

BUILDING STANDARDS COMMISSION

2525 Natomas Park Drive, Suite 130
Sacramento, California 95833-2936
(916) 263-0916 FAX (916) 263-0959



January 10, 2011

Edward F. Byrne, Chief Harbor Engineer
Engineering Division – Building Permit Group
Port of San Francisco
Pier 1
San Francisco, CA 94111

Dear Mr. Byrne,

This letter is to acknowledge receipt on December 22, 2010 of the Port of San Francisco submittal pertaining to Resolution NO. 10-82 with findings and is acceptable for filing. Per Health and Safety Code Section 17958.8 no modification or change to the California Building Standards Code shall become effective or operative for any purpose until the finding and the modification or change have been filed with the California Building Standards Commission (the Commission).

This letter attests only to the filing of these local modifications with the Commission, which is not authorized by law to determine the merit of the filing.

As a reminder, local modifications are specific to a particular edition of the Code. They must be readopted and filed with the Commission in order to remain in effect when the next triennial edition of the Code is published. In addition, should you receive Fire Protection District ordinances for ratification, it is required to submit the ratified ordinances to the Department of Housing and Community Development [H&SC Section 13869.7(c)], attention State Housing Law Program Manager, rather than the Commission.

If you have any questions or need any further information, you may contact me at (916) 263-0916.

Sincerely,


Jane Taylor
Senior Architect

cc: Chron
Local Filings



ENGINEERING DIVISION - BUILDING PERMIT GROUP

Pier 1
San Francisco CA 94111

Building Permit Desk (415) 274-0554

12/16/2010

Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833

RE: Amendments, additions and deletions to the California Standards Code adopted by the Port of San Francisco – Pursuant to H&S Code Sections 17958.7 and 18941.5

Dear Building Standards Commission,

Enclosed, please find:

1. A copy of Port of San Francisco Commission Resolution No 10-82 adopting the 2010 Port of San Francisco Building Code, Mechanical Code, Electrical Code and Plumbing Code, which adopts and amends the 2010 California Building Code, 2010 CAL Green Code, 2010 California Mechanical Code, 2010 California Electrical Code and the 2010 California Plumbing Code with administrative procedures.
2. A copy of the 2010 Port of San Francisco Building Code.

The submitted information includes standard findings expressive to each change to the existing building standard based on local climatic, geographical or topographical conditions.

We request you file this information and acknowledge such filing in writing. Should you have any questions on this matter, you may contact me at (415) 274-0564.

Sincerely,


Edward F. Byrne
Chief Harbor Engineer
Port of San Francisco
Engineering Division – Building Permit Group

20 DEC 22 PM 3:37
BUILDING STANDARDS COMMISSION

**PORT COMMISSION
CITY AND COUNTY OF SAN FRANCISCO**

RESOLUTION NO. 10-82

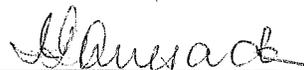
- WHEREAS, the Port of San Francisco derives its authority to regulate and permit building construction and improvements within its jurisdiction from the Burton Act (Chapter 1333 of the Statutes of 1968) and from relevant sections of the Agreement Relating to Transfer of the Port of San Francisco from the State of California to the City and County of San Francisco; and
- WHEREAS, the Port staff have established a Building Permit Group as part of the Port Engineering Division with the responsibility for enforcement, administration, and interpretation of building standards on Port property; and
- WHEREAS, the Port Engineering Division's Building Permit Group is considered a local building department; and
- WHEREAS, through Resolution 10-30, the Port Commission adopted the February 2010 edition of the 2008 Port Building Code based upon the 2007 California Building Standards Code (codified in Title 24 of the California Code of Regulations); and
- WHEREAS the 2010 Port Mechanical, Electrical, Plumbing, and Green Codes are included within the 2010 Port Building Code; and
- WHEREAS the 2010 Port Building Code has been published and made available for public review and comment; and
- WHEREAS Port staff have completed their review and drafting of the 2010 Port Building Code, have elicited public comment on the proposed Code, incorporated editorial revisions, and staff now recommend that the Port Commission adopt the 2010 Port of San Francisco Building Code; and
- WHEREAS, Port staff have developed the 2010 Port of San Francisco Building Code based on the 2010 California Building Standards Code with modifications that are reasonably necessary because of the Port's local climatic, geologic or topographical conditions, and incorporate building permitting administrative procedures appropriate to the Port's administrative structure; now, therefore, be it
- RESOLVED, that the Port Commission hereby adopts the 2010 Port of San Francisco Building Code, which includes the 2010 Port Mechanical Code, the 2010 Port Electrical Code, the 2010 Port Plumbing Code, and the 2010 Port Green Code and adopts and amends the 2010 California Building

