park, the plan would work equally well at the Marina Park. The plan was unanimously approved by the Park Commission and funds were appropriated to finance the project.

Mr. John Hogan, Superintendent of Streets, in his annual reports to the city dated 1874-1875³⁵ and 1875-1876,³⁶ argued that the Dutch cobbles being used were not adapted to San Francisco's climate. He recommended basalt stone from Napa County be used instead.* These cobbles and basalt paving stones can be found lining the Marina Yacht Harbor and the seawall both along the Marina quay and at Aquatic Park.

Changes involving bay fill did not end with the completion of the W.P.A. project. Some twenty years later the Park Commission, which now had become the Recreation and Parks Department, authorized extension of a breakwater eastward from the east side of the harbor's entrance. The plan was to continue the breakwater to the transportation docks at Fort Mason, thus increasing the berthing space for private yachts at Marina Park.³⁷

* Today a source of basalt rock is the Howell Mountain Range an extruded volcanic ridge lying east of Napa Valley. Quarries can be found here near the Napa River and also on the east-facing slope of this ridge at the town of Rockville in Solano County.

The project was accomplished by allowing several construction firms to dump debris from local project at the Marina Yacht Harbor. The trucks were driven out to the end of the earth filled pier at the foot of Scott Street. Before the breakwater progressed very far, the extension of the breakwater was brought to a halt. First the Army Corps of Engineers requested the dumping to stop because the permit allowing the breakwater to extend beyond the bulkhead line had expired in 1952. (The permit was issued on August 22, 1949, and expired on December 31, 1952.) This problem was overcome by issuance of a new permit. Then it was realized that the breakwater extension would interfere with the operation of the degaussing station located along the seawall at the foot of Fillmore Street. The plan had to be abandoned.

In the meantime, the short extension of the breakwater was causing problems inside the yacht harbor. Shoaling was occurring along the inside of the harbor just west of the harbor entrance, causing hazardous conditions and filling the slips along that section so that they became useless. As a remedy, a new plan was adopted by the San Francisco Recreation and Parks Department; namely, to close off the harbor entrance at that point and cut a new 100-foot wide entrance through the seawall. The closing of the old entrance and dredging of the new one was completed in 1958.

The final fill at the Marina Yacht Harbor was accomplished in the early 1960's because of the need to widen the breakwater beyond the old entrance. Unlike the other seawalls at Marina Park, the new breakwater extension was constructed of riprap and its seaward side was vulnerable to the waves and surge that pound this section of San Francisco's waterfront. The Recreation and Parks Department again allowed local construction firms to dump "ruins" from various San Francisco buildings being torn down at the time. However, this time the companies involved had to obtain a permit from the Department of Public Works, stating the amount and composition of the debris to be dumped.

Widening of the breakwater was carried out in the period between March 1961 and March 1963. Based upon the permits granted, at least 45,000 cubic yards of rubble were dumped along the 1,100-foot seawall extension. In it can be found parts of sidewalks, concrete buildings from the Western Addition Redevelopment Area, and part of the old French Hospital, as well as tombstones from the Laurel Hill cemeteries.

The last fill at the Marina resulted from the construction of a new yacht harbor at Gas House Cove. This plan developed an alternative to the breakwater extension plan.

Gas House Cove lies between the Marina Green and Fort Mason. The largest part of this land had been acquired from the Pacific Gas and Electric Company back in 1939 for a purchase price of \$256,000, paid off over a ten-year period. A section was purchased from the Bates Estate Company, and another section was acquired from Louis Conti, Tax Collector, by tax deed. Since some of the waterfront property here is under the jurisdiction of the San Francisco Port Authority, license to use some of the property had to come from the Board of Harbor Commissioners.

Bay fill at Gas House Cove was relatively small, consisting of only enough material to cover the storm drain outfall located at the foot of Laguna Street. In March 1961, the Department of Public Works, took control of all dumping there. The department issued permits to companies desiring to dump debris, allowing only the amount and quality to be dumped which was specified on their permits.

The Gas House Cove marina was completed in 1962 with accommodations for 109 small craft. The project included a modern concrete retaining wall, or breakwater, supported by gunite-jacketed timber piles, a parking lot, and floating boat slips. The project was financed by funds loaned from the State Division of Small Craft Harbors. The contract for the construction was awarded to Healy Tibbitts Construction Company for a bid price of \$203,631.³⁸

Conclusion: Harbor View

As can be seen, the development of the Marina was quite different from that of other sections along San Francisco's bay front. This difference was not due to a drastic shift in values regarding the four change producing forces, but rather to events which delayed development until the area could not be successfully integrated into the industrial development occurring along other sections of San Francisco's waterfront.

When most of the Marina was owned by James Fair, its development was progressing toward industrial land use. Upon his death, this trend ceased because of long litigation over the settlement of his estate. Improvement of the land, that is the cost of filling, was borne by the Panama Pacific International Exposition; thus the market value of the improved land did not entirely reflect the cost. As a result, both the city and private citizens could afford to purchase the property. In addition, the delay in the availability of the land until the 1920's put the area behind the times as far as industrial development of the waterfront was concerned. Its location was not suitable for industry especially since there were still other areas of the waterfront available with more advantages. Lastly, since the Marina was not under the jurisdiction of the Board of State Harbor Commissioners, it did not have the board influencing its development. Still, the change producing force of economic efficiency seems to have been the dominant force in shaping the development of the Marina; however, the change was to a residential land use rather than one for industry.

FOOTNOTES

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⁴Clark, "Harbor View," op. cit

⁵California Statutes, 1850, Chap. 98.

⁶California Statutes, 1851, Chap. 84.

⁷California Statutes, 1897, Chap. 81.

⁸California Statutes, 1864, Chap. 436.

⁹State Board of Tide Land Commissioners Sale Map No. 12.

¹⁰Henry G. Langley, San Francisco Directory, 1882, p. 771; 1892, p. 1112.

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¹⁵Ben Macomber, The Jewel City, (San Francisco: John H. Williams, Publisher, 1915), p. 13.

¹⁶Ibid.

¹⁷Ibid.

¹⁸Frank M. Todd, The Story of the Exposition, Vol. I (New York: The Knickerbocker Press, 1921), p. 283.

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²¹A.H. Markwart, "Report of the Activities of the Division of Works of the Panama Pacific International Exposition," San Francisco, 1915.

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²⁴California Bill No. 7980, 1926; San Francisco Ordinance Number 7531, New Series; Stewart, op. cit., p. 65.

²⁵San Francisco Board of Supervisor's Resolution No. 19251, New Series, August 18, 1921,

²⁶Park Commission Minutes, City and County of San Francisco (1925), p. 157.

²⁷California Assembly Bill No. 1376, Chap. 359, approved June 14, 1923.

²⁸San Francisco Ordinance No. 6427, approved December 8, 1924.

²⁹Annual Report of the Park Commission, City and County of San Francisco (San Francisco: City Printing Office, 1924) p. 36.

³⁰Park Commission Minutes, City and County of San Francisco (1925), p. 164.

³¹Park Commission Minutes, City and County of San Francisco (1925), p. 156.

³²Personal interview with Chesley Bonestell, architect for the Marina Gardens.

³³San Francisco Call and Post, November 22, 1924.

³⁴San Francisco Board of Supervisors' Resolution No. 1050, approved September 30, 1933.

³⁵San Francisco Municipal Report 1874 - 1875. p. 134

³⁶San Francisco Municipal Report 1875 - 1876. P. 66

³⁷San Francisco Examiner, April 2, 1955.

³⁸San Francisco Chronicle, February 27, 1959.

CHAPTER IV:

MISSION BAY

In the Beginning

In the days before the California Gold Rush, Mission Bay was an almost perfect half-moon shaped indentation in the shoreline of the San Francisco peninsula. It measured nearly a mile across from two points that marked its entrance. On the north was Steamboat Point and on the south was Point San Quentin. Midway between these two points two rocks rose above the waters of the bay. This tiny island was known as Mission Rock.

The waters of Mission Bay were shallow, sounding a depth of one foot or less at mean low tide. Extensive areas of salt march stretched inland from the bay, nourished by spring tides that sometimes reached a height of 3.5 feet above the mean tide level. The marshes located along the northern shore of the bay penetrated deep into an area of drifting sand dunes, while those along its southern shores were smaller because they were contained by the steep slopes of Portrero Hill.

Mission Creek entered Mission Bay almost at the center of its shoreline. This stream was the main drainage channel for the east-facing slopes of Twin Peaks and adjacent areas. In those places along its course where spring tides were liable to flood, the creek was lined with salt marshes.

Within sixty years of San Francisco's founding, the creek, the salt marshes, and Mission Bay had completely disappeared, buried under hundreds of tons of rock, sand and debris by a concerted effort to reclaim the bay and develop the area for commercial interests. The ensuing change was remarkable, for today Mission Bay is the site of one

of San Francisco's major industrial centers, providing space for factories, warehouses and railroad yards.

Mission Bay derived its name from the Spanish mission dedicated to St. Francis of Assisi located at Laguna de los Delores. According to Hubert H. Bancroft, the mission was established on the shores of a small lake formed by Mission Creek just before it emptied into Mission Bay. The date of the mission's founding was October 4, 1776, the anniversary of the death of St. Francis, and thus the mission was dedicated to him as is the custom.¹ Mission Bay's original name was Ensenada de los Llorones which means "cove of weepers". This name was given when the Spanish explorers mapped San Francisco Bay in 1775.²

The waters of Mission Bay covered approximately 260 acres when measured from a straight line drawn across its mouth from the two promontories that mark its entrance. It was the largest bay along the city's shoreline to be filled except possibly the cove at the mouth of Islais Creek. However, the comparison depends upon the defined boundaries. Today, man-made fill extends far beyond any notion of the boundaries defining either bay; however, the extended areas of fill are generally referred to as being part of their respective geographical areas ([see Map 9](#)).

Although Mission Bay's waters were shallow, they were navigable by shallow craft vessels like the San Francisco Bay Scow Schooner and similar craft. When Long Bridge was constructed across Mission Bay in 1862, a twenty-five foot drawbridge had to be constructed where it passed over a designated navigable channel to allow passage of vessels in and out of the bay.

The salt marshes surrounding Mission Bay occupied some 330 acres including those that lay along Mission Creek. The largest area of salt marsh lay to the bay's northwest and occupied approximately 160 acres, stretching from today's Third and

Harrison streets to Eighth and Howard streets. The marshes located along Mission Creek extended inland behind Portrero Hill to Twentieth and Harrison street [\(See Map 9\)](#).

John S. Hittell, writing in the late 1870's, described the marsh lands of Mission Bay in the following:

A swamp heading near the corner of Mission and Seventh streets ran for a mile eastward to the bay with an average width of three hundred yards, and a parallel marsh, not as wide, had its head near the crossing of Mission and Eighth streets. These were called swamps, but they seemed to have been, for part of their area at least, subterranean lakes, from forty to eighty feet deep, covered by a crust of peat eight to ten feet thick. These marshes, with another along the border of Mission Creek, had an area of three hundred acres and are now filled in.³

The peculiar nature of the marshes prompted John Hittell to comment on them. One account concerns the construction of a wooden planked road connecting downtown San Francisco with Mission Dolores. During the building of the road in 1850, it became necessary to construct a bridge across the marsh near Seventh and Mission streets. The bridge was to be built on wooden pilings driven into the marsh. However, when the pile driver delivered its first blow to the forty-foot long pile, the pile sank out of sight. When another pile of the same length was hoisted and driven immediately over the first, it sank beyond the reach of the hammer after just two blows. The idea of building a bridge supported on piles was abandoned and instead, cribs of logs were laid together, forming a sort of floating bridge across the marsh. The bridge always shook when crossed by heavy teams of horses; gradually, it settled until the middle portion lay about five feet below the original level.⁴

In 1850, the City of San Francisco claimed ownership to a large portion of the land beneath the waters of Mission Bay as well as to those marsh lands lying to its northwest. As these lands were included within the boundaries of the William Eddy survey, the State of California granted these tidelands to San Francisco under the conditions of the First Water Lot Bill passed by the Legislature in 1851. Under the terms of that bill, San Francisco gained possession to the beach and water lots in Mission Bay which were included within the boundaries claimed, but which had not previously been granted or sold to private individuals.

It is interesting to note that apparently no controversy arose between the state and the city over the ownership of those marsh lands connected to Mission Bay which lay within the Eddy survey. Yet these lands were controlled by tides and thus belonged to the State of California as designated by the Arkansas Swamp Lands Grant Act ([see Chapter I, page 9](#)). The fact that these lands were tidal controlled can clearly be recognized from John Hittell's description of the building of the Folsom street planked toll road that ran for a mile across the Mission marshes from Third to Eighth streets. He said: "In 1854, a high tide overflowed the road between Fourth and Fifth streets, and floated off the planking."⁵

Filling Begins

The process of filling Mission Bay began logically with the marsh lands lying along its northern shores near the city. One of the first references to fill was made by John Hittell when describing the aforementioned Folsom Street toll road constructed in 1852. He said that the builders had ". . .serious difficulty in filling up (the marshes) with sand until a permanent roadbed was made."⁶

Henry Langley, in describing the progress of filling the Mission marshes in 1862, referred to 150,000 cubic yards of sand that had to be removed from the high places and

deposited into the gullies and marshes during the grading of Harrison Street from Third to Eighth Street.

Many small fill operations in these marshy areas were also carried out by individual lot owners during this time. The character and difficulty of filling the marshes was significant as can be seen in John Hittell's following description:

The peat in the marshes that had their heads near the site of the new city hall was strong enough to sustain a small house or a loaded wagon, though a man, by swinging himself from side to side, or by jumping upon it, could give it a perceptible shiver. There were weak places in it, however, and a cow which was searching for sweet pasture undertook to jump from one hard spot to what appeared to be another, made a mistake, for it gave way under her, and a gentleman hunting near by was surprised to see her go down, and still more to observe that she did not come up again. A puddle of muddy water was all that remained to indicate her burial place. After that the hunter did not jump about in the swamp so boldly as before. Many ludicrous scenes occurred in filling up the swamps. When streets were first made the weight of the sand pressed the peat down, so that water stood where the surface was dry before. Sometimes the sand broke through, carrying down the peat under it, leaving nothing but water or thin mud near the surface. More than once a contractor had put on enough sand to raise a street to the official grade, and gave notice to the city engineer to inspect the work, but in the lapse of a day between the notice and the inspection, the sand had sunk down six or eight feet; and, the heavy sand had crowded under the light peat at the sides of the street and lifted it up eight or ten feet above its original level, in muddy ridges full of hideous cracks. Not only was the peat crowded up by the sand in this way, but was also pushed sidewise, so that houses and fences built upon it were carried away from their original position and tilted up at singular angles by the upheaval.⁷

At first, filling was accomplished exclusively by manual labor and horse cart. Soon, however, these methods were augmented with a steam shovel. The shovel, fondly called a "Steam Paddy," quickly loaded sand into small rail cars which were

then pushed to the areas to be filled. Henry Langley relates on the following in the San Francisco Directory of 1870:

The steam paddy has been constantly at work during the past year in loading the dirt-cars on the various temporary railways in the different streets between Sixth and Mission Dolores. Hills have been leveled and valleys filled up, so that the southwestern part of the city has lost its former 'lumpy' aspect, and now presents the appearance of a level plain.⁸

The utilization of the steam paddy greatly increased the rate of fill in Mission Bay. Hubert H. Bancroft, writing in 1888, stated that due to the swift operations of the steam paddy, 450 acres of solid ground had been created in Mission Bay in just fourteen years.⁹

John Dwinelle, another historian of the day, describing the progress at Mission Bay, said:

The sand hills formerly existing to the south and southwest of the earliest settled part of the city have been transferred into the mud-flats of the waterfront or into the marshes which formerly existed between the city and Mission Dolores. . .¹⁰

Like Yerba Buena Cove, Mission Bay first was filled with wind-blown sand taken from the great sand dunes that stretched along the bay's southern shores. Before long, other material was dumped into the bay for fill. During the construction of the Bay View and Portrero Railroad, upwards of 100,000 cubic yards of rock was removed from a deep cut through Portrero Hill in order to provide a graded roadbed for the line.¹¹ It seems quite probable that at least a portion of that material was dumped into Mission Bay, especially since the railroad line had bridged the bay.

Garbage, rubbish, and debris were also used for fill material. The latter was particularly significant after the earthquake and fire of 1906, when dumping grounds had to be found for the tons of wreckage left from that catastrophe.

One of the earliest encroachments upon Mission Bay proper was completed in 1865. It was the construction of a bridge across its waters serving as a link in the Bay View and Potrero Railroad designed to connect downtown San Francisco with the horse racing track near Candlestick Point. The bridge had the effect of separating Mission Bay from San Francisco Bay. This separation eventually led to a change in the concept of the bay's usefulness.

The Railroad's Acquisition of Land

In 1868, the Southern Pacific and Central Pacific railroads sought to acquire land for a terminal in San Francisco. At that time, they attempted to persuade the legislature to allow them to purchase approximately 6,620 acres of tide and waterfront land stretching from Mission Bay to Hunter's Point. A bill was originated in the Senate Committee on Commerce and Navigation, and seemed destined to be approved. However, the citizens of San Francisco were so outraged by the thought of the railroads being allowed to gain control of city's southern waterfront that they persuaded the legislature to change the bill. Instead, the railroads were granted thirty acres each in Mission Bay. In addition, the legislature set aside land for a right-of-way leading southward out of the city.¹² The land was selected according to the rules set out by the legislature ([see Chapter I, page 12](#)).¹³

Prior to 1869, the Southern Pacific Railroad Company had purchased property at Mission Bay and continued to do so until it had acquired all the property north of Channel Street between Third Street and Seventh Street, and south of Channel Street to Sixteenth Street between Fifth and Seventh Street ([see Map 9](#)).

The land granted to both railroads is shown on Map 9. The map also shows other parcels of land acquired by Southern Pacific in Mission Bay and the surrounding vicinity. It is obvious that the Southern Pacific Railroad Company is the major land owner of Mission Bay property lying west of Long Bridge.

Channel Street remained unfilled from Seventh Street to China Basin since it was designated a navigable waterway at the time of the transfer of state owned property to San Francisco. The 200 foot wide channel was set aside to allow the passage of ships as far inland as Seventh Street. Today this channel is the last remnant of Mission Bay.

Between the lands lying inside the Eddy Red Line, which had been sold to the Southern Pacific Railroad Company and other private individuals prior to 1869, and the sixty acres granted to the railroads in 1868, little was left of Mission Bay to be sold by the Tide Land Commissioners. In fact, only about twenty locks remained. They were auctioned off, together with the lands lying in Islais Creek, by Talbert and Leet, auctioneers, on Friday, June 26, 1869, by order of the Board of State Tide Land Commissioners ([see Map 10](#)).

Fill operations at Mission Bay under the direction of the Southern Pacific Railroad Company began with the relocation of its line from the San Francisco terminal located at Valencia and Market streets to its present location at Third and Townsend streets. This new right-of-way required considerable fill of the Mission marshes that lay in that vicinity. The company continued to fill its land in Mission Bay as indicated by the following report appearing in the San Francisco Directory of 1872:

Among other noteworthy improvements is the filling up of the water channel now formed by what is termed Long Bridge, at the foot of Fourth Street. The Southern Pacific Railroad Company has for some years been employing a heavy force of laborers in this business, with the intention of erecting upon the made land large commodious depots as the San Francisco terminus of the road.¹⁴

By 1884, Southern Pacific had extended the shoreline of Mission Bay just beyond Channel Street with a narrow strip of fill protruding out about 1600 feet into the bay from the foot of Sixth Street.¹⁵

In addition, fill was being placed on railroad owned land at Point San Quentin along the southern shore of Mission Bay ([see Map 1](#)). Fill had also been placed along both sides of Long Bridge from Portrero Point to Channel Street.¹⁶ This was the first time fill had been placed on the San Francisco Bay side of Long Bridge, and in doing so, forecast the future of Mission Bay.

It was inevitable that fill would occur east of Long Bridge because in 1869, when the Board of Tide Land Commissioners had established San Francisco's waterfront line, it was drawn along the four fathom (twenty-four foot isobaths). This line lay four to seven city blocks east of the bridge at Mission Bay, and title to the land beneath the water had been granted or sold to private individuals for development.

In the closing years of the nineteenth century, Southern Pacific continued filling its property in Mission Bay, advancing the shoreline southward from Channel Street toward Sixteenth Street. Public records bear little witness to the progress made here largely because the newly filled lands belonged primarily to the Southern Pacific Railroad Company and their intended use held little interest except to the railroad. This is not to say that the new land lay dormant until the entire area was filled so that some all-encompassing plan could be implemented. Indeed, the land was used as a huge marshaling point for lumber shipments, probably the largest on the West Coast.

By 1902, more than two-thirds of Southern Pacific's holdings inside Long Bridge had been reclaimed, as well as an additional eight acres on the east side of the bridge. The latter fill took place at Point San Quentin, completely obliterating the tiny peninsula.

The turn of the century also marked the disappearance of the salt marshes located along Mission Creek at the foot of Potrero Hill. The marshes died because the fill placed in Mission Bay stopped the flow of tide water that nourished them.

The China Basin Fill

In March 1895, legislation was enacted in Sacramento that ultimately affected the continued filling of Mission Bay. Since one of the few to locate a large terminal was along the southern waterfront or Mission Bay, Claus Spreckels, sugar magnate and railroad financier, accompanied by the directors of the newly formed San Francisco and San Joaquin Valley Railroad, went to the legislature to persuade it to enact special legislation to allow the Board of State Harbor Commissioners to lease state owned waterfront lands to the railroad to build a terminal. Without a terminal in San Francisco, they argued, the company might as well give up the new road.

