

TABLE 4.9-3

FUTURE ROADWAY NOISE LEVELS^a

Roadway Segment: Broadway East of Harbor

Alternative	Distances (feet) From Roadway Centerline to CNEL			Future CNEL (dB) at 50 Feet ^b	Increase Over Existing CNEL (dB) at 50 Feet	Increase of Each Alternative Over Future CNEL (dB) at 50 Feet
	70 CNEL	65 CNEL	60 CNEL			
A	70	208	654	69.7	3.6	0.6
B	71	212	666	69.8	3.6	0.6
C	69	205	643	69.6	3.5	0.5
D	68	202	634	69.6	3.4	0.4
E	69	205	643	69.6	3.5	0.5
F	71	212	666	69.8	3.6	0.6
G	62	184	577	69.2	3.0	0.0

Roadway Segment: Broadway East of Kettner

Alternative	Distance (feet) From Roadway Centerline to CNEL			Future CNEL (dB) at 50 Feet ^b	Increase Over Existing CNEL (dB) at 50 Feet	Increase of Each Alternative Over Future CNEL (dB) at 50 Feet
	70 CNEL	65 CNEL	60 CNEL			
A	111	344	1,086	71.9	4.0	0.8
B	107	329	1,037	71.7	3.8	0.6
C	108	333	1,052	71.8	3.8	0.6
D	100	306	965	71.4	3.4	0.2
E	108	333	1,052	71.8	3.8	0.6
F	107	329	1,037	71.7	3.8	0.6
G	95	292	919	71.2	3.2	0.0

TABLE 4.9-3 (continued)

Roadway Segment: Harbor South of Broadway

Alternative	Distance (feet) From Roadway Centerline to CNEL			Future CNEL (dB) at 50 Feet ^b	Increase Over Existing CNEL (dB) at 50 Feet	Increase of Each Alternative Over Future CNEL (dB) at 50 Feet
	70 CNEL	65 CNEL	60 CNEL			
A	0	82	258	66.7	1.4	0.7
B	0	79	250	66.5	1.3	0.6
C	0	82	258	66.7	1.4	0.7
D	0	67	212	65.8	0.5	(0.2)
E	0	82	258	66.7	1.4	0.7
F	0	79	250	66.5	1.3	0.6
G	0	69	218	65.9	0.7	0.0

Roadway Segment: Harbor West of Pacific

Alternative	Distance (feet) From Roadway Centerline to CNEL			Future CNEL (dB) at 50 Feet ^b	Increase Over Existing CNEL (dB) at 50 Feet	Increase of Each Alternative Over Future CNEL (dB) at 50 Feet
	70 CNEL	65 CNEL	60 CNEL			
A	72	221	695	70.3	4.3	2.5
B	74	227	715	70.4	4.4	2.6
C	63	191	601	69.6	3.7	1.9
D	57	170	536	69.1	3.2	1.4
E	63	191	601	69.6	3.7	1.9
F	74	227	715	70.4	4.4	2.6
G	0	126	394	67.8	1.8	0.0

TABLE 4.9-3 (continued)

roadway Segment: Kettner South of Broadway

Alternative	Distance (feet) From Roadway Centerline to CNEL			Future CNEL (dB) at 50 Feet ^b	Increase Over Existing CNEL (dB) at 50 Feet	Increase of Each Alternative Over Future CNEL (dB) at 50 Feet
	70 CNEL	65 CNEL	60 CNEL			
A	0	92	289	66.8	7.3	0.2
B	0	94	294	66.8	7.3	0.2
C	0	93	292	66.8	7.3	0.2
D	0	76	238	65.9	6.4	(0.7)
E	0	93	292	66.8	7.3	0.2
F	0	94	294	66.8	7.3	0.2
G	0	89	280	66.6	7.1	0.0

roadway Segment: Pacific South of Broadway and North of Market

Alternative	Distance (feet) From Roadway Centerline to CNEL			Future CNEL (dB) at 50 Feet ^b	Increase Over Existing CNEL (dB) at 50 Feet	Increase of Each Alternative Over Future CNEL (dB) at 50 Feet
	70 CNEL	65 CNEL	60 CNEL			
A	97	288	904	70.6	3.4	2.1
B	92	270	848	70.4	3.1	1.8
C	105	313	983	71.0	3.7	2.4
D	84	241	754	69.9	2.6	1.3
E	105	313	983	71.0	3.7	2.4
F	92	270	848	70.4	3.1	1.8
G	67	181	563	68.6	1.3	0.0

TABLE 4.9-3 (continued)

Roadway Segment: G Street West of Seventh

Alternative	Distance (feet) From Roadway Centerline to CNEL			Future CNEL (dB) at 50 Feet ^b	Increase Over Existing CNEL (dB) at 50 Feet	Increase of Each Alternative Over Future CNEL (dB) at 50 Feet
	70 CNEL	65 CNEL	60 CNEL			
A	0	110	347	67.6	3.5	0.5
B	0	111	348	67.6	3.5	0.5
C	0	109	342	67.5	3.5	0.5
D	0	107	337	67.4	3.4	0.4
E	0	109	342	67.5	3.5	0.5
F	0	111	348	67.6	3.5	0.5
G	0	97	305	67.0	3.0	0.0

Roadway Segment: Market Street West of Ninth and East of Kettner

Alternative	Distance (feet) From Roadway Centerline to CNEL			Future CNEL (dB) at 50 Feet ^b	Increase Over Existing CNEL (dB) at 50 Feet	Increase of Each Alternative Over Future CNEL (dB) at 50 Feet
	70 CNEL	65 CNEL	60 CNEL			
A	87	271	854	71.2	3.6	0.6
B	85	263	829	71.0	3.4	0.4
C	85	262	826	71.0	3.4	0.4
D	76	235	740	70.5	2.9	(0.1)
E	85	262	826	71.0	3.4	0.4
F	85	263	829	71.0	3.4	0.4
G	77	239	753	70.6	3.0	0.0

a Does not consider any obstructions to the noise path.

b CNEL measured in feet from the centerline of the near travel lane.

As Table 4.9-3 indicates, roadway noise level increases due to each of the development alternatives ranges from 0.4 dB to 2.6 dB over the no action alternative, Alternative G. The projected noise level increases for each of the alternatives are at a level that is less than significant.

Rail traffic along the rail lines that bisect the site would be infrequent, occurring an average of twice per year. Thus, any noise associated with this source would not be considered significant due to its infrequency.

Alternative G would result in no long-term noise impacts to the project area, although it would be exposed to additional noise from traffic as traffic levels associated with cumulative development increase.

4.9.3 MITIGATION MEASURES

The following mitigation measures are recommended for each of the Alternatives A through F of the proposed Navy Broadway Complex project.

Short-Term Impacts

- Compliance with the San Diego County Code requires that significant noise-generating construction activities will be limited to Monday through Saturday, 7:00 a.m. to 7:00 p.m.

Long-Term Impacts

- Prior to the issuance of building permits for the hotel structures (Alternatives A, B, C, D, and F), building specifications for hotel structures describing the acoustical design features of the structures and evidence prepared by an acoustical consultant that these sound attenuation measures will satisfy the interior noise standard of 45 dB CNEL shall be submitted to the City Building Inspection Department for approval.

ENDNOTES:

- 1 U.S. Department of Housing and Urban Development, 1985.
- 2 Harris, 1979.
- 3 Federal Interagency Committee on Urban Noise, 1980.
- 4 City of San Diego, 1976a.
- 5 State of California, 1976.
- 6 Ibid.
- 7 City of San Diego, op. cit.
- 8 U.S. Department of Transportation, 1978.
- 9 San Diego Unified Port District, 1988.
- 10 U.S. Environmental Protection Agency, 1971.

4.10 CULTURAL RESOURCES

This section is based upon a cultural resources study that was prepared for the project. A complete copy of the report is available for review at the Broadway Complex Project Office, 555 West Beech Street, Suite 101, San Diego, California 92101-2937. The study involved a literature search of the historical background of the project area and a surface and subsurface investigation of the site, to document cultural properties located within the project area that may qualify for the National Register of Historic Places. The cultural resources study was prepared in accordance with the regulations for protection of Historic Properties (36 CFR Part 800), which implement Section 106 of the National Historic Preservation Act. Section 106 mandates Federal agencies to take into account the effects of their undertakings on properties included in or eligible for the National Register. The National Register Criteria for Evaluation (36 CFR 60.4) are used to assess a property's eligibility. This study is being used to make determinations of eligibility in consultation with the California State Historic Preservation Officer (SHPO). SHPO has concurred with the basic findings of this analysis. For those properties found to meet National Register criteria, consultation will be initiated with the Advisory Council on Historic Preservation, as required by Section 106. The Advisory Council's comment will be included in the final environmental documentation.

4.10.1 AFFECTED ENVIRONMENT

Regional Historic Setting

The Navy Broadway Complex includes 10 major structures and various smaller buildings that were constructed between the early 1920s and the mid-1940s. Many of the buildings have been remodeled and are well maintained, giving the impression that the complex is not as old as the original construction dates would suggest.

The project site is bounded by Pacific Highway, Harbor Drive (on two sides), and Broadway. These streets were formerly known as Atlantic Street (Pacific Highway), Ocean Street (Harbor Drive), and D Street (Broadway), and were laid out as part of the development of New Town San Diego during the 1850s. The majority of the project site was actually located below the high tide line during the 1800s (when New Town San Diego was laid out). It was only after the improvement of the harbor began in the early 1900s, culminating in the construction of a bulkhead and the use of dredged materials to fill behind the bulkhead, did the project site become dry land.

Overview of Project Area History

Prior to 1850, the focus of activity in San Diego revolved around the Presidio of San Diego, Old Town, and the Mission San Diego de Alcalá, all of which were located near the San Diego River several miles to the north of the site. The project area consisted primarily of tidal flats and open shore. In 1850, a survey party that included William Heath Davis and Andrew B. Gray chose the upland area near the project site for a camp. Gray thought the place would make a fine site for a town. Gray and Lieutenant T. D. Johns drew up plans for a new town site, which encompassed the project area. The New Town concept was presented to a group of San Diegans, who on March 16, 1850, formed a partnership to buy and develop the 160-acre site¹. At the time, about half of the New Town plots lay below the level of mean high tide.

The construction of New Town began in the summer of 1850. A deep-water wharf was constructed just to the south of the present Navy Broadway Complex. After the wharf was

completed in 1851, ships could off-load cargo and passengers directly at the pier rather than requiring the use of lighters to ferry them to the shore.^{2,3} In October 1868, Stephen S. Culverwell constructed a wharf at New Town at the foot of F Street, which extended 150 feet into the bay.⁴

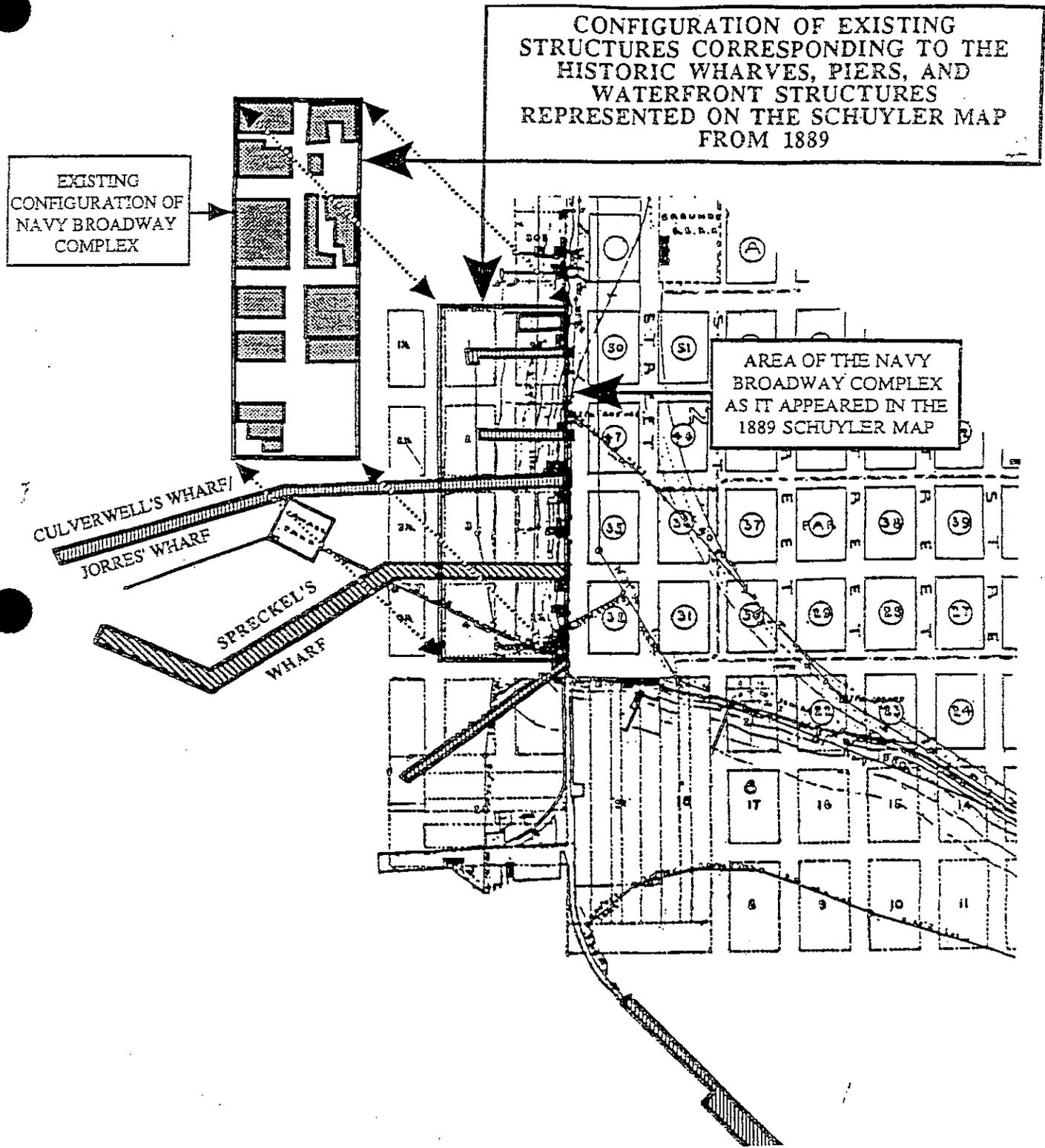
In the mid-1880s, the City experienced the first of a series of major construction booms. City crews paved streets, gas and electricity were introduced, street car tracks were laid down, and several water mains and drains carried sewage and stormwater to the deep waters of the bay. Along the waterfront, wharves became a focal point of the importation of goods into San Diego.

The major wharves constructed within the current boundaries of the project site included Culverwell's Wharf and the Spreckels Brothers' Wharf (see Figure 4-63). The Spreckels Brothers' Wharf was also known as the Coal Bunkers Wharf.⁵ It was approximately 2,000 feet long, in a zig-zag configuration, with rail carts and steam-driven cable lines and winches to unload cargoes of coal, cement and lumber. The wharf was located at the foot of G Street and extended through the southern area of the present Navy Broadway Complex. Adjacent to the Spreckels Brothers' Wharf was Culverwell's Wharf, at the foot of F Street, which also extended out several hundred feet over the tidal area to deep water. Culverwell's Wharf was subsequently purchased by William Jorres and later bore his name. Structures were constructed at the end of the wharf in the approximate locations of Buildings Nos. 7 and 8. The construction of these wharves improved shipping conditions and further solidified the advance in the harbor development and waterfront activities.⁶

Prior to 1900, the area along Pacific Highway, paralleling the high tide line, included a concentration of shanties, wharves, and businesses. The area was unique to San Diego and played an important role in the flourishing development of New Town. As shown on the illustrations drawn from the Sanborn Fire Map of 1904, the Navy Broadway Complex site included several recorded structures (see Figure 4-64). In addition, photographs from the 1880s through the early 1900s reveal that the concentration of structures was even greater than was shown on the Sanborn Fire Maps (see Figure 4-65).

In 1911, the City of San Diego, along with Los Angeles and Oakland, petitioned the State of California to grant the tidelands within the respective harbors to the cities for development. The bill authorizing this transfer passed, with the provision that the City of San Diego would make improvements (primarily dredging, filling, and the construction of bulkheads) to the tideland areas.⁷ The construction of the new concrete bulkhead and the filling of the tidelands occurred by dredging of the channel along Broadway and the deposition of the dredged material behind the bulkhead.

Based upon photographs of the dredging operation, it appears that the shanties and piers or wharves that were located in the fill area were buried beneath the dredged fill. In 1919, the City of San Diego deeded approximately 1.55 acres to the Navy at the corner of Broadway and Harbor Drive. The remaining Navy Broadway Complex property was subsequently granted to the Navy in several land exchange transactions with the City of San Diego.

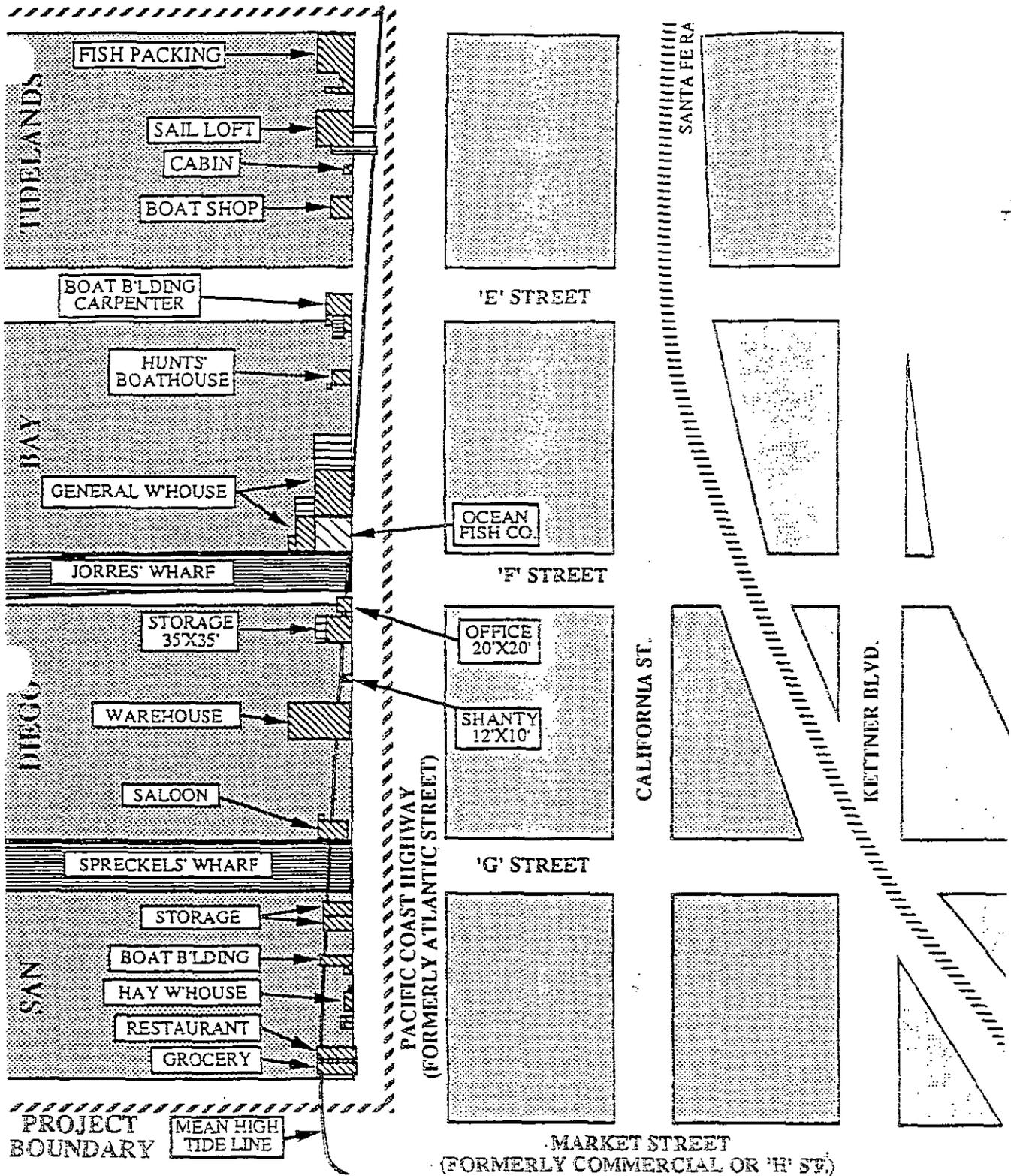


San Diego Bay Waterfront (1889) with Present Day Navy Broadway Complex Superimposed
 Navy Broadway Complex Project

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 NO SCALE



Figure 4-63

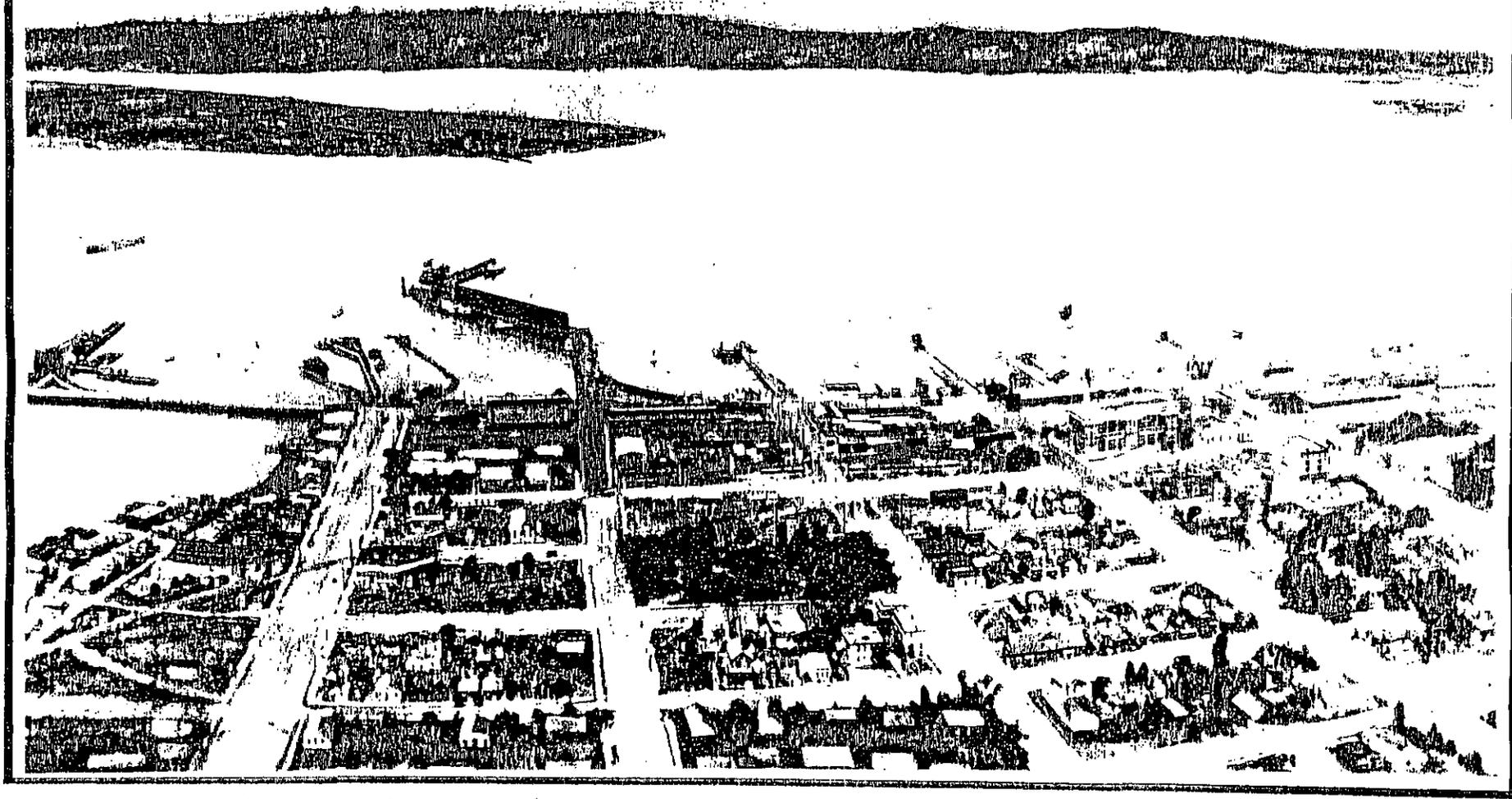


New Town Waterfront Area Map
 (circa 1904)
 Navy Broadway Complex Project

Source: Sanborne Fire Maps
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Figure 4-64



Aerial View of Project Area showing along Atlantic Street
(now Pacific Highway). Large Wharf in left-center is
Spreckels Brothers' Wharf (Photograph circa 1910)

Navy Broadway Complex Project

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Figure 4-65

Subsurface Investigation of Navy Broadway Complex

A subsurface investigation of the Navy Broadway Complex was conducted to locate the archaeological remains of the variety of commercial activities which occurred along the waterfront, and which might demonstrate the change in these commercial enterprises through time reflecting the maturing of the metropolitan environment in downtown San Diego. For instance, as coal was replaced by oil as the primary fuel for heat, the numerous waterfront companies that had been associated with the Spreckels Brothers' coal importing business had to adapt to the change in this major commercial activity. The subsurface investigation was intended to also find artifacts associated with the commercial wharves and shanties constructed on the project site.

The objective of the investigation was to determine if any extant archaeology would yield information important to the historical record of the waterfront area.