Standards Code, the 2010 California Mechanical Code, the 2010 California Electrical Code, the 2010 California Plumbing Code, and the 2010 CalGreen Code with Port Code administrative procedures; and be it further

RESOLVED, the Port Commission authorizes and directs staff to file the new 2010 Port Building Code and local findings that support the Port's modifications of the 2010 state building code based on local climatic, geologic or topographical conditions, with the California Building Standards Commission no later than December 31, 2010; and be it further

RESOLVED, that the Port Commission hereby declares that upon such filing of the 2010 Port of San Francisco Building Code and local findings, the 2010 Port of San Francisco Building Code shall have the effective date of 12:01 a.m. January 1, 2011, which shall supersede and repeal the February 2010 edition of the 2008 Port of San Francisco Building Code in its entirety.

I hereby certify that the foregoing resolution was adopted by the San Francisco Port Commission at its meeting of December 14, 2010.



Secretary

**PORT OF SAN FRANCISCO
2010 BUILDING CODE**

STANDARD FINDINGS

1. **GEOLOGY.** More restrictive than CBC but justifiable on the basis of geology. Many structures and buildings within the Port of San Francisco's jurisdiction are at increased risk of seismic-induced structural failure and consequent fire due their age and to their proximity to hazardous micro-zones, slide areas, liquefaction hazards; and construction on filled tide lands in a high-risk seismic area.
2. **CLIMATE.** More restrictive than CBC but justifiable on the basis of climate. Many structures and buildings within the Port of San Francisco's jurisdiction are at increased risk due to high winds, their proximity to the corrosive atmospheric conditions of the San Francisco Bay and the densely populated areas of the City and County of San Francisco.
3. **TOPOGRAPHY.** More restrictive than CBC but justifiable on the basis of topography. Many structures and buildings constructed on finger piers over bay waters within the Port of San Francisco's jurisdiction are at increased risk for fire due to limited access for fire response to the side and rear elevations.
4. **TOPOGRAPHY.** More restrictive than CBC but justifiable on the basis of topography. Many structures and buildings constructed on finger piers over bay waters within the Port of San Francisco's jurisdiction which have limited access for maintenance and repair and are at increased risk for emergency response due to limited access to the side and rear elevations.
5. **TOPOGRAPHY.** More restrictive than CBC but justifiable on the basis of topography. Many structures and buildings constructed on finger piers over bay waters within the Port of San Francisco jurisdiction are at increased risk of adequate exit discharge due to their age and limited access to the public way from the side and rear elevations.
6. **TOPOGRAPHY.** More restrictive than CBC but justifiable on the basis of topography. Many structures and buildings constructed within the Port of San Francisco's jurisdiction are at increased risk for fire, emergency response and adequate exit discharge to the public way due to their age and narrow, crowded public ways throughout highly popularized, historical places of interest to the tourism and sight seeing industry.
7. **GEOLOGY, CLIMATE and TOPOGRAPHY.** More restrictive than CBC but justifiable on the basis of geology, climate and topography. Many structures and buildings within the Port of San Francisco's jurisdiction are at increased risk due to flood prone areas proximate to the San Francisco Bay. Additionally, the configuration of the San Francisco peninsula has made it difficult to install a storm water system separate from the sanitary sewer, so most of the City of San Francisco and the Port of San Francisco rain waters drain to the building drains and ultimately to the combined sewer. Unusual geology, rising tidal waters, occasional heavy rainfall and large areas of impervious material prohibiting natural drainage contribute to flooding and drainage problems, necessitating special requirements.
8. **GEOLOGY, CLIMATE and TOPOGRAPHY.** More restrictive than CALGreen but justifiable on the basis of geology, climate and topography. Due to its dense population, proximity to bay and ocean waters, topographical configuration, consumption of natural resources and quantity of waste materials, the City presents an elevated impact to the environment. The obligation to reduce greenhouse gas emissions, to limit the consumption of natural resources such as water and electricity, to improve air quality and to control and reduce the quantity of solid waste leading to landfills justifies the need for higher green building standards.
9. Not a building standard; no local findings required.