The legislature passed the “Gleaves Bill” which allowed the Board of State Harbor Commissioners to negotiate a lease contract with the railroad. The rent on the terminal location was not to exceed \$1,000 per year and was to carry the following restrictions: no land was to be leased for a longer period than fifty years, not more than fifty acres were to be leased to any one railroad, and no lease was to be assignable without written consent of the commissioners.¹⁷

This legislation allowed the San Francisco and San Joaquin Railroad Company to lease about thirty-five acres of state owned tideland in Mission Bay near Third and Channel streets known as China Basin ([see Map 10](#)). In return for this consideration, the railroad agreed to reclaim the tideland, place the tracks, warehouses and freight sheds at its own expense in addition to paying a nominal rental of \$1,000 per year.

After five years, the railroad had not begun to improve the site, so the lease was nullified and a new lease was drawn to extend the term of the lease to 1950. In return for the new agreement, the railroad agreed to build a seawall along the waterfront of the property, and spent \$50,000 annually for six years on improvements. The new lease, like the old, was non assignable; however, the restriction did not apply to the assignment or transfer that might occur as a result of the San Francisco and San Joaquin Valley Railroad Company's sale, foreclosure, transfer, or assignment.

When the Atchison, Topeka and Santa Fe Railroad acquired the holdings of the San Francisco and San Joaquin Railroad, the lease to the state owned property at China Basin was transferred to the Santa Fe Railroad Company. Thus Santa Fe, which heretofore had only limited facilities in San Francisco, gained property to build a freight yard and could compete more successfully with the Southern Pacific Railroad for the rail business coming to San Francisco.¹⁸

Shortly afterwards, the Santa Fe Railroad acquired additional property adjacent to China Basin on the south and began to build a seawall behind which fill was to be placed.

The work of reclaiming China Basin commenced in May 1901, with the dredging of a 3,000-foot long channel along the bulkhead line from Channel Street south to El Dorado Street. Although the channel's size varied according to locality, on the average its depth was forty to fifty feet below city base and the channel measured sixty feet wide. As fast as the trench was dredged, rock was placed into it, serving as the core of the seawall. An average of 200 cubic yards of rock per lineal foot of wall was used for the core.

Heavy riprap* was placed outside the core to protect it from wave action. The

*Riprap is broken stones thrown together irregularly or loosely, used in connection with building a wall or foundation.

slope of the face of the wall was two in one on the sea side, and four in one on the land side. The composition of the core rock was igneous basalt brought from rock quarries at El Campo and San Bruno.

Filling of the property began with the mud dredged up from the trench in which the seawall was to be placed. As soon as the seawall was completed, an earth filled dike was extended out from the foot of Fourth Street toward El Dorado Street. Rail trestles were run out from the dike into the China Basin parcel from which fill was dumped, most of which came from Potrero Hill. An estimated 2.8 million cubic yards of earth was used to fill China Basin.¹⁹

The China Basin fill project was considered a remarkable engineering feat in 1902, as can be seen from the following statement from an article appearing in Marine Engineering in 1902:

The great work of the Santa Fe Railway in filling in China Basin will probably be eclipsed by some other undertaking.²⁰

Mission Bay after the Earthquake of 1906

On April 18, 1906, at 5:13 in the morning, the City of San Francisco was shaken by an earthquake of major proportions. The quake and fire that followed created an estimated ten to eleven million cubic yards of rubble which had to be removed before the devastated area could be rebuilt.²¹ Dumping grounds had to be found for this enormous volume of debris. Locations were chosen both in and out of the city to dispose of the material. One of the sites selected was Mission Bay.

All of the city's railroads participated in the removal of the earthquake debris. Since the Southern Pacific Railroad owned extensive tidelands at Mission Bay, the company was happy to cooperate and at the same time cheaply reclaim its lands. There

seems to be no record regarding Southern Pacific's fill procedure at Mission Bay; however, Rufus Steel gives a stirring account of how some of the rubble was removed, thus giving some inkling of methods used:

Railroad lines were extended across town for the debris trains. Steam and electric cranes lifted the twisted steel beams and dropped them upon flat cars, and later lifted out of basements the carriers whose capacity was a wagon load. The inventors got busy. Huge mechanical devices for shoveling and loading were invented and set to work.²²

In cases where the ruined buildings were too far from the temporary rail tracks, horses were used to haul the wagonloads of heavy rubble. Fifteen thousand horses were worked to death accomplishing this task.²³

Upon completion of the tremendous debris removal operation, Southern Pacific Railroad had filled all of its holdings in Mission Bay. This included the land south of Sixteenth Street to Mariposa Street west of Long Bridge, as well as the land east of the bridge.

Following 1906, only two other large fill projects took place in Mission Bay. One was filling of approximately four acres at Central Basin, a twenty five acre section of submerged land in Mission Bay dedicated to and reserved for docks, piers, slips, basins, and other purposes of commerce ([see Map 10](#)). The other modification and fill of Mission Rock in preparation for construction of a twenty-nine acre "shipping terminal" at Pier 50. At the time of its completion, Mission Rock Terminal, as it was sometimes called, was the largest wharf in San Francisco Bay with a capacity for berthing eight ships simultaneously.

A portion of Central Basin lying between Seventeenth and Mariposa streets, east of Illinois, had been covered by a wharf for many years. This wharf was used for a lumber terminal. Maintenance of the wharf became so expensive that it was decided

that the wharf be removed and the area reclaimed. By taking advantage of various grading operations that were underway at the time, cheap material was available to build a rock wall and fill behind it. This created about four acres of state owned land that could be used for port facilities.²⁴

Mission Rock

The name Mission Rock Terminal reflects a long tradition of ocean trading. The original Mission Rock was composed of two tiny islets, one measuring .14 of an acre in area and the other measuring .01 of an acre, varying from ten to twenty-five feet above sea level depending upon the height of the tide. They lay about one half mile off the Mission Bay shoreline of 1864. An act of Congress on April 4, 1870, provided for its sale, and it was sold on July 11, 1872, to a man by the name of Tichenor. He sold it to the California Dry Dock Company on May 1, 1878, which later conveyed it to the Mission Rock Company on June 6, 1900.²⁵

During the time Mission Rock was owned by the California Dry Dock Company, tons of rock were dumped around the perimeter of the rock increasing the available area to about four acres, upon which extensive warehouses were built. The situation was both advantageous and unique; Mission Rock was the only place in San Francisco harbor where cargo could be brought in, stored, and shipped without touching the mainland, and it provided deep water all around its periphery to dock ships.

Grain barges would sail down the Sacramento River from California's Great Valley and discharge sacks of grain at Mission Rock. Ocean-going sailing ships would then load grain from the warehouse, and dump their stone ballast in the deep waters around the island.²⁶

Later, the Mission Rock warehouses were leased by the Alaskan Packers' Association. They housed strike breakers in 1919; and later they were headquarters for "bay pirates", toughs who used the old ramshackle buildings for their hideout.

On January 13, 1899, the president of the United States, purporting to be acting in conformity with an Act of Congress, declared Mission Rock a permanent reserve for the navy. This action precipitated legal action by the Mission Rock Company, which claimed title. A California court decision dated December 14, 1900, entered by a Judge Beatty, said the land above the high water mark belonged to the United States, while the land below was judged to belong to the Mission Rock Company. In 1937, after a thirty-eight year court fight, the island was awarded to the United States government as a "naval defense area". The case was finally settled in the United States Supreme Court seven years later on June 28, 1944. At that time the Board of State Harbor Commissioners was trying to obtain title to the island in order to build the new Pier 50 complex. The decision allowed the board to fulfill its goal to purchase Mission Rock. The United States was paid \$9,425, and the Mission Rock Company \$120,000 for their respective titles to the rock.

Plans had been under consideration to build a ship terminal at Pier 50 since 1924. However, it was not until after World War II that the plan could be implemented. A need for expanded waterfront facilities and a need to eliminate congestion caused by the inefficient and expensive method of transshipping cargo across the city from one pier to another precipitated the eventual action.

Construction began with driving wooden piles around six acres of Mission Rock, followed by the installation of an encompassing concrete bulkhead and filling behind it with sand and rock. A great amount of this fill came from the dredging operation taking place around the rock. This accomplished two purposes: the depth of water around the island would be increased to allow passage for the deep draft ships, and the dredged -up material would be used as fill behind the bulkhead.

According to the San Francisco Examiner, additional fill used at Mission Rock consisted of “more that 500,000 tons of high grade dirt and rock which cost nearly \$1,000,000.”²⁷

Construction was started in 1947 by the Clinton Construction Company, which built the sub-structure, and Leo Epp, Inc. completed the remainder.²⁸ The terminal was completed on August 31, 1950, at a cost of 6.5 million dollars.²⁹ From the day the terminal opened until 1970, American President Lines was its only lease. In 1970, American President Lines moved to the new and larger Army Street Terminal.

Conclusion: Mission Bay

It is obvious that the dominant force leading to the filling of Mission Bay was economic efficiency; that is, the need to maximize the bay’s productivity. Given unencumbered opportunity, Mission Bay would have evolved in a number of ways. It could have been developed for shipping companies; the bay would have been dredged and wharves built to allow ships to enter and discharge their cargoes. Alternatively, the bay might have been filled by various manufacturers whose operations did not depend upon receiving and shipping materials by ships. However, in early San Francisco, these types of manufacturers were small and could not afford the cost of filling, especially when other locations were available. Bay fill for housing was unheard of in those days, and the added cost of preparing the site would have made it too expensive to compete with other residential sites in the city. Another option could have been to leave Mission Bay undeveloped, but it is unrealistic to believe that the bay would have stayed that way for long, especially with the lack of level land along San Francisco’s bay front.

Development of Mission Bay for the railroad was probably the best use of the area, regardless of the fact that a huge amount of the bay was given to the railroad companies. Railroads need large, level areas for their freight yards; in San Francisco there were few places that could meet this requirement.

FOOTNOTES

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- ⁸Henry. G. Langley, San Francisco Directory, 1870, p. 16.
- ⁹Bancroft, op. cit., Vol. III, p. 691.
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- ¹⁵U. S. Coast Survey Chart Number 621 (1884).
- ¹⁶Ibid.
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- ¹⁹Biennial Report of the Board of State Harbor Commissioners, 1900-1902
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- ²⁰"Docking Facilities on the West Coast," Marine Engineering, Vol. III, No. 8
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²³Ibid., p. 17.

²⁴Biennial Report of the Board of State Harbor Commissioners, 1928 - 30
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²⁵Circuit Court of Appeals, Ninth Circuit, May 16, 1901, No. 682.

²⁶San Francisco Chronicle, August 12, 1943.

²⁷San Francisco Examiner, August 13, 1950.

²⁸Special Report of the Board of State Harbor Commissioner, 1948
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²⁹San Francisco Examiner, August 31, 1950.

CHAPTER V:

POTRERO POINT

Early History and Description

A prominent feature of San Francisco's original shoreline immediately south of Mission Bay was a small peninsula named Potrero Point. Its name comes from Rancho Rincon de Las Salinas y Potrero Vejo, a Spanish land grant of which Potrero Point was part. In Spanish potrero means pasture, and under the pueblo system a potrero was land held in common for the use of the inhabitants of the pueblo. According to William Sharpsteen, there were two potreros in the pueblo of San Francisco: potrero Viejo (old pasture) and potrero neuvo (new pasture).¹ Potrero Point was part of potrero neuvo; however, Mr. Sharpsteen said: "both are now known as Potrero".

Potrero Point was a peninsula formed by a shoulder of Potrero Hills, which extended eastward into San Francisco Bay separating Mission Bay from Islais Creek ([see Maps 1 and 11](#)). The slopes of the peninsula rose abruptly from the bay waters to an altitude of 100 feet or more, with little or no level area for building sites. Over a half mile of the hills that formed the promontory of Potrero Point was cut away and dumped into Mission Bay and Islais Creek basin. All the land from the southern Embarcadero Freeway eastward to the water's edge used to be Potrero Hill, and the periphery of the peninsula has been extended and modified to such a degree that today its former shape is lost.

Industrial Development of Potrero Point

Since the promontory of Potrero Point rose steeply from the waters of San Francisco Bay, it was one of the few places along San Francisco's bayside shoreline

where deep water lay close to shore. This natural advantage was hindered by the lack of level land at Potrero Point, thus slowing the development of the area until other alternatives had been exhausted.

Its relative isolation from more populated areas, together with its advantage of deep water immediately offshore, combined to make Potrero Point a suitable location for warehousing dangerous commodities, particularly high explosives. By 1868, at least two powder magazines were located at the point.

The most popular industry to locate at the point was shipbuilding or repair, and small shipways and wharves were located all around the perimeter of the peninsula. This type of industry did not require very large areas of level land.

One of the more impressive industries to locate at Potrero Point in those early days was the Pacific Cordage Manufacturing Company (San Francisco Cordage Company). Established in 1856 by Alfred L. Tubbs, the company located its factory at what is today the corner of Indiana and Tubbs streets. The company built its factory several blocks inshore from the water's edge, with a 1,500 foot rope walk which extended into Islais Creek basin as far as today's Michigan and Twenty-Fourth streets. Since this point of intersection was in the water in the 1850's, the ropewalk probably served a dual purpose as a loading wharf.

As San Francisco began to develop into a manufacturing center for California and the Pacific Coast, Potrero Point became more important. The first company to begin alteration of the point for manufacturing was the Pacific Rolling Mills. William Alvord, a San Francisco financier, and his associates applied for and received a patent from the state for eight acres of submerged land lying north of the peninsula for a price of \$100 per acre. His plan was to fill in the submerged land thus creating a level area for the rolling mill. The legislature agreed but Alvord had to demonstrate his integrity by starting construction of the mill on or near the adjoining upland. In addition, the

manufacturing capacity was to be not less than fifty tons of railroad iron per month, and the mill was to be completed within three years after the passage of the act.²

The Pacific Rolling Mills

The Pacific Rolling Mills was completed in 1867 at a cost of \$1,000,000; it could manufacture iron bars and rods of any shape from one-quarter of an inch to thirty-six inches in diameter, including railroad iron of all descriptions.³ The Pacific Rolling Mills supplied the rails for the Mission Street Railway, the first manufactured on the Pacific Coast.⁴ In addition, it was a major source of railroad iron for the Southern Pacific Railroad Company in San Francisco. It is of particular interest to note that due to the isolation of the mill from the mainland and the heavy weight of the finished product, shipments were made to the mainland by ship or barge.⁵

By the time of George Allardt's survey of the salt marsh and tidelands for the Board of Tide Land Commissioners, completed in 1869, several blocks of tidelands had already been filled at Potrero Point. These were the first areas to be filled. The record reveals neither the source of the fill material nor who did the filling. However, this fill was not on land owned by the Pacific Rolling Mills.

The sale of the salt marsh and tidelands surrounding Potrero Point commenced on February 28, 1871. The auction was held at Platt's Hall, San Francisco with John Middleton the auctioneer. This resulted in the sale of all the tidelands surrounding the point up to the waterfront line. Once the land was under private ownership, fill projects came more rapidly until the original character of the peninsula soon disappeared.

One of the first industries to take advantage of the Potrero Point site was the San Francisco Gas Light Company. In 1872, the company placed in operation an extensive and well-equipped gasworks, including two gas holders with a capacity of

1,038,000 cubic feet.⁶ The gasworks was located on an area the size of four city blocks at the foot of Humboldt Street in the southeastern portion of the peninsula, including two blocks covered by water. The record is not clear whether these two blocks were filled at the time of the building of the gasworks; however, it seems likely that a pier of that size would have been constructed in preference to filling the land and building on it.

Parts of the old San Francisco Gas Light Company survive today and are included in the present plant owned and operated by the Pacific Gas and Electric Company as a storage and standby system.⁷

In 1881, the California Sugar Refinery opened a new plant to increase the company's capabilities to refine raw cane sugar arriving from Hawaii. The plant was located at Potrero Point to take advantage of the deep water immediately offshore. The new refinery was built on a five-block site next to the San Francisco Gas Light Company. At least three of the blocks were tidelands and were filled as a result of this construction project.⁸

The Union Iron Works

The most impressive industry to locate at Potrero Point, and the one which was responsible for creating the greatest change there, was the Union Iron Works. Originally located at First and Mississippi streets, it moved to a thirty-acre site next to the Pacific Rolling Mills in late 1884. The move was prompted by a decision of the company's officers to compete for bids on shipbuilding. Heretofore, the Union Iron Works was known chiefly for the manufacture of machinery for the Comstock Lode.⁹

The new site consisted of twelve city blocks including streets that belonged to the City of San Francisco. In order to consolidate the site, the city board of supervisors ordered streets closed.¹⁰ Closure of the streets was no problem since ten blocks of the property were actually tideland.

Like the Pacific Rolling Mills, the Union Iron Works had little of no room to lay out a factory site because of the steepness of Potrero Point Hills. Again, the hills were cut down and deposited in the tideland portion of the property. However, only an estimated half of the tideland was filled since room had to be left for floating of ships after they left the ways.

A decision by the Western Pacific Railroad Company to fill its property immediately south of the point eliminated Potrero Point as a peninsula. The result of this fill was to join the point's shoreline with that of Islais Creek basin that lay immediately to the south, finally erasing all semblance of the peninsula's former shape.

Conclusion: Potrero Point

Both economic efficiency and technology shared in the transformation of Potrero Point. Their dynamism resulted from the need to provide the state of California with machines and products necessary for its early growth. This was not only true of Potrero Point, but all of San Francisco, for in those days San Francisco was the major manufacturing center in the West. As Potrero Point reflects the growth of manufacturing in San Francisco, it also mirrors its decline.

FOOTNOTES

¹William C. Sharpsteen, "Vanishing Waters of Southeastern San Francisco," California Historical Society Quarterly, Vol. XXI (1942), 117.

²California Statutes, 1866, Chap. 616.

³Henry G. Langley, San Francisco Directory, 1867, p. 14.

⁴Fred H. Hackett, ed., Industries of San Francisco (San Francisco: Payot, Upham & Co., 1884).

⁵Personal interview with Lynn Frarrar of the Southern Pacific Railroad Company, San Francisco.

⁶Charles M. Coleman, P.G. & E. of California: The Centennial Story of Pacific Gas and Electric Company (New York: McGraw-Hill, 1952), p. 29.

⁷Ibid.

⁸John S. Hittell, Commerce and Industries of San Francisco (San Francisco: A.L. Bancroft & Co., 1882); Crocker's Guide of San Francisco (map), 1900.

⁹W.C. Wolfe, ed., San Francisco: The Distributing Point for Both the Hemispheres (San Francisco: The Pacific Art Co., 1904), p. 116.

¹⁰San Francisco Board of Supervisors' Order No. 1759, approved March 3, 1884.

CHAPTER VI:

ISLAIS CREEK

From high on the southern slopes of Twin Peaks, a little brook winds its way down Glen Canyon to disappear into the maw of a city storm drain. This tiny stream is all that remains of an extensive network of tributaries that once nourished Islais Creek. Before the southern expansion of the City of San Francisco, Islais Creek drained an area of 3,000 acres and flowed undisturbed through Alemany Gap, discharging its waters into San Francisco Bay. In those days, at the time of spring tides, bay water penetrated far up the creek's course, creating vast areas of salt marsh. Islais Creek still flows into San Francisco Bay; however, today its course runs through a concrete aqueduct buried beneath Alemany Freeway. The free-flowing creek, and the wild salt marsh with its flora and fauna, are gone. In their place stands the James Lick and Southern Embarcadero Freeway exchange, the Islais Creek Industrial Park, and San Francisco's produce market.

For years, Islais Creek stood as a barrier to the southward development of San Francisco. As the city grew both in terms of size and in economic stature, eyes were cast toward the creek's potential for industrial development several times; however, not until 1925 were workable plans devised that could overcome the problems that kept the Islais Creek area stagnant in the face of progress.

In the reclamation of Islais Creek, a concept of social organization was employed not seen before in the bay fill development of San Francisco's waterfront. For the first time an innovative method of organizing tideland property owners for their common economic gain was implemented. It appeared in the form of a reclamation district, but the true innovation lay in its inner workings. Had it not been for this formation of a

reclamation district to act as a vehicle, Islais Creek may have developed quite differently.

In 1775, the Spanish survey party aboard the “San Carlos” made special notice of Islais Creek, for it appears prominently on Jose de Canizares’ map, “Plano del Puerto de San Francisco,” as “Estero Angosto.” Early United States coastal charts show Islais Creek meandering through an extensive area of marsh lands, and named Du Vrees Creek.¹ The United States coastal chart for 1869² shows the name changed to Islais Creek. There seems to be no other reference to the former name. the name Islais has the appearance of being Spanish; however, the Spanish dictionary does not contain the word. An Indian word, “islay,” meaning wild cherry, suggests the origin of the name. There were many wild cherry trees on the peninsula, and it is probable that some of them grew on the banks of Islais Creek. The Spanish may have adopted the name and given it a Spanish form, as was frequently done with native names.

For the purpose of this discussion, Islais Creek is that portion of the Islais Creek area covered by salt marsh and tidelands as designated on the Map of Salt Marsh and Tide Lands of San Francisco, surveyed by George Allardt under the direction of the Board of Tide Land Commissioners.³ Islais creek and the adjoining tidelands lay in a section of the Bernal Grant known as “Rincon de las Salinas,” which freely translated means “corner (or district) of salt marshes.”