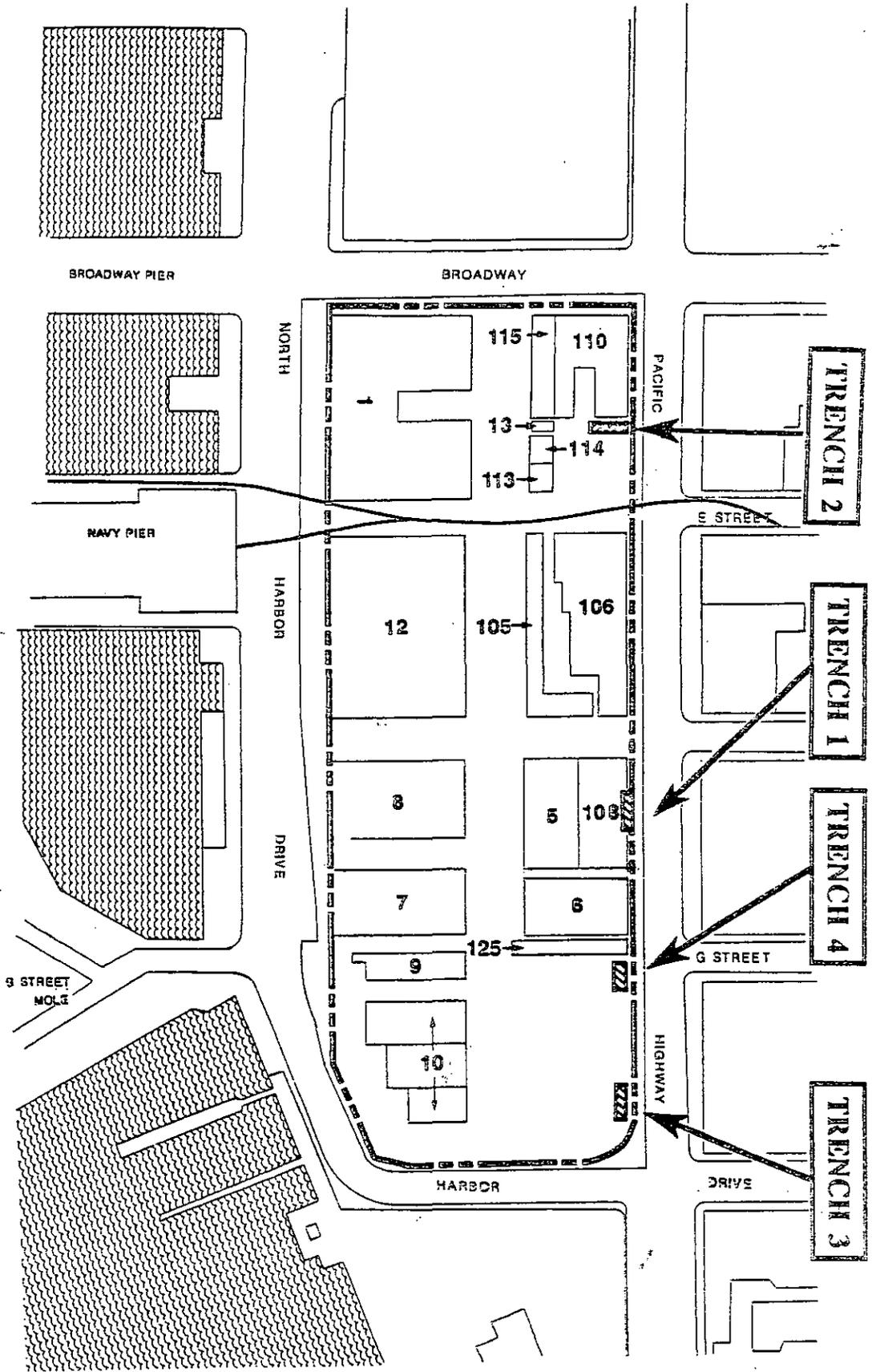
Specific sets of artifacts that were considered to be important to the data and which were expected in the deposit included:

- Faunal materials that would reveal the dietary patterns of the occupants of the area. This information would, in turn, indicate the social/financial status of those occupants, which should have changed through time as the City grew and prospered.
- Items reflecting the variety of commercial activities that occurred along the waterfront. This information would be significant to the understanding of San Diego history because it would reveal the relationship of the waterfront community to the major waterfront business (freight importing) as opposed to the primary local trade (fishing and whaling).
- Artifacts reflecting the freight importing business and the arrival of ships from around the world, significant in what they reveal about how these activities affected the local population.
- Artifacts reflecting the types of materials actually imported, such as coal, cement, wood, building materials or other goods, demonstrating trends in business and merchandising in San Diego during a time when the City was becoming a major urban center.

Four trenches were excavated on the site. A map of the trench locations is shown in Figure 4-66. Only one trench did not produce historic materials. This may have been due to previous disturbance from pipeline installations.

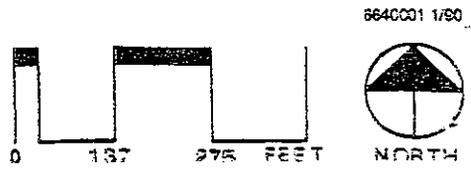
The subsurface investigation found the following:

- The target soils contained historic materials in three of the four trenches, indicating that deposits relating to the historic waterfront are present beneath the dredged fill.



-  Project Site
-  Building Number
(Refer to Table 4.2-1)
-  Railroad Tracks

Trench Location Map
 Navy Broadway Complex Project



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- The preservation of organic materials in the deposit, such as wood, bone, leather, seeds, glass, and ceramics, is excellent, due in part to the encapsulation of the deposit by the dredged fill.
- Although certain intact elements of the wharves and shanties (i.e., the pier pilings) remained, the integrity of the material appeared to be substantially damaged, probably by the dredging operations when the bulkhead was constructed.
- The variety of materials recovered from the trenches reveal the wide range of activities that occurred at the waterfront.

Evaluation of Eligibility of Subsurface Resources

The laboratory analysis of the recovered items documented a wide range of materials; however, while some of the categories were too numerous to count, such as wood fragments or pebble-sized pieces of brick, the majority of the categories included too few items to provide a basis from which to address any important research questions. Food bone was a particular category that included too few specimens to permit valid interpretation. Similarly, bottle glass was present in the recovery, but in quantities too small to permit any meaningful interpretations.

As an adjunct to the laboratory analysis, the presence of fish remains in the collection was reported to the San Diego Unified Port District. This information was considered to be potentially important because the Port District is currently attempting to develop a historical account of the natural resources of the bay. One means by which to identify the fish species in the bay is through the study of historical sites around the bay that include remains of fish taken as part of commercial fishing enterprises and sold in local markets. The size of the sample of fish materials from beneath the project site was too small to supply valuable information.

The recovered artifacts did not provide any indication of the variety of commercial activities that took place within the study area. The research effort using maps and other data provides a useful compilation of businesses located along the waterfront, but the artifact collection from the trenches was too small and the integrity of data was too unclear to support a correlation between the historic research data and the archaeological deposit. The artifact materials also do not definitively demonstrate a shift from shanties or residences in the area to business concerns during the late 1800s. The artifact recovery also did not include any noteworthy data concerning the shipping business, other than the coal importing enterprise of the Spreckels Brothers' Company (represented by pieces of coal in Trenches 3 and 4). It is more likely that data of this type would be found on the west side of the project site, where the ships were moored, rather than on the east side along the historic shoreline, where the trenches were excavated.

The subsurface analysis demonstrated that the historic deposit within the project potentially contains a variety of well-preserved materials to document the socioeconomic conditions of the waterfront population. Because San Diego is a major city that has played a major role in the history of California, the historic waterfront has been documented substantially in maps, photographs, and the literature. While the data beneath the site is interesting in its content, it appears that an understanding of the history of the waterfront can more efficiently be gained by use of existing documentation. Substantial additional excavation would yield larger samples of some materials, but it is not clear that these artifacts would provide new important information which is not already available from other sources.

Determination of Eligibility for Subsurface Resources

Criterion D of the National Register criteria for evaluation (36 CFR 60.4) would be the most likely determinant for the subsurface resources, i.e., that the site "may be likely to yield information important in history." However, based on the investigation of historic documentation, it is evident that substantial data is already available to answer the important questions about San Diego's historic waterfront. Also, the damage to the integrity of the artifacts (caused by historic dredging operations which moved and mixed materials) and the resultant lack of a clear stratigraphy (which hinders the ability to relate artifacts to time and place) diminishes the value of this resource for the National Register. Consequently, the Navy has determined that the subsurface resources do not meet the criteria for inclusion in the National Register. The State Historic Preservation Officer (SHPO) has concurred.

Navy Broadway Complex Buildings

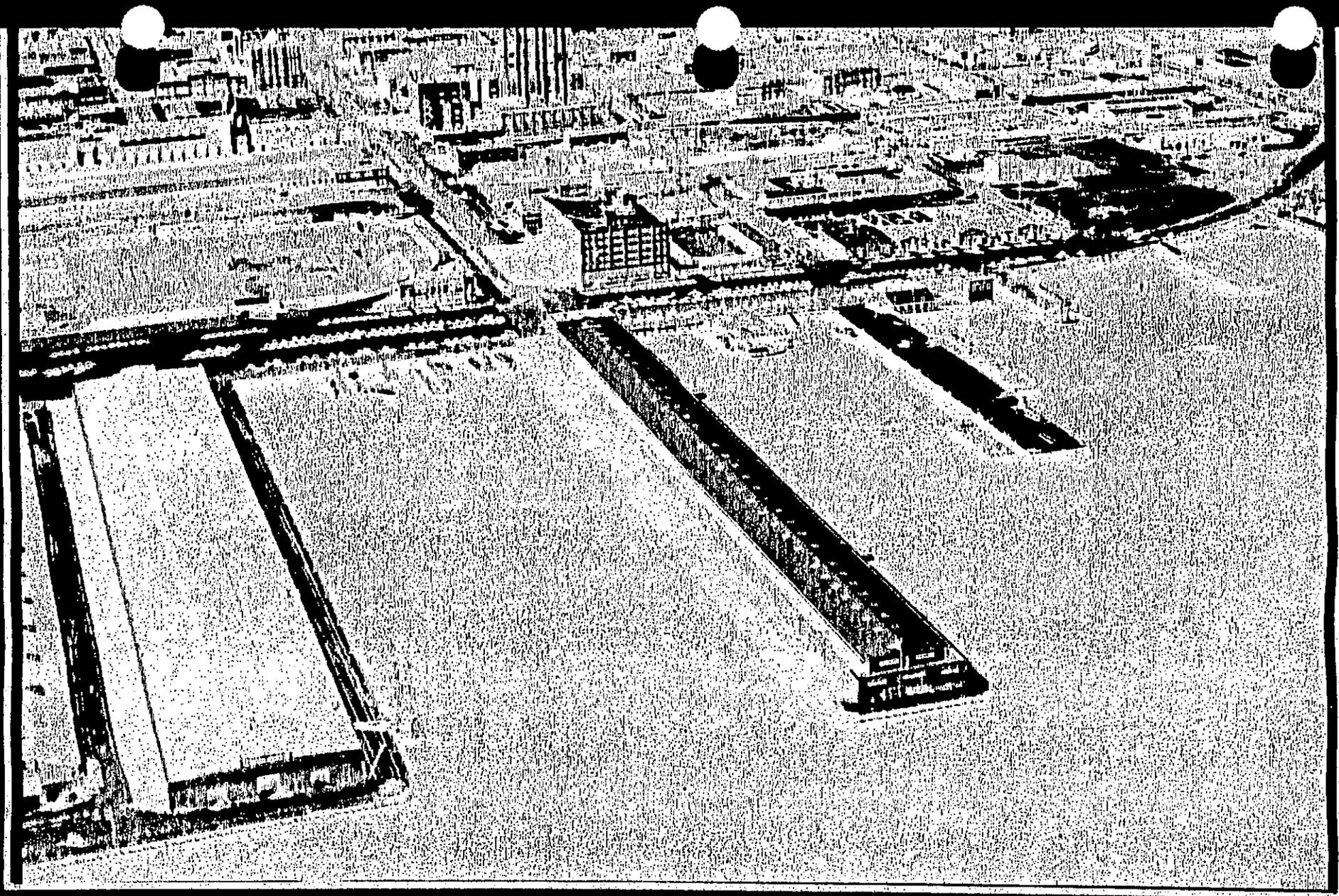
An important part of the Navy presence in San Diego was, and is, the Naval Supply Center (NSC), San Diego, one of the commands located on the Navy Broadway Complex. NSC is one of the four largest supply facilities in the Navy, with annexes at North Island, National City, Point Loma, and Long Beach. As part of the 11th Naval District established in February of 1921, the first unit of the Naval Supply Center--the north wing of Building No. 1--was begun late in 1921. It was completed in May of 1922, officially opened on August 8, 1922, and the first stores arrived on February 1, 1923. This structure (and the later 1938-1939 addition) has served as the headquarters facility for the Naval Supply Center since the base was first opened. In 1926, funds were appropriated for the construction of the Navy Pier across Harbor Drive from the future site of Building No. 12. Figure 4-67 provides an aerial view of the project area as seen in 1932. In the 1930s and 1940s, construction was completed on the remainder of the buildings on the Navy Broadway Complex, including the largest structure, Building No. 12. The expansion of the Naval Supply Center facilities was necessitated by World War II.

Today, the Naval Supply Center continues to serve as the supply headquarters facility. The majority of buildings have, however, been altered (interior and/or exterior) to accommodate changing needs and storage requirements.

Field Survey and Building Inventory

A field survey of the existing buildings on the Navy Broadway Complex was conducted to determine the age, architectural status, present condition, and historical status of the buildings on the site. All major structural and architectural features were photographed. Table 4.10-1 lists the buildings, their units, and dates of construction. In addition, a reconnaissance of the project site for evidence of historic deposits or other cultural resources was conducted.

The aboveground structures were each constructed in one of three major developmental phases, and not as part of a unified development plan. As a result, they were built in a number of generally industrial styles utilizing a wide variety of construction materials. The majority of buildings on the Navy Broadway Complex do not, therefore, appear to qualify for either individual or district listing on the National Register. Despite this, Buildings No. 1 and No. 12 onsite--along with the Navy Pier adjacent to the site--present an historical and architectural presence



Aerial View of the Project Area
(February 2, 1932)
Navy Broadway Complex Project

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Figure 4-67

TABLE 4.10-1

INVENTORY OF EXISTING STRUCTURES AT THE
NAVY BROADWAY COMPLEX

Building No.1

Original Name/Use:	Storehouse
Current Name/Use:	Administration building, administration offices, general warehouse
Construction Date:	1921-1922, 1938-1939 (two phases)
Size:	357,577 square feet
Architect:	U. S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Major addition of a seven-story south wing in 1938, modifications to the window and doorway openings, and numerous interior remodelings

Building No. 5

Original Name/Use:	Bulger Building
Current Name/Use:	Transit shed, training space, administration building
Construction Date:	1935
Size:	15,219 square feet
Architect:	Unknown (presumably U. S. Navy Public Works)
Builder:	Unknown
Condition:	Good
Alterations:	Altered in accordance with plans drawn in 1939, and undergone numerous minor modification to the window and doorway openings.

Building No. 6

Original Name/Use:	Storehouse
Current Name/Use:	Packing shed, warehouse
Construction Date:	1938-1939
Size:	30,688 square feet
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Unaltered exterior

TABLE 4.10-1 (continued)

Building No. 7

Original Name/Use:	Storehouse
Current Name/Use:	Cold storage warehouse
Construction Date:	1938-1939
Size:	313,539 cubic feet, 25,913 square feet
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Altered by the enclosure of both window and doorway openings, and by the addition of Building No. 9

Building No. 8

Original Name/Use:	Storehouse
Current Name/Use:	Flammables storehouse
Construction Date:	1938-1939
Size:	22,090 square feet
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Altered by the enclosure of the original doorway opening and the removal of the original concrete steps

Building No. 9

Original Name/Use:	Gas and cylinder storage building
Current Name/Use:	Cold Storage, administration building, and battery shop
Construction Date:	1940-1941
Size:	4,855 square feet
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Minor modifications to several window and doorway openings

TABLE 4.10-1 (continued)

Building No. 10

Original Name/Use:	Storehouse for bulk storage
Current Name/Use:	General warehouse
Construction Date:	1940-1941
Size:	30,277 square feet
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Minor modifications to window and doorway openings

Building No. 11

Original Name/Use:	Pier and transit shed
Current Name/Use:	Transit shed, general warehouse, pier
Construction Date:	1941-1942
Size:	297,775 square feet (not including attached supply pier)
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Substantially unaltered

Building No. 12

Original Name/Use:	Unknown
Current Name/Use:	General warehouse, administration building
Construction Date:	1944
Size:	427,041 square feet
Architect:	Unknown
Builder:	Unknown
Condition:	Good
Alterations:	Connected to Building No. 1 at the third story level by an overpass

TABLE 4.10-1 (continued)

Building No. 13

Original Name/Use:	Unknown
Current Name/Use:	Substation (presumably an electrical transformer room)
Construction Date:	1942
Size:	Approximately 100 square feet
Architect:	Unknown
Builder:	Unknown
Condition:	Good
Alterations:	None

Building No. 19

Original Name/Use:	Sentry house
Current Name/Use:	Gatehouse
Construction Date:	1956
Size:	12 square feet
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	None

Building No. 105

Original Name/Use:	Garage and shed
Current Name/Use:	Public Works shops, administration offices
Construction Date:	1931-1932
Size:	11,000 square feet
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Altered by many modifications to window and doorway openings by considerable interior remodeling, and by the removal of a structure from the central courtyard

TABLE 4.10-1 (continued)

Building No. 106

Original Name/Use:	Temporary storage building
Current Name/Use:	Public Works shops, cafeteria
Construction Date:	1935
Size:	20,067 square feet
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Altered by many modifications to window and doorway openings, by considerable interior remodeling, and by the removal of a structure from the central courtyard

Building No. 108

Original Name/Use:	Storehouse
Current Name/Use:	Transit Shed
Construction Date:	1936
Size:	12,960 square feet
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Virtually unaltered

Building No. 110

Original Name/Use:	Medical storage building
Current Name/Use:	Administration building, education center, post office, conference room
Construction Date:	1942-1943
Size:	40,856 square feet
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Altered by many minor modifications to the window openings and extensive interior remodeling and conversion of use

TABLE 4.10-1 (continued)

Building No. 113

Original Name/Use:	Storage building for fire fighting equipment
Current Name/Use:	Fire station, guard locker room
Construction Date:	1942-1943
Size:	2,304 square feet
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Virtually unaltered

Building No. 114

Original Name/Use:	Temporary warehouse, labor force temporary lockers, toilet building
Current Name/Use:	Credit union/labor lobby
Construction Date:	1943
Size:	1,440 square feet
Architect:	U.S. Navy Public Works
Builder:	Unknown
Condition:	Good
Alterations:	Altered by minor modifications to the window and doorway openings

Building No. 115

Original Name/Use:	Fish market
Current Name/Use:	Dispensary
Construction Date:	1928-1929
Size:	3,856 square feet
Architect:	Navy acquired long after it was built
Builder:	Unknown
Condition:	Good
Alterations:	Substantially altered by window enclosures, doorway alterations, and by conversion of use and interior remodeling

(see Figures 4-68 and 4-69). Building No. 1 contains a north wing built in 1922, and a south wing built in 1938 and 1939. The pier and Building No. 11 (see Figure 4-70) were built between 1932 and 1942, and Building No. 12 was built in 1944. These buildings also form an architectural unit, and are tied together both in terms of general form (design) and function. In effect, although the entire Navy Broadway Complex does not appear to qualify as an architectural district, these three units would appear to qualify for the National Register listing as a single architectural and/or historical group. (Note: Building No. 11, the Navy Pier, is not within the boundaries of the defined project site, but is part of a potentially significant grouping of three structures.)

Evaluation of Eligibility of the Structures

Based upon Criterion C of 36 CFR 60.4, Buildings 1, 11, and 12 appear to meet National Register Criteria as a single architectural and historical group. They represent the entire development history of the Navy Broadway Complex, and are the principal architectural components of the facility. They are all designed in compatible utilitarian/industrial styles, and retain a high degree of integrity in consideration of the fact that the major alteration (the south wing addition to Building No. 1) is 50 years old. Building No. 12 (1944) is less than 50 years old, but it represents the largest structure on the Navy Broadway Complex and is a dominant architectural feature. These three structures are primary contributing features to the overall architectural character of this area of the San Diego waterfront.

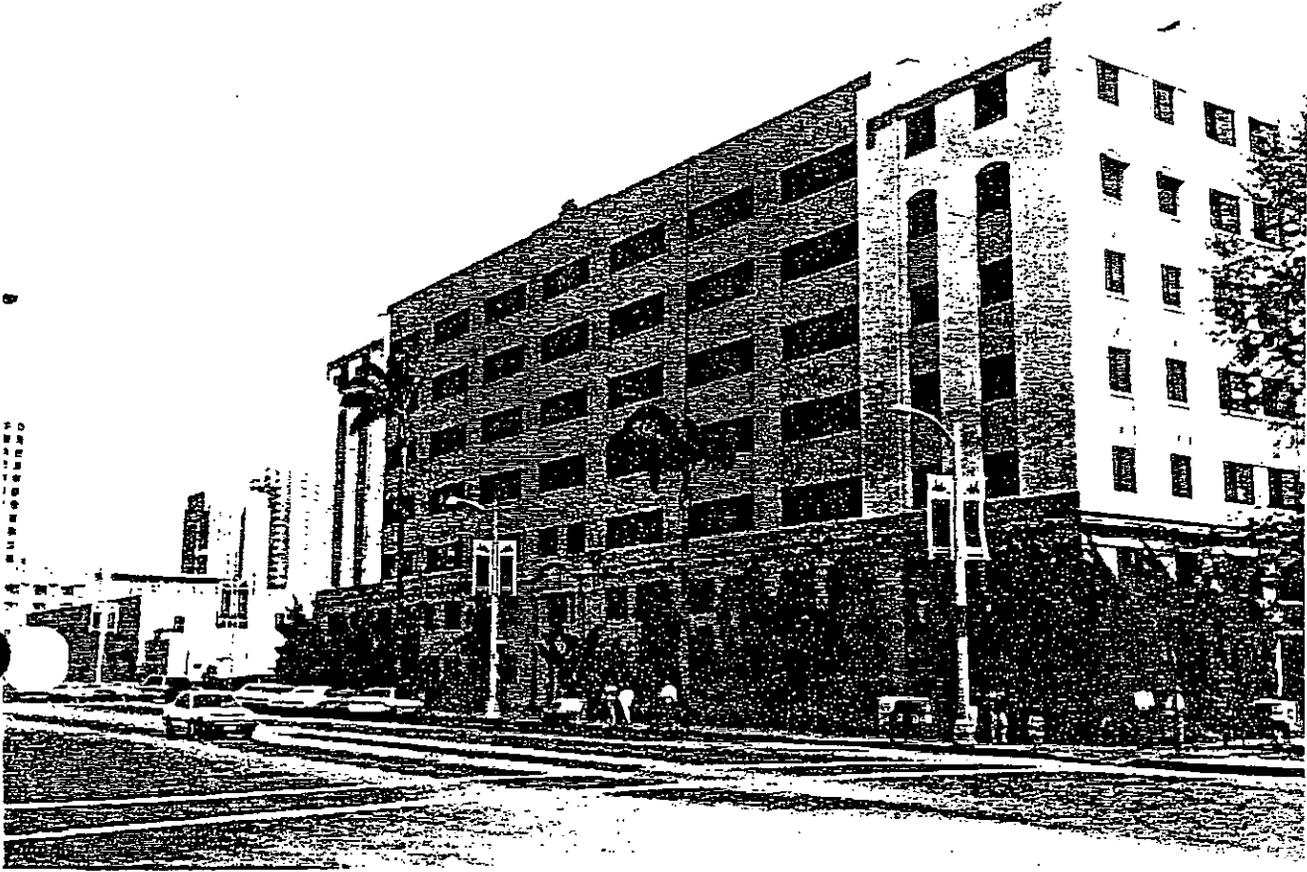
None of the other buildings on the Navy Broadway Complex appear eligible for nomination to the National Register, based upon the following factors:

- Alterations (form and/or function)
- Lack of distinguishing features
- Level of original historical or functional importance to base operations

Each of the non-eligible buildings clearly played a role in the development and operational history of the base, but the relative level of importance of each of these buildings is clearly less significant than the three buildings listed as potentially eligible for nomination to the National Register. The non-eligible buildings are most appropriately seen as architecturally associated features related to the three primary structures. The architectural associations are, however, relatively weak, as the numerous associated buildings are carried out in a number of differing styles and construction materials. None of the other buildings on the site would appear to qualify as individually eligible for listing.

In addition, because the majority of the buildings within the Navy Broadway Complex were not constructed as part of a planned development; are not of any unified design, type, or method of construction; and have been substantially modified both through physical alteration and/or range of use, it is suggested that the entire building complex as a whole or unified district not be considered to be eligible for nomination to the National Register.