**2010 Port of San Francisco
BUILDING CODE FINDINGS**

Chapter 1A

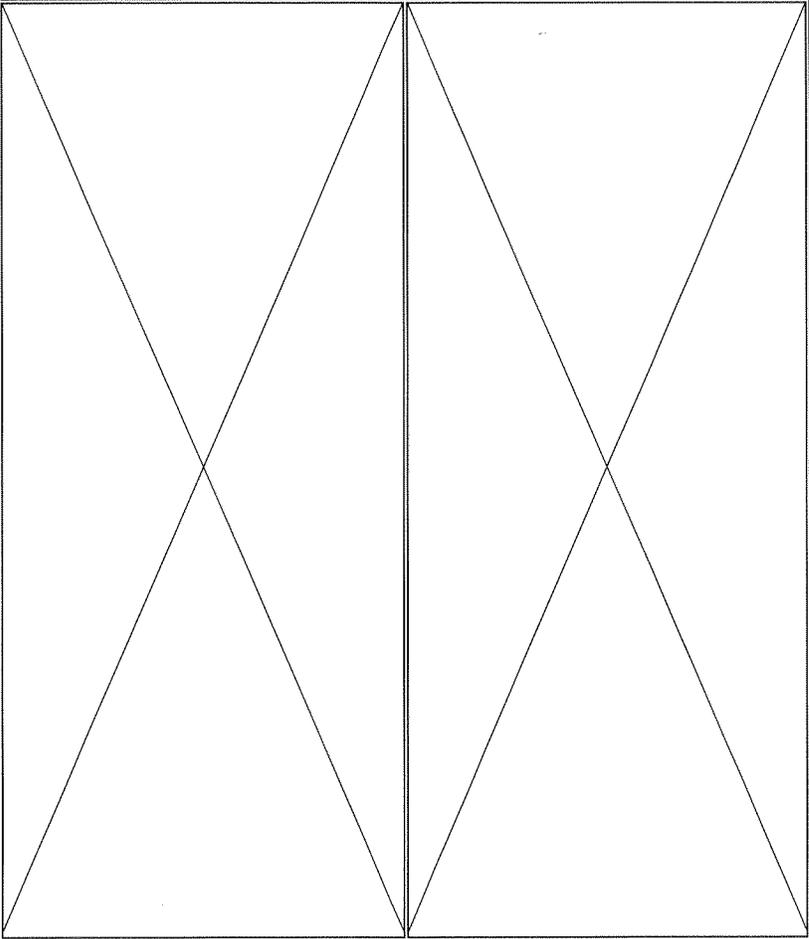
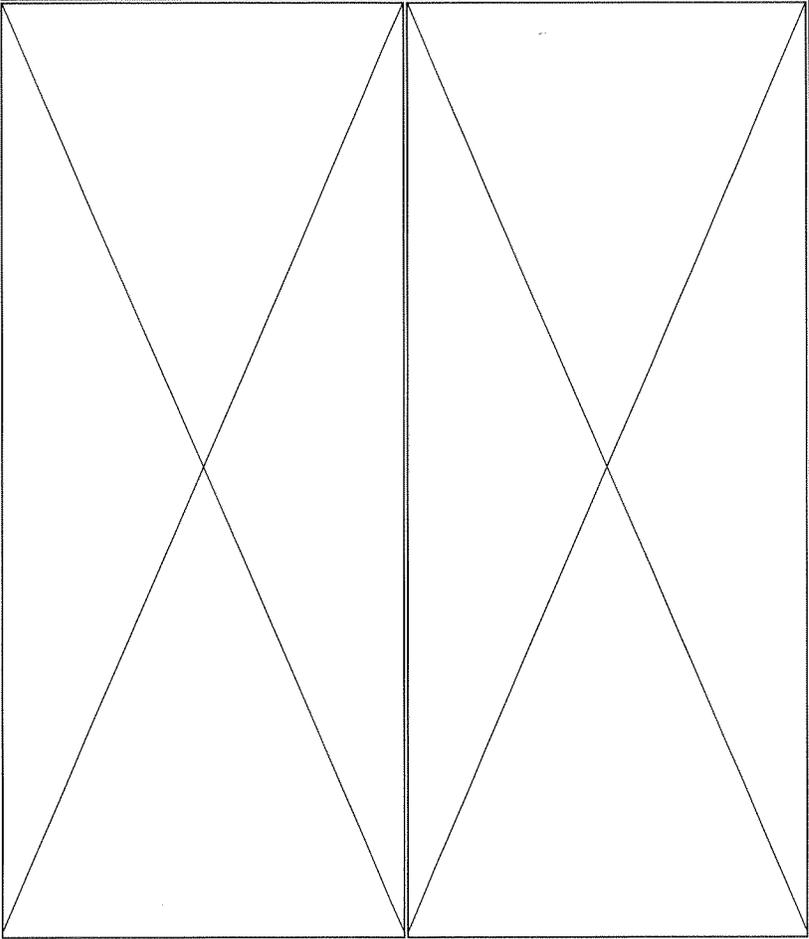