Near its mouth, Islais Creek was joined by a smaller and shorter stream flowing from the north, yet prominent enough to be named Precita Creek. William J. Lewis, Deputy Surveyor for the City of San Francisco in 1856, described Precita Creek as a very small stream flowing through a marsh that was six to eight hundred feet across from hard ground to hard ground. The marsh was noted as being “very soft and deep for it was hard to find bottom.”⁴ Precita Avenue received its name from Precita Creek.

Islais Creek has not been well described in official documents, probably because little or no productive use could be made of marsh. However, a court case involving a land ownership dispute between Freeman and Bellegrade gives the following description:

The lands described in the complaint are a portion of the Bernal Rancho, and the controverted question in the action is the title of the plaintiffs to the portions of the lands described in the complaint which lie between the south shore of Islais Creek and the thread of the stream. Islais Creek empties into the bay of San Francisco, and the tidal waters of the bay ebb and flow in the creek for some distance above its mouth. At the line of the land claimed by the plaintiffs nearest the bay the creek is, at ordinary high tides, three hundred feet wide, and the ground which at that point is covered and uncovered by the ebb and flow of the tides has width of one hundred and fifty feet between the bank of the stream and the line of ordinary low water mark. At high tide the water nearest the bay is about three feet deep, and at a point below the lands in controversy there is at low tide no water in the creek, thus rendering the creek a mere basin which is filled and emptied by the ebb and flow of the tide.⁵

Early Fill

Fill at Islais Creek first began from the need to connect San Francisco by land with certain areas lying further south on the peninsula, and later by a desire to integrate it into the city's southward development.

In the early 1880's, the San Bruno Turnpike was built connecting San Francisco with San Bruno. The road followed along the base of the hills called Bernal Heights before crossing Islais Creek on an earth-filled dike. The roadway was laid along the base of the hills called Bernal Heights before crossing Islais Creek at a point where the

salt marsh was not so broad. The roadway was laid on an earth-filled dike and was probably the first fill to occur at Islais Creek.

The creek was first bridged in 1866 with the construction of the Potrero Bay View Railroad, built to connect downtown San Francisco with the Bay View Race Track located near Candlestick Point. This horse-drawn railway crossed the tidelands at the mouth of Islais Creek via a mile-long trestle

The significance of the bridge as it related to change was recognized by Henry Langley, publisher of the San Francisco Directory, while commenting on a new route for the Southern Pacific Railroad, which was using the bridge as part of its right-of-way. He said:

. . .the bay will gradually be filled in until the present long wooden bridges will become bulkheads along the new front.⁶

The bridges Langley was referring to were Long Bridge, which crossed Mission Bay, as well as the bridge across the mouth of Islais Creek. His prediction became more than true, for today the bulkhead line is 3,400 feet east of the bridge at Islais Creek, and 2,200 feet east of Long Bridge at Mission Bay. Today their vestiges are recognizable as Third Street.

During the building of the Bayshore Highway in 1928 and 1929, the San Bruno Turnpike was modernized, becoming a link in that roadway. Today the James Lick Freeway follows along the same route ([see Map 12](#)).

By 1923, the railroad bridge across Islais Creek seems to have been shored up by earth. This assumption is based on an article appearing in the Merchants' Association Review.⁷ This article refers to the fact that the "viaduct" across Islais Creek was an earthen embankment through which a culvert allowed the tides to flow. The embankment most likely restricted the volume of tidewater that could flow up Islais Creek and onto its surrounding marsh lands, producing a drier land on its outer

perimeter. As the land became less marshy and more solid, it became more attractive for productive purposes. However, except for being used as a stockyard for “Butcher Town”, the area was used for little more than a garbage dump for many years.

During the late 1870’s or early 1880’s, another road was built across Islais Creek. This is clearly indicated by comparison of the United States Coast Survey Chart Number 621 for the years of 1877 and 1884.⁸ Although the reason for the construction of this road is not clear, it can be assumed with confidence that the road was built on an earth-filled base.

Early Plans for Development

The advantages of Islais Creek for industrial development were recognized as early as 1903 in an article appearing in one of San Francisco’s business periodicals. This article reported:

One of the underdeveloped opportunities of San Francisco is in the little inlet running from the bay on the south of the city to a point near the Mission District, and is known as Islais Creek. This inlet ought to be navigable water for sea-going vessels. Its location for quays and wharves is unsurpassed, and the water frontage it presents, or would afford under proper conditions, is needed by commerce even now.⁹

Although these opportunities for development were valid, no plans were immediately forthcoming. However, after the earthquake of 1906, a new look was taken at Islais Creek, resulting in a development plan offered by the Federated Harbor Improvement Association of San Francisco. This association, which was composed of parties interested in the development of San Francisco’s waterfront, proposed a plan to develop a sixty-four block area of submerged land at India Basin, which lies immediately adjacent to Islais Creek on the south ([See Map 1](#)).

The plan called for the purchase of approximately 173 acres of private lands to be bought back by the State of California through condemnation proceedings. The purchase was to be financed by a \$1,000,000 bond issue. Winning support of such organizations as the San Francisco Chamber of Commerce, the Merchants' Exchange, and the Ship Owners' Association, the legislature acted by passing a bill to allow the sale of state bonds to finance the project. The Board of State Harbor Commissioners purchased the land under condemnation proceedings provided for by an act of the legislature dated March 24, 1909.

After further study, the Federated Harbor Improvement Association recommended development of only forty blocks instead of the original sixty-four. A re-evaluation of the plan after the submerged land was purchased indicated that forty blocks were all that were really necessary or even useful, since the original plan had included the development of a tidal basin, a project in which the association did not want to get involved. The association said that the problem of harbor improvement was mainly an engineering question and one, they felt, that required the opinions of technical advisors.

Because of the high cost of reclaiming submerged land and due to the lack of immediate capital from either private sources or from the Board of State Harbor Commissioners, the project did not get underway. However, title to sixty-four blocks of land had passed back to the state and fell under the jurisdiction of the Harbor Commissioners.

From 1909 to 1925, little development occurred to disturb Islais Creek. A cantilever drawbridge was constructed across the creek at Third Street (renamed from Kentucky Street) through a joint effort of the Southern Pacific and Western Pacific railways; in 1918, the Islais Creek Wharf was completed along the south side of Islais Creek Channel on the state owned land purchased in 1909; then two years later, the Islais Creek Vegetable Oil Plant went into full operation. This latter project was located

on five acres of filled land adjacent to the Islais Creek Wharf, also part of the 1909 land acquisition. Some, if not all, fill resulted from material removed from the bottom of the channel when it was dredged to a depth of twenty-five feet at low tide by the Corps of Engineers in 1919.

But for the most part, Islais Creek remained virtually undeveloped for more than twenty years. The area acted as a barrier to the southward growth of San Francisco's industry. The San Francisco Chamber of Commerce considered the area "an eyesore and a cesspool." The chamber went further to say that Islais Creek ". . .has prevented the development not only of the territory within the district itself but that of the territory that surrounds it."¹⁰

San Francisco's businessmen and industrialists pushed for the commercial development of Islais Creek. Commercial development in those days meant reclamation; reclamation meant fill – bay fill. The San Francisco Chamber of Commerce underscored this concept of reclamation in another statement regarding the development of Islais Creek:

. . .the reclamation of Islais Creek is but a beginning of the utilization of the land and facilities that are available to industry and commerce lying between Potrero and Bayview districts and which today have been unusable due to the physical conditions of that section.¹¹

The advantages of Islais Creek's strategic location outweighed the disadvantages of its unimproved site as far as its potential for industrial development was concerned. It lay at the "crossroads" of transportation north and south on the peninsula as well as a route to the ocean. To the west ran Bayshore and Alemany boulevards, connecting the area with the Mission District and the City of San Mateo; Army Street connected with Potrero and Van Ess avenues providing a clear route to uptown San Francisco; and, Third Street ran directly to the financial district and the northern waterfront.

The Islais Creek Reclamation District

To fully capitalize on Islais Creek's potential, some broad and comprehensive organizational plan had to be implemented. To accomplish this goal involved cooperation from every property owner in the area. The simplest and most straightforward way to achieve it was to form a reclamation district. However, the political code of California, which generally provides for the establishment of reclamation districts, specifically precludes the City and Count of San Francisco from forming one. It was necessary, therefore, to persuade the legislature to create a special district for the purpose.

A district was created by Senate Bill Number 196 and Assembly Bill Number 253, introduced into the State Legislature on January 20, 1925, and amended on March 9. The bill passed both houses and was approved by Governor Richardson.¹²

Heretofore reclamation districts were created to drain or otherwise improve land designated for agricultural use. The Islais Creek Reclamation District was formed to reclaim tidelands that were to be used as industrial sites and shipping terminals. The legality of such a district was thus in question and it had to be tested in the courts. The case was first taken to California's Superior Court and finally to the Supreme Court. The legality of the legislative act was affirmed by the Supreme Court of California in San Francisco, Case Number 11948, filed on January 21, 1927.¹³

The court found:

- 1) The district was a legal reclamation district;
- 2) Although in the beginning reclamation districts were designed for unwatering of land for agricultural purposes, this did not stop reclamation districts from unwatering lands for other purposes as in this case, which was to aid commerce and reclaim lands and increase resources and industrial energies;
- 3) The methods and scope of the reclamation project were legal; and

- 4) The limits of the district were set by legislature and they could not be questioned after they had once been designated.

Islais Creek Reclamation District, as it became known, is bounded by Twenty-Fifth, Army, Third, and Iowa streets, and also by Army Street, Third Street, Islais Creek Channel, the Southern Pacific Railroad trestle, Oakdale Avenue, and San Bruno Avenue. ([See Map 12](#)) It includes 280.1 acres of which 8.5 acres is channel, 207.8 acres is property, and 63.8 acres is streets.

Some of the larger property owners at the time of the district's formation included the Southern Pacific Railroad Company, the Western Pacific Railroad Company, San Francisco and Fresno Land Company, Sharon Estate, S.H. Lachman Estate Company, Hind Company, Hind Rolph Investment Company, Boyd Investment Company. Henry Feige, Henry Windt, E.W. Newell, C.L. Tilden, Krieg Tanning Company, and the Winchester Estate.

Reclamation of Islais Creek included three projects: 1) Construction of a 2,200-foot seawall along the north side of Islais Creek Channel, from Third Street to the Southern Pacific Railroad tracks; 2) Filling of 280 acres of low land bringing it up to city grade; and 3) Construction of 3,500 feet of 8'x14' redwood box sewer built on 45,000 feet of pilings.

The cost of the project was estimated at \$1,620,152. The work was paid for by assessment as follows: 1) assessments based upon benefits derived from the seawall; 2) assessments based upon benefits of the sewer; 3) assessments to cover the cost of filling the property, proportioned to the amount of fill necessary to bring the property to city grade; 4) assessments to cover the cost of filling the streets (this was handled the same way as assessments for filling property); and 5) assessments to cover the cost of engineering and collection.¹⁴

The owners of the property unanimously voted approval of a bond issue to finance the project's cost.

Before the project could begin, the problems concerning fifty acres of land within the district parceled into 26x70 foot lots with title held by various individuals had to be resolved. Title to this land had been given gratis in 1861. Under the terms of Gift Map Number Four, land was given free to individuals who would pay \$10.00 for the deed and notary fee. The reason was that the land was considered worthless in 1861, and in order to collect the taxes on it, the city first had to give it away. When the time came to clear the titles for the reclamation district, it was found that the titles to the property were clouded due to the meanderings of Islais Creek, and although they were mapped, they could not be fitted into the dimensions of the tract.

To overcome this problem, the City Engineer's Office proposed a unique solution known as "Rearrangement of Gift Map Number Four." The proposal gave property owners the choice of three propositions: Proposition (1): Allow relocation of their property within the district. Proposition (2): Sell their property at the current market value, which was \$200 per lot; or Proposition (3): Purchase land they selected within the district equal to the amount they owned. The price of the new purchase was set at \$200 per lot, and required the sale of their "old" land at \$200 per lot. Proposition (3) was inserted so that the owners could not evade the \$200 set for the sale price on the grounds that it was too low. Only one owner took advantage of Proposition (3). Because of the reduction of the number of streets in the district, more land was available for reapportionment, thus each landowner was given the full amount of land shown on his original deed.

At the beginning, there were sixty-three owners and 549 parcels of land. After the rearrangement, twenty-eight owners remained with the land reapportioned into forty-one parcels.

To execute the plan, owners placed the deeds to their property in a title company. Streets were then closed, new ones opened. The titles were then cleared on all land and the deeds for the new parcels were delivered to their owners. Title insurance was given on all parcels.

The whole plan had to be carried out as a cooperative endeavor; there was no way to compel any owner to enter the plan unless a new street was planned to pass through his property, in which case the right of condemnation could be exercised. Fortunately, the threat of condemnation persuaded reluctant owners to comply, since without one hundred percent participation, small indentations would have occurred in the district as a whole, defeating to some extent the effectiveness of the plan.¹⁵

The reclamation project began in 1925 with the construction of a seawall and dredging of Islais Creek. A rock seawall, forty feet deep at mean low water, was placed along the northern shore of Islais Creek from Third Street to the Southern Pacific Railroad right-of-way. It measured approximately 2,090 feet long and involved dredging a trench which produced 378,000 cubic yards of mud. This material was placed behind the wall for fill. The wall required placing of 475,000 tons of rock obtained from nearby hills.

The State Harbor Commissioners then dredged Islais Creek from the pierhead line to the Southern Pacific right-of-way, including a turning basin at its upper end to allow room to maneuver ships. The United States Army Corps of Engineers dredged the shoal off the entrance to the channel to a depth of thirty-four feet at mean low tide. The total yardage dredged was 6,500,000 cubic yards, all of which was used to fill within the district.

A number of large property owners, in cooperation with the district, filled their land under contract with private grading firms.

The fill project took more than ten years to complete. The biggest problem of filling 280 acres of land to bring it to city grade was the availability of fill material.

A major project that contributed to the source of fill material, was the construction of the six and one-half mile Bayshore Boulevard. The construction company of Granfield, Farrar and Carlin excavated 181,452 cubic yards of clay, serpentine, and adobe, which they trucked 2.2 miles to Islais Creek. The excavation project utilized six power shovels and forty-four five-ton trucks.¹⁶

Another contractor, H.W. Rohl Company, removed one million cubic yards of material and deposited it at the reclamation district.¹⁷

The Western Pacific Railroad Company contracted Meyer Rosenberg to construct the first unit of its Islais Creek industrial yard. Construction included 500,000 cubic yards of rock removed from a six and one-half block area lying between Connecticut Street and Kansas Street, 400 feet north of Army Street ([see Map 11](#)). The work was accomplished by three steam shovels and sixteen trucks.¹⁸

The Islais Creek Reclamation District project must be considered one of the more ambitious undertakings requiring bay fill to be accomplished along San Francisco's waterfront up to that time. Its impact upon the Islais Creek region as a whole was to fit it into San Francisco's land use pattern as a location for industry. However, development and growth of land reclaimed from San Francisco Bay did not end with this project. More was to come.

The Army Street Terminal

Among the responsibilities of the Board of State Harbor Commissioners as stipulated by the legislature was to:

Keep in good repair seawalls, embankments, wharves, piers, landings and thoroughfares, for the accommodation and benefit of commerce; construct new docks, piers and wharves; allow for further construction along the waterfront.¹⁹

With this in mind, the San Francisco Port Authority submitted a proposal to the legislature in 1957 for a bill authorizing \$50,000,000 in general obligation bonds for the modernization of San Francisco's state owned harbor facilities. This act, known as the San Francisco Port Bond Law of 1958, was passed by the legislature and signed by Governor Edmund Brown. In November of that year, it went on the ballot and was approved by the California voters.

A major portion of the money was used to finance construction of Pier 80, a large, modern container pier located on state owned land at the north side of Islais Creek Channel. According to the San Francisco Port Authority, availability, geography, and land usage were the determining factors in locating here, not geology or economy. Room was needed to handle container freight, and in 1957 the Islais Creek area was the only place left along San Francisco's waterfront where both room and deep water were available. So the decision was made to locate there.

Unlike many of the piers along San Francisco's waterfront, the Army Street Terminal, as it is generally referred to, is built upon filled land. The huge pier covers sixty-eight acres and is capable of berthing eight freighters at one time. Its three wharves total one mile in length and are constructed of reinforced concrete supported by pre-stressed concrete pilings.

Twenty-two acres were already filled before the project started, as the site was previously used as a city garbage dump; then, forty-six acres were added, bringing the total land area to sixty-eight acres. Approximately 4,300,000 cubic yards of material were used to create the land and bring the old fill area to grade. The Western Construction News said: "The amount of material involved in this project and the production rates achieved compare favorably with some of the biggest earth works projects in the west."²⁰

Before the area emerged from the bay, a substantial foundation had to be established to underlie the fill. This required the removal of four million cubic yards of bay floor material, a major excavation job. Enormous trenches were dug to a depth of 135 feet around the bay perimeter of the site. These were designed to contain the sand dike that would contain the existing mud and the new fill.

The complex sand dike began rising from the trenches with the placement of 500,000 tons of rock in three different sizes, all supplied by the Basalt Rock Company. At the bottom, 45,000 tons of bonding rock was placed in a two-foot layer. This layer was then covered with 3,600,000 tons of sand secured in place by 300,000 tons of class "B" rock, and finally 80,000 tons of riprap was placed upon the rock. The layer of riprap measured two feet thick.

All excavation to a depth of minus eighty-five feet was accomplished with two 1,500 cubic yard suction dredges with twenty-four inch heads brought down from Seattle especially for the job. Where further excavation was required, a Washington Crane with a five-yard clamshell scoop was used.

Approximately 2,500,000 cubic yards of the material was "salvaged" and dumped at India Basin where another fill project was in progress. The remainder was loaded on barges and towed to a dumping area located outside the Golden Gate. The

new compacting sand that was used to replace the old was dredged from Presidio Shoals, which lie off the Marina District just east of the Golden Gate Bridge.

Construction included driving 5,001 timber piles and 4,683 pre-stressed concrete piles, then building a mile-long, seventy-eight foot wide dock around the perimeter of the fill. Buildings and railroad tracks were then added.²¹

The entire project was a joint venture of Manson Construction and Engineering Company and General Construction Company under the direction of the San Francisco Port Authority. The \$27,000,000 project began in September 1963 and the terminal opened in 1967. In 1970, the terminal underwent an additional \$1,000,000 expansion to accommodate two major tenants: American President Lines and States Steamship Company.

With the completion of the Army Street Terminal, the filling of salt marsh and tidelands lying within Islais Creek as surveyed by George Allardt under the direction of the Board of Tide Land Commissioners was nearly completed. The only places not filled are Islais Creek Channel, a designated navigable waterway and thus cannot be filled under present laws, and a few acres just north of Pier 80 and south of the Pacific Gas and Electric property at Potrero Point. These last few acres may remain unfilled, for if the intended land use is a duplication of one already in existence in some other part of San Francisco Bay, and the latter facility is not operating at full capacity, the San Francisco Bay Conservation and Development Commission is likely to refuse the permit to fill.

Conclusion: Islais Creek

The development of Islais Creek and the reclamation of its salt marshes depended upon the success of the Islais Creek Reclamation District. Yet the achievement lay not in its establishment, but in the method in which it was made to work. The district had to develop a workable plan in which the city, the property owners, and the state could effectively participate. The plan had to be organized so that it would be as fair and equitable as possible. Considering the goal of the project, to develop Islais Creek into a healthy and productive area of the community, there seems to be little controversy regarding the popularity of the challenge or the success of its outcomes.

FOOTNOTES

¹U.S Coast Survey Chart Number 621 (1856).

²U.S. Coast Survey Chart Number 621 (1869).

³Map of the Salt Marsh and Tide Lands and Lands Lying Underwater, South of Second Street, and situated in the City and County of San Francisco, approved March 10, 1868.

⁴Testimony of George Treat in Spotts vs. Hanley, Transcript on Appeal, pp. 22-23 in 426 Records of the Supreme Court.

⁵Freeman vs. Bellegrade, 108 Cal. July 1895.

⁶Henry G. Langley, San Francisco Directory, 1875, p.22

⁷"The Possibilities of Islais Creek," Merchants' Association Review, Vol. VII, No. 77 (January 1903), p3.

⁸U.S. Coast Survey Chart Number 621 (1877 and 1884).

⁹"The Possibilities of Islais Creek," op. cit., p.3.

¹⁰"Complete Development of Industrial San Francisco Assured by Islais Creek Bill," San Francisco Business, Vol. X, No. 15 (April 10, 1925), 5-7.

¹¹Ibid. p. 5.

¹²Senate Bill Number 196 and Assembly Bill Number 253, introduced in the State Legislature on January 20, 1925, and amended on March 9. Approved by Governor Richardson on April 6, 1925.

¹³Case Number 11948, Supreme Court of California, filed January 21, 1927, San Francisco, California.

¹⁴M.M. O'Shaughnessy, "Islais Creek Reclamation District, San Francisco," on file at the City and County of San Francisco Assessor's Office.

¹⁵Ibid.

¹⁶"Bayshore Boulevard, San Francisco," Western Construction News, Vol. III, No. 21, (November 25, 1928), 740-41.

¹⁷"Bayshore Highway Dedication," Western Construction News, Vol. IV (December 10, 1929), 638.

¹⁸"Islais Creek Yard Project for Western Pacific," Western Construction News, Vol. VI, No. 12 (June 25, 1931).

¹⁹California Statutes, 1863, Chap. 306.

²⁰"Pier is Four Big Jobs in One," Western Construction News, Vol. XXXXI, No. 1 (January, 1966), 17.

²¹Ibid., p. 18.