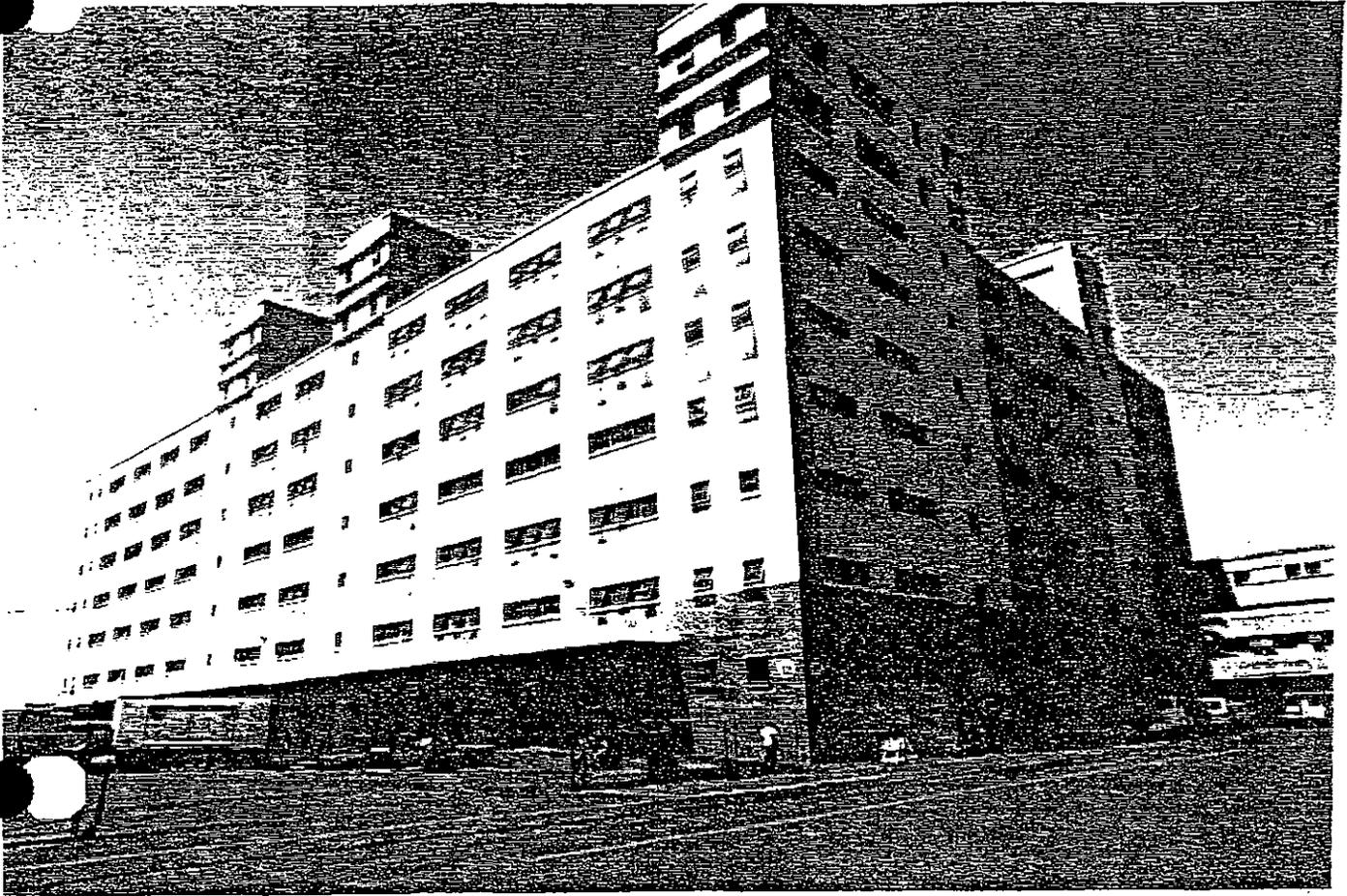
The fact that these buildings serve as a functional supply unit on a single property does not appear to justify a level of historical significance sufficient to include, within a single district, buildings which are architecturally incompatible, altered, and/or representative of differing periods of development. Specifically, although this facility is the headquarters complex, annexes are located at North Island, National City, Point Loma, and Long Beach. Most appropriately, any consideration of district eligibility, as justified on a functional or purely historical/developmental



View of Building 1
Navy Broadway Complex Project

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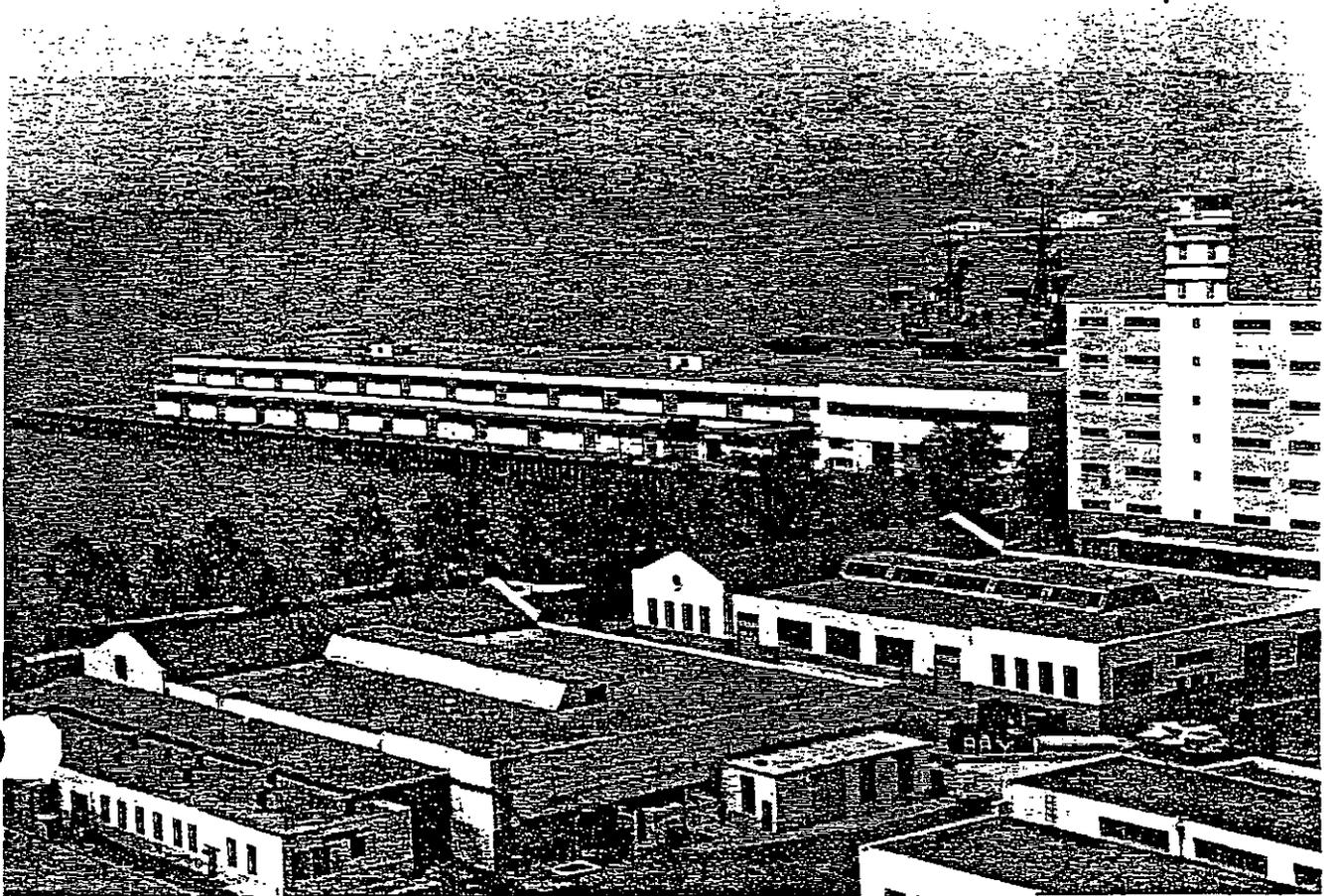
Figure 4-68



View of Building 12
Navy Broadway Complex Project

6640001 1/90

Figure 4-69



View of Offsite Building 11
(and Navy Pier)

Navy Broadway Complex Project

6640001 1/90

Figure 4-70

basis, would have to include these annexes. The possibility of making a positive finding for such a district determination of eligibility is extremely remote, and it is again suggested that consideration of a district for the Navy Broadway Complex is inappropriate.

Determination of Eligibility for the Structures

Building Nos. 1 and 12 clearly represent a district architectural entity in conjunction with the Navy Pier. They further represent a recognizable type of construction, and represent every major period of base development. As such, the Navy believes these structures qualify as eligible under Criterion C: Distinctive Characteristics for listing on the National Register. It is not suggested here that these buildings would each qualify as individually eligible, but rather as a unit. Other buildings on the site do not appear to qualify either individually or as a unit. SHPO has concurred with this finding.

Cultural Resources in the Vicinity of the Project

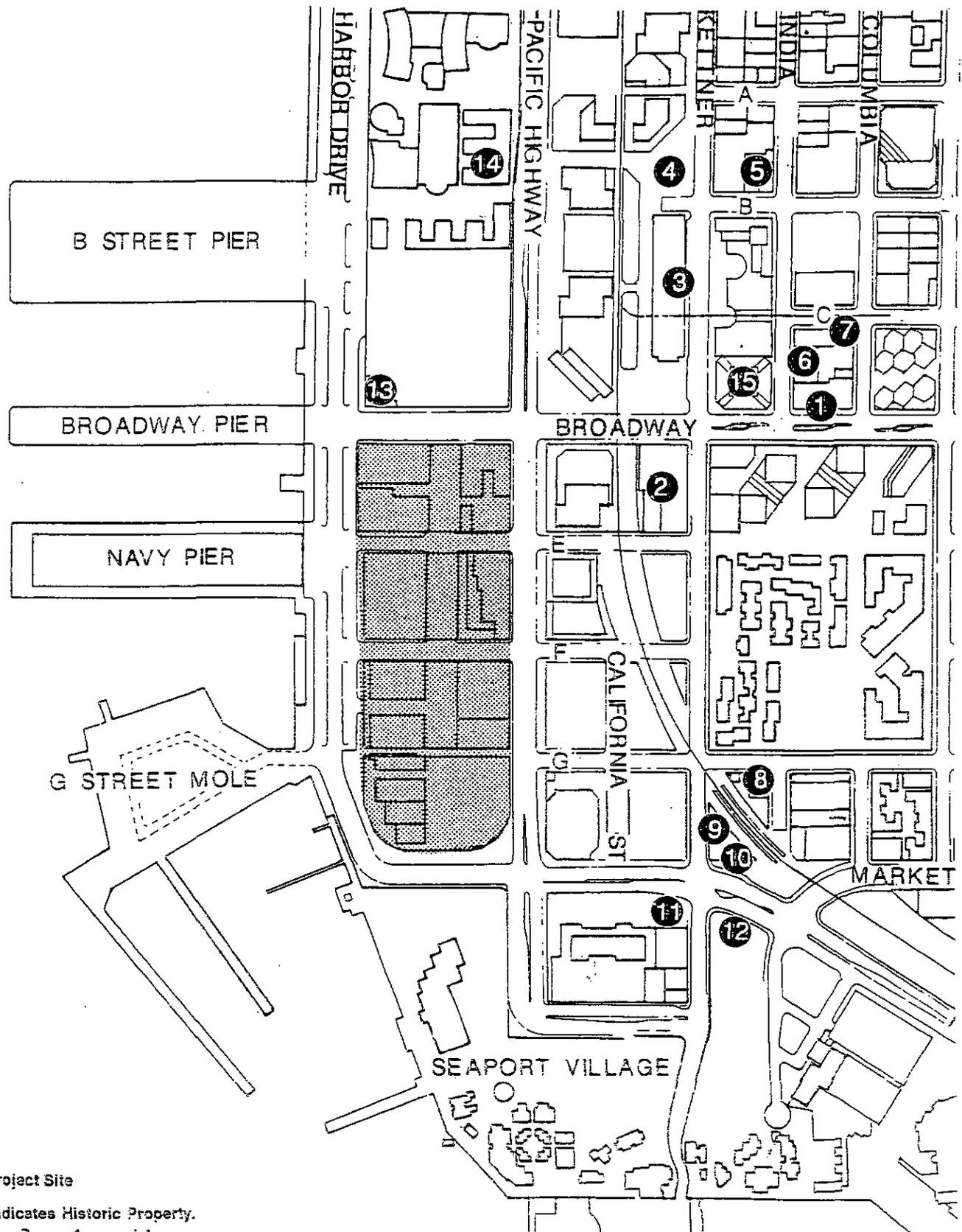
As an element of the Section 106 process, all cultural resources within the vicinity of the project must be considered because of possible adverse consequences from the project. In order to determine the extent of cultural resources within a three-block radius of the project, various sources were consulted and an on-foot reconnaissance was conducted.

The files of the San Diego Museum of Man and the South Coastal Information Center at San Diego State University were consulted for records of previously recorded sites. The records did not indicate that any sites are known to exist in the study area.

The search for historic resources was completed by researching listings of historic properties. The sources consulted included the National Register of Historic Places, the California Historical Landmarks Register, and the City of San Diego's Historic Sites Register. All of the structures listed on the registers within the study area were reviewed from the viewpoint of potential eligibility for nomination to the National Register. Lastly, the entire surrounding area was surveyed on foot to visually inspect the area for any historic sites that could be potentially eligible, but not previously identified or evaluated. In all of the facets of this survey, no in-depth evaluations or research pertaining to individual properties was conducted--the review of the area was sufficient only to determine potential for eligibility.

The following list provides the names of structures that are currently listed, determined to be eligible, or are potentially eligible for inclusion in the National Register of Historic Places within three blocks of the Navy Broadway Complex. Each location is keyed to Figure 4-71.

1. Armed Services YMCA, 500 West Broadway. Eligible.
2. SDG&E Power Generating Plant (Station B) 1911 Kettner Street. Eligible.
3. Santa Fe Depot, 1050 Kettner Street. Listed (June 26, 1972).
4. McClintock Storage Company, 1202 Kettner Street. Listed (October 3, 1980).
5. Wetmore's Garage, 1200 India Street. Potentially eligible.
6. American Youth Hostel "AYH," affiliated with the Armed Services YMCA, 031 India Street. Potentially eligible.
7. Retail and office building, 1061 India Street. Potentially eligible.
8. Warehouse Ltd., 654 India Street. Potentially eligible.
9. Building at 633 Kettner Street. Potentially eligible.
10. Kansas City Barbeque, 610 West Market Street. Potentially eligible.



end

 Project Site

 Indicates Historic Property.
See Pages 4 - and 4 -
for a Description of Each
Property

Historic Properties in the Project Vicinity Lawry Broadway Complex Project



364001 1/90

11. Old San Diego Police Headquarters Building, 700 block of West Market Street. Eligible.
12. San Diego Marine Hardware, 505 West G Street. Potentially eligible.
13. Ship's Galley Restaurant, northeast corner of Broadway and Harbor Drive. This was the Harbormaster's Office. Potentially eligible.
14. Naval Facilities Engineering Command, Western Region, 1220 Pacific Highway. Potentially eligible.
15. The Tower Bowling Alley has been determined to be eligible but has been demolished by Center City Development Corp. as part of the redevelopment program.

These structures, along with a few adjoining ones, represent an era of harborside commerce dating to the 1920s and 1930s. The historic structures in the vicinity are separated from the historic Gaslamp District (circa 1880s), Little Italy (circa 1910), and Old Town (circa 1840s) areas by redevelopment and commercial/residential zones. The most important of the listed and eligible structures are the Santa Fe Depot, the Armed Services YMCA, the San Diego Gas and Electric Power Generating Plant (Station B), and the McClintock Storage Company Building. The remaining structures on the list are smaller, but have architectural and/or cultural significance as elements of a harborside community.

4.10.2 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ALTERNATIVES

The findings of the investigations presented in the previous section represent three separate impact issues. The first issue concerns the historic structures (Buildings No. 1, No. 11, and No. 12) and the determination that these be considered eligible for listing on the National Register of Historic Places. The second issue involves the presence of historic archaeology below the layer of dredged fill. This archaeological material does not appear to meet the criteria for listing on the National Register. The third resource consists of offsite historic resources represented by various structures that are or may be eligible for nomination to the National Register, are actually listed on the National Register, or are listed on other state or local landmarks registers. The evaluation of the effect of the project and the various alternatives upon cultural resources that are listed on or eligible for nomination to the National Register has been summarized in Table 4.10-2.

Impacts to Subsurface Resources

The impact evaluation for the subsurface archaeological deposits indicated the alternatives requiring deep excavations for footings and below-grade construction would most likely destroy these resources. However, this impact is not considered to be significant because the archaeology is not likely to yield any important information about the history or prehistory of the area. The plans for Alternatives A, B, C, D, and F would include the excavation of subterranean parking structures and foundations for the larger structures that would disrupt the historic deposits, so an adverse impact would occur. The historic deposits lie approximately 6 to 8 feet below the current ground surface, and the construction excavations would reach as deep as 20 to 30 feet, thus disturbing the deposits wherever the construction would require the removal of soil for subterranean structures. At the present time, it is impossible to quantify the exact area of the deposits that would be affected by these alternatives, since the dimensions of the subsurface deposits are not fully known, nor is the extent of the construction for subterranean structures precisely drawn. However, the key factor for assessing the significance of the impact to subsurface

TABLE 4.10-2

ENVIRONMENTAL CONSEQUENCES ON CULTURAL RESOURCES

Navy Broadway Complex Alternatives	Cultural Resources		
	Subsurface Deposits Significant Impact	Historic Buildings Significant Impact	Offsite Resources Significant Impact
A	No	Yes	No
B	No	Yes	No
C	No	Yes	No
D	No	Yes	No
E	No	Yes	No
F	No	Yes	No
G	No	No	No

resources is the importance of the resource. Based on the determination that the subsurface deposits are not eligible for the National Register, their disturbance by subgrade construction is not a significant impact.

Alternatives E and G would not affect the historic archaeological deposits because they do not include disturbance of the subsurface soils in which the archaeology is located.

Because it is possible that construction activity (including offsite infrastructure construction) could expose important buried archaeological features not anticipated from previous investigations, such discoveries will be addressed in accordance with the regulations for implementing Section 106: "discovering properties during the implementation of an undertaking" (36 CFR 800.11).

Impacts to Historic Structures

The impact evaluation for the historic buildings which appear to qualify for the National Register (Buildings 1, 11, and 12) resulted in the conclusion that Alternatives A, B, C, D, E, and F would have a significant impact on cultural resources. In each of these alternatives, the impacts would result from the removal or substantial renovation (modification of the exterior and interior components) of portions of Buildings No. 1 and No. 12. Building 11 is beyond the project limits and would not be affected by the proposed project. The removal or substantial alteration of these structures would constitute an effect that would be "adverse" as defined by the Criteria for Effect

and Adverse Effect (36 CFR 800.9). Alternative G (no action) would not have an impact on the buildings as they would be retained in their current configuration.

Offsite Cultural Resources

Offsite historic resources would not be affected by the development, either directly or indirectly. The majority of the structures are situated at least one to two blocks from the project, with the exceptions being the old harbormaster's headquarters at the northeast corner of Broadway and Harbor Drive, the San Diego Gas and Electric Substation B at 1911 Kettner Street, and the old San Diego Police Headquarters in the 700 block of West Market Street. The historic sites that are located beyond one block of the project would not be affected by the project. None of the alternatives have features that would remove or otherwise significantly alter the use or integrity of these offsite resources.

Cumulative Impacts to Cultural Resources

The consideration of cumulative impacts to cultural resources was not an issue for this project. The resources are site specific, with the exception of historic buildings adjacent to the project. No historic districts have been identified in this area that would be affected through the loss of resources within the project.

4.10.3 MITIGATION MEASURES

The environmental consequences section of this study delineated potential impacts to subsurface historic archaeological resources and significant adverse effects to Buildings Nos. 1 and 12, which appear to qualify for inclusion in the National Register of Historic Places. In order to determine appropriate steps to mitigate the impacts to these cultural resources, the Navy has initiated consultation with the California SHPO and the Advisory Council on Historic Preservation. The Navy is proposing a program for recording Buildings 1 and 12 pursuant to Section 110(b) of the National Historic Preservation Act and will monitor excavations to ensure that no significant archaeology is inadvertently lost. SHPO has concurred with the basic findings of this analysis and is consulting with the Navy on mitigation. The Section 106 process will lead to mitigation that reduces project impacts to a level that is not significant.

ENDNOTES:

- 1 County Recorder, Deed Book B.
- 2 Rolle 1968.
- 3 Brandes et al. 1985.
- 4 MacMullen 1969.
- 5 Ibid.
- 6 Heilbron 1936.
- 7 Ibid.
- 8 U.S. Congress 1916.

4.11 PUBLIC HEALTH AND SAFETY

Two issues of potential concern are associated with public health and safety: (1) the potential for hazardous waste to be located on the site or in groundwater beneath the site and (2) the proximity of the site to the Lindbergh Field Airport and North Island Naval Air Station.

4.11.1 AFFECTED ENVIRONMENT

Hazardous Materials

Methodology

An assessment was completed by Woodward-Clyde Consultants in January 1988, as part of the Hirsch and Company report,¹ to detect possible contamination and any threats to human health from ongoing and previous activities on the Navy Broadway Complex. The investigation focused on the possible presence of fuel products and EPA priority pollutants in the soil and groundwater. Petroleum hydrocarbons associated with fuel products, metals, and PCBs (from electrical transformers) were identified as the most probable potential contaminants on the project site, given the history of project operations. In addition, the site was investigated for the presence of asbestos, a hazardous material with previous widespread use in building construction. Because a precise location for the offsite location of Navy offices for Alternative D has not been established, a study on hazardous materials for the offsite component was not conducted.

The field investigations included visual reconnaissance, test borings, groundwater and soil sampling, and soil gas surveys. The visual reconnaissance helped identify areas with the greatest likelihood of contamination. Soil and groundwater sampling was conducted using methodologies that maximize the possibility of discovering hazardous substances. Tests focused on areas where underground and surface storage tanks have been located, and where long-term industrial activities have occurred.

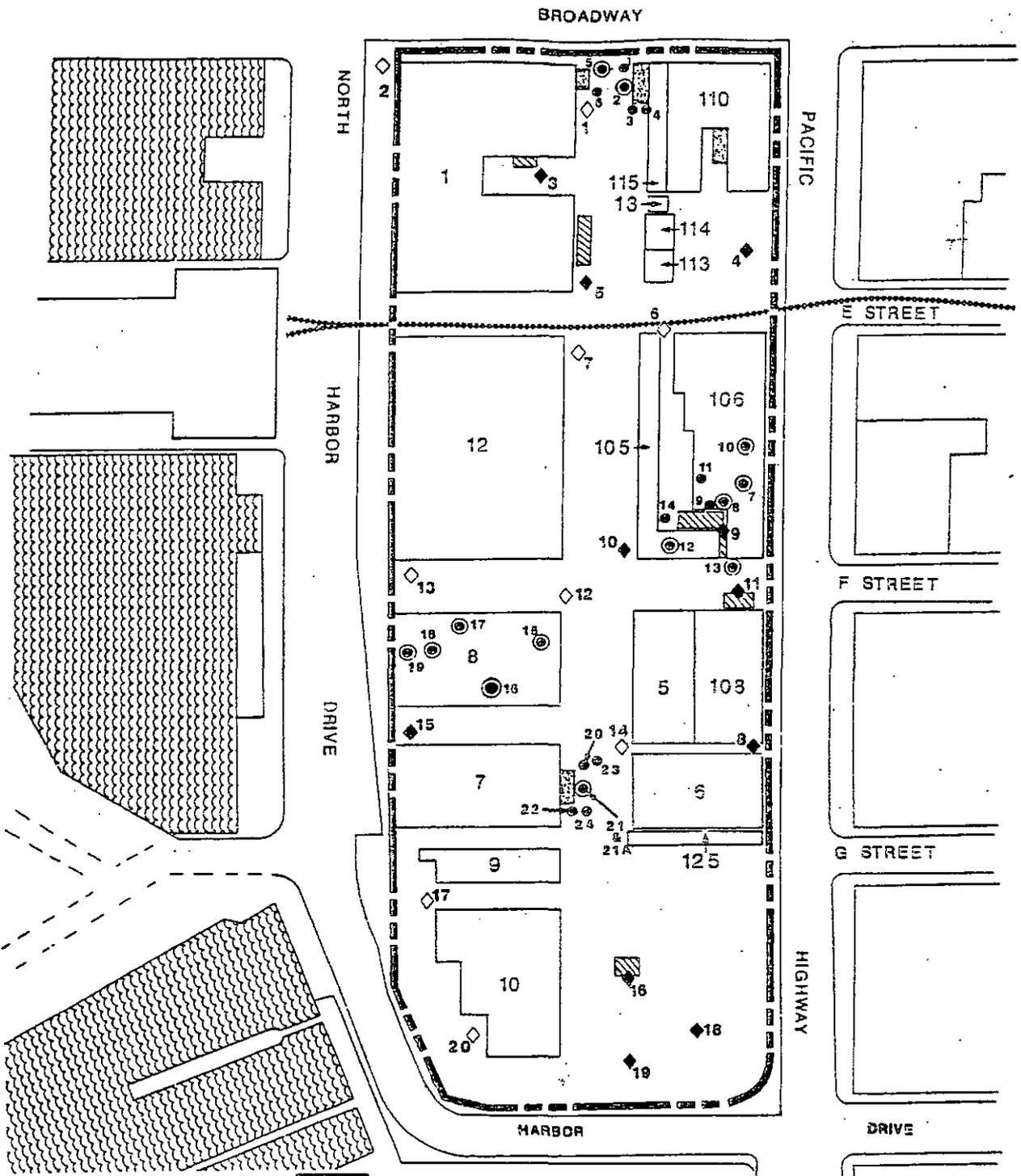
Twenty borings were conducted throughout the site. Monitoring wells were installed in 10 of these boring wells. Soil samples were taken from above the water table, which is 8 to 10 feet below grade, and were analyzed for PCBs, priority pollutant metals, and petroleum hydrocarbons. In addition to the test bores, 24 hand-augured bores were drilled in the upper 3 feet of soil. During hand auguring, a soil gas analysis was conducted to identify the presence of volatile organics. Figure 4-72 depicts the locations where samples were taken.

Materials Found Onsite

Table 4.11-1 describes the presence of hazardous materials and asbestos at or near each of the onsite buildings.

Petroleum Hydrocarbons/EPA Priority Pollutants

Laboratory analysis found no detectable hydrocarbon concentrations in the groundwater in the 10 monitoring wells dug on the site. Generally 2 or 3 soil samples were taken from each of the 20 test borings, at depths of 1 to 8 feet. Petroleum hydrocarbons were detected in only one boring, No. 19-1 (Figure 4-72). The action level for hydrocarbon cleanup, as established by the State Water Quality Control Board (SWQCB), is 1,000 parts per million (ppm). At 2 feet below surface in this boring, 19 ppm of total hydrocarbons were detected. The source of the



- INDICATES APPROXIMATE LOCATION OF TEST BORING
- INDICATES APPROXIMATE LOCATION OF MONITORING WELL
- INDICATES APPROXIMATE LOCATION OF HAND AUGERED BORING
- INDICATES APPROXIMATE LOCATION OF FUEL TANK
- INDICATES APPROXIMATE LOCATION OF ELECTRICAL TRANSFORMER OR TRAFER STATION
- INDICATES NAVY DESIGNATED BUILDING NUMBER

INDICATES APPROXIMATE LOCATION OF HAND AUGERED BORING SOIL GAS PROBE

Location of Soil Sample Borings at Broadway Complex Project

3640001 1/80



hydrocarbon traces is not certain; however, 19 ppm is well below the threshold that generally requires remediation.

TABLE 4.11-1

PRESENCE OF ASBESTOS AND HAZARDOUS MATERIALS

Bldg. No.	Building Use	Asbestos Present	Hazardous Materials Present
1	Administration Offices	Yes	Yes
5	Warehouse and Administration	Yes	No
6	Warehouse	Yes	No
7	Cold Storage Warehouse	Yes	Yes
8	Warehouse	Yes	No
9	Offices	Yes	No
10	Warehouse	No	No
12	Warehouse and Offices	Yes	Yes
13	Substation	No	No
105	PW Shops	Yes	Yes
106	Cafeteria and Shops	Yes	Yes
108	Warehouse	No	No
110	Administration	Yes	No
113	Fire Station and Office	Yes	No
114	Administration Office	Yes	No
115	Administration	Yes	No
125	Warehouse and Offices	Yes	Yes

Note: Hazardous materials include sulfuric acid batteries, freon, sulfuric acid, cleaning chemicals, propane, and paints. All buildings contained fluorescent lighting ballast and some buildings contained electrical transformers. These apparatuses contain PCBs in sealed structures.