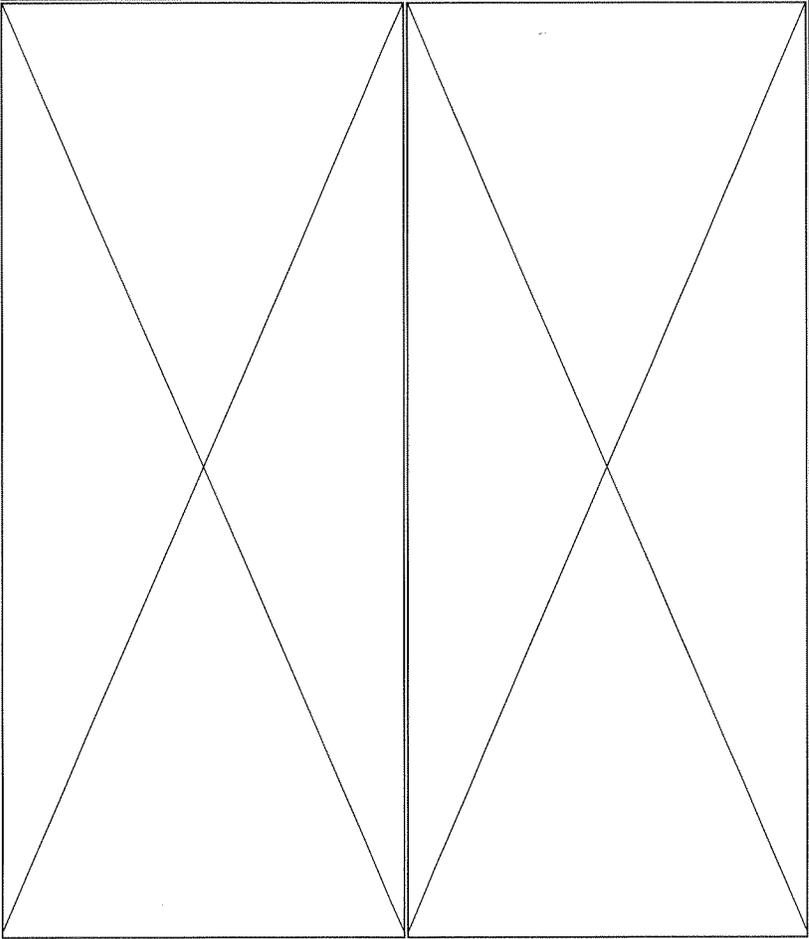
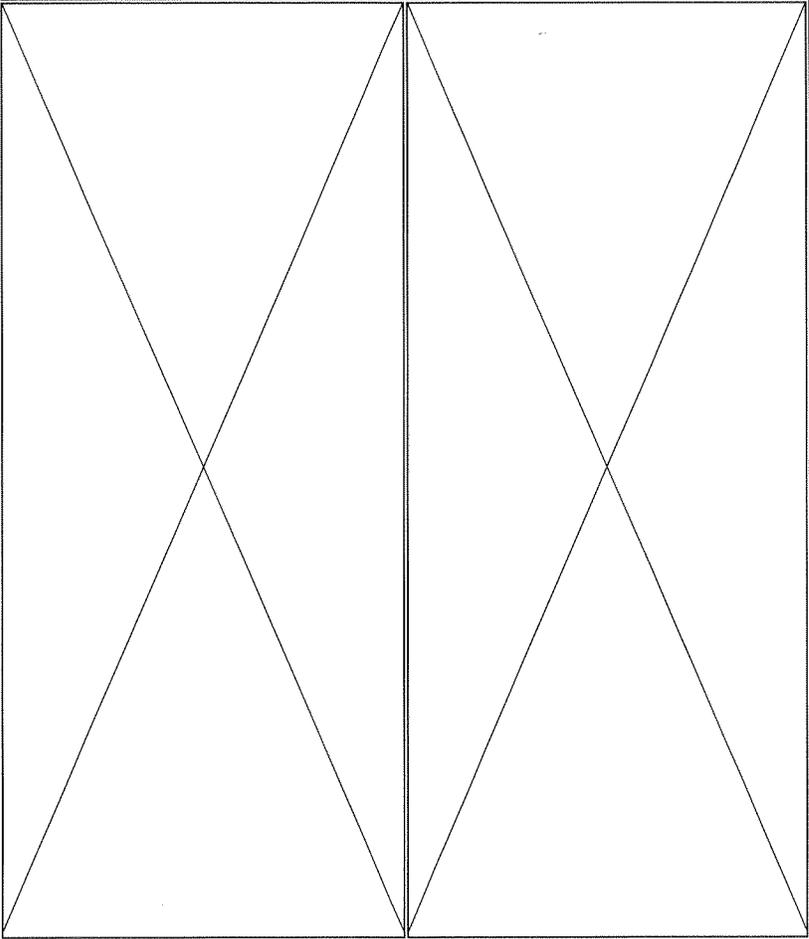
Administrative Finding # 9