CHAPTER VII:

INDIA BASIN

Early Development

A section of San Francisco's shoreline closely related to Islais Creek is India Basin. This is the area that lies adjacent to Islais Creek on the south and extends to Hunter's Point ([see Map 1](#)). India Basin has played an important part in San Francisco's southern waterfront development plans, serving as an integral part of the intermodal cargo terminal centered at Islais Creek.

Historically, shore land use there has been oriented toward the sea. Chinese fishing camps, small ship builders and oyster beds were located there for many years. The shipyard of Anderson and Cristifani, established in 1893, is the last remaining industry of those former times.

India Basin received its name early in San Francisco's history, for it appears on the salt marsh and tide land map authorized by the Board of Tide Land Commissioners in 1868. At that time, 32 ½ - acres were "dedicated to and reserved for docks, piers, slips, and basins, and other purposes of commerce"¹ ([See Map 12](#)). Except for this and the Butchers' Grant, all lands at India Basin were sold into private hands as a result of the Board of Land Commissioner's sale of the state's surplus land in 1870.

Bay fill along the shore of India Basin has been comparatively limited. The United States Coast Survey charts indicate some fill possibly occurred along the Butchers' Grant in the early 1880's; however, until the late 1920's, India Basin remained relatively unchanged.

First Fill

The first major fill to occur there was conducted under the direction of the Western Power Company, which later became the Pacific Gas and Electric Company, in order to increase its power generating facilities and provide better service to its San Francisco customers. A small point jutting into India Basin was chosen for the plant site because of its ideal advantages for development into a steam-operated power plant: a generous supply of salt water for condensing purposed; a suitable foundation of material composed of hard rock; an abundant supply of fresh water close by; and, accessibility to deep water for flat deep-laden fuel barges. In addition, the site was situated close to the station's load center.

The first unit of the plant was placed under operation on December 3, 1929, with a 42,000 kilowatt capacity. The plant was built by Great Western Power Company's construction department at a cost of thirty million dollars. After the reorganization of the Western Power Company into the new Pacific Gas and Electric Company, this power generating plant at India Basin was designated Station "P".

U.S. Coast and Geodetic Survey Chart Number 5532, Edition 15, dated February 1932,² shows an increase of land area over Chart Number 5532, Edition 9, dated April 1924³ at the power plant's site. The following quotation from the Western Pipe and Steel News dated November 1929 gives more information:

That portion of the property upon which the plant is located was a hill of serpentine rock and it was necessary to excavate 85,000 yards to prepare for it. The material excavated was used to make two dikes extending out into the bay to the government bulkhead line established for the future waterfront.⁴

Fuel for the power plant's operation was received at the ends of the dikes from oil pipe lines which ran from moored barges. Fresh water was supplied by the Spring Valley Water Company, whose well is located nearby.

The plant was enlarged in 1949 to a 262,000 kilowatt capacity and placed into operation on February 8, 1949. At that time, more than 15,000 cubic yards of concrete were poured below the ground for foundations, saltwater intake and discharge, tunnels and pipe trenches.⁵

South of the Pacific Gas and Electric Company's Station "P" in the vicinity of Innes Avenue and Earl Street just east of Evans Street ([see Map 12](#)), lies approximately twenty-five acres of recently filled land. This land was hurriedly filled in 1965, by the owners in order to take precedence over restrictive rulings regarding bay fill which were under consideration at the time by the San Francisco Conservation and Development Commission. No apparent plans were formulated for the use of the land and today it is dormant.

The greatest fill at India Basin began in 1962 with an environmental impact rivaling the Hunter's Point or Islais Creek fills. It was prompted by a decision of the San Francisco Port Authority to fill the remaining portion of tidelands acquired by the Board of State Harbor Commissioners back in 1909, utilizing mud dredged during the construction of the Army Street Terminal.

The Boblitt Debris Dike

In 1962, the San Francisco Port Authority announced it would receive bids for construction of a 6,000-foot rock-fill dike or seawall around its property at India Basin to contain the mud dredged from the construction of the Army Street Terminal project. The lowest bid received was \$3,500,000. The port authority rejected the bid because it was too expensive. At the same time, a local dump operator, Theo. Boblitt and Company, was looking for a disposal site capable of handling large volumes of construction debris over a period of years. Boblitt suggested that the port authority use his supply of debris to build the dike. This was a new idea in seawall construction, and

when engineers agreed that the project was feasible, the port authority concurred with the plan.

The earthen dike was to surround twenty-two city blocks located adjacent to Islais Creek Channel on the south and extending southward along the bulkhead line to India Street. The inshore side of the project was Arthur Avenue ([see Map 12](#)).

The dike was constructed in two stages. In the first stage, an estimated 1.7 million cubic yards of debris was used to build an embankment thirty feet high with a minimum width at its base of 180 feet. The second stage required widening of the embankment to a total base width of 300 feet. The total length of the dike measured over a mile long - - 5,800 feet. During construction, the dike was able to advance at an average rate of 200 feet per month.

The success of the debris dike was due to the huge quantities of rubbish being generated by San Francisco's building boom and redevelopment projects. The Army Street Terminal project contributed 2.5 million cubic yards of bay mud dredged from its foundation to create approximately 150 acres of land. The cost of the dike was approximately \$514,000.⁶

The LASH Terminal

The port authority had no immediate plans to utilize the 150-acre India Basin site; however, the economic consulting firm of Arthur D. Little had submitted two reports that would greatly influence future development of the site.

The first report was entitled "Port of San Francisco: An In-Depth Study."⁷ This report made two salient observations on future cargo terminal needs. 1) The port must plan to handle growing volumes of containerized cargo; and 2) port economics and the changing technology of the steamship industry dictates a large-scale shift of cargo

activity from the technologically outmoded piers and limited land areas of the northern waterfront to a new pier complex on the southern waterfront.

The second report, entitled "San Francisco's Maritime Future: Revolution and Response,"⁸ concluded that unless suitable container handling facilities were developed, the port could expect to lose one-third to one-half of its cargo generating revenues by 1980. The report analyzed the physical requirements of an appropriate facility and recommended that India Basin be selected as the site for a container terminal. In addition, the report recommended construction of a container terminal with the capacity to berth nine container ships and two lighter aboard ship (LASH) vessels. It also recommended that back-up space of thirteen to sixteen acres per berth be provided and space for rail-truck transfer and cargo consolidation, together with the retention of open water area for LASH operations.

The need for continuing terminal construction in the Islais Creek - India Basin was strongly endorsed in a 1970 study sponsored privately by a citizen's waterfront committee headed by Supervisor Roger Boas and Commissioner Mortimer Fleishhacker, Jr. of the City Planning Commission.⁹ The committee's report emphasizes the importance of city employment stemming from harbor activity and calls for immediate action to finance new facilities:

Steamship cargo technology is in the midst of a revolution. A competitive response requires the immediate construction of at least another new container terminal in addition to the Lighter Aboard Ship terminal. Construction on the additionally needed facility should start now if shippers and carriers who have traditionally utilized facilities in San Francisco are not to be lost to competition.¹⁰

The committee's study made the following recommendation regarding financing of the project:

The Committee believes this investment should be financed by the issuance of general obligation bonds and that the annual deficits resulting there-from be defrayed from Port revenues and from the general fund, if necessary.¹¹

The San Francisco Board of Supervisors gave approval (this was now necessary since the transfer of the port from the State of California to the City of San Francisco) to the adoption of a \$34,000,000 general obligation bond recommended by the Supervisors and Development Committee. On August 23, 1970, the Board of Supervisors certified the bond issue to the November 2nd ballot, and it was passed by the voters of San Francisco.

In January 1970, the San Francisco Port Commission sold \$11,000,000 in Series “A” revenue bonds to initiate construction of the world’s first LASH terminal. In addition, a sale of parity, revenue bonds Series “B”, for an amount of \$9,000,000 was made in January 1971 to complete the financing.¹² The 21.6 million dollar terminal is located at Pier 96. Pier 96 is built on fifty-five acres of fill land resulting from the Boblitt Islais Creek Debris Dike project at India Basin. ([See Maps 9](#) and [12](#))

Pier 96 opened in February 1972 as part of San Francisco’s multiport, an advanced design complex of intermodal cargo terminals located along the southern waterfront. Pier 96 LASH terminal provides two ultra-length berths for the 820-foot LASH ships of the Pacific Far East Lines fleet, with a back-up area of more than twenty-five acres per berth; twice the cargo working space offered by conventional container terminals. It includes a LASH lighter basin, where ship cargo barges are moored, and a transit shed with a cantilevered steel canopy to shelter the 61-foot barges during loading. Pier 96 will also handle pure container ships RORO (Roll On/Roll Off) vessels and other types of intermodal vessels.

Construction on Pier 94 intermodal terminal was begun early in 1972. This \$34,000,000 link in San Francisco’s multiport complex is engineered to total container capability. Its advanced intermodal facilities are being developed on 115 acres of the Boblitt filled land immediately north of Pier 96. It is designed to provide thirty acres of back-up area per berth to accommodate the new jumbo container ships and other giant cargo carriers that are on the drawing boards of the world’s ship builders.¹³

Pier 94 is financed by a \$34,000,000 general obligation bond approved by the electorate of the City and County of San Francisco in the general election of November 2, 1971.

Conclusion: India Basin

Clearly, India Basin's major bay-fill project was the 150 acres of land created behind the Boblitt Debris Dike. The decision to go ahead with the project was based upon economic expediency; that is, utilization of the muck dredged in preparation for the Army Street Terminal. Yet, at the time of this decision, no clear plan had been formulated for the use of the newly created land. The consulting firm of Arthur D. Little indirectly provided a solution. The firm's studies showed that the Port of San Francisco was losing cargo handling business to other ports in San Francisco Bay and elsewhere, and recommended the development of this land to curtail this loss. It recommended the development of India Basin into the first Lighter Aboard Ship cargo handling terminal.

Political forces favored the LASH terminal as a solution to several problems plaguing San Francisco at the time. The harbor commissioners hoped the terminal would stop the flow of business to other ports. The construction industry and trade unions hoped to benefit from the work the project would provide. The waterfront unions hope to benefit by keeping jobs in San Francisco. And, local politicians hoped to be re-elected if they supported the plan.

However, the success of the plan is in question; an ultra-modern port facility does not compensate for the additional transportation costs and delay caused by San Francisco's disadvantageous location in respect to the hinterland. The old problem of San Francisco's location lies at the root of the problem. Building the LASH terminal is only an attempt to delay the inevitable, for even at this writing, the American President

Lines, one of San Francisco's major shipping companies, announced its desire to relocate its cargo handling facilities from the Army Street Terminal to a location in Oakland. This action has been forestalled by the Port of San Francisco making "special considerations" to the American President Lines.

FOOTNOTES

¹Map of the Salt Marsh and Tide Lands and Lands Lying under Water South of Second Street and Situated in the City and County of San Francisco, prepared by George F. Allardt, City Surveyor and Chief Engineer, March 30, 1868. .

²U.S. Coast Survey Chart Number 5532, Edition 15 (February 1932).

³U.S. Coast Survey Chart Number 5532, Edition 9 (April 1924).

⁴"P.G.&E. Station 'P'," Western Pipe & Steel News, Vol. VI, No. 8 (November 1929), p. 1.

⁵Charles M. Coleman, P.G.&E. of California: The Centennial Story of Pacific Gas and Electric Company, 1852 - 1952, (New York: McGraw Hill Book, 1952).

⁶"Construction Debris Substitutes for Rockfill in Dike," Engineering News Record, Vol. 176, No. 7 (February, 17, 1966) pp. 42-44, 48.

⁷"Port of San Francisco: An In-Depth Study," a report prepared by Arthur D. Little, Inc., San Francisco, September 1966.

⁸"San Francisco's Maritime Future: Revolution and Response," a report prepared by Arthur D. Little, Inc., San Francisco, November 1967.

⁹"Report of Waterfront Study," a report prepared by Gruen and Gruen, San Francisco, December 14, 1970.

¹⁰Ibid., p. 3.

¹¹Ibid., p. 6.

¹²"Prospectus for Financing Pier 94," a report prepared by the San Francisco Port Commission.

¹³Ibid

CHAPTER VIII:

HUNTER'S POINT

One of the most interesting areas of fill along San Francisco's waterfront occurred at Hunter's Point. It is significant for two reasons: 1) the amazing changes in its shoreline configuration resulting from the fill; and 2) because here is best demonstrated the awesome impact of twentieth century technology on landscape.

For 166 years, Hunter's Point remained relatively undisturbed except for the establishment of a small merchant shipyard. Then, in just two years after America's entry into World War II, this unique peninsula was transformed into a vast complex designed to repair and maintain the United States Navy's Pacific Fleet, from the smallest vessel to the largest warship afloat.

For the purpose of clarity, this chapter has been divided into two parts. In part one, the history of Hunter's Point is discussed from the time of its discovery to its conversion into a giant naval ship repair base, as well as the situations and decisions which led to its construction. Part two discusses the technical aspects of dock construction and fill that changed Hunter's Point almost beyond recognition.

Early History

Punta de Concha was the Spanish name given to the prominent peninsula known today as Hunter's Point. The name first appears on the chart "Plano del Puerto de San Francisco," drafted in 1776 by Jose de Canizares, first pilot of the Spanish vessel "San Carlos."¹ The "San Carlos" was under the command of Captain Juan Manuel de Ayala, whose duty it was to explore and survey San Francisco Bay for Spain.

A British expedition, commanded by William Beechy on the ship H.M.S. Blossom, completed the first recognized authoritative survey of San Francisco Bay and

its border lands in the year 1827.² Captain Beechy's chart published in 1833, shows Hunter's Point named Point Avisadera.*

During the early 1860's, the South San Francisco Homestead and Railroad Association purchased approximately 2,455 acres of land at Hunter's Point from the State of California. This included some twenty-five acres of tidelands that were purchased under the act of the legislature that provided for the sale of swamp and overflowed lands ([see Chapter I, page 18](#)). Within the bounds of the purchase lay a fifteen-acre tract called Hunter's Tract. It bordered San Francisco Bay in the vicinity of what is known today as Thomas Street, Hawes Street, Oakdale Avenue and Fitch Street. Allardt's map of 1868 for the Board of Tide Land Commissioners shows Hunter's Tract with a house and a short wharf located on the tract.

The History of San Francisco Naval Shipyard, 1941 – 1958 states that two brothers, Robert and Phillip Hunter, were hired by real estate developers, presumably the Homestead Association, to sell property at Hunter's Point and that they purchased land there, the implication being that the promontory was named after the Hunter brothers.³ However, Mr. J.H. Gedge, a San Francisco forty-niner pioneer, said:

“ Others have said it was called Hunter's Point even earlier due to the fact that it was a popular place to go hunting.”⁴

The United States Coast Survey Chart No. 621, dated 1859,⁵ gives the promontory the name Hunters Point. This is the first time the name appears on the survey charts. The Hunter's Tract venture to develop the peninsula into a community to be called South San Francisco failed because in the 1850's and 60's Hunter's Point was too remote from the City of San Francisco to become a suburb, yet too near to be a city by itself.

* The word “avisadera” is not a familiar term in Spanish. The word may have something to do with the verb avisar (to give warning), or perhaps with avisitar (to decry at a distance). The spelling of Point Avisadera was changed to Point Avisadero beginning with United States Coast Survey Chart No. 621 (1884).

The First Dry Dock

The first bay fill to occur at Hunter's Point was directly connected to the peninsula's principal industry, ship repair. William C. Ralston, a San Francisco businessman and director of the California Steam Navigation Company, recognized the point's maritime potential. The natural advantage of a hard-rock peninsula jutting into deep water created an ideal situation for development into a dry dock for ships. Ralston held the belief that a dry dock capable of handling large ocean-going ships was absolutely necessary for the future of San Francisco's maritime trade. Alexander von Schmidt, a renowned civil engineer, assured Ralston that a graving dock* could be built at Hunter's Point, and work was begun in September 1866 under his direction.⁶ The cost of the undertaking, including engines, pumps, mechanical apparatus and the excavation itself totaled \$1,200,000. Upon its completion two years later, the dry dock could accommodate any ship afloat except the "Great Western."⁷

Ralston and his associates obtained the tip of the Hunter's Point peninsula and then applied to the legislature for a grant to the offshore property. The 46.8 acre ship repair yard was incorporated under the name of the California Dry Dock Company on August 31, 1868, with one million dollars capital.⁸ ([see Map 2](#)).

By the turn of the century, the commercial world was looking toward the Pacific Coast of the United States as the most promising area for future development. The extension of America's trade to the Far East gave promise of a bright future for its merchant fleet. San Francisco, with its natural advantages and its advanced development, was destined to play a major role in America's involvement with the Pacific nations.

* A graving dock is a dry dock. The vessel is floated in and the gates are closed when the tide is at ebb. The remaining water is then pumped out, and the vessel's bottom is "graved" or cleaned.

Additional dry docking facilities in San Francisco Bay became necessary to support the growing merchant fleet. Thus the decision was approved to construct a new dry dock at Hunter's Point. Excavation of a second dock, adjacent to the first, was begun in 1901 and formally opened on January 29, 1903, with the docking of the battleship U.S.S. Ohio. The new dock was ranked among the largest in the world.⁹

In 1908, the Bethlehem Steel Company purchased the dry docks and repair facilities of the California Dry Dock Company that had earlier changed its name to the San Francisco Dry Dock Company. The ship repair yard was used in conjunction with the Union Iron Works, a San Francisco based subsidiary of Bethlehem Steel Company, and operated under the name of Union Iron Works Dry Dock Company until 1917 when the name was again changed to Bethlehem Shipbuilding Company, Ltd.¹⁰

The United States Navy Takes Interest

The United States Navy was the primary force affecting further bay fill at Hunter's Point. The navy's first interest there resulted from the need to repair Admiral Sperry's "Great White Fleet" when it arrived in San Francisco Bay during its globe circling cruise in 1908. Admiral Sperry's fleet arrived in San Francisco Bay and found that the waters of the United States Navy ship repair yard at Mare Island were too shallow to accommodate its deep draft ships. Consequently, twenty-three ships were docked and serviced at the Union Iron Works Dry Dock Company yard at Hunter's Point. This event dramatized the need for a United States Navy deep water repair facility for the West Coast.

Two years later, in 1910, the United States Navy General Board officially recognized this need and recommended that Hunter's Point, or an alternative San Francisco location, be purchased and developed onto a naval repair facility in order to support the expanding Pacific Fleet.¹¹ This need was reaffirmed by several other boards in the years to follow; however, no acquisitions were made.

A most thorough study of Hunter's Point's potential as a United States Navy ship repair yard resulted from one of these board investigations. A special commission was approved by Congress in 1916 with the directive to:

. . .study the necessity and desirability of establishing an additional Navy yard on the West Coast of the United States . . .(and) recommend a suitable site.¹²

The commission was under the direction of Rear Admiral J.M. Helm, and it has since been referred to as the Helm Commission.

Once the commission established the fact that an additional naval repair facility was necessary for the West Coast of the United States, a regional location had to be selected. San Francisco Bay won the commission's approval because of its superior physical and strategic advantages, its industrial development, and its defensibility.

Numerous cities around San Francisco Bay were anxious to secure the new yard. Site competition was narrowed to four finalists: Alameda, Yerba Buena Island, Richmond – Albany, and Hunter's Point.¹³

In support of Hunter's Point as the new United States Navy ship repair yard, the Helm Commission made the following statement:

From a careful inspection of the site and from weighing all the information received, the commission has reached the conclusion that Hunter's Point possesses the following important advantages among others in considering its development for naval purposes:

- 1) It adjoins permanent deep water;
- 2) It adjoins the largest and best anchorage ground in the bay;
- 3) It is conveniently located with reference to San Francisco as a center of labor and materials, and as a residence for employees;

- 4) It is adjacent to two privately owned large graving docks; and
- 5) Dry docks can be constructed there at a savings of fully \$1,000,000 per dock, as compared with docks constructed elsewhere, owing to more favorable material.

It is therefore recommended that this site be one of those considered further in making final comparison and selection.¹⁴

The commission's report also revealed some important disadvantages of Hunter's Point for the location of a new repair base. It showed that due to the precipitous character of the site, extensive grading and filling would be necessary before it could be effectively utilized. The report regarded grading and filling disadvantageous because of its high cost and the resultant delay in yard readiness. Added building costs would also be incurred due to the character of the material composing the submerged lands. A hard bottom, necessary for a firm foundation for piers, quay walls, and industrial buildings, lay under many feet of unstable mud. To prevent possible damage to the structures resulting from an earthquake as severe as the one of 1906, it would be essential to extend all foundations to the more stable rock.¹⁵

The Helm report failed to precipitate immediate congressional action in the selection of Hunter's Point for the location of the navy's new West Coast ship repair yard. However, the navy did recognize the importance of the site by subsidizing the enlargement of Dry Dock Number One that was being modernized at the time.¹⁶

The Union Dry Dock Company had contracted for the construction of a new graving dock to be excavated on the site of the original dry dock built in 1866.¹⁷ It would measure more than twice its predecessor's size and would be oriented in a slightly different direction. The conditions of the government subsidy stated that the United States Navy would have priority use of the facility in return for a guaranteed rental of \$50,000 for six years after its completion. The dock was first used in 1919 for

battleship docking.¹⁸ By making periodic contracts with Bethlehem Shipbuilding Company, Ltd., the navy continued using the facility until 1941.¹⁹

The United States Navy Buys Hunter's Point

Interest in Hunter's Point as a site for a United States Navy ship yard was revived in 1939 by two related factors: the possibility of war, and the need for additional shore stations and repair facilities to service the navy's growing fleet.