Source: Hirsch and Company 1988.

An oily surface spill with surface staining was apparent outside Building 106 in the vicinity of a forklift maintenance and drum storage area. Concrete and asphalt surface in this location may be limiting the migration of this contamination into the soil. Hand-augured drillings Nos. 8 and 10 at Building 106 found high acidity as a result of sulfuric acid being previously stored in this building. The source is assumed to be battery acid used for batteries in fork lifts and vehicles. It was determined that the metals concentrations associated with the acid were below any action levels that would require remediation.

No petroleum hydrocarbons were found in any of the 24 hand-augured samples with the exception of boring HA-21 adjacent to Building 7, which contained 390 ppm total petrohydrocarbons in

some discolored soil near some fuel tanks. This contamination is below the SWQCB threshold that generally requires remediation. However, the extent of this contamination has not been identified, and could be greater than tested.

No PCBs were found in any of the 15 soil samples analyzed, even in the vicinity of three large transformer units that contain oil laden with PCBs. No leakage was reported to have occurred in any of the transformers or other electronic units located on the site.

Twelve soil samples were analyzed for EPA priority pollutant metals. Samples HA-7 and HA-9 showed higher than normal levels of some priority pollutant metals. However, the samples do not exceed threshold levels that would require remediation.

Field readings from an organic vapor meter showed concentrations of 0 to 4 ppm in soil gas analysis, an almost undetectable quantity of volatile organics. No significant areas of contamination were identified.

Asbestos

In an encased or non-friable form (i.e., not peeling or cracking) asbestos does not pose a significant health risk factor. However, friable asbestos can enter the air stream and become a human health hazard. As shown in Table 4.11-1, some form of asbestos was found in all but three buildings onsite. None of the buildings with asbestos were found to pose an imminent health threat.

Asbestos-containing materials (ACM) found in Building 1 include pipe insulation, floor tile adhesive, corrugated paneling, and sprayed-on ceiling material. Approximately 270,000 square feet of ACM was detected in this building.

Building 12 contains approximately 32,000 square feet of ACMs, including pipe insulation, blown-on fire-proofing material, and flooring. Building 115 contains ACM mainly in pipe insulation and flooring materials. Approximately 3,000 square feet of ACM was found in this building.

Approximately 800 square feet of ACM was found in Building 114 in the form of painted wall paneling. Approximately 900 square feet of vinyl floor tile and adhesive containing 5 percent asbestos was found in Building 113. Flooring materials, covering approximately 24,000 square feet of Building 110, contained asbestos. Approximately 14 square feet and 100 linear feet of ACM were detected in Building 7.

Building 8 contained 400 square feet of ACM in the form of vinyl floor tile and adhesive. In Building 9, about 2,800 square feet of flooring contains ACM along with 200 linear feet of pipe insulation. Approximately 1,000 square feet of flooring containing 3 percent asbestos was found in Building 5.

Building No. 106 contains approximately 26,000 square feet of ACM. A significant portion of that area is flooring that contains 1 to 3 percent asbestos. More than 8,000 square feet of ACM and two asbestos-containing waste containers were also found in Building 106.

Conclusion of Site Investigation

Investigations conducted by Woodward-Clyde Consultants (as part of the Hirsch and Company report) found that groundwater at the Navy Broadway Complex appears to be free of contamination. Soil contamination by hydrocarbons occurs in isolated areas, but only in substantial quantities in the vicinity of the forklift maintenance area (at Building 106), where soil removal and disposal would be recommended prior to future development on the site.

Although PCB-containing sources were found onsite (fluorescent lighting ballasts and electrical transformers), no contamination from PCBs was detected on the project site. Thus, PCBs are well contained within their storage sources.

The Woodward-Clyde study also indicated several areas that would require further investigation to determine the type and extent of any hazardous waste and the potential need for additional remediation. These areas include:

- A source of black, hydrocarbon-discolored soil encountered in hand-augured borings HA-21, HA-21A, and HA-24 near Building 7.
- A former hazardous waste storage area located in Building 8. The results of a soil gas survey indicate that further investigation would be needed to determine if there is spillage beneath or around this building.
- The soil around the forklift area should be evaluated for acid levels, and remediated if the pH is less than 5. At lower pH levels, heavy metals have a propensity to migrate.
- Oil within fluorescent lighting ballasts and transformers should be tested to identify PCB concentrations. If sufficiently high concentrations are found, remediation would be recommended to reduce the probability of future onsite soils contamination.

Asbestos is present in all buildings except two warehouses and the substation building. Although not posing an imminent health threat, asbestos has the potential to become a health threat over time. Asbestos has the potential to be friable and become a human health hazard. This hazard would be increased if demolition of buildings occurred, thus potentially releasing asbestos into the local air stream.

Agency Consultation on Hazardous Substances

The California Department of Health Services (DHS), Regional Water Quality Control Board (RWQCB) and the Environmental Protection Agency (EPA) were consulted to determine if there were any reports of hazardous substances at the Navy Broadway Complex. No hazardous substance releases or underground storage tank leaks at the Navy Broadway Complex have been reported.^{2,3,4} However, RWQCB did express concern with respect to leaking underground storage tanks in the Centre City area outside the project boundaries, especially with regard to a known plume of contaminated groundwater southwest of the site.⁵ This is discussed below.

Regional Groundwater Contamination--A plume of contaminated groundwater was discovered in 1986 approximately 1/3 mile east of the site in the area of Market Street and Front Street (see

Figure 4-73). The plume contains concentrations of hydrocarbons in the form of gasoline and diesel.⁶ The gradient of the plume is to the southwest,⁷ which would result in normal migration south of and away from the Navy Broadway Complex. The IT Corporation conducted a detailed characterization and remediation study in 1988.

The study found that the Convention Center project, located southeast of the Navy Broadway Complex and south of the plume, may have promoted migration of the plume towards the Convention Center site through a groundwater dewatering program that was removing over 800,000 (and up to 1.3 million) gallons of groundwater per day in 1987 and 1988.⁸

The RWQCB expressed concern that there may be plumes of contaminated groundwater in other areas of Centre City.⁹

Airport Hazards

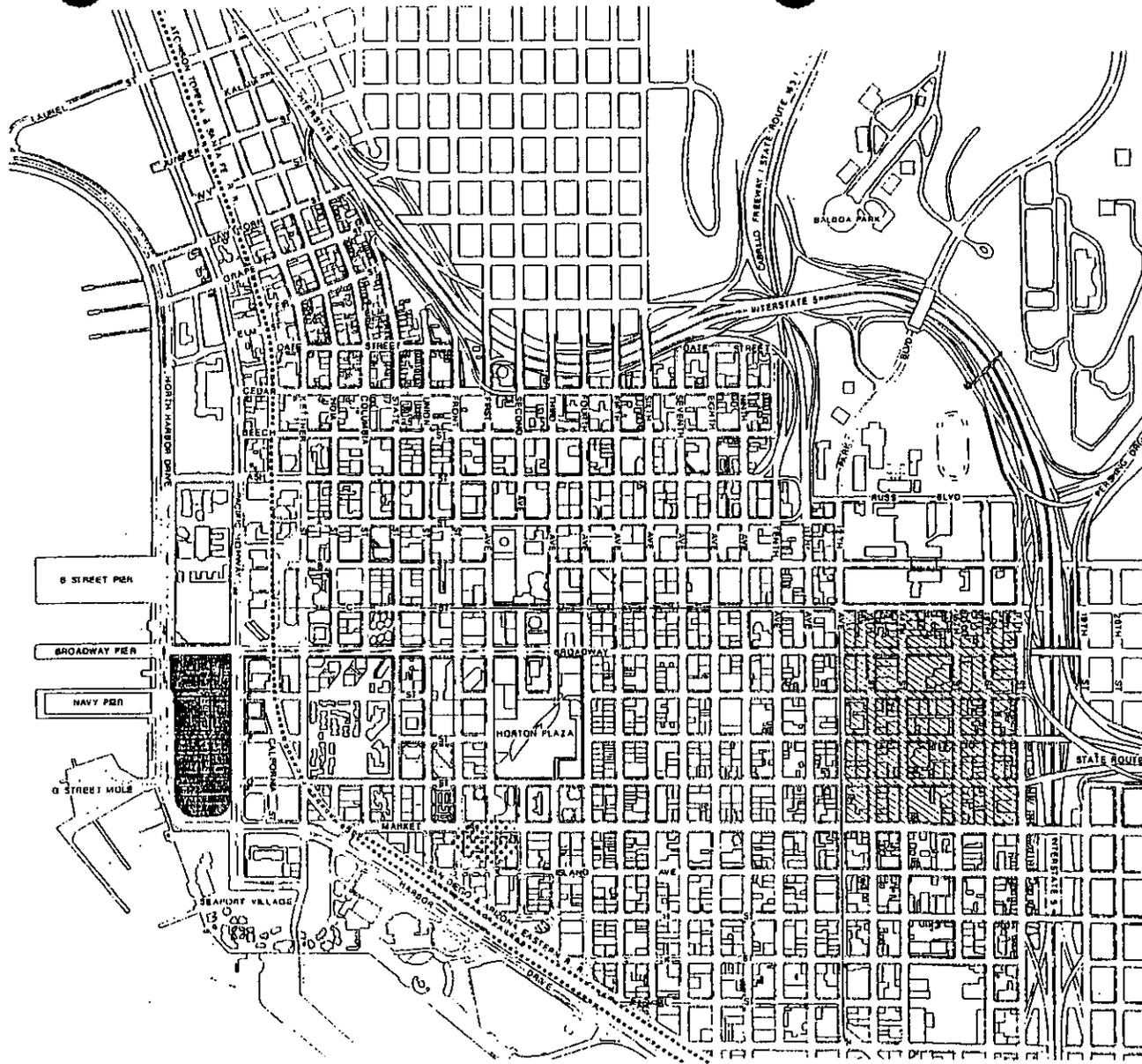
Regional Setting

The project site is located in the vicinity of both Lindbergh Field and the Naval Air Station, North Island. Guidelines that require consideration of structure height to prevent hazards to navigable airspace have been defined in an "Airport Approach Overlay Zone" for the areas around these facilities. In 1986, the City of San Diego adopted the Airport Approach Overlay Zone (Ordinance No. 0-16556) for Lindbergh Field. The purpose of the ordinance is to establish a procedure by which a proposed structure is evaluated for compliance with the zone's height limitation, prior to the issuance of a building permit for the structure. This is consistent with the FAA's procedures for determining potential hazards, as specified in Federal Aviation Regulations Part 77. The height limitations are not absolute restrictions; rather they signify the threshold that, once exceeded, would require an evaluation by the FAA to determine if a hazard to air navigation would result, and if so what remedial measures should be imposed to avoid the hazard. Buildings, structures, or uses not exceeding 30 feet in height would be exempt from the procedures of the Overlay Zone.¹⁰ The Overlay Zone encompasses an irregular area surrounding Lindbergh Field that continues outward and upward from the airport along aircraft approach paths up to an elevation of 500-foot mean sea level (msl).

The Naval Air Station (NAS), North Island has identified height limitations (imaginary surfaces) through Federal Aviation Regulations Part 77 designed to protect its navigable airspace. Areas to the north and east of the air station are within both the Overlay Zone and air station height limitations.

Project Site

The Navy Broadway Complex is within imaginary height surfaces associated with Lindbergh Field and NAS, North Island. The site is not within any safety hazard zones or beneath any flight tracks, as defined by the Aircraft Installation Compatibility Use Zone (AICUZ) study for NAS, North Island, and is not within any clear zones or other high safety hazard zones associated with Lindbergh Field. A non-operational Part 77 imaginary surface from Lindbergh Field (the horizontal surface) crosses over the site at 165 feet above mean sea level (msl). Structures above this height would require submittal of a Notice of Proposed Construction or Alteration to the FAA. The lowest imaginary surface that crosses the site from NAS, North Island, above which a Notice of Proposed Construction or Alteration must be filed with the FAA, is of 391 feet msl associated with the conical surface, which is approximately 381 feet above Block 1. Imaginary



Legend

-  Project Site
-  Approximate Location of Plume
-  Location of possible Navy Office for Alternative D (Will Encompass 2 Blocks)

Figure 4-73

Contaminated Plume Location



SOURCE: IT Corporation, 1988

Navy Broadway Complex Project

surfaces that extend over other areas of the site (Blocks 2, 3, and 4) associated with NAS, North Island are at approximately the same height. The lowest operational imaginary surfaces that are located over the site are at 500 feet msl. These surfaces are associated with a circling area for missed approaches to Lindbergh Field, and extend over the length of the site and a large part of the Centre City area.

4.11.2 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ALTERNATIVES

Effects From Hazardous Materials

Soils Contamination

Health hazards are associated with the presence of substantial quantities of hazardous substances, so hazardous substances identified on the project site would have a similar effect on each of the alternatives. No action-level (i.e., clean-up level) concentrations of hazardous substances were found in the investigation, no study is thorough enough to preclude the detection of all substances that might be present on the site. Several areas of contamination or potential contamination were identified on the site that could adversely affect the health of personnel on the site, especially during construction activities that uncover soils.

The area beneath and surrounding Building 8 may contain hazardous substances. If these materials exist and are exposed, they could cause significant health impacts. If the integrity of any units that store PCB-laden oil is compromised, contamination with this material could occur, also a significant health concern. Acid levels in soils near Building 106 could cause metals in the soils to become more mobile. It is not presently known if the acid levels are sufficient to cause this to occur, but from a conservative consideration, this would be considered a significant adverse effect. The oily surface residue in the vicinity of Buildings 7 and 106 may contain residues of concern with regard to health. From a conservative consideration, this would be considered a significant adverse effect.

If Alternative D is adopted, the location of the offsite Navy offices would need to be inspected to determine if there is a potential health risk at that site associated with hazardous materials in soils.

Effects Related to Asbestos

Development in accordance with Alternatives A through F would pose significant health exposure risks associated with demolition of buildings that contain asbestos. During demolition, asbestos fibers could become airborne, thereby providing a pathway to enter the human system. Asbestos exposure is considered a human health risk, and building demolition in accordance with any of these alternatives would be considered a significant safety impact.

If Alternative D is adopted, the offsite Navy office location would need to be inspected to determine if there are any existing facilities that require removal and contain asbestos that could pose a health risk.

Alternative G would not involve the demolition of any structures, so the risk of exposure to airborne asbestos would be substantially reduced. There is no eminent health risk associated with existing asbestos on the site.

Effects Related to Regional Groundwater Contamination

Alternatives A, B, C, D, and F include subsurface parking and would likely include subsurface foundation components. Groundwater is located at approximately 7 to 11 feet below the ground surface of the site. Subsurface construction would encounter substantial quantities of groundwater, and a temporary groundwater dewatering program would be required during construction. Following construction, a permanent groundwater dewatering program would be required to avoid flooding of subsurface facilities. Dewatered groundwater would be released either to storm drains for disposal to the bay, or to the sanitary sewer system, where it would be conveyed to the Point Loma Wastewater Treatment Plant (PLWTP) and released to the bay.

Ongoing studies have shown the hydrocarbon-contaminated groundwater plume to be 1/3 of a mile east of the Navy Broadway Complex, with a gradient to the southwest, away from the site. Tests of groundwater beneath the site have found no presence of hydrocarbons. Given the distance to a known contaminated source and the gradient of flow away from the Navy Broadway Complex, it is unlikely that any contaminated groundwater would be encountered during temporary or permanent dewatering activities. However, it was found that the dewatering program associated with the Convention Center may have promoted migration of the contaminated plume in the direction of that project. It is, therefore, conceivable that groundwater dewatering associated with any of these alternatives could cause migration of the plume, or of a currently unknown source of contaminated groundwater, towards the Navy Broadway Complex.

If the discharge of groundwater occurred, a National Pollution Discharge Elimination System (NPDES) permit application would need to be filed with the RWQCB. The RWQCB would review the permit application and determine if an NPDES permit is necessary. The RWQCB has indicated, given the uncertainty associated with groundwater quality in the Centre City area, that an NPDES permit would likely be required for the discharge of groundwater directly into the storm drain system and to the bay. The RWQCB expressed uncertainty regarding the need for a permit if dewatered groundwater is discharged into the sanitary sewer, where it would be conveyed to PLWTP for advanced primary treatment prior to release to the bay. The RWQCB would determine that an NPDES permit is needed if it is felt that the dewatered groundwater could adversely affect the water quality of the bay. If a permit is required, it would include quality standards for discharge that would protect water quality. Thus, compliance of the project with any NPDES permit conditions, if it is determined a permit is needed, would avoid adverse impacts to water quality from discharged groundwater.¹¹

The offsite Navy offices associated with Alternative D would be located in the Centre City East area, well away from the contaminated groundwater plume. Although subsurface parking would be constructed at the offsite location with this alternative, it is probable that groundwater in this area is sufficiently deep to not require an extensive dewatering program. Therefore, this component of Alternative D would not result in a significant impact to water quality.

Alternatives E and G would not include the construction of subsurface facilities. Therefore, no dewatering would be associated with either of these alternatives, and no impacts associated with water quality would result.

Effects Associated With Airport Hazards

Alternatives A, B, C, D, and F include building heights that approach the imaginary surfaces associated with Lindbergh Field and NAS, North Island designed to protect navigable airspace. However, the site is not within any safety hazard zones as defined by the AICUZ for NAS, North Island, and is not within any clear zones or other high safety hazard zones associated with Lindbergh Field. Each of these alternatives has 250-foot-high buildings on Block 3, which is 260 feet msl and is above the horizontal surface from Lindbergh Field. In addition, Alternative A has a building height of 400 feet (410 feet msl) on Block 1, which is above the 391-foot msl imaginary conical surface from NAS, North Island. Neither the horizontal surface from Lindbergh Field nor the conical surface from NAS, North Island, are surfaces that affect the operations of either airfield, and the exceedance of these surfaces means only that notification to the FAA is required. The Navy has notified the FAA of the proposed development of Alternative A. In response, the FAA has prepared a Determination of No Hazard to Air Navigation and has indicated the project would not have a significant effect on the safe and efficient utilization of navigable airspace. Proposed structures on Block 1 and the easterly halves of Blocks 2 and 3 would need to be obstruction lighted in accordance with FAA Advisory Circular AC 70/7460-1G.¹²

Alternative F includes a 500-foot-high building (510 feet msl) on Block 2, which would be the only building in any alternative that exceeds an operational imaginary surface, which is the 500-foot msl circling area for missed approaches at Lindbergh Field. Alternative F has the potential to adversely affect air navigation. However, the FAA has previously approved structures for as high as 500 feet (msl) on blocks in the vicinity of the project. Therefore, it is unlikely that the FAA would consider any of the alternatives a hazard to air navigation.

The offsite Navy office component of Alternative D would be a maximum of 350 feet high. The entire area in which this site would be located has imaginary surfaces associated with Lindbergh Field and the NAS, North Island in excess of 500 feet. Therefore, the offsite component of this alternative would not result in adverse effects to air navigation.

Alternatives E, with buildings proposed as high as 150 feet, and G, with existing buildings as high as 100 feet, do not include any buildings that approach the imaginary surfaces associated with Lindbergh Field or the North Island Naval Air Station. Therefore, these alternatives do not have the potential to adversely affect air navigation.

4.11.3 MITIGATION MEASURES

Hazardous Materials

The EPA has requested inclusion of the following mitigation measures for Alternatives A through F:¹³

- If any underground storage tanks on the site are found to be leaking, such leaks will be cleaned up by the Navy in accordance with the Resource Conservation and Recovery Act (RCRA) and any other applicable state or City of San Diego regulations, with clean up being initiated upon discovery of any leaks.
- If the Navy discovers evidence of substantial hazardous substances contamination in the future, it will promptly notify the EPA and comply with all applicable requirements of the Comprehensive Emergency Response Compensation and

Liability Act and the Superfund Amendment and Reauthorization Act (CERCLA/SARA) and the National Contingency Plan (NCP).

- If CERCLA hazardous substances are discovered, no construction will occur until the requirements of CERCLA/SARA and the NCP have been fully satisfied by the Navy. CERCLA/SARA/NCP activities would take priority over new construction until CERCLA/SARA compliance has been achieved.

The following additional measures are applicable to Alternatives A through F and would reduce impacts associated with exposure to hazardous materials to a level that is less than significant:

- The area beneath Building 8 will be further investigated by the Navy, prior to construction in this area, for the presence of hazardous materials in the soils. The tests will include soils sampling and testing in accordance with accepted professional standards. If any contaminated soils are found, they will be cleaned up in accordance with the regulations specified by the EPA.
- The fluid in transformers and other electrical units will be tested by the Navy prior to onsite construction to determine if such fluid contains PCBs. If PCBs are found, the fluid and the units will be disposed of by the Navy at an approved waste disposal facility.^a
- The soil in the vicinity of the forklift maintenance area at Building 106 will be tested for acidity by the Navy prior to development in this area. If the pH of the soil is less than 5, the pH will be adjusted so that it is greater than 5.
- The oily residue-stained soil and paving materials in the vicinities of Buildings 7 and 106 will be removed by the Navy to the satisfaction of the EPA prior to development in this area and disposed of in an approved waste disposal facility.^a
- Demolition of buildings containing asbestos on the Navy Broadway Complex will be conducted by the Navy in accordance with commonly accepted practices and in compliance with the Federal Clean Air Act. Asbestos-containing materials will be disposed of by the Navy in a landfill or other such facility that is permitted to accept such waste.

The following mitigation measure is applicable to the offsite Navy office component of Alternative D, if that alternative is selected, and would reduce to a level that is below significance any potential impacts associated with hazardous materials:

- A visual and historic land use survey of the offsite location will be conducted by the Navy prior to final purchase of the location to determine if there are any evident hazardous materials requiring remediation, or if there is the potential for such. If it is found that there may be hazardous materials at the offsite location, a remediation program will be designed and implemented.

The following mitigation measure is applicable to Alternatives A, B, C, D, and F and would reduce to a level that is less than significant any potential impacts associated with groundwater dewatering:

- A National Pollution Discharge Elimination System (NPDES) permit application will be filed with the Regional Water Quality Control Board (RWQCB). The project developer will comply with any conditions expressed by the RWQCB.

Airport Hazards

The FAA has reviewed the Notice of Proposed Construction or Alteration for Alternative A. Based on that review, the following measure has been required:

- Buildings on Block 1 and the easterly halves of Blocks 2 and 3 will be red obstruction lighted in accordance with the provisions of FAA Advisory Circular AC 70/7460-1G, Obstruction Marking and Lighting.

The following mitigation measure is applicable to Alternatives B, C, D, and F.

- A Notice of Proposed Construction or Alteration has been filed with the FAA. Any conditions that the FAA imposes on the site (e.g., lighting, striping, poles, etc.) will be followed.

ENDNOTES:

- 1 Woodward-Clyde Consultants, 1988 and Hirsch and Company, 1988.
- 2 Foley, California Department of Health Services, personal communication, 1989.
- 3 Posthumous, Regional Water Quality Control Board-San Diego Region, personal communication, 1989.
- 4 Region 9 Federal Facility Hazardous Waste Information Docket, July 1989.
- 5 Posthumous, op. cit.
- 6 Owen Geotechnical, 1989.
- 7 Ibid.
- 8 IT Corporation, 1988.
- 9 Posthumous, op. cit.
- 10 City of San Diego, 1986.
- 11 Posthumous, op. cit.
- 12 Federal Aviation Administration, 1990.
- 13 Tomsavic, Environmental Protection Agency, personal communication, 1989.

4.12 ENERGY AND CONSERVATION

4.12.1 NATURAL GAS

AFFECTED ENVIRONMENT

The San Diego Gas & Electric Company (SDG&E) provides natural gas service to the project area. The primary gas supplier to SDG&E is the Southern California Gas Company.

Natural gas facilities in the project area include a 2-inch main in Harbor Drive; 1-inch, 1.5-inch, and 4-inch mains in Pacific Highway; a 2-inch main in Broadway; and a 1-inch main in Market Street (Figure 4-74). These facilities are operating within their capacity.¹

ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ALTERNATIVES

As depicted in Table 4.12-1, Alternatives A, B, C, D, and F would consume over 10 million therms of natural gas per year. This is a substantial increase over that consumed by the existing onsite uses (i.e., Alternative G). The uses proposed by Alternative E would consume approximately 70,000 therms on an annual basis, also a large increase over current consumption. Nevertheless, SDG&E can provide gas service associated with any of these alternatives without adversely affecting the ability to provide natural gas to SDG&E's service area.

The existing natural gas facilities serving the project area are operating well within their capacity. A preliminary study of surrounding gas facilities suggests that the natural gas lines serving the project vicinity may be sufficient to supply any of the proposed alternatives with natural gas. Therefore, significant impacts to natural gas distribution are not anticipated with implementation of the land uses proposed by Alternatives A through F, or perpetuation of the existing uses under Alternative G.