Chapter 2

Administrative Finding # 9

SECTION #	FINDING #	SECTION #	FINDING #	SECTION #	FINDING #
Chapter 3 No PSF Amendments		903.2.8.1.1	1,6,7	Chapters 13A -13B -13C-13D Administrative 9 Geology Climate Topographic 8	
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Chapter 5 No PSF Amendments		T-903.2.11.6	1,6,7	Chapter 15	
Chapter 6		905.3.4	1,6,7	1501.1	9
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602.1.3	3,4,5	907.2.9.4	1,6,7	1505.1	1,3,4,6
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707.1	9	1001.1	9	1507.9	1,3,4,6
709.4	9	1009.11	9	1509.2	9
Chapter 7A No PSF Amendments		1011.1	9	1509.6	3,5
Chapter 8		Chapter 10A Administrative #9		1510.1	9
804.1	9	Chapters 11 - 11A - 11B - 11C No PSF Amendments		1510.7	9
Chapter 9		Chapter 12		Chapter 16 Administrative 9 Geology Climate Topographic 1,2,7	
901.4	3,4,6	1203.4	9,2	Chapter 16A No PSF Amendments	
902.1	9,3,4,6	1203.5	9,2	Chapter 16B Administrative 1 Geology Climate Topographic 1,7	
903.2.8	1,6,7	1205.2.2	2,5,6	Chapter 16C Administrative 1 Geology Climate Topographic 1,7	
903.2.8.1	1,6,7	Chapter 13 No PSF Amendments			

SECTION #	FINDING #	SECTION #	FINDING #	SECTION #	FINDING #
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1704.1	9	2304.11.2.6	3,4,6	3111(including subsections)	9,2
1704.5	1, 9	2304.11.4.2	9,2	Chapters 31B, 31C, 31E No PSF Amendments	
1704.5.4	9	2304.11.5	2	Chapter 31E Administrative #9 Geology Climate Topographic 1,2,3,4,5,6,7,	
1704.5.5	1, 9	Chapter 24 No PSF Amendments		Chapter 31F No PSF Amendments	
1704.6.3	1, 9	Chapter 25 No PSF Amendments		Chapter 32	
1704.15	1, 9	Chapter 26			
1704.17	1, 2,7, 9	2603.3	3,4,5	3201.4	2,7
1704.18	1, 2	2603.4.1.5	3,4,5	3202.3.1	2,6, 9
1704.19	1,2,6, 9	2603.6	3,4,5	3202.3.2	2,6
Chapter 17A No PSF Amendments		Chapter 27		Chapter 33	
Chapter 18 No PSF Amendments		2701.1	9	3302.3	9
Chapter 18A No PSF Amendments		Chapter 28		3303.1.1	1,2,9,
Chapter 19 No PSF Amendments		2801.1	9	3303.1.2	9
Chapter 19A No PSF Amendments		Chapter 29		3303.4	1,2, 9
Chapter 20		2901.1	9	3303.7	9
Chapter 21 No PSF Amendments		Chapter 30		3304.1	2,9
Chapter 21A No PSF Amendments		3008.1	9	3306.10	2,3,8
Chapter 22 No PSF Amendments		3008.2	9	3306.11	2,3,8
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		3103.1.1	9	3307.1	1,2,7,9