In 1939, the Secretary of the Navy appointed a board to again study the need for a dry docking yard in San Francisco Bay. This study, as others before it, considered the feasibility of improving the navy's facilities at Mare Island and the possibility of locating a ship repair yard at Alameda. Both were rejected in favor of Hunter's Point due to the superior characteristics of the site - - deep water lying immediately offshore, and solid bedrock for dry dock functions. The report concluded:

That for the purpose of National Defense, there is a need for, and the Navy should acquire, Hunter's Point dry dock property as soon as possible and thereafter prosecute a program of improvements and additions there to. . . which will render these dry docks capable of being utilized to their full capacity as an annex to the United States Navy Yard, Mare Island, California.²⁰

The board recommended the purchase of the facilities of Bethlehem Shipbuilding Company, Ltd., at a cost not in excess of \$3,500,000, and that improvements totaling \$2, 500,000 would also be provided. Recommended improvements included grading and fill, two hundred feet of quay wall, a dry dock crane, independent power supply, and roads.²¹

In June of 1939, under the growing pressures preceding World War II, Congress authorized acquisition of Bethlehem's dry dock facilities at Hunter's Point. On December 29, 1939, a purchase agreement was negotiated for 48.6 acres of land

including the two dry docks and supporting facilities. However, Bethlehem Steel Company argued that it could not buy a comparable site for \$3,500,000 so the navy bought out Bethlehem for a final sum of \$3,993,572. On November 12, 1940, the navy acquired fee simple title but immediately sub-leased the facility back to Bethlehem Steel Company, the previous owner, for continued operations. On December 18, 1941, eleven days after the bombing of Pearl Harbor, the navy officially took possession and began operations under the name of Hunter's Point Naval Dry Docks; later it was re-designated Hunter's Point Naval Shipyard, Hunter's Point.²²

The Impact of World War II

The attitude of the United States Navy toward the need to develop Hunter's Point changed drastically with America's entry into the war in the Pacific. The navy plunged ahead, securing from the City of San Francisco the necessary acreage on which to build a first class naval shipyard. The objection of cost necessary to improve the site cited by the Helm Commission when it considered Hunter's Point in 1917 became negligible in the crisis of 1942.

The method of securing land was through condemnation, and under these terms the government was allowed to take possession of land before title had passed. This was necessary at the time because of the emergency. The building of a naval repair yard during war time could not be delayed by legal formalities. Clear title to some small landholdings belonging to private individuals was not passed until years after the end of World War II. Several cases were cleared up as late as 1957.²³

Litigation proceedings between the San Francisco Port Authority (formerly the State Board of Harbor Commissioners) and the United States government over title settlement of some condemned public lands are still in process at this writing.²⁴

Four land purchases totaling 537.19 acres were quickly made. The first and largest purchase acquired 276 additional acres. The second and third purchases acquired 108.43 more acres, and the fourth acquired 10.16 acres to be used for right-of-way. All purchases were completed by May 20, 1942. The War Powers Act provided the funds.*²⁵

By the end of the war, Hunter's Point Naval Shipyard had developed into a mighty full-fledged shipyard capable of performing practically any task the fleet might require. The site had grown to nearly one thousand acres (979 acres) of modern industrial facilities, including almost five miles of berths, seventeen miles of railroad track, 200 buildings, and six dry docks ranging in length from 420 to 1,092 feet.²⁶

The San Francisco Naval Shipyard's ability to adapt itself to the many diversified work requirements of the fleet in full-scale warfare, in limited warfare as in the Korean conflict, and in peace time work load conditions has led to the permanence of the facility. This, together with the ability to dock the largest warship in the world here, led to the navy's decision to establish the yard as an integral part of its fleet.

*The War Powers Acts were provisions relating to the making of contracts by the government without regard to their legality in order to expedite the war effort.

Site Description

Hunter's Point juts into San Francisco Bay from the southeast corner of the City of San Francisco. Originally, it measured nearly six thousand feet in length with an average width of about two thousand feet. A high ridge ran its full length, sloping rather abruptly to the bay. Two knolls punctuated its bayward end; the largest rose 171 feet above sea level. Its landward end rose to a summit with an elevation of 190 feet. The slope of the northeastern tip of the peninsula was more gradual, falling away to a shelf that extended several hundred feet into the bay before dropping suddenly to a

depth of over forty feet. Close examination of the earliest U.S. Coast Survey charts reveals a low area traversing the shelf, which might be defined as a tombolo.²⁷ A description of this site published in 1902 confirms the existence of this channel:

Many centuries ago a rocky island lay a few hundred yards off the bay shore in the neighborhood of San Francisco's present site, but by a change of currents this channel was gradually filled up, until at the present time we have a prominent head of land connected with the main shore by a less prominent low lying strip. This is Hunter's Point of today.²⁸

Hunter's Point is composed primarily of serpentine rock, a material that is naturally advantageous for the construction of excavated dry docks. Its density makes it highly impervious to water and a reliable building foundation, yet it is soft enough to allow cutting with ease.

The location of the first two dry docks was at the outer tip of the peninsula where the rock shelf extends into the water. The third and most recent dock, built in 1942, was located on the site of a 171-foot knoll after it was cut away ([see Map 12](#)).

The material removed during the excavation of the docks was placed in the shallow waters alongside of the site, thus widening the point. Most of the fill was placed along the southwestern shore. Bay fill has increased the size of Hunter's Point nearly 750 acres.

Building the First Dry Dock

The successful completion of the first Hunter's Point graving dock was due to the genius of Mr. Alexander W. von Schmidt, civil engineer. After the dock basin had been dug, it was his innovative method of submarine excavation that was applied in making the entrance to the dock.²⁹

Work on the dock began in September 1866, and took two years to complete. The dock measured 465 feet long at the top and 400 feet long at the bottom. It was 120 feet wide at the top and sixty feet wide at the bottom. The depth measured twenty-two feet from the bottom to the miter sill.³⁰

The excavation methods utilized a steam shovel for the bulk of the material and hand labor to finish the work. From the Rocklin quarries in Sacramento came some 13,000 square yards of cut granite blocks that were used to line the dock.³¹

According to Tilton, the excavated rock was used to cover ten fifty vara lots of adjoining marsh land to bring it to city grade.³² A comparison of United States Coast Survey Chart No. 621, dated 1859,³³ with the same chart dated 1877,³⁴ shows an increase in the amount of land at Point Avisadera for that period of time, confirming Tilton's statement regarding the use of the excavated material.

Building the Second Dry Dock

In 1901, a contract for a second graving dock was awarded to the City Improvement Company for a bid price of \$404,000. The dock measured 750 feet long, 122 feet wide at the top, sloping toward the bottom where it measured seventy-four feet. The depth of the dock at high tide was thirty-two feet. When it was completed in 1903, Dry Dock Number Two was considered "... the newest and one of the largest in the world."³⁵

Continued growth in the size of ships made the dock excavated by von Schmidt obsolete. Thus the San Francisco Bridge Company won a contract to modernize the old 400-foot graving dock, increasing its size to 1,004 feet. Two years were needed to complete construction, which included construction of a new pump house and installing new pumps. The modernized dock was ready for service on October 11, 1918.

These new projects resulted in approximately 12,900 cubic yards of excavated material that was evidently used to fill adjacent tidelands at the point. Comparison of U.S. Coast and Geodetic Survey Chart No. 5532, issued in 1911,³⁶ with that issued in 1918, indicates an increase of land area between these years, leading to the conclusion that the material removed during the excavation was dumped alongside.

It should be clearly understood that the areas of apparent fill at Hunter's Point for this period may not have occurred solely from the excavation of the graving docks; shoaling may also have contributed to the change in shoreline.

No appreciable change in Hunter's Point's shoreline occurred in the two decades following World War I. [Map 1](#) indicates the appearance of the point prior to the United States declaration of war with Japan; following the declaration, Hunter's Point underwent a phenomenal transformation which changed its shoreline to the one we know today.

Construction and Bay Fill Following America's Entry into World War II

The United States' entry into World War II precipitated the navy's decision to develop Hunter's Point into a first class ship repair facility. This meant that startling changes would occur; more land was acquired, excavation and fill projects were undertaken, and additional repair facilities were constructed.

Land for site expansion was acquired from areas adjacent to the original site. The land included both water lots (land lying underwater or tidal controlled) and the precipitous promontory that formed Point Avisadero.

On January 30, 1942, the Bureau of Ships stated that another dry dock at Hunter's Point would supplement rather than duplicate the industrial capacity at Mare Island. This conclusion was based on the fact that there were no capital ship docks at Mare

Island, and that access to the yard for capital ships required the dredging of its approaches. Thus, on February 18, 1942, a contract was awarded to the Pacific Bridge Company for the construction of an eleven hundred foot graving dock, 1,000 feet of quay wall, and two 1,000 foot piers to be built on the 270 acre site.³⁷ Half of the newly acquired 275 acres were underwater and required extensive filling to convert into usable land. This was accomplished by the use of modern earth-moving equipment. Tractors, steam shovels and trucks quickly and efficiently leveled the old familiar landmark, Point Avisadero, for its site offered the best foundation for the new 1,092 foot dry dock. The removal of the 170-foot hill and the dry dock excavation involved five million cubic yards of earth. The material was moved to the northern and southern parts of the yard where it was used for bay fill. Part of the excavated material was used to raise a coffer dam, behind which the dry dock and part of the quay wall were built.

After leveling Point Avisadero, it took the engineers only nine months to dig the new dry dock and put it into operation. It was formally christened on June 19, 1943, with the docking of the former luxury liner "Monterey."³⁸

Shortly after the completion of the 1,092-foot dry dock, a contract was awarded to Ben C. Gerwick, Inc. of San Francisco for the construction of three small vessel dry docks. Main items in the contract included hydraulic dredging for approach channels and removal of unstable mud from the underwater foundation area, driving foundation piles for the dry docks and piers, and the construction of the reinforced concrete dry docks and related structures.

A total of 500,000 cubic yards of material was removed from the approach channels and foundation site, principally by hydraulic dredge. After the unstable mud had been removed, an underwater "back-fill" blanket of sand was placed throughout the dock foundation area. The blanket measured ten feet thick and required 140,000 cubic yards of hydraulically placed sand. Six thousand piles were driven throughout

the site due to the low bearing values of the underlying material. Then pre-cast bulkheads and flooring were placed into position, forming the dry dock itself.

The areas adjoining the dry docks were then backfilled and paved. Approximately 140,000 cubic yards of Class I fill was required, and 360,000 square feet of paving.

Work started on June 8, 1943, under the direction of Captain G.F. Nicholson, Resident Officer in Charge of Construction. As of July 15, 1944, the project was ninety-nine and nine-tenths per cent complete.³⁹

This small ship docking facility was the last construction project of this type to occur at Hunter's Point. In the years to follow, only building construction continued; wooden buildings were replaced with steel, shops were enlarged or improved, and temporary buildings were replaced with permanent ones. No construction was undertaken with the expressed intention of filling in bay tidelands; however, filling continued as a result of these building improvements. The submerged land to the south of Hunter's Point (the South Basin area) was gradually filled with material from building and equipment foundations. Sand blasting material wastes, and other non-reusable substances.⁴⁰ Filling continues today in this area as space is needed for the dumping of waste materials.

Conclusion: Hunter's Point

The transformation of Hunter's Point from a wild and narrow peninsula rising abruptly from the waters of San Francisco Bay into a mighty industrial complex spreading over acres of flat, bay filled land is an outstanding example of the impact of technology upon landscape. At Hunter's Point, technology was the dominant force causing change. The other forces were present, and in the case of the navy's acquisition

of the point, these forces delayed the final decision to buy it, but had it not been for the advancement of technology, the result we see today could not have been accomplished.

To carve a 10,000 cubic yard dry dock out of solid rock took both engineering skill and amazing machines, especially in the 1860's. Yet the leveling of a 170-foot hill and the subsequent excavation of a 1,000 foot dry dock in its place, requiring the removal of some 5,000,000 cubic yards of earth, eighty years later took equal skill and imagination, again demonstrating the sometime awesome force of technology in shaping change.

FOOTNOTES

¹Kemble, op. cit., p.4.

²Neal Narlow, The Maps of San Francisco Bay: From the Spanish Discovery in 1789 to the American Occupation (New York: The Book of the Month Club, 1950), p.64.

³History of the San Francisco Naval Shipyard, 1941 – 1958, prepared by Code 143, San Francisco Naval Shipyard, September 1959, p. 4.

⁴Personal reminiscences of J.H. Gedge, on file at the Sutro Library, San Francisco.

⁵U.S. Coast Survey Chart No. 621 (1859).

⁶John S. Hittell, The Commerce and Industries of the Pacific Coast of North America (San Francisco: A.L. Bancroft & Co., 1882), p. 431.

⁷C.G. Tilton, William Ralston, Courageous Builder (Boston: Christopher Publishing Co., 1935), p. 127.

⁸Ibid.

⁹“The Battleship ‘Ohio’ in Hunter’s Point Dry Dock,” Marine Engineering News, Vol. VIII, No, 3 (1903).

¹⁰“History of the Development and Operation of a Naval Repair Yard at Hunter’s Point during World War II,” a report prepared for the Office of Naval History by Edwin G. Schmidt, Yard Historian, p. 9.

¹¹Ibid., p.12.

¹²Ibid.

¹³Ibid., p. 13.

¹⁴Ibid., p. 16.

¹⁵Ibid., p. 14.

¹⁶History of the San Francisco Naval Shipyard, 1941 – 1958, op. cit., p. 4.

¹⁷“History of the Development and Operation of a Naval Repair Yard at Hunter’s Point during World War II,” op. cit., p. 4.

¹⁸Ibid.

¹⁹Ibid., p. 10.

²⁰ Hearings on Bill H.R. 5766, No, 182 Publication for House Naval Affairs Committee, April 11, 1939.

²¹ "History of the Development and Operation of a Naval Repair Yard at Hunter's Point during World War II," op. cit., p. 33.

²² Ibid., p. 4.

²³ Personal interview with Gale R. Blosser, Assistant Chief Real Estate Appraiser, City and County of San Francisco.

²⁴ See federal condemnation suit on Hunter's Point, U.S. District Court No. 36272

²⁵ History of the San Francisco Naval Shipyard, op. cit., Plate 1a.

²⁶ Ibid., p. 7.

²⁷ U.S. Coast Survey Chart No. 621 (1856).

²⁸ "Docking Facilities on the West Coast." Marine Engineering News, Vol. VII, No. 8 (August 1902), 390.

²⁹ J.S. Hittell, The Commerce and Industries of the Pacific Coast of North America, op. cit., p. 431.

³⁰ Tilton, op. cit., p. 127

³¹ Ibid.

³² Ibid.

³³ U.S. Coast Survey Chart No. 621 (1859).

³⁴ U.S. Coast Survey Chart No. 621 (1877).

³⁵ Crawford, op. cit., p. 390.

³⁶ U.S. Coast Survey Chart No. 5532 (1911); U.S. Coast Survey Chart No. 5532 (1919).

³⁷ "History of the Development and Operation of a Naval Repair Yard at Hunter's Point during World War II," op. cit., p. 33.

³⁸ Ibid.

³⁹ "Tremie Concrete: Forms Precast for Naval Dry-docks," Western Construction News, Vol. XIV, November 1944, 70.

⁴⁰ Personal interview with C.P. Paccagnella, Division Head, Public Works Division of Engineering, Hunter's Point Naval Shipyard

CHAPTER IX:

BAY VIEW

Early History and Description

One of the most neglected sections of San Francisco's bay frontage is the area lying southwest of Hunter's Point. Before it came under attack by fill operations, it was a pleasant basin-like valley punctuated on the north by Point Avisadero, and on the south by Candlestick Point. Its crescent-shaped shoreline was indented with small coves and tiny beaches. Offshore the waters remained shallow for several hundred yards, with a tiny island named Double Rock lying in its midst. The area was known as Bay View for many years; now it is generally referred to as Hunter's Point.

In the 1860's, Bay View became the site of a horseracing track, considered by some horsemen as the world's fastest. At the turn of the century, farmers settled the area, transforming it into a community of truck farms characterized by orderly fields dotted with windmills, grazing cattle and horse corrals. The offshore waters provided clams and oysters to delight the San Franciscan palate.

Candlestick Point with its 480-foot high promontory dominated the scene. Grass covered and accentuated with interesting outcroppings of Franciscan chert, the hill was regarded by those who knew it as a refuge, a place to be alone with the wind and the view.

Bay View, like Hunter's Point, became a casualty of World War II. Its open fields, marsh lands and shallow waters were commandeered by the government to provide locations for housing the employees of Hunter's Point Naval Shipyard and their families. Once these lands were changed they would never return to their former state; the demands of an industrially oriented society found more important uses for them.

The area of our concern is the tidelands lying between Hunter's Point, Visitation Valley, and the San Francisco-San Mateo county line. These tidelands were surveyed by George Allardt in 1868 for the State Tide Land Commissioners, who then sold them to private parties. Today this area is generally referred as Hunter's Point, while Bay View is considered being located further inland on the west side of Third Street.

Although Bay View had rather small areas of marsh, its offshore submerged lands were the most extensive to be surveyed and sold in San Francisco by the state. The cove containing these submerged lands was named South Basin and it was here that most of the fill took place.

Here at Bay View more than any other part of San Francisco Bay fill occurred with the least notice. It began as early as 1863 and continues today. Unfortunately, the record is either unclear or totally silent on many of the particulars. Even today (1972), with government's many bureaus such as the San Francisco Planning Commission, San Francisco Public Works and Engineering departments, the San Francisco Bay Conservation and Development Commission, and all the hearings, administrative approvals, permits, rules and regulations regarding filling of San Francisco Bay, unauthorized fill continues at South Basin. The best way to keep track of the progress of fill is by periodically checking the changing shoreline.

The City and County of San Francisco is aware of the unauthorized fill being placed at South Basin as is the San Francisco Bay Conservation and Development Commission; in fact, B.C.D.C. has several lawsuits pending against the City of San Francisco regarding this fill. However, when property owners refuse to cooperate, illegal fill is almost impossible to control or document.

To imply that Bay View and its offshore waters of South Basin were ignored for potential development would be erroneous. In 1912, the site was considered for the Panama Pacific Exposition, and there were many supporters of the plan. In 1926, a plan to reclaim 600 acres for industrial sites was started, but the ambitious scheme never materialized.

In the mid-1950's, San Francisco was looking at a new site to relocate its aging wholesale produce market then located in the northeastern section of the downtown area. The San Francisco Planning Commission conducted a study to determine a suitable alternative site. One of the considerations was the federally owned land at Bay View used to house the Hunter's Point Shipyard workers and their families during World War II. The San Francisco Board of Supervisors, realizing that locating the wholesale produce market at Bay View's South Basin might act as a nucleus for further development there, passed a resolution declaring the submerged lands served no useful purpose for industry, commerce, or navigation, and that they should be reclaimed. The California Legislature then created the Hunter's Point Reclamation District and ordered it to prepare to reclaim 600 acres of the district's tidelands.¹

Because of a lack of united interest by the wholesale produce industry in locating the new produce market at Bay View, the San Francisco Board of Supervisors again passed a resolution designating the site for redevelopment. This resolution rescinded the first, and, in effect, killed the Hunter's Point Reclamation District.

Early Fill

As one might expect, it was the marshlands at Bay View which first became filled, followed by the small coves and finally the tidelands. In 1864, the San Francisco City Directory mentions that the Bay View Park and Race Course was located on reclaimed land and protected from the tide by a seawall*. The site of the racetrack can be identified today as being bounded by Third, Hawes, Bancroft, and Gillman streets.

The existence of Bay View Park and Race Course before 1874 is documented by the San Francisco Directory,² the "Map of the Salt Marsh and Tide Lands,"³ and the United States Coast Survey Chart of 1868.⁴ However, a story reporting the closing of the track which appeared in the San Francisco Chronicle of 1896 indicated it was built at a later date.⁵ In the article, a veteran horseman described a scene which took place at the time of the track's construction. He recalled seeing drifting sand dunes lying west of the site and an enormous dune situated where the infield was later located. He remembered seeing the Chinese laborers using shovels and handcarts to cut away the dune and fill in the low places. He dated his remembrances 1874.

The park and racecourse was built by the Bay District Fair Ground Association, which included the names of some of the most prominent men in the state. Horsemen who loved the track swore it to be the fastest oval track in the world; Bay View Park was one of the highlights of early San Francisco.

To get to Bay View from San Francisco was very difficult in the 1860's, so a paved road was built to alleviate the situation. According to Langley's San Francisco City Directory, a beautiful shell road, was built from the Mission the Mission to the Bay

*A line which could easily be interpreted as a seawall stretching across the bay-ward end of Bay View Park shows clearly on the U.S. Coast Survey Chart of 1869. Today, what I believe is a remnant of the seawall still remains and can be seen running adjacent to Hawes Street between Carroll and Armstrong streets. The wall is constructed of Franciscan sandstone, a rock not common to this area. It is possible that it came from the old Crocker quarry located on Lowell Street several blocks south of Mission.

View Race Track in 1864. The length of the road was about three miles and it cost approximately \$30,000.⁶

In 1866, the Potrero and Bay View Railroad began its run from Post and Montgomery streets to Bay View Park. It soon became the fastest and most popular route to the racetrack. The route ran over what is known today as Fourth Street to Third Street, and then to Bay View Recreational Park. The railroad was very important in the southward growth and development of San Francisco. The line was responsible for building the first bridges across Mission Bay and Islais Creek as well as the excavation or “cut” through Potrero Hill to provide a graded right-of-way for the line. Indirectly, Bay View Race Track had a far-reaching impact upon San Francisco’s landscape.