MITIGATION MEASURES

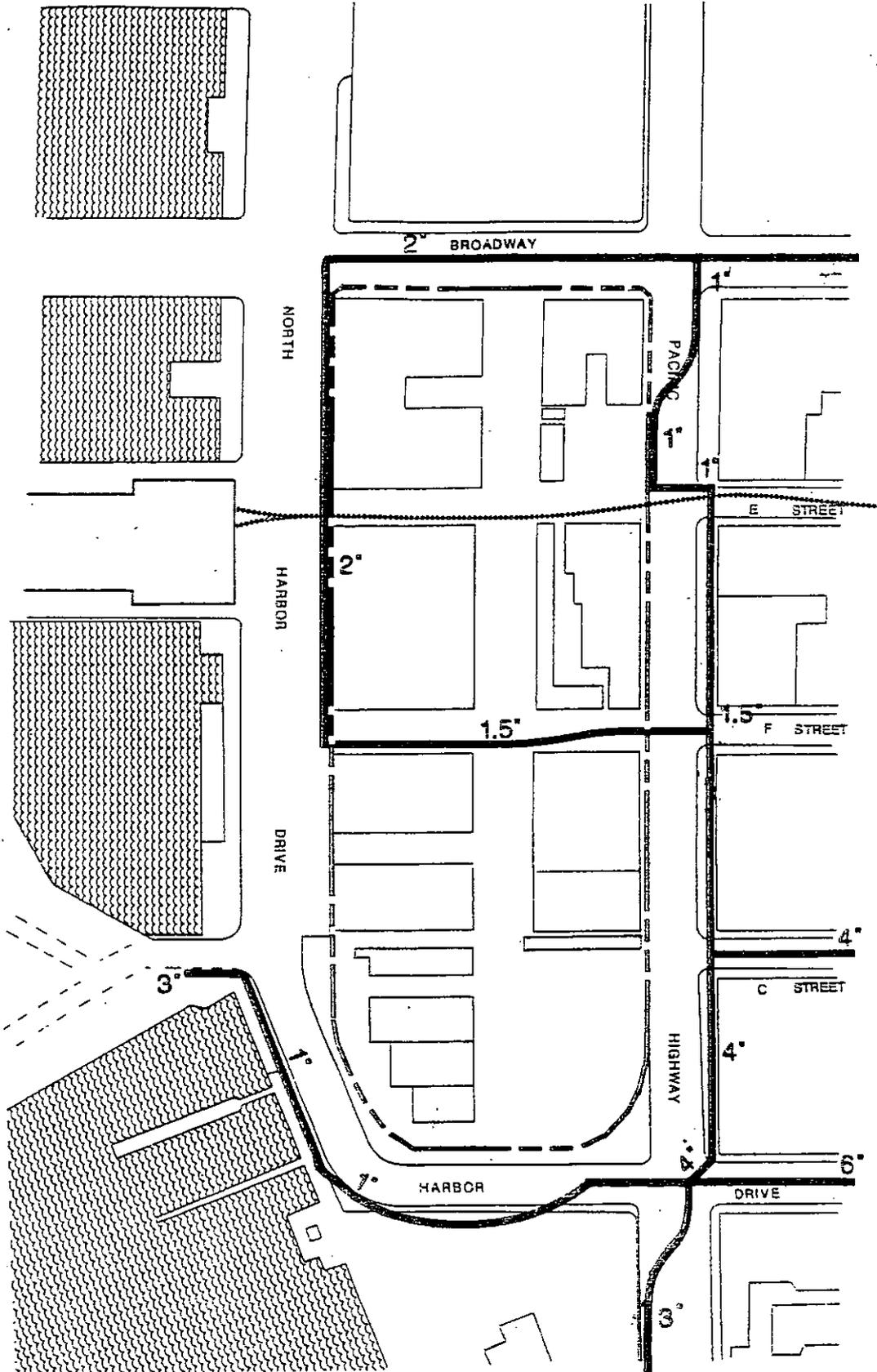
Private development associated with Alternatives A through D and Alternative F would be required to meet State of California Title 24 energy conservation standards. No other mitigation measures are necessary.

4.12.2 ELECTRICITY

AFFECTED ENVIRONMENT

San Diego Gas and Electric provides electrical service to the project area. San Diego Gas and Electric has a substation, Station B, located one block east of the project site, on Kettner Boulevard between E Street and F Street. The capacity of Station B will be upgraded from 75 megawatts to 100 megawatts in the first quarter of 1990. The peak demand of Station B is approximately 63 megawatts.²

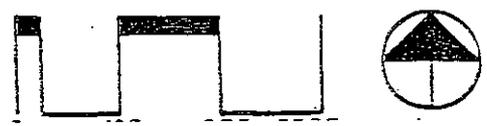
SDG&E currently provides 12-kilovolt electrical service to the project site.³ The location of electrical infrastructure serving the site is shown on Figure 4-75. The primary distribution line facility is located along Broadway.

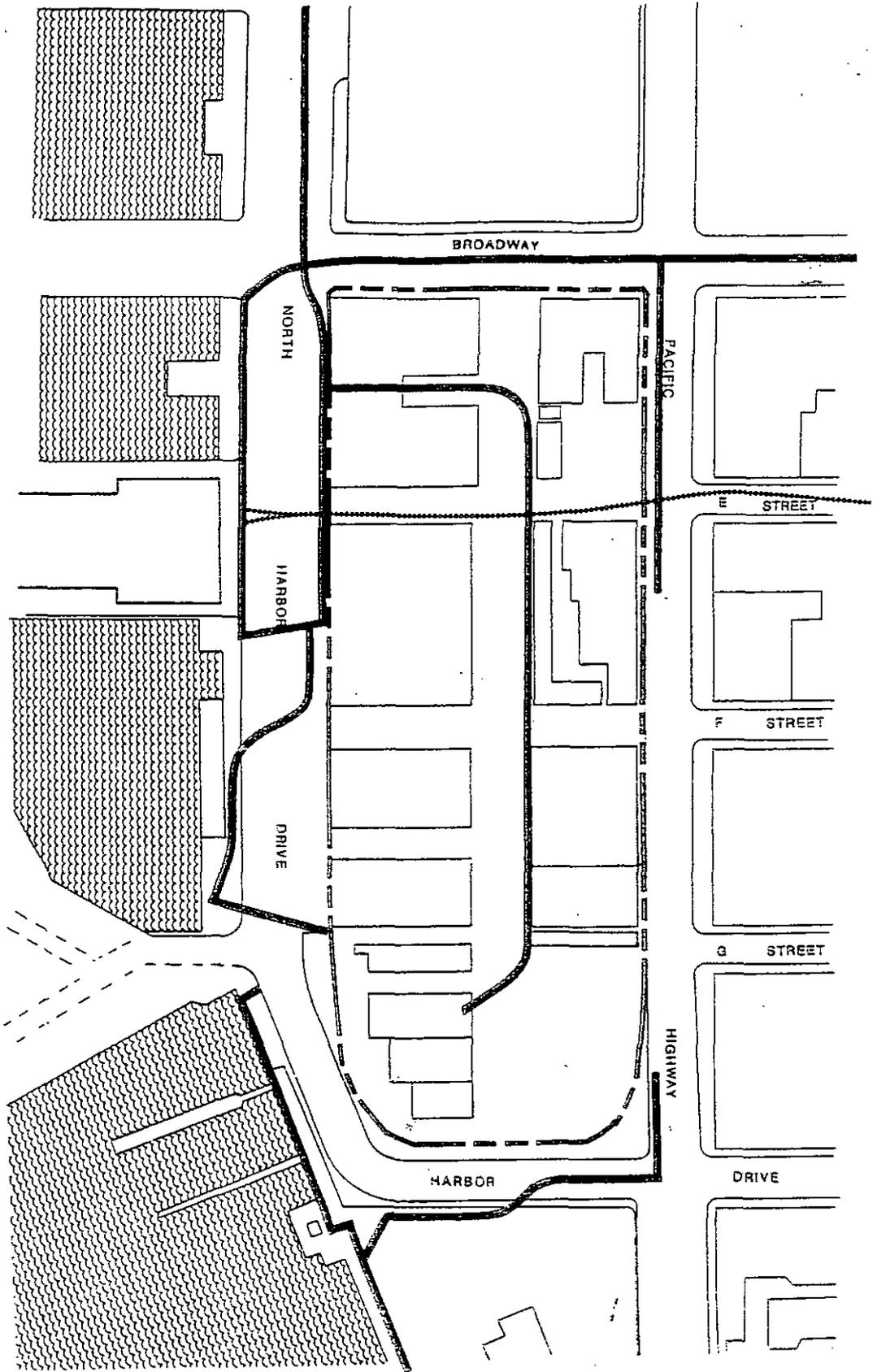


- nd
- GAS LINE/ SIZE
- RAILROAD TRACKS
- PROJECT SITE

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atural Gas Facilities
 Javy Broadway Complex Project





-  ELECTRICAL DISTRIBUTION LINE
-  RAILROAD TRACKS
-  PROJECT SITE

Electrical Facilities
 Jazz Broadway Complex District



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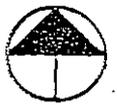


TABLE 4.12-1

**NATURAL GAS CONSUMPTION FOR THE PROPOSED ALTERNATIVES
(Net Increase)**

Alternative	Land Use	Consumption (Therms/Year) ^b
A	1,249,247 SF office ^a	159,597
	1,245,000 SF hotel	<u>10,012,600</u>
	Total	10,172,197
B	1,549,247 SF office ^a	195,063
	1,245,000 SF hotel	<u>10,012,600</u>
	Total	10,207,663
C	594,247 SF office ^a	70,932
	1,245,000 SF hotel	<u>10,012,600</u>
	Total	10,083,532
D	2,024,247 SF office ^a	248,262
	1,445,000 SF hotel	<u>11,574,566</u>
	Total	11,822,828
E	594,247 SF office ^a	<u>70,932</u>
	Total	70,932
F	1,249,247 SF office ^a	159,597
	1,245,000 SF hotel	<u>10,012,600</u>
	Total	10,172,197
G	No new uses	<u>0^c</u>
	Total	0

a Existing office uses on the site are subtracted from proposed uses to arrive at net office uses. Industrial uses currently on the site consume a minor amount of natural gas annually (less than 3,500 therms), so are not considered in the analysis.

b Generation rates provided by San Diego Gas & Electric.

c There would be no net increases in natural gas usage because no new uses are proposed.

ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ALTERNATIVES

When compared to Alternative G, the no action alternative, redevelopment of the project site with Alternatives A, B, D, and F would result in an increase in electricity consumption, whereas implementation of Alternative E would result in a decreased demand for electricity.

Table 4.12-2 lists the anticipated electricity requirements of the proposed alternatives. Alternatives A, B, C, D, and F would all substantially increase the demand for electricity over existing consumption (Alternative G). The uses proposed by Alternative E would actually reduce the amount of electricity that would be consumed on the site.

According to the preliminary public utilities assessment by Cash and Associates, a looped 12 kV system would be required to serve the new or rehabilitated structures associated with Alternatives A through F. The loop system could be constructed in conjunction with the phased development of these alternatives.

Development of the 12 kV system, as well as the underutilized capacity of Station B, would provide sufficient electrical service to the project site. No significant impacts are expected from implementation of any of the alternatives.

MITIGATION MEASURES

The following measures should be incorporated into the project design to reduce potential adverse effects on consumption and distribution of electricity to the project site:

- A looped 12 kV system will be constructed by the developer in phases to provide adequate electricity to the various individual structures within the Navy Broadway Complex as they are developed.
- Coordination by project developers will occur with SDG&E regarding recommendations on energy conservation measures. All private development will be constructed in accordance with Title 24 of the California Administrative Code, which provides energy conservation measures.

TABLE 4.12-2
ELECTRICITY CONSUMPTION FOR THE PROPOSED ALTERNATIVES
(Net Increase)

Alternative	Net Land Use	Consumption ^b kWh/Year
A	1,249,247 SF office ^a	19,156,797
	1,245,000 SF hotel	11,787,425
	(601,276 SF industrial)	<u>(16,806,240)^c</u>
	Total	14,137,982
B	1,549,247 SF office ^a	23,413,863
	1,245,000 SF hotel	11,787,425
	(601,276 SF industrial)	<u>(16,806,240)^c</u>
	Total	18,395,048
C	594,247 SF office ^a	8,514,132
	1,245,000 SF hotel	11,787,425
	(601,276 SF industrial)	<u>(16,806,240)^c</u>
	Total	3,495,317
D	2,024,247 SF office ^a	28,339,458
	1,445,000 SF hotel	21,285,330
	(601,276 SF industrial)	<u>(16,806,240)^c</u>
	Total	32,818,548
E	594,247 SF office ^a	8,514,132
	(601,276 SF industrial)	<u>(16,806,240)^c</u>
	Total	-8,292,108
	F	1,249,247 SF office ^a
1,245,000 SF hotel		11,787,425
(601,276 SF industrial)		<u>(16,806,240)^c</u>
Total		14,137,982
G	Total	<u>0^d</u>
	Total	0

- a Net increase in proposed office uses over existing office uses that would be removed.
- b Consumption factors were provided by San Diego Gas & Electric.
- c Existing industrial uses that would be removed by Alternatives A through F.
- d No net increases in electricity consumption would occur because no new uses are proposed.

ENDNOTES:

- 1 Cash and Associates, 1988.
- 2 Ables, San Diego Gas and Electric, personal communications, 1989.
- 3 Cash and Associates, op. cit.

SECTION 5 CUMULATIVE IMPACTS

The Navy Broadway Complex is located in an area of San Diego that is undergoing substantial development. As shown in Table 4.1-2, page 4-7, and Figure 4-3, page 4-8, major projects with over 6.5 million SF of office, 600,000 SF of commercial-retail, 4,000 hotel rooms, nearly 2,000 residential units, and a convention center are proposed to be completed in the project vicinity between 1989 and 2010. Attendant with this level of development would be cumulative impacts to many of the environmental systems in the project area.

Due to the relatively long buildout period of the alternatives, with completion of all but Alternative E and Alternative G (no action) not expected until 2003, many of the impacts of the proposed project were considered in Section 4 along with cumulative development. Provided herein is a qualitative discussion of the potential cumulative impacts of the proposed alternatives, with references to quantitative discussions in Section 4, where appropriate. Cumulative impacts are generally regional impacts associated with several developments to which the project may contribute.

5.1 LAND USE AND APPLICABLE PLANS

Section 4.1.1, page 4-12, discusses the impacts of the proposed alternatives on existing and proposed surrounding land uses. As indicated in that discussion, none of the alternatives introduce incompatibilities to the existing and future land uses in the project area.

The ability of the Navy Broadway Complex to provide waterfront access is a site-specific issue that would be unaffected by cumulative development in the project vicinity. Nonetheless, to the extent that the development of either of Alternatives A through F would provide new pedestrian linkages from the downtown core to the waterfront, the following mitigation measure should be considered:

- New development along Broadway, E Street, F Street, G Street, and Market Street in the vicinity of the Navy Broadway Complex should be designed to facilitate and encourage pedestrian flow.

5.2 TRANSPORTATION/CIRCULATION

Section 4.2.2 (page 4-47) addressed two traffic impact scenarios: a short-term scenario that addressed the impacts of the first phase of the project on the circulation system that would be in place in 1995, and a long-term scenario that addressed the impacts of buildout of the project alternatives with buildout of cumulative development. As indicated in Section 4.2.2 (page 4-47), several of the alternatives would contribute incrementally to cumulatively significant impacts at the following intersections:

- Grape/Pacific Highway (Alternatives A through F)
- Broadway/Harbor (Alternatives B, C, and E)
- Broadway/Pacific Highway (Alternatives A through F)
- Broadway/Front (Alternatives A through F)

Several alternatives also contribute incrementally to cumulatively significant impacts at the following roadway segments:

- Pacific Highway south of Broadway (Alternatives A, B, C, E, and F)
- First Avenue south of Ash (Alternatives A, B, C, E, and F)

Mitigation measures, listed in Section 4.2.3, page 4-65, would reduce the traffic contributions of the alternatives to all intersections and road segments to a level that is below significance.

5.3 AESTHETICS AND VIEWSHED

The aesthetics and viewshed analysis in Section 4.3.2, page 4-108, includes visual simulations of Alternatives A and F. Included in those simulations were simulations of cumulative development. As indicated in Section 4.3.2, page 4-108, the alternatives would fill in the skyline of downtown San Diego. Only Alternative F, at some selected street-end views, would adversely affect the aesthetic character of the skyline.

5.4 PUBLIC SERVICES AND UTILITIES

Section 4.4 (page 4-115) discusses the impacts of the proposed alternatives on police protection, fire protection, recreation facilities, water, wastewater, and solid waste. Impacts created by project demand for these services and utilities would be mitigated to a level that is less than significant. The suppliers of these services and utilities did not indicate that cumulative development would adversely affect their ability to provide services. As discussed in Section 4.4, page 4-115, the project alternatives that include private development (Alternatives A, B, C, D, and F) would contribute incrementally to a cumulatively significant impact to schools. Measures to mitigate project impacts would reduce to less than significant the project's contribution to this effect.

5.5 SOCIOECONOMICS

The San Diego Association of Governments (SANDAG) provides projections of population, housing, and employment growth based on growth trends, land use patterns, and general plan land use designations. The SANDAG projections are cumulative in nature. The SANDAG growth projections for the site have been based on mixed-use development of the site, as designated by the City of San Diego General Plan. Development of any of the proposed alternatives, which would fall within the parameters of a mixed-use development, would be consistent with regional growth projections for the site. Therefore, the project would not adversely affect cumulative socioeconomic projections.

5.6 PHYSICAL ENVIRONMENT

5.6.1 GEOLOGY AND SEISMICITY

Geology and seismicity impacts are site-specific, and would not be affected by, nor would contribute to, cumulative impacts.

5.6.2 EXTRACTABLE RESOURCES

Impacts to extractable resources are site-specific. Therefore, the proposed project would not contribute cumulatively to impacts on extractable resources.

5.6.3 HYDROLOGY

Other development in the project vicinity would be located primarily on sites that already have some form of urban development. Therefore, redevelopment with the new uses would not add substantial areas of impervious material to the area. As such, no cumulative impacts on hydrology would occur.

5.7 BIOLOGICAL RESOURCES

As discussed in Section 4.7.2, page 4-151, the proposed alternatives would not adversely affect biological resources in the project vicinity. Therefore, development of the alternatives would not contribute to cumulative impacts on biological resources.

5.8 AIR QUALITY

The air quality analysis in Section 4.8.2, page 4-161, considers the impact of each of the alternatives on the air quality in the project vicinity and in the San Diego Air Basin. The San Diego Air Basin is a non-attainment area for ozone, nitrogen dioxide, and carbon monoxide. The proposed alternatives would include transportation demand management measures (TDM) that would substantially reduce the potential air quality impacts of the project. Incorporation of the TDM would, according to the California Air Resources Board, demonstrate consistency with the State Implementation Plan.

The Regional Air Quality Strategy establishes a goal of maintaining a Level of Service (LOS) C or better to reduce idling times and vehicular emissions. Cumulative development in the project vicinity would create congestion (LOS D or below) at six intersections. The proposed project would contribute a substantial increment to this congestion at one or two of these intersections. City of San Diego standards provide that this incremental contribution to the region's non-attainment of ozone and carbon monoxide standards is a cumulatively significant unmitigated impact.

5.9 NOISE

The noise analysis in Section 4.9.2, page 4-175, considers the impacts of each of the alternatives on buildout of the project vicinity. No significant noise impacts in the project vicinity would result.

5.10 CULTURAL RESOURCES

Unless the proposed alternatives would affect a historic district, cultural resource impacts from Navy Broadway Complex development are considered site-specific. As discussed in Section 4.10.1, page 4-207, the area surrounding the site is not in a historic district; therefore, development on the site would not create cumulative cultural resource impacts.

5.11 PUBLIC HEALTH AND SAFETY

Public health (i.e., hazardous waste) and safety (i.e., proximity to an airport) impacts are site-specific and would, therefore, not be affected by other development.

5.12 ENERGY AND CONSERVATION

5.12.1 NATURAL GAS

The San Diego Gas & Electric Company (SDG&E) has sufficient capacity to supply natural gas to other development in the Centre City without adversely affecting its ability to continue providing existing services.

5.12.2 ELECTRICITY

SDG&E has indicated that a new substation may be needed to service the electrical needs of cumulative development in Centre City. Development of any of the proposed alternatives, except Alternatives C and E (both of which would provide a net reduction in onsite electricity use), and Alternative G, would contribute to this need.

SECTION 6

GROWTH-INDUCING IMPACTS

The project site is located in a dynamic area of San Diego that is undergoing substantial development. A number of major office, hotel, and commercial developments are proposed, under construction, or have been recently completed in the vicinity of the project site.

Growth-inducing impacts are those direct or indirect effects of a project that could result in economic or population growth, or the need for new housing. Section 4.5 (page 4-129), Socioeconomics, discusses the population and housing growth potential associated with the project. It is not anticipated that the proposed project would cause or encourage the intensification of any surrounding land uses, because surrounding land uses have long been responding to dynamic market forces that have already resulted in substantial growth, without apparent regard to the proposed redevelopment of the Navy Broadway Complex. Infrastructure in the project vicinity is already in place, and has not been a primary constraint to development of the surrounding area. Therefore, project development would not result in the introduction to the project area of new infrastructure that would remove constraints to the development of surrounding properties.

Alternatives A, B, C, D, and F would result in substantial increased usage of the waterfront. This would occur because major pathways between the Centre City core and the waterfront, such as E, F, and G Streets would be opened and enhanced for public use. In addition, pedestrian-encouraging treatments along Harbor Drive and the provision of ground-level retail on the site would serve to increase pedestrian use of this area. In turn, patronage of other waterfront establishments, such as Seaport Village, would be expected to increase, which is a growth-inducing effect of the project.

SECTION 7

ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSED ACTION BE IMPLEMENTED

Section 4, beginning on page 4-1, addressed the potential environmental consequences of the proposed action, and included measures to mitigate significant environmental consequences to the extent feasible. After mitigation, certain of the proposed alternatives would still cause significant adverse environmental effects, as discussed below. Please refer to Section 4 for a complete discussion of the potential impacts and mitigation measures.

7.1 LAND USE AND PLANNING

Alternatives C and E would not implement City of San Diego urban design goals that specify a pedestrian orientation along Broadway and would not be consistent with City or regional goals for providing a plaza at the foot of Broadway.

7.2 TRANSPORTATION/CIRCULATION

No significant unavoidable impacts associated with traffic would result from development of any of the alternatives.

7.3 AESTHETICS AND VIEWSHED

Development of Alternative F would significantly affect street-end views, such as from Pantoja Park down F Street, because this alternative would contrast substantially with the skyline from this distance. Even so, it is recognized that visual resource impacts are highly subjective, and development of this alternative may be considered aesthetically appropriate, even if its building height is out of character with the scale of nearby development.

7.4 PUBLIC SERVICES AND UTILITIES

No significant unavoidable impacts associated with public services and utilities would result from development of any of the alternatives.

7.5 SOCIOECONOMICS

No significant unavoidable impacts associated with socioeconomics would result from development of any of the alternatives.

7.6 PHYSICAL ENVIRONMENT

No significant unavoidable impacts associated with physical environmental resources would result from development of any of the alternatives.

7.7 BIOLOGICAL RESOURCES

No significant unavoidable impacts associated with biological resources would result from development of any of the alternatives.

7.8 AIR QUALITY

Development of Alternatives A through F would result in increased emissions of air pollutants. The project region is located in a nonattainment area for the achievement of air quality standards, so any increase in emissions is considered a significant environmental effect. However, substantial reductions in emissions would result from the proposed mitigation measures, so development of Alternatives A through F would not result in significant project-related unavoidable effects to air quality. The project would contribute an increment to cumulatively significant air quality impacts. This increment is considered significant under City of San Diego guidelines (see Section 5.8, page 5-3).

7.9 NOISE

No significant unavoidable impacts associated with noise would result from development of any of the alternatives.

7.10 CULTURAL RESOURCES

No significant unavoidable impacts associated with cultural resources would result from development of any of the alternatives.

7.11 PUBLIC HEALTH AND SAFETY

No significant unavoidable impacts associated with public health and safety would result from development of any of the alternatives.

7.12 ENERGY AND CONSERVATION

No significant unavoidable impacts associated with energy and conservation would result from development of any of the alternatives.

SECTION 8

ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES THAT WOULD BE INVOLVED IN THE PROPOSED ACTION IF IMPLEMENTED

The Navy Broadway Complex is located in the urbanized downtown area of the City of San Diego. Redevelopment of the site with any of the proposed alternatives would not commit new land or sensitive environmental resources to urban uses.

As with any urban development, nonrenewable resources and resources used to manufacture construction materials will be used during both the construction and operational phases of the project. Such resources include oil and gas, sand and gravel, and other construction materials. This represents an irreversible commitment of resources.

SECTION 9

THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Development of the Navy Broadway Complex with the proposed uses would provide a continuation of the urban uses on the project site. In the short term, noise, traffic, and air pollution would be generated as old structures are removed or renovated and new facilities are constructed. No sensitive environmental resources would be used in the short term.

The project site is located in a highly urbanized area, and land use plans indicate a long-term commitment to highly urbanized uses, such as high-rise office and hotel uses. The proposed uses would represent a continuation of this long-term commitment to urban uses. The proposed uses would enhance the long-term productivity of the site. Each of the alternatives, except Alternative G, would create view corridors to the waterfront along E, F, and G Streets. Alternatives A and F would provide significant open space uses at the foot of Broadway, and Alternatives B and D would provide smaller pedestrian plazas at the foot of Broadway. Other urban amenities would be provided by redevelopment of the site with the proposed alternatives.

SECTION 10
LIST OF PREPARERS

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Technical Appendices

A. Public Law 99-661

LEGISLATION AUTHORIZING REDEVELOPMENT OF
BROADWAY COMPLEX, SAN DIEGO, CALIFORNIA
National Defense Authorization Act for FY 1987 (P.L.99-661)

SEC. 2732. LEASE AND DEVELOPMENT OF CERTAIN REAL PROPERTY, SAN DIEGO,
CALIFORNIA

(a) IN GENERAL.--Subject to subsections (b) through (g), the Secretary of the Navy may--

(1) enter into long-term leases of real property located within the Broadway Complex of the Department of the Navy, San Diego, California; and

(2) assist any lessee of such real property in financing the construction of any facility on such real property.

(b) CONSIDERATION.--(1)(A) In consideration for leasing the real property described in subsection (a), the Secretary shall obtain, without compensation or at substantially below market value, facilities or the use of facilities, or both, constructed on such real property by the lessees. (B) The Secretary shall provide that the value of the facilities or the use of facilities, or both, obtained under subparagraph (A) (minus the amount of any compensation paid by the Secretary for the facilities or use of them) shall be at least equal to the value of the use of the real property leased under subsection (a), as determined by the Secretary.

(2) In consideration for assisting a lessee in financing the construction of any facility on such real property, the Secretary shall obtain an ownership interest in such facility that is at least equal in value to the amount of the financing provided by the Secretary.

(c) CONDITIONS.--(1) The Secretary shall provide that any real property leased under this section shall be developed in accordance with detailed plans and terms of development which have been duly formulated by the Secretary and the San Diego community through the San Diego Association of Governments' Broadway Complex Coordinating Group.