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Chapter 34					
Administrative Finding # 9					
Appendix J					
J103.2	9				
J104.3	9				
J109.5	7				
J112	9				

2010 Port of San Francisco GREEN CODE FINDINGS
See Building Code Chapter 13A Administrative #9 Geological, Climatic, Topographical Finding #8
See Building Code Chapter 13B Administrative #9 Geological, Climatic, Topographical Finding #8
See Building Code Chapter 13C Administrative #9 Geological, Climatic, Topographical Finding #8
See Building Code Chapter 13D Administrative #9 Geological, Climatic, Topographical Finding #8

**2010 Port of San Francisco
MECHANICAL CODE FINDINGS**

Chapter 1

Administrative Finding # 9

Chapter 2

Administrative Finding # 9

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Chapter 3 No PSF Amendments		1309.5.1.1.3	2	X	
Chapter 4 No PSF Amendments		Chapter 14 No PSF Amendments			
Chapter 5 No PSF Amendments		Chapter 15 No PSF Amendments			
Chapter 6 No PSF Amendments		Chapter 16 No PSF Amendments			
Chapter 7 No PSF Amendments		Chapter 17 No PSF Amendments			
Chapter 8 No PSF Amendments		Appendix A No PSF Amendments			
Chapter 9		Appendix B No PSF Amendments			
918.0	8,9	Appendix C No PSF Amendments			
Chapter 10		Appendix D No PSF Amendments			
1021.0	9	X			
1022.0	9				
1023.0	9				
1023.4	9				
Chapter 11 No PSF Amendments					
Chapter 12 No PSF Amendments					
Chapter 13					
1309.5.1.1.1	2				
1309.5.1.1.2	2				

**2010 Port of San Francisco
ELECTRICAL CODE FINDINGS**

Article 089
Administrative Finding # 9

Article 90
No PSF Amendments

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110.15	9	330.40	2	690.43	1,2,4
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210.5 (C)	9	352.10 (A)	3,4,5,6	760.130 (A)	6
230.43	6	358.10 (B)	2	760.130 (B)	6
230.56	9	358.12	2,3,4,5	760.180	1,2,3,5
230.71 (A)	3,4,5	362.10	2,3,4,5	Chapter 8 No PSF Amendments	
250.50	2,3,4,5	378.12 (6)	3,4,5		
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Chapter 3		410.36 (B)	1,3,4,5	Chapter 9 No PSF Amendments	
300.3 (C)	2,3,4,5	411.4 (A)	1,3,4,5		
300.4 (H)	2,6	Chapter 5 No PSF Amendments			
300.6	2				
312.2	2				

**2010 Port of San Francisco
PLUMBING CODE FINDINGS**

Chapter 1
Administrative Finding # 9

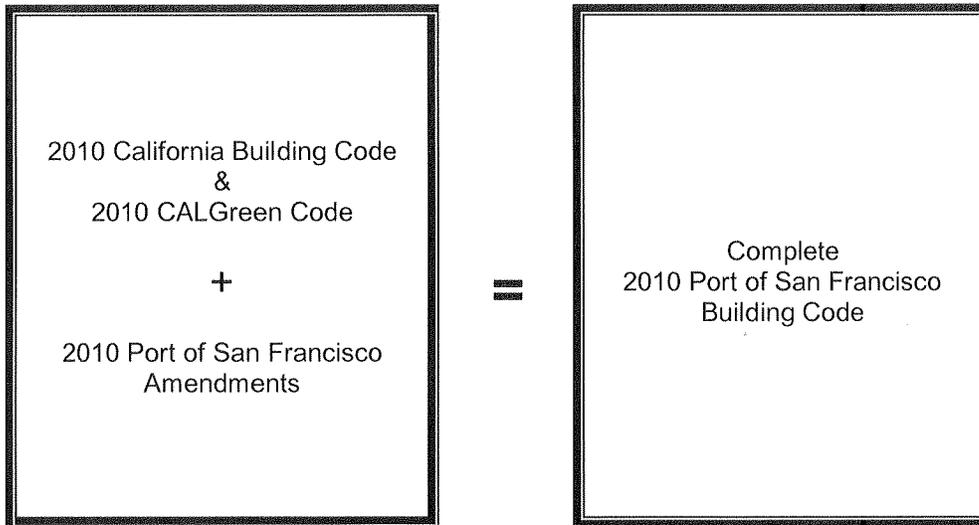
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Administrative Finding #9