On April 2, 1866, the California Legislature passed an act granting the Potrero and Bay View Railroad a right-of-way across Mission Bay and Islais Creek for a period of twenty-five years. It is interesting to note that Leland Stanford was the president of the railway company; he was also a member of the Bay District Fair Ground Association and a major owner, along with H.S. Crocker, of the land upon which the Bay View Race Course was built. The Tide Land Commissioners’ map of the state owned salt marsh and tidelands indicates the racecourse was laid out on state owned lands. Stanford and Crocker probably purchased the land after it was declared surplus and sold in 1869 and 1870.

By comparing U.S. Coast Survey Chart No. 621 dated 1877 with Chart No. 621-A dated 1884,⁷ the disappearance of a small cove or salt marsh along the shoreline just southward of Hunter’s Point is indicated. On Allardt’s map of 1858, this is shown as a salt marsh lying within the Hunter Tract. The records do not explain what happened here.

Examination of U.S. Coast Survey charts indicated that no fill occurred at Bay View for the next fifty years. The chart of 1934⁸ indicates the disappearance of a tiny cove just northeast of Candlestick Point. That actually occurred there, but when is not absolutely clear. In 1932, the city purchased the site for a bay side playground, naming it the Gillman and Griffith Playground after two streets that intersect there. The city paid \$1,000 per acre, a reasonable price for submerged land at that time.

World War II's Impact

The largest area to be filled resulted from a need to provide temporary war housing for the workers at Hunter's Point Naval Shipyard. To provide dwellings for the 500 families, thirty acres of tidelands at South Basin were chosen by the San Francisco Housing Authority and approved by the United States Navy for the purpose. The site was selected because the "improved" area would become part of San Francisco's "master plan" in the post war period.

The site faced Double Rock Cove, the innermost part of South Basin. It was roughly bounded by Thomas, Jennings, Wallace, Yosemite, Bancroft, and Ignals streets.

Steam shovels were used to remove 200,000 yards of earth that was then dumped into the tidelands, which ran a depth from four to six feet. The fill seems to have come from two small hills on or adjacent to the site. The U.S. Coast Survey chart dated 1943⁹ shows two little hills, one 125 feet high and the other eighty feet high at this location. The next edition, dated 1947,¹⁰ well after the war, shows South Basin without any apparent changes in its shoreline. The two hills are also shown. Edition twenty-seven, issued in 1957,¹¹ ten years after the war, reflects the changes of the shoreline as well as the removal of the two small hills. The conclusion is that the hills were removed and used to fill the tidelands, but these changes were not immediately recorded by the U.S. Coast and Geodetic Survey.

Five hundred prefabricated dwellings were erected on the earth-filled site. These dwellings were fabricated at another location and then moved to South Basin where they were set upon foundations.

As in the case of the government takeover of private lands at Hunter's Point, similar action under the conditions of the Lanham Act were employed to acquire sites for temporary war housing at South Basin. Mr. Joseph T. Ford, a native San Franciscan and land owner at Hunter's Point, told the following story about what he did upon discovering his land was being built upon by the United States Navy:

"I went to City Hall and talked with the attorney representing the United States government. He offered me less than \$2,000 for the lot. He told me that this (World War II) was an emergency and the navy needed my land. When I explained that I was a resident of San Francisco and could have been easily contacted, he said that there were land owners of Hunter's Point all over the world. I finally settled with the United States government eight

years later.”¹²

Another place to disappear in the early forties was Candlestick Cove, located on the southwest side of Candlestick Point ([see Map 1](#)). Here, too, the record is not clear as to what happened. The U.S. coastal chart of 1934 ¹³ shows the cove replaced by a marsh, and remaining so until 1958, ¹⁴ when the chart published in that year shows the cove to be dry land.

The San Francisco Housing Authority’s Sixth Annual Report dated 1944 ¹⁵ states that 944 temporary dwelling units were built on a 102.04 acre site at Candlestick Cove. Aerial photographs taken after the war show that these dwellings were built both on the hillside and on the flat land next to the bay. It can be concluded with reasonable accuracy that filling of Candlestick Cove for developmental purposes occurred in preparation for the construction of the temporary war housing. It can also be concluded that the fill came from the hillside when it was terraced to accommodate building sites.

Candlestick Park

In the early 1950’s, the Mayor of San Francisco, George Christopher, and Supervisor Francis McCarthy, supported by some of San Francisco’s leading businessmen, thought it would be a good time to have a major league baseball team’s home base in San Francisco. At the time, no city in the West could boast a major league team and they thought that such a team would boost San Francisco’s tourist business.

Mayor Christopher contacted Horace Stoneham, the owner of the New York Giants, and asked him if he would be interested in moving the team to San Francisco. Mr. Stoneham agreed to the move only if the city would provide a 45,000-seat stadium along with parking for 8,000 cars.

Armed with Stoneham’s commitment, Mayor Christopher set out to secure a stadium. Normally this would involve selecting a site, condemnation of the property, sale of a general obligation bond (with approval of the city’s voters), calling of bids, and finally construction of a stadium. However, Mayor Christopher was so anxious to secure the Giants before some other city did that he relied on a different method to acquire a stadium.

First, the mayor, in cooperation with San Francisco’s Park and Recreation Department, the Department of Public Works, and the Real Estate Department, studied various sites in San Francisco which might be suitable for a baseball stadium. The sites

were analyzed as to space requirements, accessibility by public transit and private auto, weather conditions, and topographic features. Availability of the sites was examined in terms of ownership, both public and private, cost of acquisition, and time required for the site clearance and preparation. The study indicated a preference for sites located in the southern Bayshore area of San Francisco.¹⁶

The site chosen was Candlestick Point, for it provided the most advantages. The city already owned about thirty-six acres of land there, some state land was available, the prime contractor, Charles L. Harney, Inc., owned some tideland lots on the proposed site, and the other private owners could be easily persuaded to sell their property.* In addition, Harney owned acreage on the promontory which forms Candlestick Point from which earth could be excavated, thus providing the necessary fill to improve the site for the baseball stadium.

All purchases were approved by the Board of Supervisors after being reviewed by the Real Estate Department and the City Comptroller. Improved land (land already filled before purchase) sold for about \$66,000 an acre, a fair price for improved land at Candlestick at the time.

The stadium was financed by a \$5,000,000 bond issue approved by the San Francisco voters in 1954, \$2,000,000 from the Continental Casualty and Continental Assurance Companies of Chicago, and \$3,500,000 from Charles Harney. The project was under the supervision of Stadium, Inc., a non-profit corporation formed to build the ballpark.

On July 24, 1958, Charles Harney signed a contract to build Candlestick Stadium, designed by architect John S. Bolles. The firm of Mac Donald, Young and Nelson of Oakland was contracted to build the stadium.

When Harney signed the contract, approximately 500,000-cubic yards of fill had already been dumped on Harney's property at Candlestick Point, already changing the old shoreline. Some of this fill material came from the building and redevelopment projects then underway in the city. One of these projects was the excavation for the Civic Center underground exhibit hall. During that project, seventeen trucks a day were dispatched to Harney's property, each carrying 2,400 cubic yards of earth.¹⁷

Additional plans called for dumping another 1,500,000 cubic yards of earth to complete the proposed fifty-acre parking lot. Most of the latter fill came from a huge

excavation of a portion of Bay View Park hill, at the same time providing part of the stadium site itself.

Fill has continued at South Basin even after the building of Candlestick Park. Until September 17, 1965, it was only necessary to obtain a permit from the City of San Francisco to fill tidelands within its boundaries as long as the intended land met with city building codes and zoning laws. After that date, it became necessary for an owner of tideland to obtain a permit from the San Francisco Bay Conservation and Development Commission. The authority of B.C.D.C. supersedes that of the city, and the reason for filling San Francisco Bay must be in agreement with the conditions set by the California Legislature and be approved by the B.C.D.C., the legislature's controlling agency.

Two or three days before September 17, 1965, the City of San Francisco issued a rather large number of permits allowing bay fill at South Basin and some other tideland areas within the city limits; however, the fill projects themselves did not begin until sometime later. It seems that most, if not all, of these projects had no authorization from B.C.D.C.; thus their legality is in question. In addition, where legal permits were obtained, the amount of fill overextended the boundaries set by the permit.¹⁸

Primarily the City and County of San Francisco does not have the same interest in or attitude toward the question of fill as does the San Francisco Bay Conservation and Development Commission; thus the owners of tidelands tend to support the city's point of view.

The continuing fill projects currently underway at South Basin are an attempt by the landowners to improve the value of their property. As long as the tidelands are allowed to be filled, the property owners are able to continue to improve their property, thereby increasing its potential value. The city has no objection to continued bay fill, for it realizes that tidelands cannot be taxed at the same rate as improved property*.

The San Francisco Bay Conservation and Development Commission is the only authority discouraging fill, and its control is not dictatorial. In most cases, if the need to fill the bay can be satisfactorily demonstrated, the proposed fill will receive approval of the commission.

*The threat of condemnation together with the possibility of a forced sale at a lower price than that offered before condemnation is very persuasive in convincing a landowner to sell his property

Conclusion: Bay View

The major bay fill at South Basin resulted from the city's decision to locate a major league baseball stadium there. In essence, the decision was based upon the question of economics: where in San Francisco could a stadium be built which would best satisfy the site requirements for a baseball stadium? This is not to say that compromises were not made and that politics were not involved; however, the main issue centered around economic efficiency. Candlestick Point offered vacant tidelands that needed only to be filled to be brought to a "productive capability."

FOOTNOTES

¹California Statutes, 1955, Chap. 1573.

²Henry G. Langley, San Francisco Directory, 1864, p. 10.

³Map of the Salt Marsh and Tide Lands and Lands Lying under Water South of Second Street and Situated in the City and County of San Francisco, op. cit.

⁴U.S. Coast Survey Chart No. 621 (1868).

⁵San Francisco Chronicle, May 24, 1896.

⁶Langley, San Francisco Directory, 1864, p. 10.

⁷U.S. Coast Survey Chart No. 621, Edition 3 (October 1877); U.S.

Coast Survey Chart No. 621-A, Number 2 (August 1884).

⁸U.S. Coast Survey Chart No. 5532 (1934).

⁹U.S. Coast Survey Chart No. 5532, Edition 25 (1943).

¹⁰U.S. Coast Survey Chart No. 5532, Edition 26 (1947).

¹¹U.S. Coast Survey Chart No. 5532, Edition 27 (1957).

¹²Personal interview with Joseph T. Ford, native San Franciscan and

Hunter's Point land owner.

¹³U.S. Coast Survey Chart No. 5532 (1934).

¹⁴U.S. Coast Survey Chart No. 5532 (1958).

¹⁵San Francisco Housing Authority's Sixth Annual Report, 1944.

¹⁶City Planning Department, City and County of San Francisco, Annual Report, 1956- 57, p.3.

¹⁷San Francisco Examiner, October 29, 1956.

¹⁸Personal interview with Alan Pendleton, Counselor for the San Francisco Bay Conservation and Development Commission.

CHAPTER X:

CONCLUSION

In the final analysis, it is evident that the development of San Francisco's waterfront was achieved to increase the productivity of the lands bordering the bay. Through technology, hills were leveled, tidelands were filled, streams diverted, and elaborate systems were devised to organize human efforts to accomplish the tasks. The role economic efficiency played is clearly demonstrated in Santa Fe Railroad Company's fill of China Basin. The change in attitude toward the concept of economic efficiency is shown in the case of the Marina developing into a residential area after first being developed for industry.

The ever present influence of politics cannot be clearly defined or documented in every situation. However, it is quite evident in the Bay View development of Candlestick Park, in the construction of the LASH terminal at India Basin, in the attempts to extend the waterfront line at Yerba Buena Cove in the 1860's, and in the battle between San Francisco and California over the jurisdiction of the port.

Finally, public responsibility is revealed as a changing influence, changing as man's social consciousness and philosophy changes. In the early days of San Francisco, public concern regarding the waterfront dealt with promoting its expansion, and increasing its efficiency, for at that time the port was vital to the very life of the city as well as the state. Today, port revenues are less than fifty percent maritime oriented, reflecting a change in the importance of San Francisco as a port. As a result, concern regarding today's use of waterfront property is quite different than before. Now the controversy concerns such questions as: what will happen to the waterfront if more non-maritime businesses are allowed to locate there, should there be public access to the bay, and what is happening to the quality of life as a result of the changes taking place along San Francisco's northern bay front?

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1925	42	Creates Islais Creek Reclamation District
1931	627	Grant to City and County of San Francisco (Channel Street from N'Ely line of Seventh Street to tide line)
1931	857	Amends Section 2524 of Political Code
1931	1003	Authorizes suits against state
1933	805	Grant to the City and County of San Francisco (Lewis Street)
1933	912	Grant to City and County of San Francisco (Treasure Island)
1935	437	Grant to City and County of San Francisco (east of Presidio Military Reservation, north of 1923, Chap. 359)
1947	434	Grant to City and County of San Francisco (street areas near Central Basin)
1951	1081	Declaration of lands not necessary for navigation (Illinois between Sixteenth and Seventeenth)
1953	521	Repeals Chap. 81, Stats. 1897
1953	1252	Grant to City and County of San Francisco (Louisiana and Georgia, Twenty-Fourth, Twenty-Fifth)
1955	1573	An Act to Develop Hunter's Point Reclamation District
1957	1999	Repeals Section 10, Chap. 1753, Stats. 1955 (Hunter's Point)
1958	2	S.L.L. Thirty-One (Candlestick Park)
1959	1109	Requires the sale of certain streets (north of Market), S.L.L. Thirty-Eight
1963	941	Grant to City and County of San Francisco (area east of Presidio and east of 1923, Chap. 359)
1963	1273	Releases public trust of street areas (Hunter's Point)
1968	1333	Grant to City and county of San Francisco (Burton Act)
1969	1296	Amends Section 2 of Burton Act (no change)
1969	1367	Grant to City and County of San Francisco (portion of Davis Street, two parcels)
1969	1400	Adds Section Twenty-Four to Burton Act (Protects Bond Holders)
1969	1474	Act Removing Trust Provision in Davis Street (1969, Chap. 1367)
1970	670	Removes survey requirements

Appendix 3

Early Charts of San Francisco Bay

Jose de Canizares, “Plano del Puerto de San Francisco”, 1776

Captain Fredrick Beechy, 1826

Captain Cadwalader Ringgold, 1852

Appendix 4

Early Surveys of San Francisco

1839	Jaquez Vioget, survey ordered by Alcalde Francisco de Haro
1847	Jaspar O'Farrell
1851	William Eddy, authorized by California Legislature (Stat. 1851, Chap. 41)
1852	Clement Humphreys, County Surveyor
1868	James Stratton, approved by Surveyor General for the State of California, August 13, 1868
1868	George F. Allardt, "Salt Marsh and Tide Lands", by order of Tide Land Commissioners
1883	Ferdinand von Leicht, by order of the Secretary of the Interior

Appendix 5

Charts of San Francisco
Published by the United States Coast & Geodetic Survey

<u>Date</u>	<u>Number</u>	<u>Scale</u>	<u>Description</u>
1852	---	1-10,000	City of San Francisco
1853	627	1-10,000	City of San Francisco
1857	---	1-10,000	City of San Francisco
1859	---	1-50,000	San Francisco Bay Entrance
182	622	1-50,000	Upper Part San Francisco Bay
1869	628	1-40,000	San Francisco Peninsula
1875	621	1-50,000	San Francisco Bay Entrance
1878	621	1-50,000	San Francisco Bay Entrance
1877	622	1-50,000	Upper Part San Francisco Bay
1882	621	1-50,000	San Francisco Bay Entrance
1882	622	1-50,000	Southern Part San Francisco Bay
1884	621	1-50,000	San Francisco Bay Entrance
1884	621-A	1-40,000	San Francisco Bay Entrance
1884	622	1-50,000	Southern Part San Francisco Bay
1892	*5522 (622)	1-50,000	Southern Part San Francisco Bay
1894	*5581 (621A)	1-40,000	San Francisco Bay Entrance
1897	5581	1-40,000	San Francisco Bay Entrance
1901	5581	1-40,000	San Francisco Bay Entrance
1903	5531	1-50,000	Southern Part San Francisco Bay
1903	*5532 (5581)	1-40,000	San Francisco Bay Entrance
1906	5531	1-50,000	Southern Part San Francisco Bay
1907	5532	1-40,000	San Francisco Bay Entrance
1907 *	*5530	1-80,000	San Francisco Bay
1910	5530	1-80,000	San Francisco Bay
1911	5531	1-50,000	Southern Part San Francisco Bay
1911	5532	1-40,000	San Francisco Bay Entrance
1915	5532	1-40,000	San Francisco Bay Entrance
1917	5531	1-50,000	Southern Part San Francisco Bay
1918	5530	1-80,000	San Francisco Bay
1919	5532	1-40,000	San Francisco Bay Entrance
1923	5530	1-80,000	San Francisco Bay
1932	5531	1-50,000	Southern Part San Francisco Bay

*Indicates change to new number

** Indicates change to new number and new scale

1924	5532	1-40,000	San Francisco Bay Entrance
1925	5530	1-80,000	San Francisco Bay
1926	5531	1-50,000	Southern Part San Francisco Bay
1926	5532	1-40,000	San Francisco Bay Entrance
1930	5530	1-80,000	San Francisco Bay
1932	5532	1-40,000	San Francisco Bay Entrance
1932	5530	1-80,000	San Francisco Bay
1933	5532	1-40,000	San Francisco Bay Entrance
1934	5531	1-50,000	Southern Part San Francisco Bay
1935	5532	1-40,000	San Francisco Bay Entrance
1935	**5535 (5530)	1-20,000	Candlestick Pt. to Angel Island
1936	5532	1-40,000	San Francisco Bay Entrance
1936	5535	1-20,000	Candlestick Pt. to Angel Island
1937	5532	1-40,000	San Francisco Bay Entrance
1937	5535	1-20,000	Candlestick Pt. to Angel Island
1941	5531	1-50,000	Southern Part San Francisco Bay
1941	5535	1-20,000	Candlestick Pt. to Angel Island
1942	5531	1-50,000	Southern Part San Francisco Bay
1943	5532	1-40,000	San Francisco Bay Entrance
1943	5535	1-20,000	Candlestick Pt. to Angel Island
1947	5531	1-50,000	Southern Part San Francisco Bay
1947	5532	1-40,000	San Francisco Bay Entrance
1950	5531	1-50,000	Southern Part San Francisco Bay
1960	5532	1-40,000	San Francisco Bay Entrance
1963	5532	1-40,000	San Francisco Bay Entrance
1972	5535	1-20,000	Candlestick Pt. to Angel Island
1973	5532	1-40,000	San Francisco Bay Entrance