(2) A lease may not be entered into under this section until 21 days after the Secretary submits a plan for the development of the real property described in subsection (a) to the Committees of the Armed Services of the Senate and the House of Representatives, including a justification of how this plan is more advantageous to the United States than developing the real property with Federal funds.

(d) COMPETITIVE PROCEDURES.--Each lease entered into under subsection (a) shall be awarded through the use of competitive procedures.

(e) RIGHT TO ACQUIRE.--The Secretary may provide that the United States shall have the right of first refusal to acquire all right, title, and interest in and to any facility constructed on the real property subject to such lease.

(f) ADDITIONAL TERMS.--(1) A lease entered into by the Secretary under this section under which a facility is constructed by a private developer and leased to the Department of the Navy may provide for the operation and maintenance of such facility by the private developer.

(2) The Secretary may require such additional terms and conditions in connection with the leases authorized by this section as the Secretary considers appropriate to protect the interest of the United States.

(g) LIMITATION.--The Secretary may obligate or expend amounts for--
(1) assisting in financing under subsection (a)(2);
(2) obtaining facilities or the use of facilities under (b)(1)(A);

(3) acquiring interest in a facility under subsection (e), only to the extent funds have been appropriated for such purpose.

B. Memorandum of Understanding

COPY

DOCUMENT NO. RA-26845

FILED JUN 1 1987
OFFICE OF THE CITY CLERK
SAN DIEGO, CALIFORNIA

Page One

MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF SAN DIEGO
AND THE U. S. NAVY.

This Memorandum of Understanding is made on the 1st day of June,
1987 by and between the City of San Diego, hereinafter called the City,
and the Navy, with respect to the following:

Whereas the Navy owns or controls approximately 16 acres of waterfront
land commonly referred to as the Broadway property in downtown San
Diego;

Whereas the Navy is interested in encouraging joint public/private
sector use on said land;

Whereas the Navy is interested in obtaining approximately 1 million
square feet of office space;

Whereas Congress authorized the Secretary of the Navy to develop the
Broadway property through a plan to be formulated with the San Diego
community;

Whereas the City of San Diego will represent the San Diego community in the development of the property;

Whereas both parties recognize and agree that it would be to their mutual benefit to have the City participate in the development of the property; and

Whereas the parties agree the most appropriate means to implement this agreement is pursuant to a development agreement which will be entered into and binding upon both the Navy and the City and which will be adopted by the City by ordinance pursuant to California state law.

Now, therefore be it agreed between the parties that:

1. The Navy in consultation with the City shall prepare a development plan, and urban design guidelines (i.e., land uses, density, viewscales, building heights, open space, etc.) which will define the nature of development occurring on the Broadway property. The development plan and urban design guidelines shall consider the economic, environmental and community issues regarding this critical site. The development plan and urban design guidelines shall consider parking management alternatives and other means of encouraging mass

transit usage as well as alternatives for funding of necessary infrastructure improvements.

2. The Navy shall in coordination with the City prepare appropriate environmental documentation for the project to ensure all federal, state and local requirements are satisfied. Environmental documentation shall be based on the development plan and urban design guidelines. Navy shall be responsible for compliance with the National Environmental Policy Act. The City shall be responsible for compliance with the California Environmental Quality Act.

3. The Navy and the City shall enter into a development agreement. The development agreement shall be adopted by the City in accordance with applicable state law. The development agreement shall define the responsibilities of the City, the Navy and the developer(s) with respect to the development of property. Specifically, the development agreement shall address but not be limited to the following:

a. The Navy and the City shall adopt the development plan and design guidelines prepared as provided in this agreement.

b. Any development (including the construction, maintenance and use) on the property shall be in compliance with the development plan and design guidelines as defined in the development agreement. The agreement shall set forth the responsibilities for the enforcement of these guidelines (i.e., granting of building permits and the application of all applicable City municipal ordinance, codes and formal policies including, planning, building, fire and safety).

c. The agreement shall set forth how the City will apply its police powers and regulatory authorities.

d. The City shall be responsible for the provision of all municipal services (i.e., police, fire, sanitation) to the development site.

e. The provision of public amenities including streets, sidewalks, parks, water, sewer, and open space for the development and the funding of these public amenities including any City funding shall be described.

f. The City shall assume administration, and control of all public improvements or amenities constructed on the site.

g. The Navy shall solicit for and select the developer(s).

h. The Navy shall require in any leasing agreements relative to the development of the property that the developer(s) comply with the development agreement.

4. The execution of the proposed development agreement as described herein shall be contingent upon future approval of all the terms and conditions of the development agreement by the Navy and the City Council of the City.

5. This Memorandum of Understanding is entered into for the sole purpose of providing guidelines for the planning and preparation of documents including the proposed development agreement.

TO THE CITY MANAGER
CITY OF SAN DIEGO, CALIFORNIA

COMMANDER
NAVAL BASE, SAN DIEGO,
CALIFORNIA

APPROVED AS
to Form by JOHN W. MITT, CITY ATTORNEY
By
Deputy City Attorney

RESOLUTION NUMBER R- 268-158

ADOPTED ON JUN 1 1987

BE IT RESOLVED, by the Council of The City of San Diego, & the City Manager is hereby authorized and empowered to execute for and on behalf of The City of San Diego, a Memorandum of Understanding with the UNITED STATES NAVY for the redevelopment of the Broadway Complex, a copy of which Memorandum of Understanding is on file in the office of the City Clerk as Document No. RR- 268-158.

BE IT FURTHER RESOLVED, that the City Manager is authorize to proceed with negotiations for a development agreement for a Broadway Complex Project.

APPROVED: JOHN W. WITT, City Attorney

BY 
Harold O. Valderhaug
Deputy City Attorney

HOV:ps
05/12/87
Or.Dept:Mgr.
R-87-2357
Form=r.none

Passed and adopted by the Council of The City of San Diego on

JUN 1 1987

by the following vote:

YAYS: Wolfsheimer, McColl, Jones, Struikema, Gotch, McCarty,

Ballesteros.

NAYS: None.

NOT PRESENT: Cleator, O'Connor.

AUTHENTICATED BY:

MALREEN O'CONNOR

Mayor of The City of San Diego, California

CHARLES G. ABDELNOUR

City Clerk of The City of San Diego, California

By June A. Blacknell

Deputy

I HEREBY CERTIFY that the above and foregoing is a full, true
and correct copy of RESOLUTION NO. R- 268-158 passed and

adopted by the Council of The City of San Diego, California, on

JUN 1 1987

CHARLES G. ABDELNOUR

City Clerk of The City of San Diego, California

By *June A. Blacknell*

Deputy

(SEAL)

C. Notice of Intent/Notice of Preparation

Notice of Intent to Prepare an Environmental Impact Statement for Proposed
Redevelopment of Navy Land Known as the Broadway Complex, San Diego, California

Pursuant to the procedural provisions of the Council on Environmental Quality regulations (40 CFR Parts 1500-1508) implementing the National Environmental Policy Act (NEPA), the Department of the Navy gives notice that an Environmental Impact Statement (EIS) is being prepared, in coordination with the City of San Diego, for proposed redevelopment of Navy land known as the Broadway Complex, San Diego, California.

The project site is located on approximately sixteen acres in downtown San Diego adjacent to the San Diego Bay waterfront. The site consists of eight city blocks that are bounded by Harbor Drive on the west, Market Street on the south, Pacific Highway on the east, and Broadway on the north. The site is currently improved with a series of sixteen miscellaneous office and warehouse buildings containing approximately one million square feet of gross floor area. The buildings were constructed between 1922 and 1945.

The Navy is proposing to consolidate in modern facilities the general regional administrative activities of the naval shore establishment in the San Diego area. These facilities are to be central to the San Diego naval commands, the commuting work force of the San Diego area, and regional transportation systems. The Navy's objective is to redevelop this site through a public/private partnership designed to meet the Navy's regional administrative office space needs in a manner that will compliment San Diego's bayfront redevelopment. Approximately one million square feet of Navy office space is contemplated to be developed on the site by a private developer(s) for use by the Navy. Additional mixed-use (e.g., office, hotel, specialty retail) private development on the site will be allowed which is intended to offset the cost of the Navy-occupied space, thereby reducing cost to the taxpayer.

A conceptual master plan and urban design guidelines will be prepared in coordination with the San Diego community through the City of San Diego to guide the development of the site. It is proposed that the Navy and the City will enter into a development agreement as the mechanism for approval and control of the site's development.

It is our understanding that the City of San Diego will prepare an Environmental Impact Report (EIR) for its proposed actions in compliance with the California Environmental Quality Act (CEQA). Because of issues common to both and to facilitate administration, joint hearings and meetings will be conducted for the NEPA and CEQA processes.

The EIS will be a full scope document that will cover all matters of potential environmental concern. The environmental analysis will address, but not be limited to, traffic and circulation, land used and planning, waterfront access, aesthetics and view corridors, public services and utilities, socioeconomic, geology and seismicity, extractable resources, hydrology and drainage, biology, endangered species and critical habitat, air quality, noise, cultural resources, coastal zone management, public health and safety, and energy conservation.

Alternatives that are being considered include variations of private and Navy development on the Broadway Complex site, Navy-only development of the site, development of an alternative site in downtown San Diego, and no action.

The Department of the Navy is requesting any comments you may have regarding the scope of the environmental analysis in the EIS. Please submit comments and/or questions to the address given below no later than December 16, 1988:

Officer in Charge
Western Division
Naval Facilities Engineering Command Detachment
Broadway Complex
1220 Pacific Highway
San Diego, California 92132-5190
Attn: Captain Wayne Goodernote, CEC, USN

Telephone inquiries may be directed to Mr. Anthony Principi, General Counsel, Broadway Complex Project Office, at (619) 532-3291.

Joint public scoping meetings will be held to receive written and oral testimony from governmental agencies and the public about issues and concerns that should be addressed in the Navy EIS and the City EIR. A morning session has been scheduled for agency representatives and an evening session for members of the public. Both meetings will be open to the general public at the times and locations given below. The evening session will adjourn at 11:30 p.m. or earlier, if all comments have been received. The scoping meetings will be conducted by Captain Wayne Goodernote, the Officer in Charge of the Broadway Complex Project Office. The meetings will be informal. Individual speakers will be requested to limit their statements to five minutes. Written statements will be accepted at the meetings or they may be mailed to the address given above. All comments must be received on or before December 16, 1988.

Morning Session

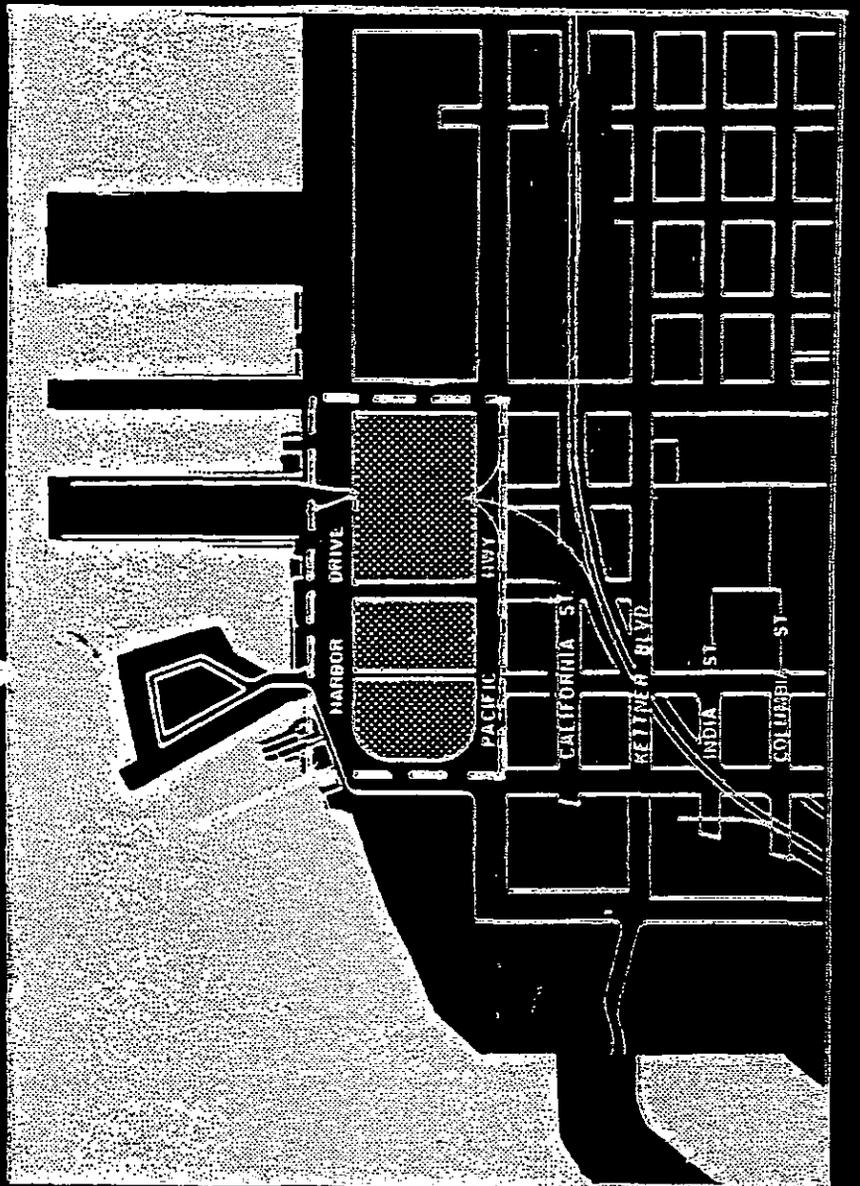
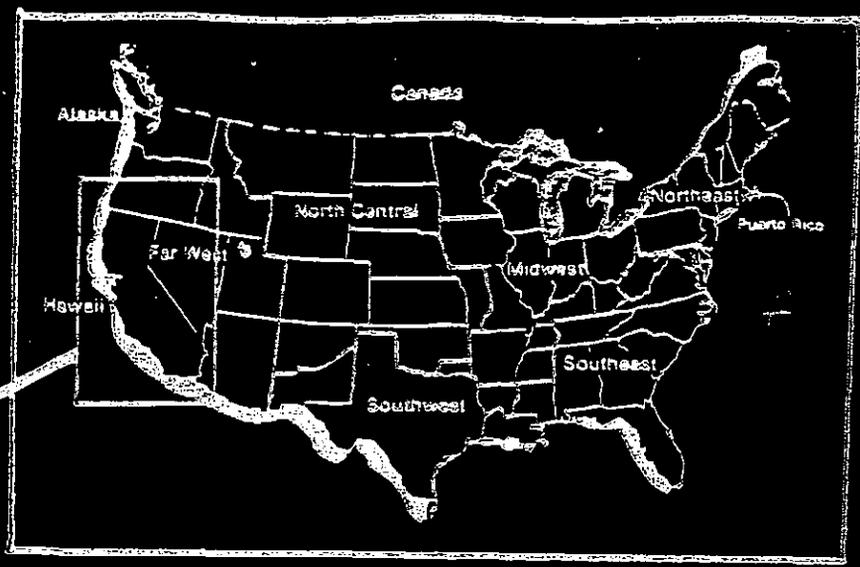
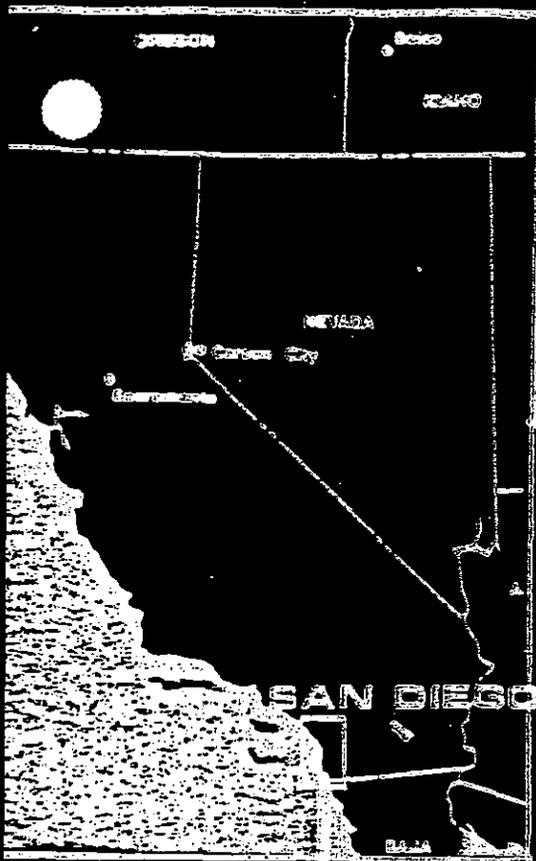
November 14, 1988 - 9:00 a.m.

City Administration Building
12th Floor
202 'C' Street
San Diego, CA 92101

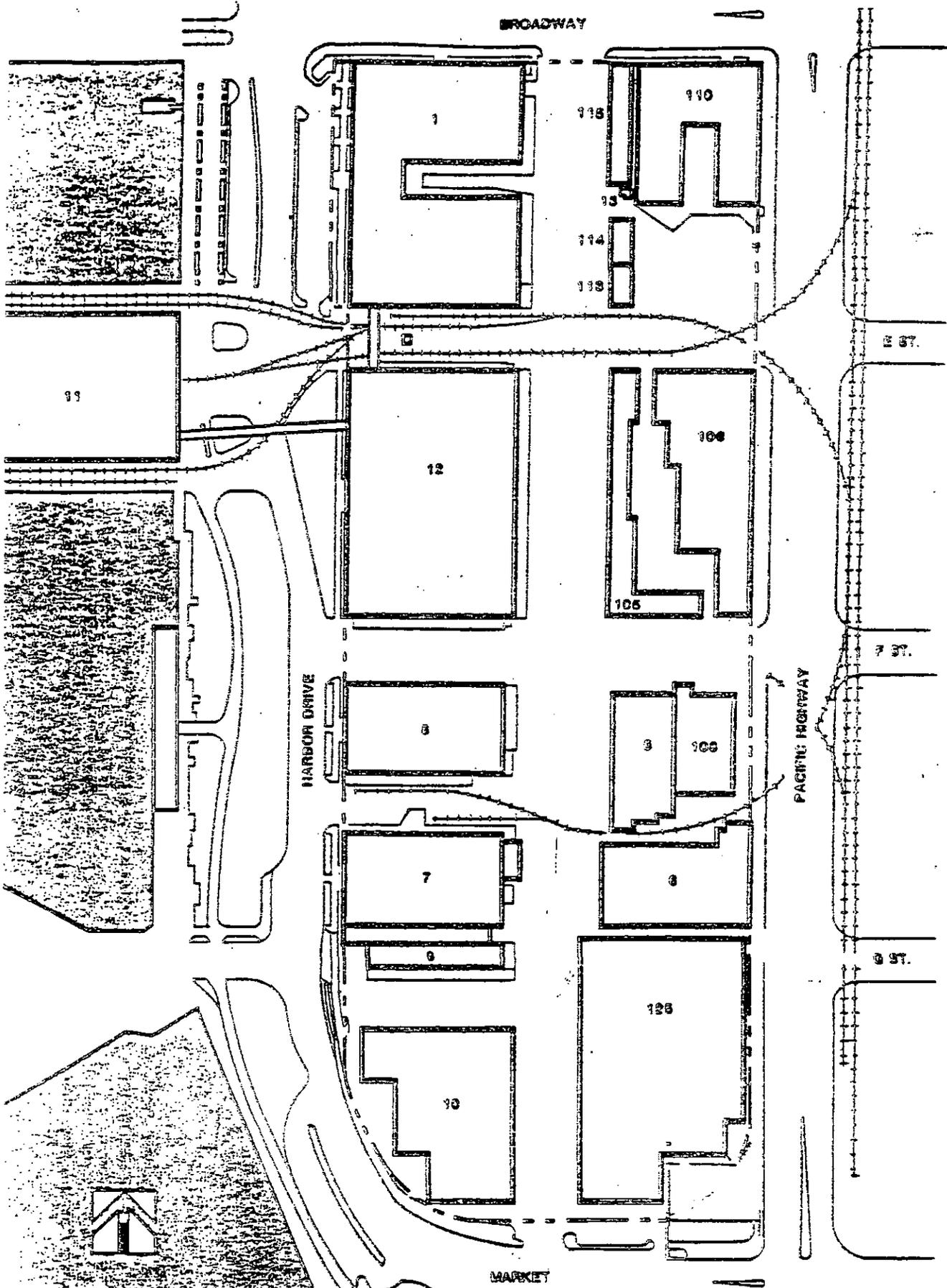
Evening Session

November 14, 1988 - 7:00 p.m.

City Administration Building
12th Floor
202 'C' Street
San Diego, CA 92101



**ADWAY COMPLEX,
DIEGO, CALIFORNIA**



**BROADWAY COMPLEX,
SAN DIEGO, CALIFORNIA**

NOTICE OF PREPARATION (NCP) FOR A
CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)
DRAFT ENVIRONMENTAL IMPACT REPORT

LEAD AGENCY:

The City of San Diego, California

PROPOSED ACTION:

The Department of the Navy, in coordination with the City of San Diego, is proposing to redevelop its land known as the Navy Broadway Complex. The project site is located on approximately sixteen acres in downtown San Diego adjacent to the San Diego Bay waterfront and consists of eight city blocks that are bounded by Harbor Drive on the west, Market Street on the south, Pacific Highway on the east, and Broadway on the north (see Exhibits 1 and 2). The site is currently improved with a series of sixteen miscellaneous office and warehouse buildings containing in excess of one million square feet of gross floor area. The buildings were constructed between 1922 and 1945.

The Navy is proposing to consolidate in modern facilities the general regional administrative activities of the naval shore establishment in the San Diego area. These facilities are to be central to the San Diego naval commands, the population of the San Diego area and regional transportation systems. The Navy's objective is to redevelop this site through a public/private partnership designed to meet the Navy's regional administrative office space needs in a manner that will compliment San Diego's bayfront redevelopment. Approximately one million square feet of Navy office space is contemplated to be developed on the site by a private developer(s) for use by the Navy. Additional mixed-use (e.g. office, hotel, specialty retail) private development on the site will be allowed which is intended to offset the cost of the Navy-occupied space thereby reducing cost to the taxpayer.

A conceptual master plan and urban design guidelines will be prepared in coordination with the San Diego community through the City of San Diego to guide the development of the site. It is proposed that the Navy and the City will enter into a development agreement as the mechanism for approval and control of the site's development.

ENVIRONMENTAL CONSIDERATIONS

Prior to entering into such a development agreement, the City of San Diego is required to prepare an Environmental Impact Report (EIR) in compliance with the CEQA. The Navy will also be preparing an Environmental Impact Statement (EIS) for its proposed actions in compliance with the National Environmental Policy Act (NEPA). Because of issues common to both and to facilitate administration, joint hearings and meetings will be conducted for the NEPA and CEQA processes.

The EIR will be a full scope document that will cover all matters of potential environmental concern (an initial study is not attached to this). The environmental analysis will address, but not be limited to, traffic and circulation, land use and planning, waterfront access, aesthetics and view

corridors, public services and utilities, socioeconomic, geology and seismicity, extractable resources, hydrology and drainage, biology, endangered species and critical habitat, air quality, noise, cultural resources, coastal zone management, public health and safety, and energy conservation.

Alternatives that are being considered include variations of private and Navy development on the Broadway Complex site, Navy-only development of the site, development of an alternative site in downtown San Diego, and no action.

COMMENTS ON THE SCOPE OF THE EIR:

The City of San Diego is requesting any comments you may have regarding the scope of the environmental analysis in the EIR. Because of issues common to both the Navy's environmental review and this process and to facilitate administration, the Navy is designated to collect and disseminate questions and comments regarding this process to the City of San Diego for response. Please submit comments, in writing, to the address provided below:

Officer in Charge
Western Division
Naval Facilities Engineering Command Detachment
Broadway Complex
1220 Pacific Highway
San Diego, California 92132-5190
Attn: Captain Wayne Goodermote, CEC, USN

Questions should be addressed to the same address or telephone inquiries can be directed to Anthony Principi, General Counsel, Broadway Complex Project Office, at (619) 532-3291. Written comments must be submitted by December 16, 1988.

In addition, joint public scoping meetings will be held to receive written and oral testimony from governmental agencies and the public about issues that should be addressed in the EIS/EIR. A morning session has been scheduled for agency representatives and an evening session for members of the public. The evening session will adjourn at 11:30 P.M. or earlier, if all comments have been received. The scoping meetings will be conducted by Captain Wayne Goodermote, the Officer in Charge of the Broadway Complex Project Office. The meetings will be informal. Individual speakers will be requested to limit their statements to five minutes. Written statements will be accepted at the meetings or they may be mailed to the address given above.

Both meetings will be open to the general public at the times and locations indicated below:

Morning Session

November 14, 1988 - 9:00 a.m.

City Administration Building
12th Floor
202 'C' Street
San Diego, CA 92101

Evening Session

November 14, 1988 - 7:00 p.m.

City Administration Building
12th Floor
202 'C' Street
San Diego, CA 92101

D. Draft Urban Design Guidelines

DRAFT
URBAN DESIGN GUIDELINES

The following Guidelines are intended as recommendations that will ensure high quality design of the Broadway Complex Development ("the Development") consistent with the City's current policies in the Centre City area. The following Urban Design Guidelines are illustrated in Attachment 1 to the Exhibit.

Architectural Standards

The architecture of the development shall establish a high quality of design. While it is not the intent for the entire Development to represent a single architectural solution, it is desirable to establish a compatible vocabulary of forms and materials to create a visually harmonious grouping of buildings.

Street-Level Design: Harbor Drive/Open Space/Broadway Frontage

- a) Upon the demolition of "Building 1", an open space of at least 1.9 acres shall be reserved at the foot of Broadway. This space shall be configured to allow for aggregation with adjacent land for the creation of a larger open space at the foot of Broadway.
- b) Harbor Drive, Broadway and the frontage adjacent to the proposed open space are envisioned as highly active pedestrian spaces with a strong orientation to the Bay. At least 75 percent of the linear frontage shall be developed in uses including retail, restaurants, and other public-oriented activities that will promote pedestrian activity.
- c) Along Broadway, buildings shall be set back from the property line to create a plaza depth of 75 feet. Along Harbor Drive on Block 3, above-grade development shall be built to the property line. Along Harbor Drive on Block 4, buildings shall be set back from the property line between 0 and 14 feet to create a consistent sidewalk depth of 25 feet, from the existing curb line.
- d) Ground-level facades shall be substantially transparent to maximize the sense of contact between indoor and outdoor activities. Colorful awnings and/or arcades shall be incorporated into the facade design to reinforce the pedestrian environment.
- e) Broadway's historic street wall of 30 to 100 feet shall be maintained and extended to the frontage adjacent to the proposed open space to reinforce the spatial experience of the street and open space.