SECTION #	FINDING #	SECTION #	FINDING #	SECTION #	FINDING #
Chapter 3		Chapter 9		Appendix A No PSF Amendments	
301.2	9	907.1	6	Appendix B No PSF Amendments	
306.2	7	907.3	9	Appendix D No PSF Amendments	
314.1	1,2,3,4,5	Chapter 10		Appendix G No PSF Amendments	
314.2	1,2	1016.2.1	6,7	Appendix I No PSF Amendments	
314.8	1,2	Chapter 11		Appendix K No PSF Amendments	
Chapter 4 No PSF Amendments		1101.1.1	7	Appendix L No PSF Amendments	
Chapter 5 No PSF Amendments		1101.1.2	7	X	
Chapter 6		1101.1.3	7		
603.4.6.5	9	Chapter 12			
604.1	2	1209.5.1.1.2	2		
605.9	6,7	1209.5.1.1.3	2		
Chapter 7		1209.5.1.1.4	1,2,3,4		
701.1.3	1,6,7	Chapter 13 No PSF Amendments			
701.1.7	6	Chapter 14 No PSF Amendments			
707.9	1,4	Chapter 15 No PSF Amendments			
710.1.1	1,6,7	Chapter 16 (Reserved)			
Chapter 8 No PSF Amendments		Chapter 16A No PSF Amendments			

2010 Port of San Francisco Building Code

The complete 2010 Port of San Francisco Building Code adopts and amends the 2010 edition of the California Building Code and the 2010 edition of the CALGreen Code.

Effective Date: January 1, 2011



PUBLISHER'S NOTE

To simplify the use of the Port of San Francisco amendments with corresponding sections of the 2010 California Codes, explanatory remarks appearing in italics are provided at the beginning of each amendment indicating whether the Port of San Francisco Amendments to the 2010 California Codes are adding, revising, or replacing a section or portion of a section.

Should you find publication (e.g., typographical) errors or inconsistencies in this code or wish to offer comments toward improving its format, please address your comments to:

Port of San Francisco
Engineering Division - Building Permit Group
Pier 1, The Embarcadero
San Francisco, CA 94111

Phone: (414) 274-0564
Fax: (415) 732-0420

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**Chapter 1
SCOPE AND ADMINISTRATION**

**DIVISION I
CALIFORNIA ADMINISTRATION**

No Port of San Francisco Code Amendments

**DIVISION II
SCOPE AND ADMINISTRATION**

*See Chapter 1A for the Administration provisions of the
Port of San Francisco Building Code*

2010 Port of San Francisco Building Code

2010 Port of San Francisco Building Code

Chapter 1A

ADMINISTRATIVE

Port of San Francisco adopts the following Chapter 1A for the purpose of administration of the 2010 Building Code. Certain specific administrative and general code provisions as adopted by various state agencies may be found in Chapter 1, Divisions I & II of this code.

SECTION 101A GENERAL

101A.1 Title. These regulations shall be known as the “2010 Port of San Francisco Building Code,” may be cited as such and will be referred to herein as “this code.” The 2010 Port of San Francisco Building Code amends the California Building Code and the 2010 Cal Green Code, which are Part 2 & 11, respectively, of the 12 parts of the official compilation and publication of the adoption amendment and repeal of the building regulations to the California Code of Regulations, Title 24, also referred to as the California Building Standards Code. The California Building Code incorporates by adoption the 2009 International Building Code of the International Code Council with necessary California amendments.