*Indicates change to new number

** Indicates change to new number and new scale

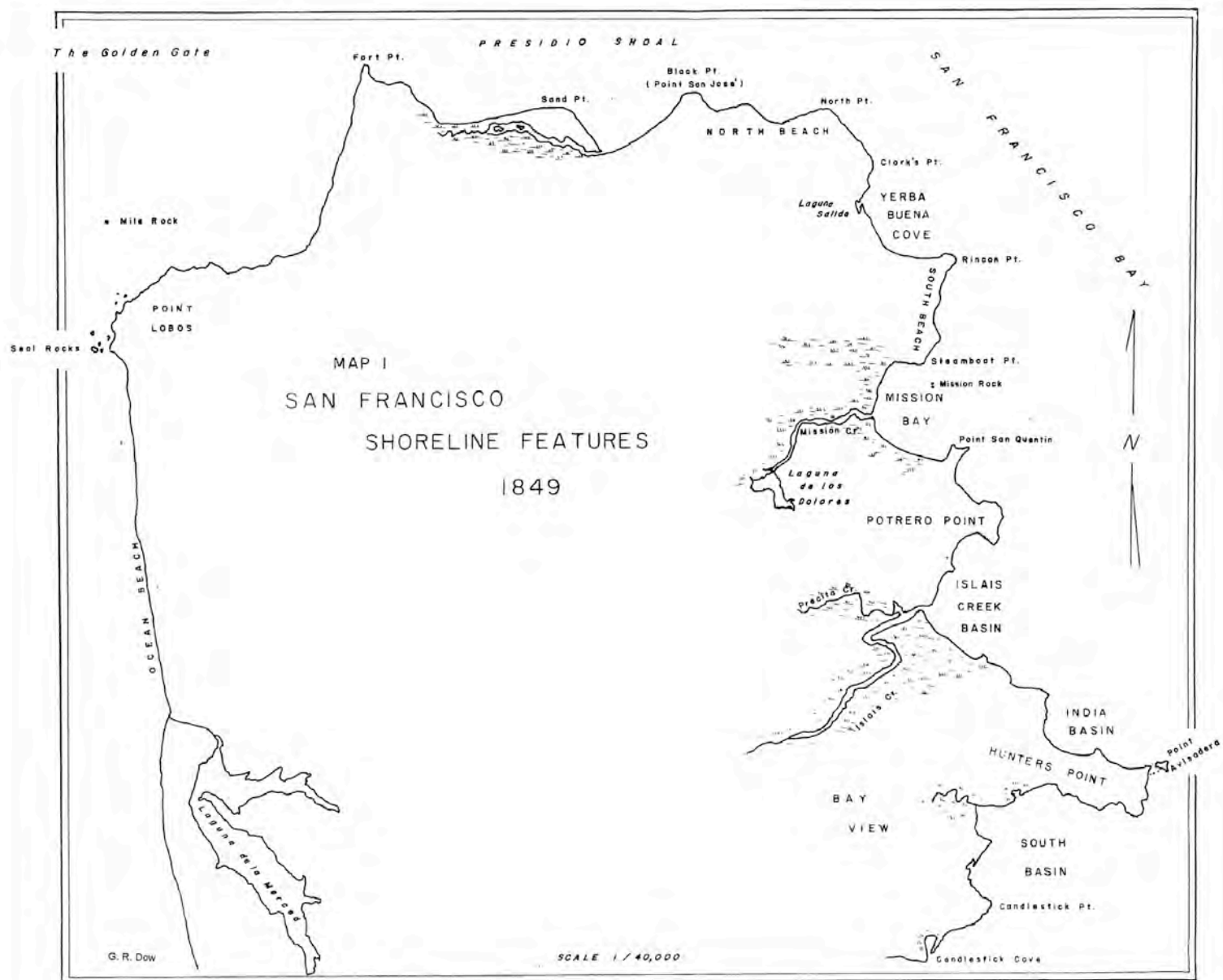
Appendix 6

Tabulation of Data on Seawall Construction

Section	Started	Completed	Length in Feet	From	To
B	09/22/1890	05/22/1893	1,000	Foot of Powell	Foot of Taylor
A	12/18/1879	01/24/1881	561	West Line of Sec. 1	West Line of Powell
1	09/13/1878	05/15/1880	1,000	East Line of Kearny	1,000 feet West
2	11/05/1878	04/30/1880	1,000	East Line of Kearny	1,000 feet East
3	01/25/1879	04/08/1881	1,000	Between Montgomery and Sansome	Battery
4	03/27/1880	08/12/1881	1,000	Battery	Between Front and Davis
5	02/20/1884	03/13/1885	1,000	Between Front and Davis	Drumm
6	01/06/1885	04/03/1886	800	Drumm	Pacific
7	05/12/1887	05/31/1889	1,000	Pacific	Clay
8a	03/05/1891	12/13/1892	389.5	Center Line of Clay	North End of Section 8b
8b	10/25/1888	06/30/1890	450	South End of Section 8a	Foot of Mission
8	12/06/1909	03/10/1910	300	Foot of Mission	Between Mission and Howard
9a	01/04/1913	11/27/1914	990	End of Section 8, Foot of Mission	Foot of Folsom
9b	01/01/1913	05/06/1915	780	Foot of Folsom	Foot of Harrison
9	02/29/1910	10/13/1910	1,000	Foot of Harrison	Between Bryant and Brannan
10	08/29/1909	09/07/1911	485	Point between Bryant and Brannan	Foot of Main
11a	11/25/1908 05/16/1912	10/28/1914 01/02/1914	280	Foot of Main	Foot of Beale
11	02/22/1909	10/11/1909	353	Foot of Beale	Between Brannan and Townsend
12	06/13/1907	06/04/1908	1,000	Between Brannan and Townsend	Foot of King
13	12/30/1903	04/27/1905	600	Foot of King	South of Berry
13a	02/09/1922	01/26/1924			