Street-Level Design: Pacific Highway Frontage

- a) The Pacific Highway frontage shall be designed to reinforce the street's role as a major landscaped gateway boulevard within the Centre City, and as the downtown "face" of the Broadway Complex development.

- b) Along Pacific Highway above-grade development shall be set back from the property lines in the following ways to create a consistent sidewalk depth of approximately 20 feet from the existing curb line.

Block 1: 10 feet
Block 2: 10 feet
Block 3: 8 feet
Block 4: 7 feet

- c) In order to emphasize the landscape character of the street, development fronting Pacific Highway shall not exceed a street-wall height of 50 feet. Taller elements shall be stepped back by at least 15 feet. Between G Street and Harbor Drive, an exception may be made to this step-back to allow for a landmark element that will provide diversity and interest along the street.

Street-Level Design: The East-West Streets (E, F and G Streets)

- a) The prolongations of E, F and G Streets shall be opened to allow for continuous vehicular and pedestrian access between Pacific Highway and Harbor Drive. The design of the streets shall emphasize pedestrian access through wide sidewalks and continuous landscaping.
- b) A 75-foot wide right-of-way shall be maintained along E and F Streets to provide for this access and to maximize inland views to the Bayfront. Approximately 35 feet of this right-of-way shall be dedicated to pedestrian walkways and landscaping.
- c) A 120-foot wide right-of-way shall be maintained along G Street. Approximately 60 feet of this right-of-way shall be developed in pedestrian walkways, leading from the Marina Neighborhood to the G Street Mole.

Street-Level Design: North-South Passage

- a) A continuous north-south movement through a series of public and quasi-public spaces shall be created through the development, linking the open space at the foot of Broadway with Seaport Village. This should be designed as an interesting sequence of spaces with a diversity of activities and spatial experiences (e.g., galleries, courts, exterior plazas, etc.).

Architectural Form and Scale

- a) Towers shall be designed to minimize view obstructions from inland areas, and to create a well-composed skyline compatible with existing and planned development.
- b) Facades shall be articulated to create variety and interest; large areas of curtain wall glazing (vision glass or spandrel construction) shall be discouraged. Reflective glass should be avoided.
- c) Low-rise elements shall be articulated to create interest and variety and to promote the pedestrian scale of the street. Articulation of the first

two floors with architectural detailing, storefront design, arcades and awnings shall be encouraged. Special treatment and detailing of the cornice of street-wall buildings shall also be encouraged.

- d) Building materials shall be light in color and of a high quality. A palette of colors and materials shall be developed for the Broadway Complex project to ensure harmonious treatment.
- e) Towers shall be designed with distinctive roof forms that create a pleasing skyline profile. A compatible vocabulary of forms (e.g., domes, vaults, pyramids, etc.) shall be developed to encourage a "family" of buildings within the complex.
- f) Mechanical equipment, appurtenances and penthouses located on rooftops shall be architecturally screened and enclosed, and incorporated as an integral part of the architectural design. Efforts will also be made to integrate/screen Navy rooftop communication equipment to the maximum extent possible.

Access

- a) Curb cuts shall be avoided along Broadway, Pacific Highway and Harbor Drive, and shall be situated along the east-west streets (E, F, and G Streets). They shall not be located closer than 50 feet from intersections with Pacific Highway or Harbor Drive.
- b) Access to parking and loading areas shall be screened from predominant view, and designed to allow vehicles to maneuver on site without obstructing public pedestrian or vehicular circulation.

Parking Treatment

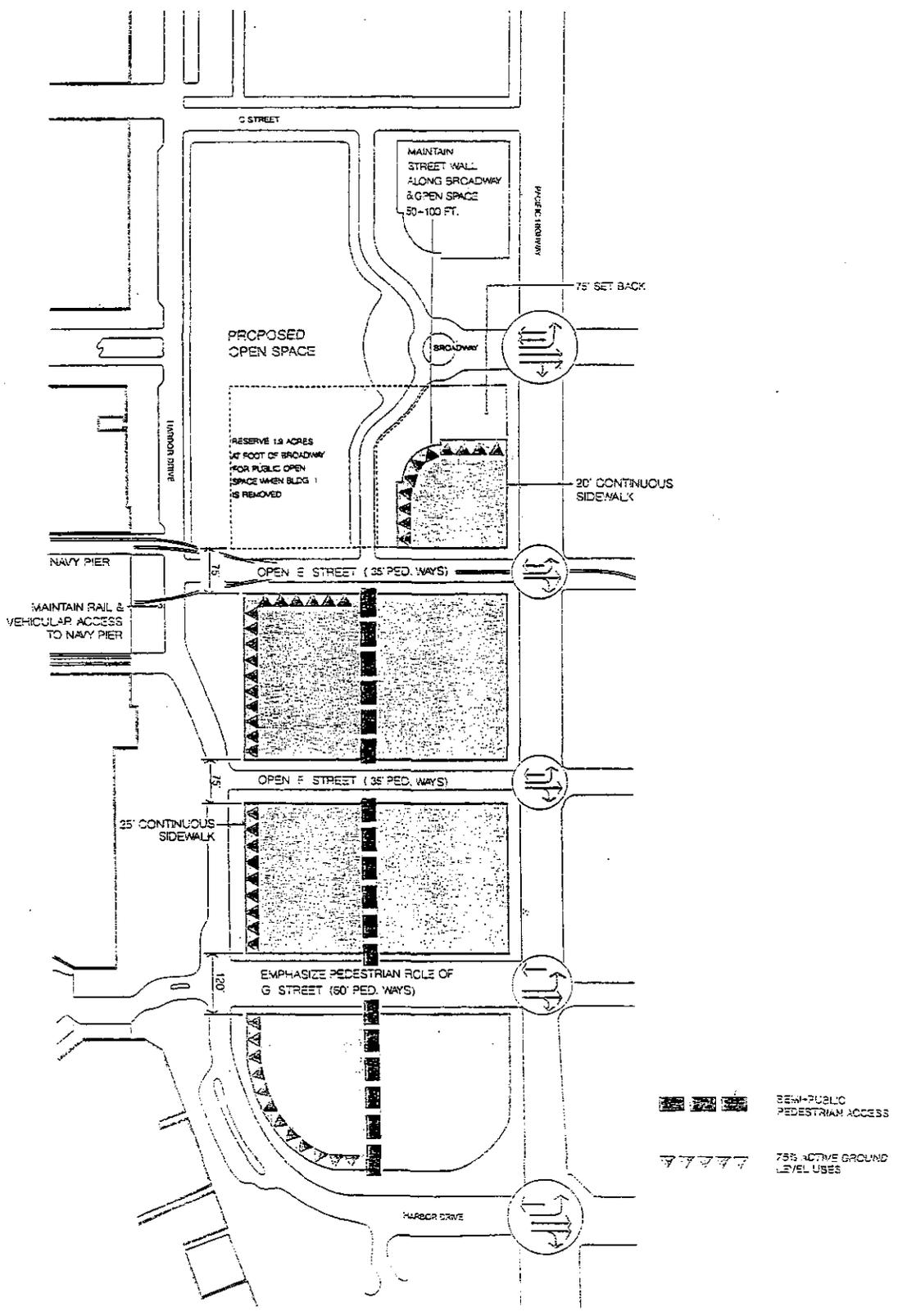
- a) Every reasonable effort should be made to provide two levels of below-grade parking prior to the provision of above-grade parking.
- b) Above-grade parking shall be encapsulated within development so that it appears as an integral part of the building design. Active uses shall screen above-grade parking from predominant public view along the Pacific Highway and Harbor Drive frontages. Along the east-west streets, above-grade parking shall be designed to appear as an integral part of the building facade.
- c) Surface parking shall be permitted on an interim basis; such parking shall be well screened from public street views with temporary perimeter landscaping.

Landscape Treatment

- a) The landscape of the development shall establish a high quality of design and promote a comfortable and attractive pedestrian environment. An understandable hierarchy of streetscape treatment shall be established within and along the perimeter of the development.

- b) The design of the Pacific Highway frontage shall reinforce its designation as a major gateway street, with tall palms and ornamental lighting, as currently recommended by the City Planning Department.
- c) Harbor Drive should be reinforced as an informal waterfront parkway for pedestrians and automobiles; additional sidewalk planting shall extend the canopy of existing trees to the edge of the project.
- d) G Street shall be developed as a visually strong promenade in the spirit of the proposed linear park along Harbor Drive. Colorful planting beds, water features, sculpture, benches and distinctive vertical plantings shall be encouraged.
- e) E and F Streets shall be designed as secondary east-west streets, with regularly planted street trees along each sidewalk.

Design Guidelines



E. Air Quality Data

CONSTRUCTION EMISSIONS
Emission Factors for Heavy-Duty
Diesel-Powered Construction Equipment^{a)}

Type Of Equipment	POLLUTANT (gm/hr)				
	Carbon Monoxide	Exhaust Hydrocarbons	Nitrogen Oxides	Sulfur Oxides	Particulates
Tracktype Tractor	157.01	55.06	570.70	62.3	50.7
Wheeled Tractor	1622.77	85.26	575.84	40.9	61.5
Wheeled ^{b)} Dozer	--	--	--	158	75
Scraper	568.19	120.15	1740.74	210	184
Motor Grader	60.46	18.07	24.43	39	27.7
Wheeled Loader	259.58	113.17	858.19	82.5	77.7
Tracktype Loader	91.15	44.55	375.22	34.4	26.6
Off-Highway Truck	816.01	86.84	1889.16	206	116
Roller	137.97	30.58	392.9	30.5	22.7
Miscellaneous	308.37	69.35	767.3	64.7	63.2

a) Source: EPA-AP-42, Volume II, September 1985

b) The wheeled dozer HC/CO/NOx emissions are included in the off-highway truck category.

Emission Factors for Heavy-Duty
Gasoline-Powered Construction Equipment

Type of Equipment	POLLUTANT (gm/hr)						
	Carbon Mono-oxide	Exhaust Hydro-carbons	Evapo-rative Hydro-carbons	Crank-case Hydro-carbons	Nitrogen Oxides	Sulfur Dioxide	Particulates
Wheeled Tractor	4320	164	30.9	32.6	195	7.03	10.9
Motor Grader	5490	186	30.0	37.1	145	7.59	9.4
Wheeled Loader	7060	241	29.7	48.2	235	10.6	13.5
Roller	6080	277	28.2	55.5	164	8.38	11.8
Miscellaneous	7720	254	25.4	50.7	187	10.6	11.7

Dust Emissions

1.2 tons per acre are of construction per month of activity, or 110 lbs. per acre per working day.

Source for all above data: EPA-AP-42, Volume II, September 1985

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14-Jul-83

Use	Count	Elect. Factor	Gas Factor	Daily Elec. Consumption	Daily Gas Consumption	Electricity Emissions (tCO2e)					Gas Emissions (tCO2e)					Total Emissions (tCO2e)				
						CO2	NOx	SOx	Part.	HC	CO	NOx	SOx	Part.	HC	CO	NOx	SOx	Part.	HC
Electricity	17.10	3.00		51,124	51,000	0.00422	0.02434	0.00250	0.00084	0.00321	0.00080	0.00240	0.00000	0.00000	0.00018	0.00482	0.02384	0.00250	0.00084	0.00321
Gas	17.10	1.00		16,345	16,367	0.00468	0.02384	0.00231	0.00094	0.00327	0.00087	0.00287	0.00000	0.00001	0.00018	0.00335	0.02381	0.00231	0.00094	0.00327
Electricity	20.00	1.00		19,341	19,333	0.00359	0.02244	0.00234	0.00078	0.00276	0.00215	0.00281	0.00000	0.00002	0.00037	0.00606	0.02104	0.00224	0.00080	0.00277
Gas	20.00	1.00		1171	1,167	0.00312	0.00367	0.00067	0.00002	0.00031	0.00002	0.00077	0.00000	0.00000	0.00000	0.00017	0.00074	0.00007	0.00002	0.00001
				0	0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL				125,125	125,125	0.01292	0.07429	0.04773	0.00255	0.00625	0.00344	0.01273	0.00000	0.00002	0.00091	0.01609	0.08805	0.00775	0.00251	0.00356

Page 8
14-Jul-83

Use	Count	Elect. Factor	Gas Factor	Daily Elec. Consumption	Daily Gas Consumption	Electricity Emissions (tCO2e)					Gas Emissions (tCO2e)					Total Emissions (tCO2e)				
						CO2	NOx	SOx	Part.	HC	CO	NOx	SOx	Part.	HC	CO	NOx	SOx	Part.	HC
Electricity	17.10	3.00		51,124	51,000	0.00422	0.02434	0.00250	0.00084	0.00321	0.00080	0.00240	0.00000	0.00000	0.00018	0.00482	0.02384	0.00250	0.00084	0.00321
Gas	17.10	1.00		16,345	16,367	0.00468	0.02384	0.00231	0.00094	0.00327	0.00087	0.00287	0.00000	0.00001	0.00018	0.00335	0.02381	0.00231	0.00094	0.00327
				0	0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
				0	0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
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				0	0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
				0	0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
				0	0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
				0	0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
				0	0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
				0	0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
				0	0	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
TOTAL				125,125	125,125	0.01292	0.07429	0.04773	0.00255	0.00625	0.00344	0.01273	0.00000	0.00002	0.00091	0.01609	0.08805	0.00775	0.00251	0.00356

Caline 4 Variables

	VARIABLE	TYPE	UNITS	SUGGESTED/MANDATORY LIMITS
Surface Roughness	Z0	real	cm	$3 \leq Z0 \leq 400$ cm
Wind Bearing	BRG	real	deg	$0' \leq BRG \leq 360'$
Standard Deviation of Wind Bearing	SIGTH	real	deg	$5' \leq SIGTH \leq 60'$
Wind Speed	U	real	m/s	$U \geq 0.5$ m/s
Settling Velocity	VS	real	cm/s	$VS \geq 0$
Deposition Velocity	VD	real	cm/s	$VD \geq 0$
Ambient Concentration	AMB	real	ppm	
Mixing Height	MIXH	real	m	$MIXH \geq 5$ m
Temperature	TEMP	real	'C	
Vehicles per Hour	VPS	integer		
Emission Factor	EF	real	gm/v-mile	
Roadway Width	W	real		$W \geq 10$ m
Left Mixing Width	MIXWL	real		$MIXWL \geq W/2$
Right Mixing Width	MIXWR	real		$MIXWR \geq W/2$
Source Height	H	real		$-10 \leq H \leq 10$ m

SOURCE:

California Department of Transportation report(FHWA/CA/TL-84/15), Caline 4 - A Dispersion Model for Predicting Air Pollutant Concentrations Near Roadways.

REPORT FOR FILE : mark3

1. Site Variables

U= 1.0 M/S ZO= 321.0 CM
 BRG= 225.0 DEGREES VD= 0.0 CM/S
 CLASS= F STABILITY VS= 0.0 CM/S
 MIXH= 1000.0 M AMB= 0.0 PPM
 SIGTH= 20.0 DEGREES TEMP= 18.0 DEGREE (C)

2. Link Description

LINK	*	LINK COORDINATES (M)				*	EF	H	W
DESCRIPTION	*	X1	Y1	X2	Y2	* TYPE	VPH	(G/MI)	(M)
A. 1		0	0	-72	0	AG	3320	7.3	0.0 18.0
B. 2		0	0	72	0	AG	3850	7.3	0.0 32.0
C. 3		0	0	0	72	AG	2260	7.3	0.0 37.0
D. 4		0	0	0	-72	AG	1180	7.3	0.0 37.0

LINK	*	MIXW		STPL	DCLT	ACCT	SPD	VPHO	EFI	IDT1	IDT2
	*	L (M)	R (M)	(M)	(SEC)	(SEC)	(MPH)	(G/MIN)	(SEC)	(SEC)	(SEC)
A.		0	0	0	0.0	0.0	0	0	0.0	0.0	0.0
		0	0	0	0.0	0.0	0	0	0.0	0.0	0.0
		0	0	0	0.0	0.0	0	0	0.0	0.0	0.0
D.		0	0	0	0.0	0.0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR		X	Y	Z
1		15	15	1.3
2		30	30	1.3
3		-15	15	1.3
4		-30	30	1.3

REPORT FOR FILE : mark5
 1. Site Variables

U= 1.0 M/S ZO= 321.0 CM
 BRG= 225.0 DEGREES VD= 0.0 CM/S
 CLASS= F STABILITY VS= 0.0 CM/S
 MIXH= 1000.0 M AMB= 0.0 PPM
 SIGTH= 20.0 DEGREES TEMP= 18.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* X1	LINK COORDINATES (M)	* Y1	X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
1	0	0	0	-72	0	AG	2490	7.3	0.0	18.0
2	0	0	0	72	0	AG	3440	7.3	0.0	32.0
3	0	0	0	0	72	AG	2010	7.3	0.0	37.0
4	0	0	0	0	-72	AG	1250	7.3	0.0	37.0

LINK	* L (M)	R (M)	MIXW	STPL (M)	DCLT (SEC)	ACCT (MPH)	SPD NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
A.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0
E	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0
C.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0
D.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR	X	Y	Z
RECEPTOR 1	15	15	1.3
RECEPTOR 2	30	30	1.3
RECEPTOR 3	-15	15	1.3
RECEPTOR 4	-30	30	1.3

REPORT FOR FILE : mark6

1. Site Variables

U=	1.0 M/S	ZO=	321.0 CM
BRG=	225.0 DEGREES	VD=	0.0 CM/S
CLASS=	F STABILITY	VS=	0.0 CM/S
MIXH=	1000.0 M	AMB=	0.0 PPM
SIGTH=	20.0 DEGREES	TEMP=	18.0 DEGREE (C)

2. Link Description

LINK	* DESCRIPTION	* X1	LINK COORDINATES (M)	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A.	1	0	0	-72	0	AG	2790	7.3	0.0	18.0	
B.	2	0	0	72	0	AG	3840	7.3	0.0	32.0	
C.	3	0	0	0	72	AG	2620	7.3	0.0	37.0	
D.	4	0	0	0	-72	AG	1280	7.3	0.0	37.0	

LINK	* L (M)	* R (M)	MIXW	STPL (M)	DCLT (SEC)	ACCT (MPH)	SPD	NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
A.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0	
B.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0	
C.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0	
D.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0	

3. Receptor Coordinates

RECEPTOR	1	X	Y	Z
RECEPTOR 1	15	15	1.3	
RECEPTOR 2	30	30	1.3	
RECEPTOR 3	-15	15	1.3	
RECEPTOR 4	-30	30	1.3	

1. Site Variables

U= 1.0 M/S ZO= 321.0 CM
 BRG= 225.0 DEGREES VD= 0.0 CM/S
 CLASS= F STABILITY VS= 0.0 CM/S
 MIXH= 1000.0 M AMB= 0.0 PPM
 SIGTH= 20.0 DEGREES TEMP= 18.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* * *	LINK COORDINATES (M)				* * *	TYPE	VPH	EF (G/MI)	H (M)	W (M)
		X1	Y1	X2	Y2						
1		0	0	-72	0	AG	3320	7.3	0.0	18.0	
2		0	0	72	0	AG	3850	7.3	0.0	32.0	
3		0	0	0	72	AG	2260	7.3	0.0	37.0	
4		0	0	0	-72	AG	1180	7.3	0.0	37.0	

LINK	* * *	MIXW	L (M)	R (M)	STPL (M)	DCLT (SEC)	ACCT (MPH)	SPD NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
A.		0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0
B.		0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0
C.		0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0
D.		0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR		X	Y	Z
1		15	15	1.3
2		30	30	1.3
3		-15	15	1.3
4		-30	30	1.3

REPORT FOR FILE : mark8

1. Site Variables

U=	1.0 M/S	ZO=	321.0 CM
BRG=	225.0 DEGREES	VD=	0.0 CM/S
CLASS=	F STABILITY	VS=	0.0 CM/S
MIXH=	1000.0 M	AMB=	0.0 PPM
SIGTH=	20.0 DEGREES	TEMP=	18.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* * *	LINK COORDINATES (M)				* * *	TYPE	VPH	EF (G/MI)	H (M)	W (M)
		X1	Y1	X2	Y2						
A. 1		0	0	-72	0	AG	1830	7.3	0.0	18.0	
B. 2		0	0	72	0	AG	3500	7.3	0.0	32.0	
C. 3		0	0	0	72	AG	1500	7.3	0.0	37.0	
D. 4		0	0	0	-72	AG	730	7.3	0.0	37.0	

LINK	* * *	MIXW		STPL	DCLT	ACCT	SPD		EF1	IDT1	IDT2	
		L (M)	R (M)	(M)	(SEC)	(SEC)	(MPH)	NCYC NDLA	VPHO (G/MIN)	(SEC)	(SEC)	
A.		0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
B.		0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
C.		0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
D.		0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR		X	Y	Z
RECEPTOR 1	1	15	15	1.3
RECEPTOR 2	2	30	30	1.3
RECEPTOR 3	3	-15	15	1.3
RECEPTOR 4	4	-30	30	1.3

REPORT FOR FILE : front1

1. Site Variables

U= 1.0 M/S ZO= 321.0 CM
 BRG= 180.0 DEGREES VD= 0.0 CM/S
 CLASS= F STABILITY VS= 0.0 CM/S
 MIXH= 1000.0 M AMB= 0.0 PPM
 SIGTH= 20.0 DEGREES TEMP= 18.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* * * * * *	LINK COORDINATES (M)				* * * * * *	EF (G/MI)	H (M)	W (M)
		X1	Y1	X2	Y2	TYPE	VPH		
1		0	0	-44	0	AG	1750	13.6	32.0
2		0	0	44	0	AG	1750	13.6	32.0
3		0	0	0	44	AG	846	13.6	22.0
4		0	0	0	-44	AG	846	13.6	22.0

LINK	* * * * * *	MIXW L R	STPL (M)	DCLT (SEC)	ACCT (MPH)	SPD NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2
A.		0	0	0	0.0	0.0	0	0	0.0	0.0	0.0
F		0	0	0	0.0	0.0	0	0	0.0	0.0	0.0
C.		0	0	0	0.0	0.0	0	0	0.0	0.0	0.0
D.		0	0	0	0.0	0.0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR		X	Y	Z
RECEPTOR 1		15	15	1.3
RECEPTOR 2		30	30	1.3
RECEPTOR 3		-15	15	1.3
RECEPTOR 4		-30	30	1.3
RECEPTOR 5		15	-15	1.3
RECEPTOR 6		30	-30	1.3

REPORT FOR FILE : front5

1. Site Variables

U=	1.0 M/S	ZO=	321.0 CM
BRG=	130.0 DEGREES	VD=	0.0 CM/S
CLASS=	F STABILITY	VS=	0.0 CM/S
MIXH=	1000.0 M	AMB=	0.0 PPM
SIGTH=	20.0 DEGREES	TEMP=	18.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* * * * * *	LINK COORDINATES (M)				* * * * * *	TYPE	VPH	EF (G/MI)	H (M)	W (M)
		X1	Y1	X2	Y2						
A. 1		0	0	-44	0	AG	3440	7.3	0.0	32.0	
B. 2		0	0	44	0	AG	3440	7.3	0.0	32.0	
C. 3		0	0	0	44	AG	1302	7.3	0.0	22.0	
D. 4		0	0	0	-44	AG	1302	7.3	0.0	22.0	

LINK	* * * * * *	MIXW	L (M)	R (M)	STPL (M) (SEC)	DCLT (SEC)	ACCT (MPH)	SPD NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
A.		0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0
B.		0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0
C.		0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0
D.		0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR		X	Y	Z
RECEPTOR 1		15	15	1.3
RECEPTOR 2		30	30	1.3
RECEPTOR 3		-15	15	1.3
RECEPTOR 4		-30	30	1.3
RECEPTOR 5		15	-15	1.3
RECEPTOR 6		30	-30	1.3

REPORT FOR FILE : front7

1. Site Variables

U= 1.0 M/S ZO= 321.0 CM
 BRG= 180.0 DEGREES VD= 0.0 CM/S
 CLASS= F STABILITY VS= 0.0 CM/S
 MIXH= 1000.0 M AMB= 0.0 PPM
 SIGTH= 20.0 DEGREES TEMP= 18.0 DEGREE (C)

2. Link Description

LINK	* DESCRIPTION	* X1	LINK COORDINATES (M)	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A.	1	0	0	-44	0	0	AG	3850	7.3	0.0	32.0
B.	2	0	0	44	0	0	AG	3850	7.3	0.0	32.0
C.	3	0	0	0	44	0	AG	1320	7.3	0.0	22.0
D.	4	0	0	0	-44	0	AG	1320	7.3	0.0	22.0

LINK	* L (M)	MIXW R (M)	STPL (M)	DCLT (SEC)	ACCT (MPH)	SPD NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
A.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
B.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
C.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
D.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR		X	Y	Z
RECEPTOR	1	15	15	1.3
RECEPTOR	2	30	30	1.3
RECEPTOR	3	-15	15	1.3
RECEPTOR	4	-30	30	1.3
RECEPTOR	5	15	-15	1.3
RECEPTOR	6	30	-30	1.3

REPORT FOR FILE : front8

1. Site Variables

U=	1.0 M/S	ZO=	321.0 CM
ERG=	180.0 DEGREES	VD=	0.0 CM/S
CLASS=	F STABILITY	VS=	0.0 CM/S
MIXH=	1000.0 M	AMB=	0.0 PPM
SIGTH=	20.0 DEGREES	TEMP=	18.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* * X1	LINK COORDINATES (M)	Y1	X2	Y2	* * TYPE	VPH	EF (G/MI)	H (M)	W (M)
1		0	0	-44	0	AG	3500	7.3	0.0	32.0
2		0	0	44	0	AG	3500	7.3	0.0	32.0
3		0	0	0	44	AG	1308	7.3	0.0	22.0
4		0	0	0	-44	AG	1308	7.3	0.0	22.0