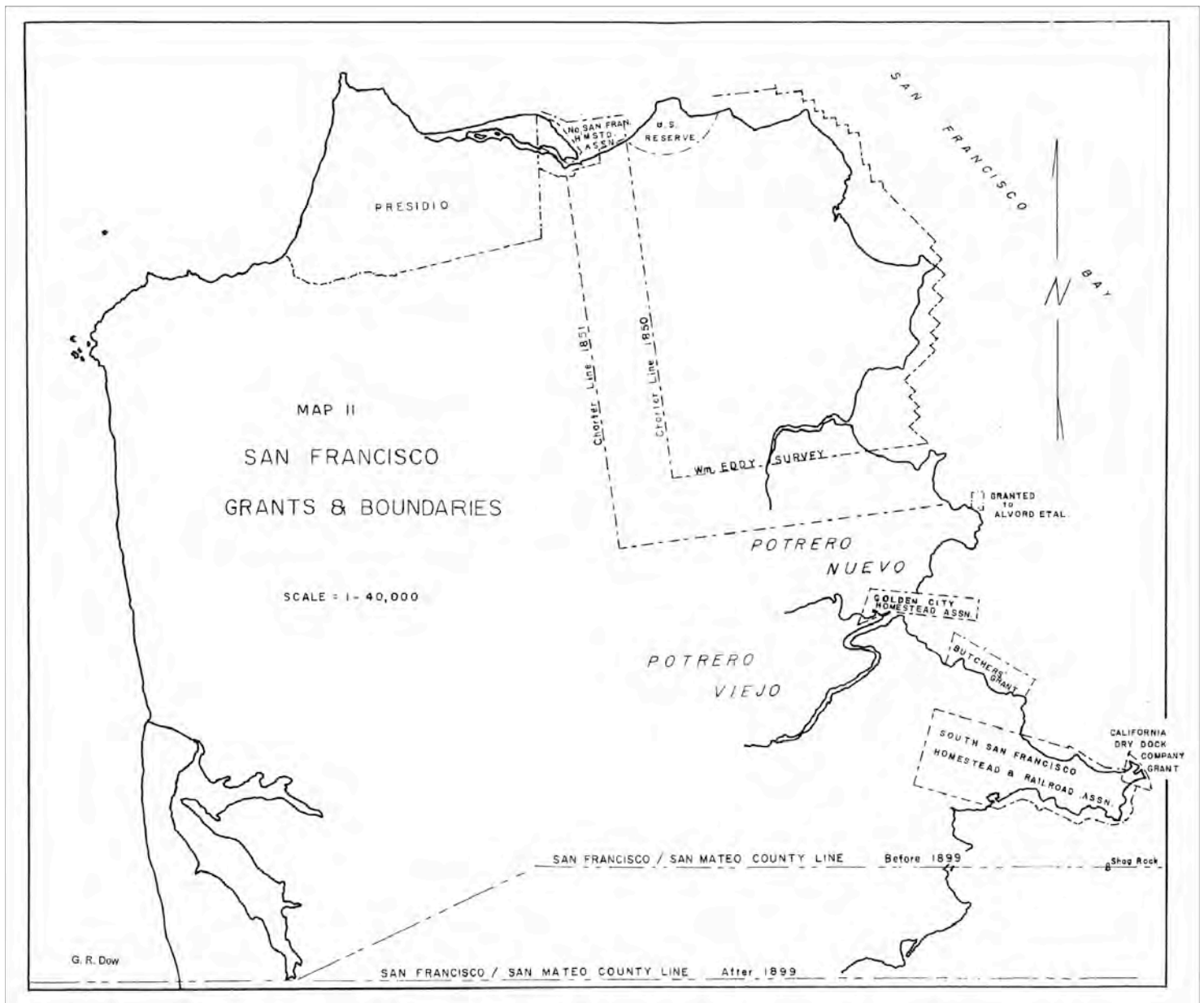
Appendix 7

Maps



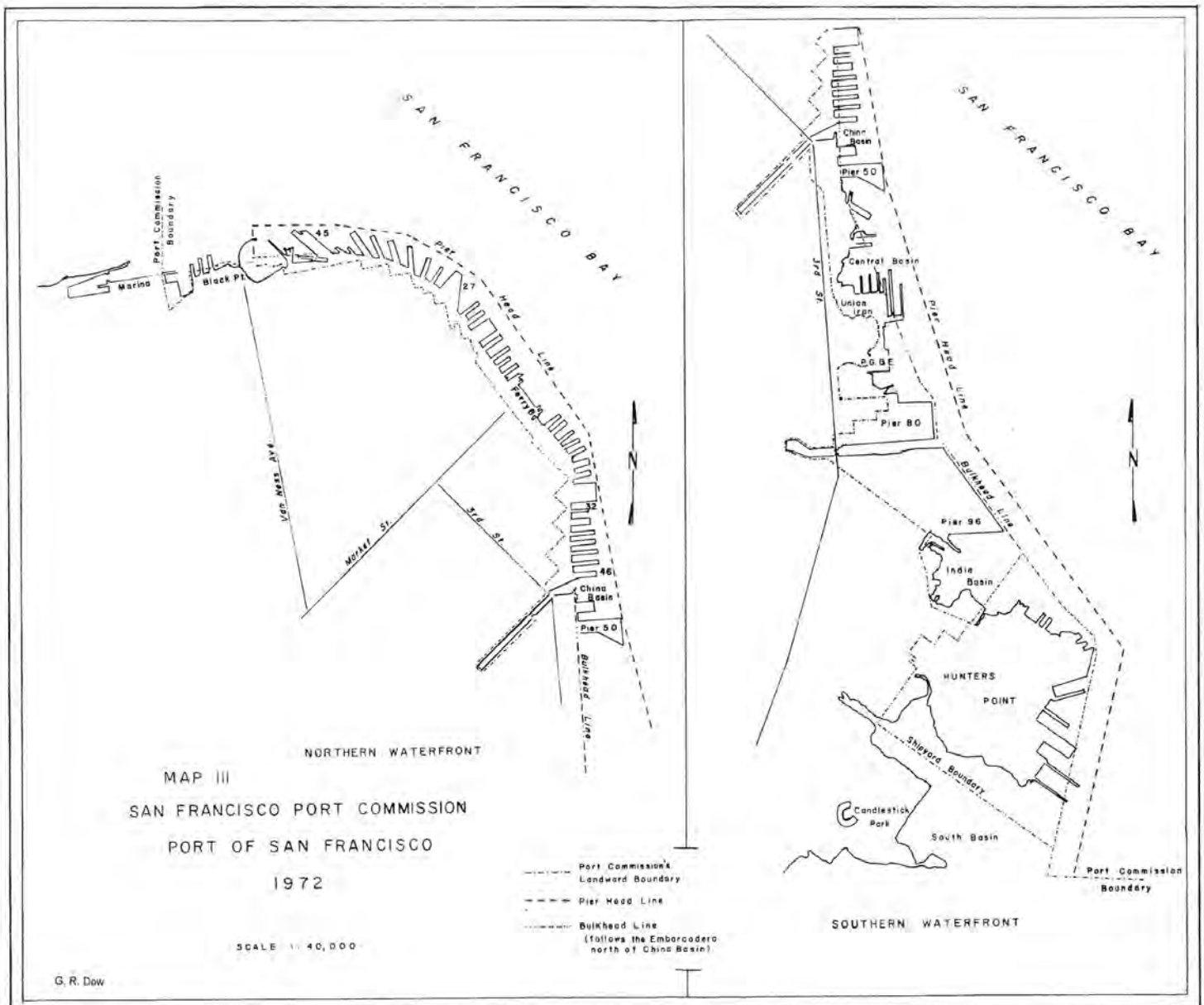
MAP 1

SAN FRANCISCO SHORELINE FEATURES 1849



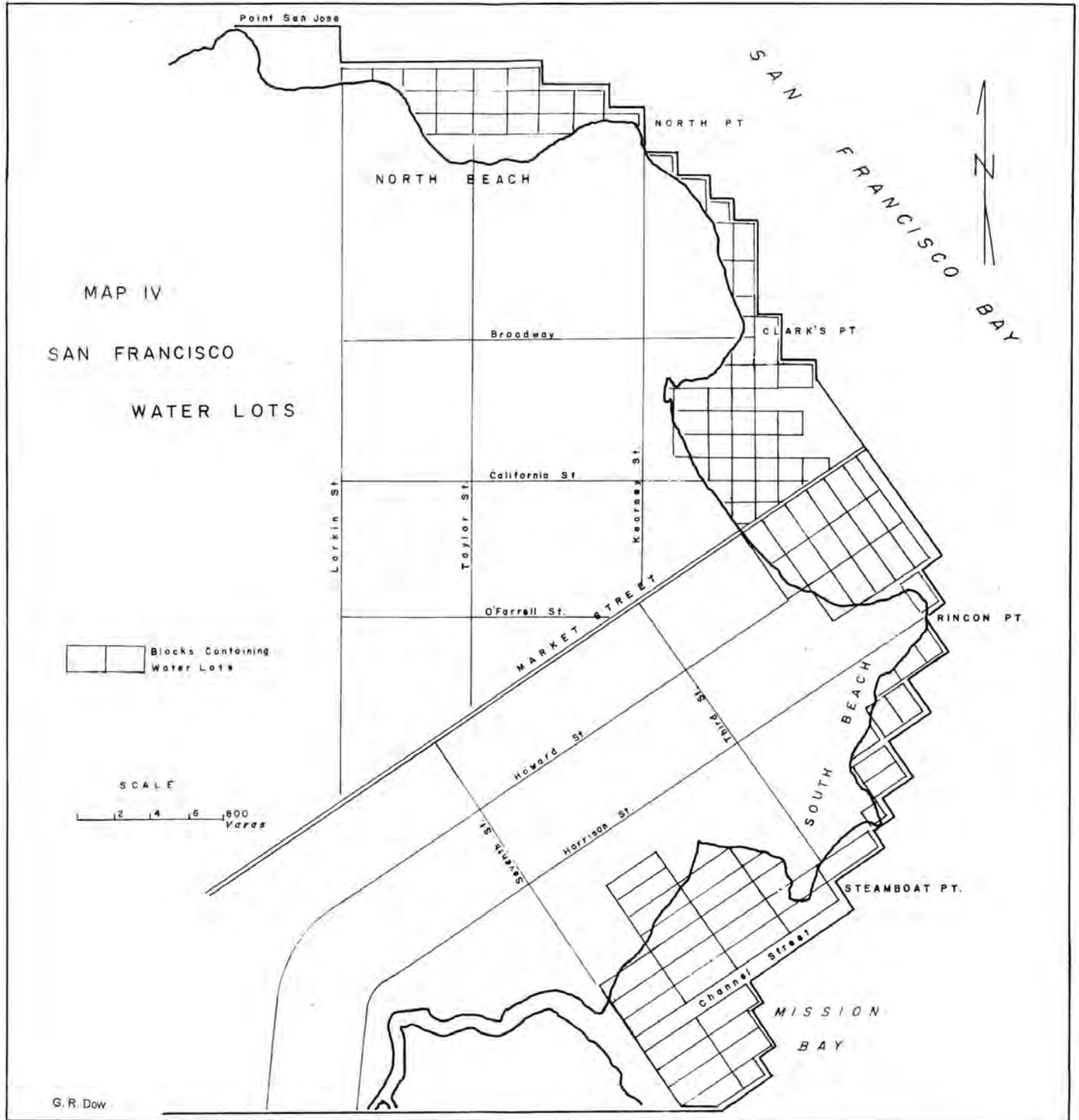
MAP 2

SAN FRANCISCO GRANTS & BOUNDARIES



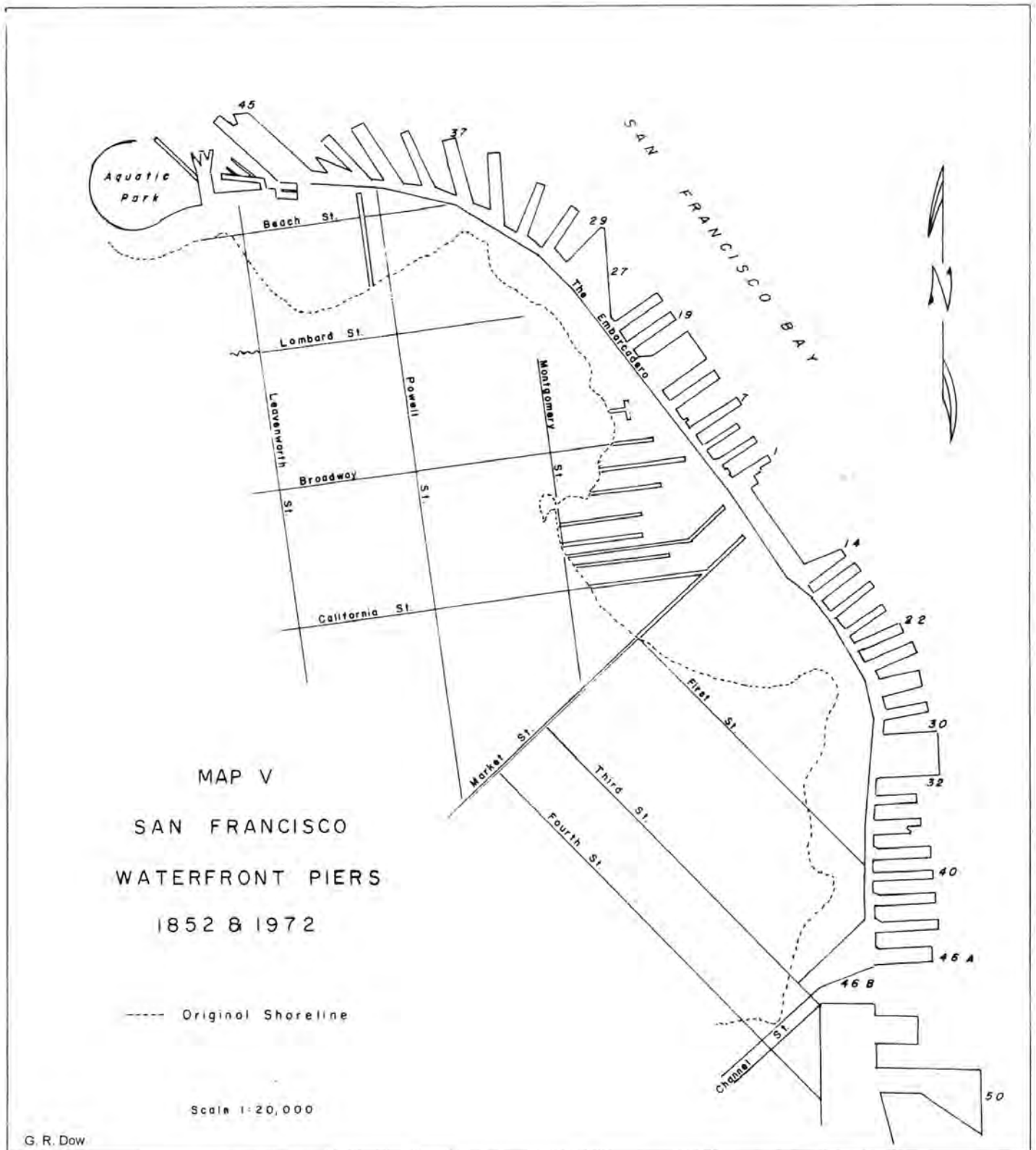
MAP 3

SAN FRANCISCO PORT COMMISSION: PORT OF SAN FRANCISCO 1972



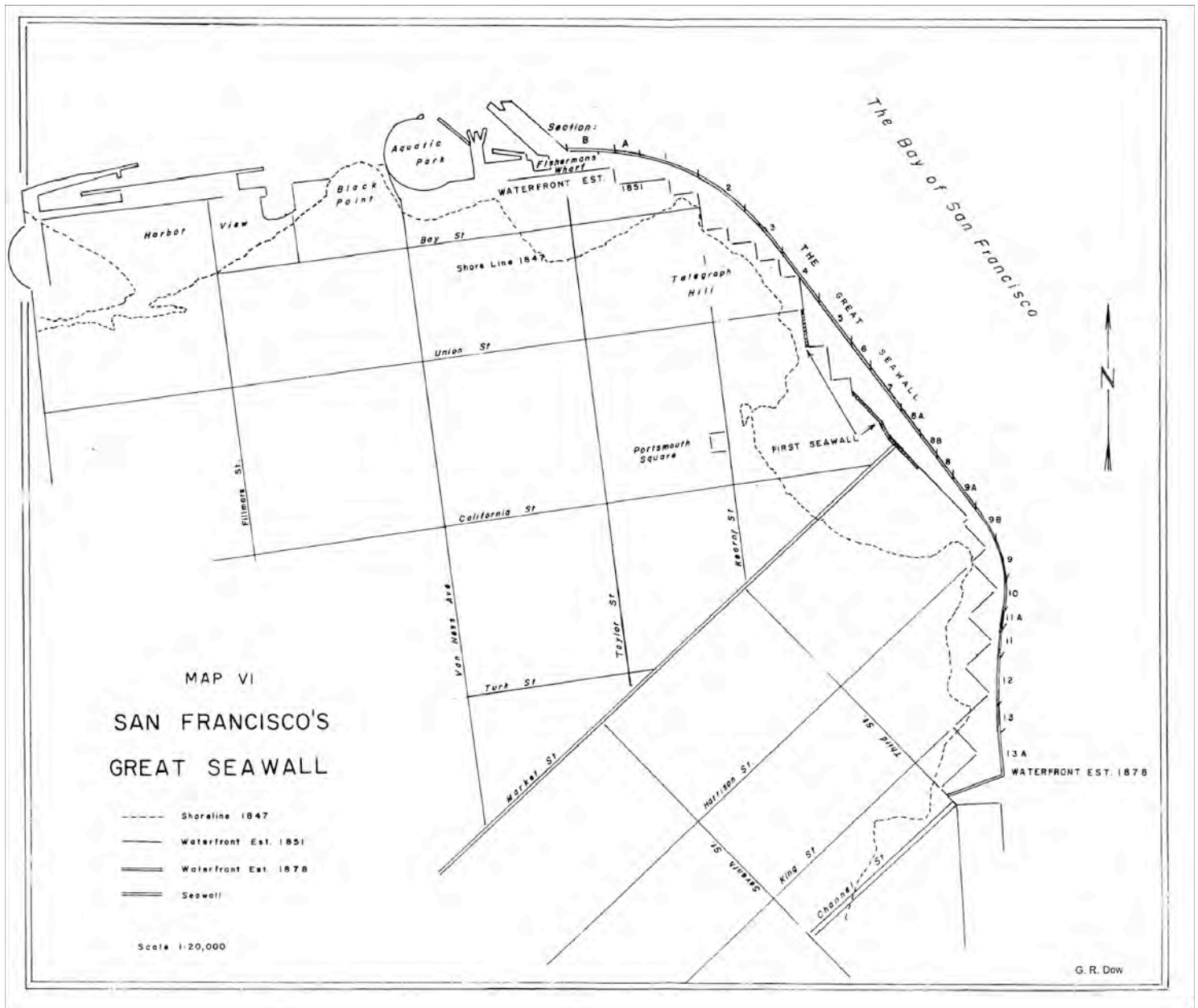
MAP 4

SAN FRANCISCO WATER LOTS



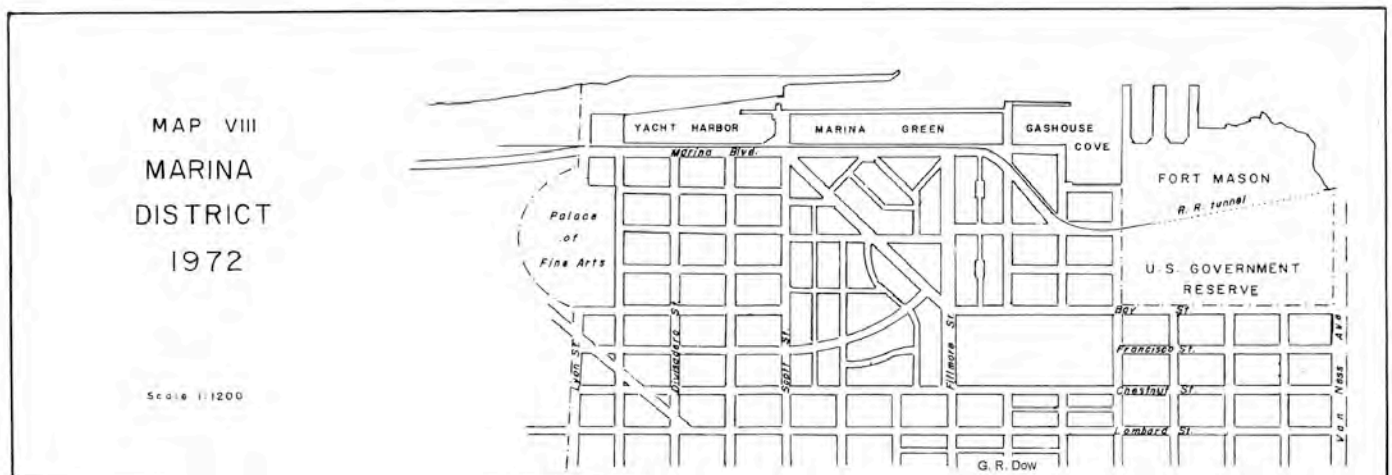
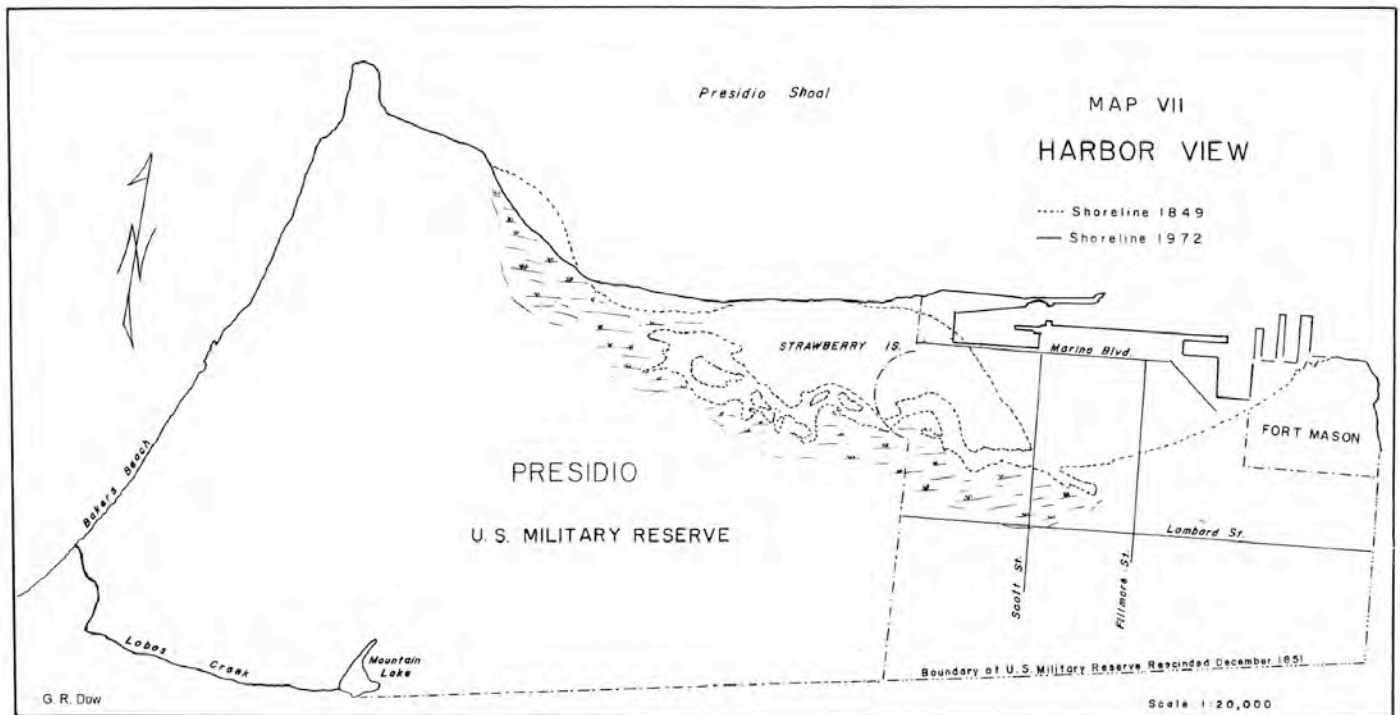
MAP 5

SAN FRANCISCO WATERFRONT PIERS - 1852 & 1972



MAP 6

SAN FRANCISCO'S GREAT SEAWALL

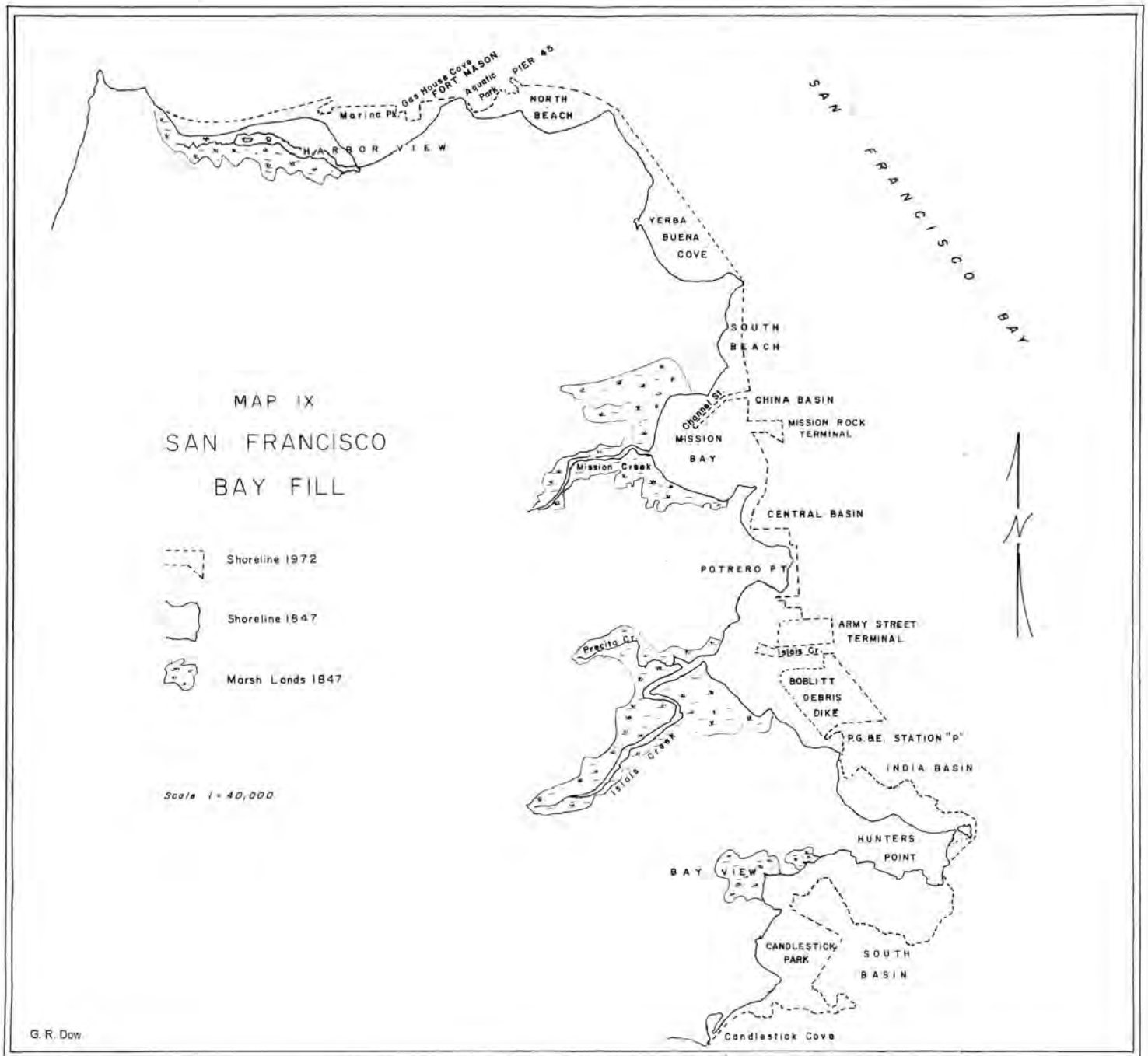


MAP 7

HARBOR VIEW

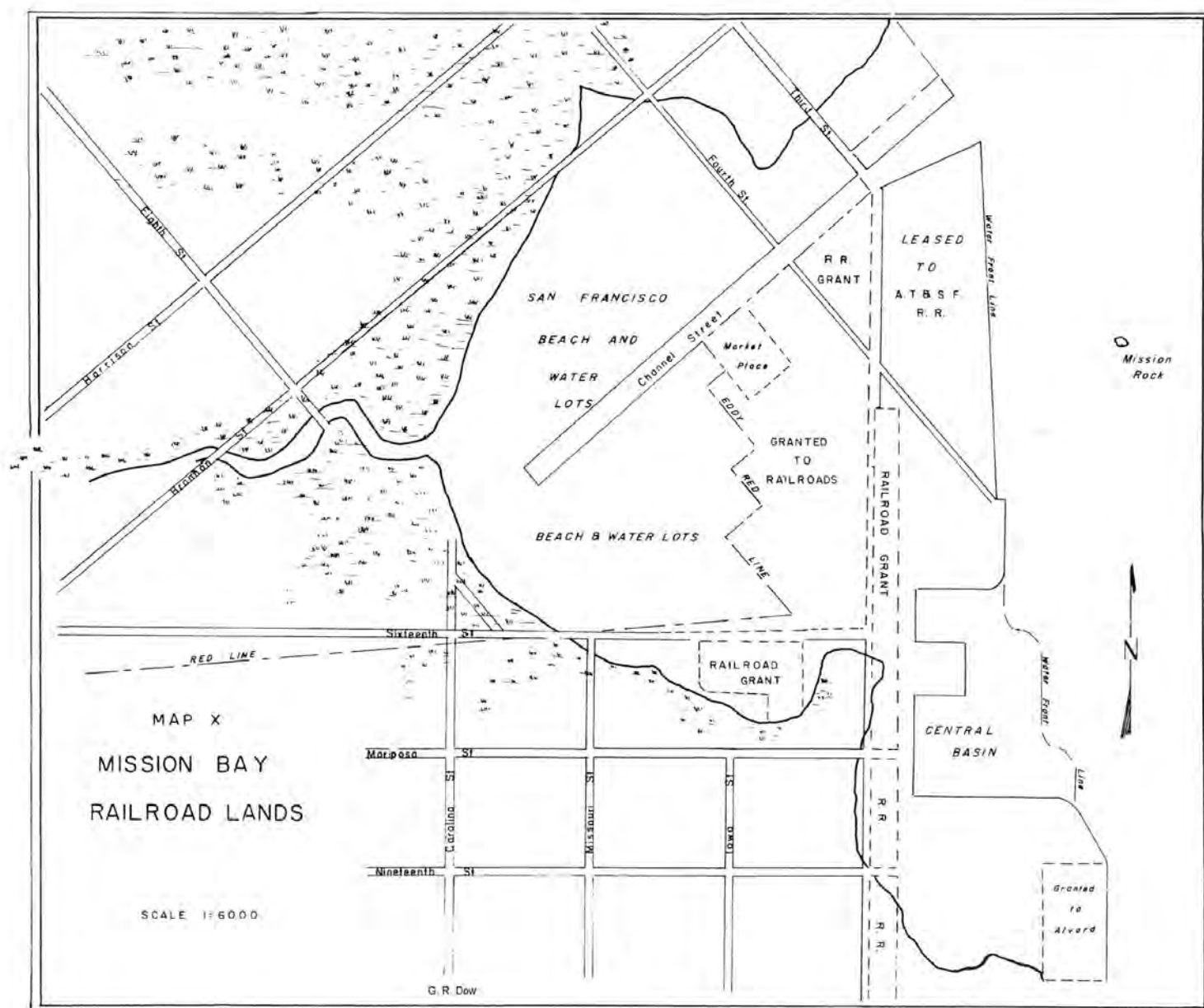
MAP 8

MARINA DISTRICT



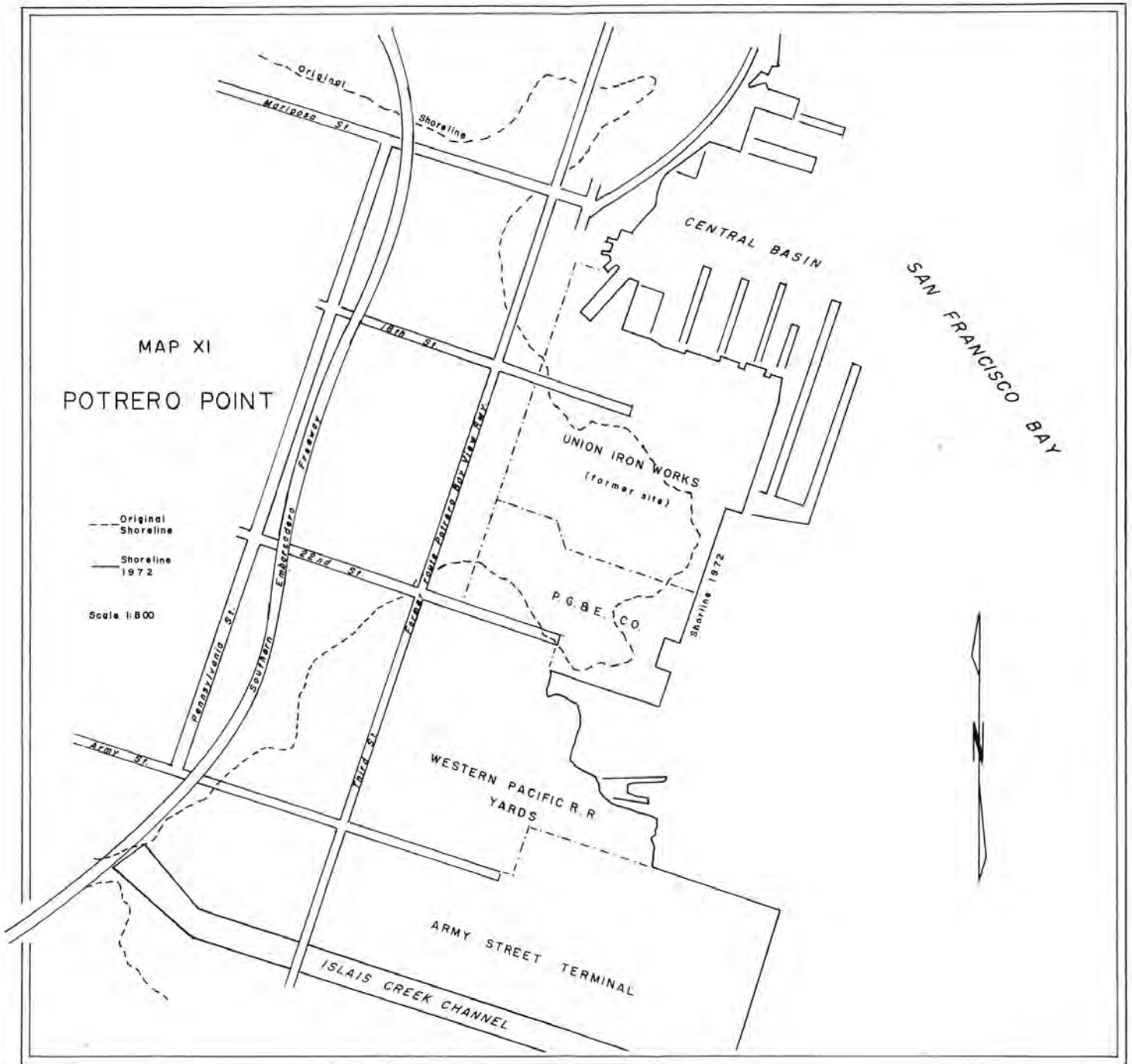
MAP 9

SAN FRANCISCO BAY FILL



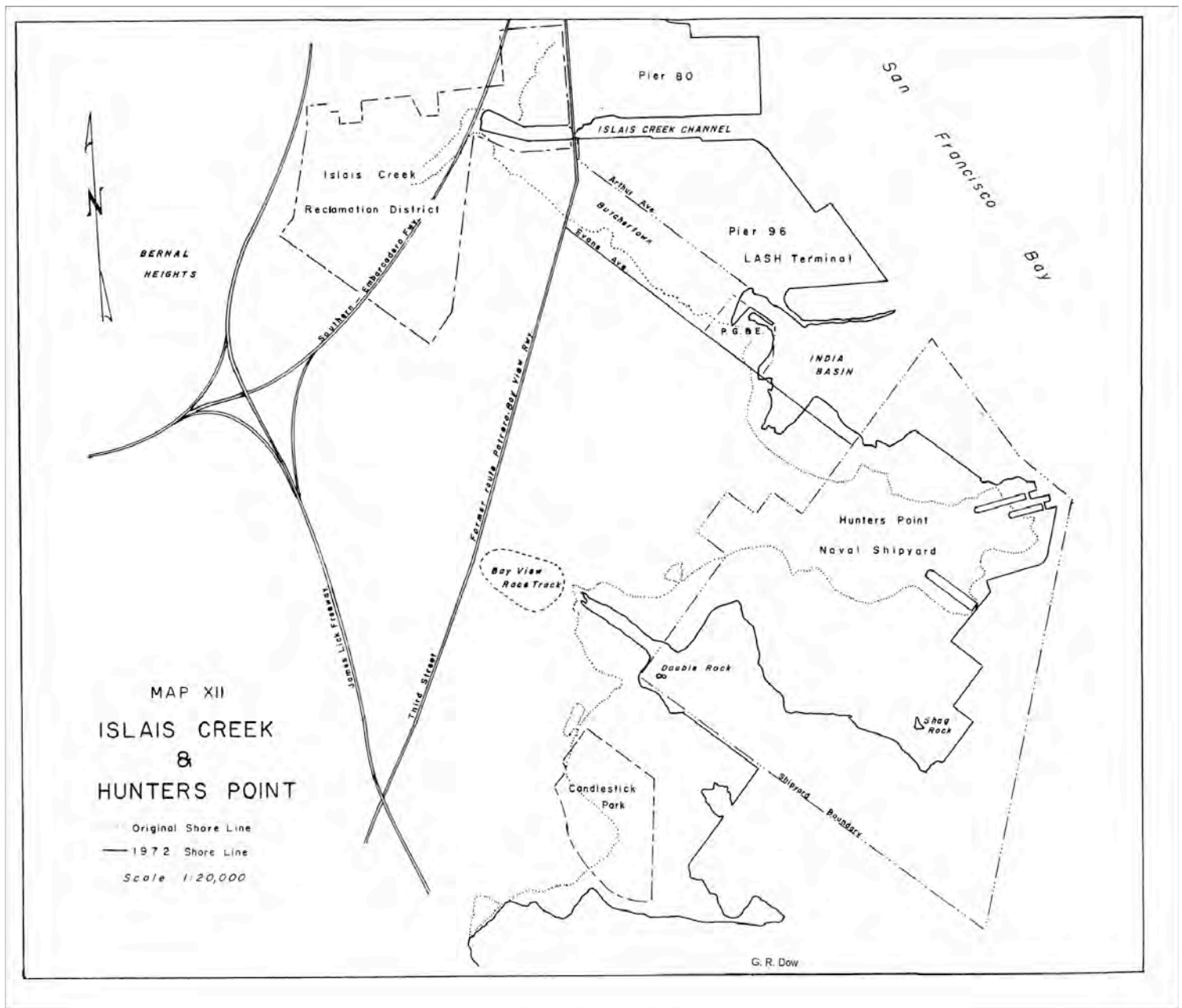
MAP 10

MISSION BAY RAILROAD LINES



MAP 11

POTRERO POINT



MAP 12

ISLAIS CREEK AND HUNTER'S POINT

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