LINK	* * L (M)	R (M)	MIXW	STPL (M)	DCLT (SEC)	ACCT (MPH)	SPD NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
A	0	0		0	0.0	0.0	0	0	0	0.0	0.0	0.0
	0	0		0	0.0	0.0	0	0	0	0.0	0.0	0.0
C.	0	0		0	0.0	0.0	0	0	0	0.0	0.0	0.0
D.	0	0		0	0.0	0.0	0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR		X	Y	Z
RECEPTOR 1		15	15	1.3
RECEPTOR 2		30	30	1.3
RECEPTOR 3		-15	15	1.3
RECEPTOR 4		-30	30	1.3
RECEPTOR 5		15	-15	1.3
RECEPTOR 6		30	-30	1.3

MODEL RESULTS FOR FILE mark1

RECEPTOR		* PRED	* WIND *	COCN/LINK			
		* CONC	* BRG *	(PPM)			
		* (PPM)	*(DEG)*	A	B	C	D
RECPT 1	*	1.5	* 201 *	0.1	0.8	0.2	0.5
RECPT 2	*	1.0	* 225 *	0.2	0.3	0.2	0.2
RECPT 3	*	1.4	* 129 *	0.3	0.5	0.3	0.3
RECPT 4	*	0.9	* 135 *	0.2	0.3	0.2	0.2

MODEL RESULTS FOR FILE mark2

RECEPTOR		* PRED	* WIND *	COCN/LINK			
		* CONC	* BRG *	(PPM)			
		* (PPM)	*(DEG)*	A	B	C	D
RECPT 1	*	1.5	* 248 *	0.6	0.3	0.5	0.0
RECPT 2	*	1.0	* 225 *	0.2	0.4	0.2	0.1
RECPT 3	*	1.5	* 129 *	0.4	0.6	0.4	0.1
RECPT 4	*	1.0	* 123 *	0.1	0.5	0.3	0.1

MODEL RESULTS FOR FILE mark3

RECEPTOR		* PRED	* WIND *	COCN/LINK			
		* CONC	* BRG *	(PPM)			
		* (PPM)	*(DEG)*	A	B	C	D
RECPT 1	*	1.5	* 248 *	0.7	0.3	0.4	0.0
RECPT 2	*	1.0	* 225 *	0.3	0.4	0.2	0.1
RECPT 3	*	1.4	* 129 *	0.4	0.6	0.3	0.1
RECPT 4	*	1.0	* 123 *	0.1	0.4	0.3	0.1

MODEL RESULTS FOR FILE mark4

RECEPTOR		* PRED	* WIND *	COCN/LINK			
		* CONC	* BRG *	(PPM)			
		* (PPM)	*(DEG)*	A	B	C	D
RECPT 1	*	1.5	* 249 *	0.6	0.3	0.5	0.0
RECPT 2	*	1.0	* 225 *	0.2	0.4	0.3	0.1
RECPT 3	*	1.5	* 112 *	0.1	0.8	0.5	0.0
RECPT 4	*	1.0	* 123 *	0.1	0.4	0.4	0.1

MODEL RESULTS FOR FILE mark5

RECEPTOR		* PRED	* WIND *	COCN/LINK			
		* CONC	* BRG *	(PPM)			
		* (PPM)	*(DEG)*	A	B	C	D
RECPT 1	*	1.3	* 201 *	0.1	0.8	0.2	0.3
RECPT 2	*	0.9	* 225 *	0.2	0.3	0.2	0.1
RECPT 3	*	1.3	* 129 *	0.3	0.5	0.3	0.1
RECPT 4	*	0.8	* 123 *	0.1	0.4	0.3	0.1

MODEL RESULTS FOR FILE mark6

RECEPTOR	* PRED * CONC * (PPM)	* WIND * ERG * (DEG)*	COCN/LINK (PPM)			
			A	B	C	D
RECPT 1	* 1.5	* 249	* 0.6	0.3	0.5	0.0
RECPT 2	* 1.0	* 225	* 0.2	0.4	0.3	0.1
RECPT 3	* 1.5	* 112	* 0.1	0.8	0.5	0.0
RECPT 4	* 1.0	* 123	* 0.1	0.4	0.4	0.1

MODEL RESULTS FOR FILE mark7

RECEPTOR	* PRED * CONC * (PPM)	* WIND * ERG * (DEG)*	COCN/LINK (PPM)			
			A	B	C	D
RECPT 1	* 1.5	* 248	* 0.7	0.3	0.4	0.0
RECPT 2	* 1.0	* 225	* 0.3	0.4	0.2	0.1
RECPT 3	* 1.4	* 129	* 0.4	0.6	0.3	0.1
RECPT 4	* 1.0	* 123	* 0.1	0.4	0.3	0.1

MODEL RESULTS FOR FILE mark8

RECEPTOR	* PRED * CONC * (PPM)	* WIND * ERG * (DEG)*	COCN/LINK (PPM)			
			A	B	C	D
RECPT 1	* 1.1	* 196	* 0.0	0.8	0.1	0.1
RECPT 2	* 0.7	* 211	* 0.1	0.5	0.1	0.1
RECPT 3	* 1.1	* 112	* 0.1	0.7	0.3	0.0
RECPT 4	* 0.7	* 123	* 0.1	0.4	0.2	0.0

MODEL RESULTS FOR FILE front1

RECEPTOR	* PRED * CONC * (PPM)	* WIND * ERG * (DEG)*	COCN/LINK (PPM)			
			A	B	C	D
RECPT 1	* 1.3	* 221	* 0.4	0.5	0.2	0.2
RECPT 2	* 0.9	* 221	* 0.2	0.4	0.1	0.1
RECPT 3	* 1.3	* 139	* 0.5	0.4	0.2	0.2
RECPT 4	* 0.9	* 139	* 0.4	0.2	0.1	0.1
RECPT 5	* 1.3	* 319	* 0.4	0.5	0.2	0.2
RECPT 6	* 0.9	* 319	* 0.2	0.4	0.1	0.1

MODEL RESULTS FOR FILE front2

RECEPTOR	* PRED * CONC * (PPM)	* WIND * ERG * (DEG)*	COCN/LINK (PPM)			
			A	B	C	D
RECPT 1	* 1.5	* 221	* 0.3	0.8	0.2	0.2
RECPT 2	* 0.9	* 221	* 0.3	0.4	0.1	0.1
RECPT 3	* 1.5	* 139	* 0.6	0.5	0.2	0.2
RECPT 4	* 0.9	* 139	* 0.4	0.3	0.1	0.1
RECPT 5	* 1.5	* 319	* 0.5	0.5	0.2	0.2
RECPT 6	* 0.9	* 319	* 0.3	0.4	0.1	0.1

MODEL RESULTS FOR FILE front3

RECEPTOR	*	(PPM)	*(DEG)*	A	B	C	D
RECPT 1	*	1.4	* 221 *	0.4	0.6	0.2	0.2
RECPT 2	*	0.9	* 221 *	0.2	0.4	0.1	0.1
RECPT 3	*	1.4	* 139 *	0.6	0.4	0.2	0.2
RECPT 4	*	0.9	* 139 *	0.4	0.2	0.1	0.1
RECPT 5	*	1.4	* 319 *	0.4	0.6	0.2	0.2
RECPT 6	*	0.9	* 319 *	0.2	0.4	0.1	0.1

MODEL RESULTS FOR FILE front4

RECEPTOR	*	PRED CONC (PPM)	*WIND * * BRG * (DEG)*	A	B	C	D
RECPT 1	*	1.4	* 221 *	0.4	0.6	0.2	0.2
RECPT 2	*	0.9	* 221 *	0.2	0.4	0.1	0.1
RECPT 3	*	1.4	* 139 *	0.6	0.4	0.2	0.2
RECPT 4	*	0.9	* 139 *	0.4	0.2	0.1	0.1
RECPT 5	*	1.4	* 319 *	0.4	0.6	0.2	0.2
RECPT 6	*	0.9	* 319 *	0.2	0.4	0.1	0.1

MODEL RESULTS FOR FILE front5

RECEPTOR	*	PRED CONC (PPM)	*WIND * * BRG * (DEG)*	A	B	C	D
RECPT 1	*	1.3	* 221 *	0.4	0.5	0.2	0.2
RECPT 2	*	0.8	* 221 *	0.2	0.4	0.1	0.1
RECPT 3	*	1.3	* 139 *	0.5	0.4	0.2	0.2
RECPT 4	*	0.8	* 139 *	0.4	0.2	0.1	0.1
RECPT 5	*	1.3	* 319 *	0.4	0.5	0.2	0.2
RECPT 6	*	0.8	* 319 *	0.2	0.4	0.1	0.1

MODEL RESULTS FOR FILE front6

RECEPTOR	*	PRED CONC (PPM)	*WIND * * BRG * (DEG)*	A	B	C	D
RECPT 1	*	1.4	* 221 *	0.4	0.6	0.2	0.2
RECPT 2	*	0.9	* 221 *	0.2	0.4	0.1	0.1
RECPT 3	*	1.4	* 139 *	0.6	0.4	0.2	0.2
RECPT 4	*	0.9	* 139 *	0.4	0.2	0.1	0.1
RECPT 5	*	1.4	* 319 *	0.4	0.6	0.2	0.2
RECPT 6	*	0.9	* 319 *	0.2	0.4	0.1	0.1

MODEL RESULTS FOR FILE front7

RECEPTOR	*	PRED CONC (PPM)	*WIND * * BRG * (DEG)*	A	B	C	D
RECPT 1	*	1.4	* 221 *	0.4	0.6	0.2	0.2
RECPT 2	*	0.9	* 221 *	0.2	0.4	0.1	0.1
RECPT 3	*	1.4	* 139 *	0.6	0.4	0.2	0.2
RECPT 4	*	0.9	* 139 *	0.4	0.2	0.1	0.1
RECPT 5	*	1.4	* 319 *	0.4	0.6	0.2	0.2
RECPT 6	*	0.9	* 319 *	0.2	0.4	0.1	0.1

MODEL RESULTS FOR FILE front8

RECEPTOR	* FRED *WIND *		COCN/LINK			
	* CONC * (PPM)	* BRG * (DEG)*	A	B	C	D
RECPT 1	* 1.3 *	* 221 *	0.4	0.5	0.2	0.2
RECPT 2	* 0.8 *	* 221 *	0.2	0.4	0.1	0.1
RECPT 3	* 1.3 *	* 139 *	0.5	0.4	0.2	0.2
RECPT 4	* 0.8 *	* 139 *	0.4	0.2	0.1	0.1
RECPT 5	* 1.3 *	* 319 *	0.4	0.5	0.2	0.2
RECPT 6	* 0.8 *	* 319 *	0.2	0.4	0.1	0.1

REPORT FOR FILE : pch3

1. Site Variables

U=	1.0 M/S	ZO=	321.0 CM
BRG=	90.0 DEGREES	VD=	0.0 CM/S
CLASS=	F STABILITY	VS=	0.0 CM/S
MIXH=	1000.0 M	AMB=	0.0 PPM
SIGTH=	20.0 DEGREES	TEMP=	18.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* * * *	LINK COORDINATES (M)	* * * *	EF	H	W
		X1 Y1 X2 Y2		(G/MI)	(M)	(M)
A. 1		0 0 -72 0	AG	1617 7.3	0.0	32.0
B. 2		0 0 72 0	AG	1617 7.3	0.0	32.0
C. 3		0 0 0 158	AG	3832 7.3	0.0	37.0
D. 4		0 0 0 -158	AG	2260 7.3	0.0	37.0

LINK	* * * *	MIXW	STPL	DCLT	ACCT	SPD	VPHO	EFI	IDT1	IDT2
		L R (M) (M)	(M) (SEC)	(SEC)	(MPH)	NCYC NDLA	(G/MIN)	(SEC)	(SEC)	(SEC)
A.		0 0	0	0.0	0.0	0 0	0 0	0.0	0.0	0.0
B.		0 0	0	0.0	0.0	0 0	0 0	0.0	0.0	0.0
C.		0 0	0	0.0	0.0	0 0	0 0	0.0	0.0	0.0
D.		0 0	0	0.0	0.0	0 0	0 0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR		X	Y	Z
RECEPTOR 1	1	-15	-15	1.3
RECEPTOR 2	2	-30	-30	1.3
RECEPTOR 3	3	15	-15	1.3
RECEPTOR 4	4	30	-30	1.3

REPORT FOR FILE : pch7

1. Site Variables

U=	1.0 M/S	ZO=	321.0 CM
BRG=	90.0 DEGREES	VD=	0.0 CM/S
CLASS=	F STABILITY	VS=	0.0 CM/S
MIXH=	1000.0 M	AME=	0.0 PPM
SIGTH=	20.0 DEGREES	TEMP=	18.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* X1	LINK COORDINATES (M)	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 1	0	0	-72	0	0	AG	1617	7.3	0.0	32.0
B. 2	0	0	72	0	0	AG	1617	7.3	0.0	32.0
C. 3	0	0	0	158	0	AG	3832	7.3	0.0	37.0
D. 4	0	0	0	-158	0	AG	2260	7.3	0.0	37.0

LINK	* L (M)	MLW R (M)	STPL (M)	DCLT (SEC)	ACCT (MPH)	SPD NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
A.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
B.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
C.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
D.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR		X	Y	Z
RECEPTOR 1	1	-15	-15	1.3
RECEPTOR 2	2	-30	-30	1.3
RECEPTOR 3	3	15	-15	1.3
RECEPTOR 4	4	30	-30	1.3

REPORT FOR FILE : ket2

1. Site Variables

U=	1.0 M/S	ZO=	321.0 CM
BRG=	225.0 DEGREES	VD=	0.0 CM/S
CLASS=	F STABILITY	VS=	0.0 CM/S
MIXH=	1000.0 M	AMB=	0.0 PPM
SIGTH=	20.0 DEGREES	TEMP=	18.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* X1	LINK COORDINATES (M) Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 1	0	0	-72	0	AG	2230	7.3	0.0	22.0
B. 2	0	0	115	0	AG	2230	7.3	0.0	22.0
C. 3	0	0	0	72	AG	1674	7.3	0.0	22.0
D. 4	0	0	0	-72	AG	1791	7.3	0.0	22.0

LINK	* L (M)	MIXW R (M)	STPL (M)	DCLT (SEC)	ACCT (MPH)	SPD NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
A.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
B.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
C.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
D.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR	1	X	Y	Z
RECEPTOR 1	1	15	15	1.3
RECEPTOR 2	2	30	30	1.3

REPORT FOR FILE : ket3

1. Site Variables

U=	1.0 M/S	ZC=	321.0 CM
BRG=	225.0 DEGREES	VD=	0.0 CM/S
CLASS=	F STABILITY	VS=	0.0 CM/S
MIXH=	1000.0 M	AMB=	0.0 PPM
SIGTH=	20.0 DEGREES	TEMP=	13.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* * X1	LINK COORDINATES (M)	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
1		0	0	-72	0	AG	2240	7.3	0.0	22.0
2		0	0	115	0	AG	2240	7.3	0.0	22.0
3		0	0	0	72	AG	1701	7.3	0.0	22.0
4		0	0	0	-72	AG	1710	7.3	0.0	22.0

LINK	* L (M)	* R (M)	MIXW	STPL (M)	DCLT (SEC)	ACCT (MPH)	SPD NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
1.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0
2.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0
3.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0
4.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR	X	Y	Z
RECEPTOR 1	15	15	1.3
RECEPTOR 2	30	30	1.3

REPORT FOR FILE : ket5

1. Site Variables

U=	1.0 M/S	ZO=	321.0 CM
BRG=	225.0 DEGREES	VD=	0.0 CM/S
CLASS=	F STABILITY	VS=	0.0 CM/S
MIXH=	1000.0 M	AMB=	0.0 PPM
SIGTH=	20.0 DEGREES	TEMP=	18.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* * *	LINK COORDINATES (M)				* * *	TYPE	VPH	EF (G/M)	H (M)	W (M)
		X1	Y1	X2	Y2						
1		0	0	-72	0	AG	2170	7.3	0.0	22.0	
2		0	0	115	0	AG	2170	7.3	0.0	22.0	
3		0	0	0	72	AG	1377	7.3	0.0	22.0	
4		0	0	0	-72	AG	1296	7.3	0.0	22.0	

LINK	* * *	MIXW		STPL	DCLT	ACCT	SPD		VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
		L (M)	R (M)	(M)	(SEC)	(SEC)	(MPH)	NCYC	NDLA			
A		0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
B		0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
C		0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
D		0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR		X	Y	Z
1		15	15	13
2		30	30	13

REPORT FOR FILE : ket6

1. Site Variables

U=	1.0 M/S	ZO=	321.0 CM
BRG=	225.0 DEGREES	VD=	0.0 CM/S
CLASS=	F STABILITY	VS=	0.0 CM/S
MIXH=	1000.0 M	AMB=	0.0 PPM
SIGTH=	20.0 DEGREES	TEMP=	18.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* X1	LINK COORDINATES (M)	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 1	0	0	-72	0	AG	2200	7.3	0.0	22.0	
B. 2	0	0	115	0	AG	2200	7.3	0.0	22.0	
C. 3	0	0	0	72	AG	1692	7.3	0.0	22.0	
D. 4	0	0	0	-72	AG	1764	7.3	0.0	22.0	

LINK	* L (M)	MIXW R (M)	STPL (M)	DCLT (SEC)	ACCT (MPH)	SPD NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
A.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
B.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
C.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
D.	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR	X	Y	Z
1	15	15	1.3
2	30	30	1.3

REPORT FOR FILE : ket7

1. Site Variables

U=	1.0 M/S	ZO=	321.0 CM
ERG=	225.0 DEGREES	VD=	0.0 CM/S
CLASS=	F STABILITY	VS=	0.0 CM/S
MIXH=	1000.0 M	AMB=	0.0 PPM
SIGTH=	20.0 DEGREES	TEMP=	18.0 DEGREE (C)

2. Link Description

LINK DESCRIPTION	* X1	* Y1	* X2	* Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
1	0	0	-72	0	AG	2240	7.3	0.0	22.0
2	0	0	115	0	AG	2240	7.3	0.0	22.0
3	0	0	0	72	AG	1701	7.3	0.0	22.0
4	0	0	0	-72	AG	1710	7.3	0.0	22.0

LINK	* L (M)	* R (M)	STPL (M)	DCLT (SEC)	ACCT (MPH)	SPD NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
1	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
2	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
3	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0
4	0	0	0	0.0	0.0	0	0	0	0.0	0.0	0.0

3. Receptor Coordinates

RECEPTOR	X	Y	Z
1	15	15	13
2	30	30	13

REPORT FOR FILE : ket8

1. Site Variables

U=	1.0 M/S	ZO=	321.0 CM
ERG=	225.0 DEGREES	VD=	0.0 CM/S
CLASS=	F STABILITY	VS=	0.0 CM/S
MIXH=	1000.0 M	AMB=	0.0 PPM
SIGTH=	20.0 DEGREES	TEMP=	18.0 DEGREE (C)

2. Link Description

LINK	* DESCRIPTION	* X1	LINK COORDINATES (M)	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A.	1	0	0	-72	0	AG	1960	7.3	0.0	22.0	
B.	2	0	0	115	0	AG	1960	7.3	0.0	22.0	
C.	3	0	0	0	72	AG	1620	7.3	0.0	22.0	
D.	4	0	0	0	-72	AG	1746	7.3	0.0	22.0	

LINK	* L (M)	* R (M)	MIXW	STPL (M)	DCLT (SEC)	ACCT (MPH)	SPD	NCYC	NDLA	VPHO (G/MIN)	EFI (SEC)	IDT1 (SEC)	IDT2 (SEC)
A.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0	
B.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0	
C.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0	
D.	0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0.0	

3. Receptor Coordinates

RECEPTOR	1	X	Y	Z
RECEPTOR	1	15	15	1.3
RECEPTOR	2	30	30	1.3

MODEL RESULTS FOR FILE pch1

RECEPTOR		* PRED	* WIND *	COCN/LINK			
		* CONC	* ERG *	(PPM)			
		(PPM)	(DEG)*	A	B	C	D
RECPT	1	* 1.1	* 12	* 0.3	0.0	0.6	0.2
RECPT	2	* 0.7	* 24	* 0.2	0.0	0.4	0.1
RECPT	3	* 1.1	* 348	* 0.0	0.3	0.6	0.2
RECPT	4	* 0.7	* 336	* 0.0	0.2	0.4	0.1

MODEL RESULTS FOR FILE pch2

RECEPTOR		* PRED	* WIND *	COCN/LINK			
		* CONC	* ERG *	(PPM)			
		(PPM)	(DEG)*	A	B	C	D
RECPT	1	* 1.5	* 12	* 0.4	0.0	0.9	0.2
RECPT	2	* 0.9	* 23	* 0.2	0.0	0.6	0.1
RECPT	3	* 1.5	* 348	* 0.0	0.4	0.9	0.2
RECPT	4	* 0.9	* 337	* 0.0	0.2	0.6	0.1

MODEL RESULTS FOR FILE pch3

RECEPTOR		* PRED	* WIND *	COCN/LINK			
		* CONC	* ERG *	(PPM)			
		(PPM)	(DEG)*	A	B	C	D
RECPT	1	* 1.5	* 12	* 0.4	0.0	0.9	0.2
RECPT	2	* 0.9	* 23	* 0.2	0.0	0.6	0.1
RECPT	3	* 1.5	* 348	* 0.0	0.4	0.9	0.2
RECPT	4	* 0.9	* 337	* 0.0	0.2	0.6	0.1

MODEL RESULTS FOR FILE pch4

RECEPTOR		* PRED	* WIND *	COCN/LINK			
		* CONC	* ERG *	(PPM)			
		(PPM)	(DEG)*	A	B	C	D
RECPT	1	* 1.5	* 12	* 0.4	0.0	0.9	0.2
RECPT	2	* 0.9	* 24	* 0.2	0.0	0.5	0.1
RECPT	3	* 1.5	* 348	* 0.0	0.4	0.9	0.2
RECPT	4	* 0.9	* 336	* 0.0	0.2	0.5	0.1

MODEL RESULTS FOR FILE pch5

RECEPTOR		* PRED	* WIND *	COCN/LINK			
		* CONC	* ERG *	(PPM)			
		(PPM)	(DEG)*	A	B	C	D
RECPT	1	* 1.3	* 12	* 0.4	0.0	0.8	0.2
RECPT	2	* 0.8	* 23	* 0.2	0.0	0.5	0.1
RECPT	3	* 1.3	* 348	* 0.0	0.4	0.8	0.2
RECPT	4	* 0.8	* 337	* 0.0	0.2	0.5	0.1

MODEL RESULTS FOR FILE pch6

RECEPTOR	* PRED * CONC * (PPM)	* WIND * BRG *(DEG)*	A	B	C	D
RECPT 1	1.5	12	0.4	0.0	0.9	0.2
RECPT 2	0.9	24	0.2	0.0	0.5	0.1
RECPT 3	1.5	348	0.0	0.4	0.9	0.2
RECPT 4	0.9	336	0.0	0.2	0.5	0.1

MODEL RESULTS FOR FILE pch7

RECEPTOR	* PRED * CONC * (PPM)	* WIND * BRG *(DEG)*	A	B	C	D
RECPT 1	1.5	12	0.4	0.0	0.9	0.2
RECPT 2	0.9	23	0.2	0.0	0.6	0.1
RECPT 3	1.5	348	0.0	0.4	0.9	0.2
RECPT 4	0.9	337	0.0	0.2	0.6	0.1

MODEL RESULTS FOR FILE pch8

RECEPTOR	* PRED * CONC * (PPM)	* WIND * BRG *(DEG)*	A	B	C	D
RECPT 1	1.4	11	0.3	0.0	0.9	0.1
RECPT 2	0.9	22	0.2	0.0	0.6	0.1
RECPT 3	1.4	349	0.0	0.3	0.9	0.1
RECPT 4	0.9	338	0.0	0.2	0.6	0.1

MODEL RESULTS FOR FILE ket1

RECEPTOR	* PRED * CONC * (PPM)	* WIND * BRG *(DEG)*	A	B	C	D
RECPT 1	0.8	209	0.1	0.4	0.1	0.2
RECPT 2	0.5	225	0.2	0.2	0.1	0.1

MODEL RESULTS FOR FILE ket2

RECEPTOR	* PRED * CONC * (PPM)	* WIND * BRG *(DEG)*	A	B	C	D
RECPT 1	1.1	209	0.1	0.5	0.2	0.4
RECPT 2	0.7	225	0.2	0.2	0.2	0.1

MODEL RESULTS FOR FILE ket3

RECEPTOR	* PRED * CONC * (PPM)	* WIND * BRG *(DEG)*	A	B	C	D
RECPT 1	1.1	241	0.4	0.2	0.4	0.1
RECPT 2	0.7	225	0.2	0.2	0.2	0.1

MODEL RESULTS FOR FILE ket4

RECEPTOR	* PRED	* WIND	* CONC	* BRG	COCN/LINK (PPM)			
	(PPM)	(DEG)			A	B	C	D
RECPT 1	1.1	241	0.4		0.2	0.4	0.1	
RECPT 2	0.7	225	0.2		0.2	0.2	0.1	

MODEL RESULTS FOR FILE ket5

RECEPTOR	* PRED	* WIND	* CONC	* BRG	COCN/LINK (PPM)			
	(PPM)	(DEG)			A	B	C	D
RECPT 1	1.0	241	0.4		0.2	0.3	0.1	
RECPT 2	0.6	225	0.2		0.2	0.1	0.1	

MODEL RESULTS FOR FILE ket6

RECEPTOR	* PRED	* WIND	* CONC	* BRG	COCN/LINK (PPM)			
	(PPM)	(DEG)			A	B	C	D
RECPT 1	1.1	241	0.4		0.2	0.4	0.1	
RECPT 2	0.7	225	0.2		0.2	0.2	0.1	

MODEL RESULTS FOR FILE ket7

RECEPTOR	* PRED	* WIND	* CONC	* BRG	COCN/LINK (PPM)			
	(PPM)	(DEG)			A	B	C	D
RECPT 1	1.1	241	0.4		0.2	0.4	0.1	
RECPT 2	0.7	225	0.2		0.2	0.2	0.1	

MODEL RESULTS FOR FILE ket8

RECEPTOR	* PRED	* WIND	* CONC	* BRG	COCN/LINK (PPM)			
	(PPM)	(DEG)			A	B	C	D
RECPT 1	1.0	209	0.1		0.4	0.2	0.4	
RECPT 2	0.7	225	0.2		0.2	0.2	0.1	