101A.2 Purpose. The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress, facilities, stability, access to persons with disabilities, sanitation, adequate lighting and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment; to regulate and control the demolition of all buildings and structures, and the quarrying, grading, excavation, and filling of land within the jurisdiction of the San Francisco Port Commission, as set forth within sections of Statutes 1968, ch.1333 (The Burton Act); and to provide safety to fire fighters and emergency responders during emergency operations.

The purpose of this code is to ensure that barrier-free design is incorporated in all buildings, facilities, site work and other developments to which this code applies and to ensure that they are accessible to and usable by persons with disabilities.

101A.3 Scope. The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout the Port of San Francisco, except work located primarily in a public way, public utility towers and poles, mechanical equipment not specifically regulated in this code and hydraulic flood control structures.

101A.3.1 Non-state regulated buildings, structures and applications. Except as modified and established through adoption by the San Francisco Port Commission pursuant to Section 1.1.8, the following standards in the California Code of Regulations, Title 24, Parts

2010 Port of San Francisco Building Code

2,2.5,3,4,5,6,8,9,10,11 and 12 shall apply to all occupancies and applications not regulated by a state agency.

101A.4 Appendices. Provisions contained in the appendices of this code shall not apply unless specifically adopted by a state agency or adopted by a local enforcing agency in compliance with Health and Safety Code Section 18938(b) for Building Standards Law, Health and Safety Code Section 17950 for State Housing Law and Health and Safety Code Section 13869.7 for Fire Protection Districts.

101A.5 Validity If any chapter section, subsection, sentence, clause or phrase of this code is for any reason held to be unconstitutional, contrary to statute, exceeding the authority of the state as stipulated by statutes, or otherwise inoperative, such decision shall not affect the validity of the remaining portion of this code.

101A.6 Reference documents. The codes, standards and publications adopted and set forth in this code, including other codes, standards and publications referred to therein are, by title and date of publication, hereby adopted as standard reference documents of this code. When reference is made in this code to the California Mechanical Code, California Electrical Code or the California Plumbing Code, it shall mean the California Mechanical Code, California Electrical Code or California Plumbing Code as adopted and amended by the San Francisco Port Commission through the 2010 Port of San Francisco Building Code, 2010 Port of San Francisco Mechanical Code, 2010 Port of San Francisco Electrical Code and the 2010 Port of San Francisco Plumbing Code.

When this code does not specifically cover any subject relating to building design and construction, recognized architectural or engineering practices shall be employed. The National Fire Codes and Fire Protection Handbook of the National Fire Protection Association are permitted to be used as authoritative guides in determining recognized fire-prevention engineering practices.

In the event of any differences between these building standards and the standard reference documents, the text of these building standards shall govern.

101A.7 Order of precedence.

101A.7.1 Specific provisions. Where a specific provision varies from a general provision, the specific provision shall apply.

101A.7.2 Conflicts. When the requirements of this code conflict with the requirements of any other part of the California Building Standards Code, Title 24, the most restrictive requirement shall prevail.

101A.7.3 Fire Codes. Nothing in these building standards shall diminish the requirements of the state fire marshal.

SECTIONS 101A.8 – 101A.20 Reserved

2010 Port of San Francisco Building Code

101A.21 Safety assessment placards. This section establishes standard placards to be used to indicate the condition of a building or structure after a natural or human-created disaster. A description of the placards to be used is set forth in Section 101A.21.2. The Chief Harbor Engineer and authorized representatives are authorized to post the appropriate placard at each entry point to a building or structure upon completion of a safety assessment. A safety assessment is a visual, nondestructive examination of a building or structure for the purpose of determining the condition for continued occupancy.

101A.21.1 Application of provisions. The provisions of this section are applicable to all buildings and structures of all occupancies within the jurisdiction of the San Francisco Port Commission as set forth within Section 3 of Statutes 1968, ch.1333 (The Burton Act).

101A.21.2 Description of placards. The Port of San Francisco shall use the standard form of placards that the Applied Technology Council has recommended. The recommended placards are revised from time to time. The actual placards shall be in a form that the Chief Harbor Engineer approves and shall be signed by the Chief Harbor Engineer. In addition, the Port of San Francisco designation, its address, and telephone number shall be permanently affixed to each placard. Each placard shall include the following language or its equivalent as determined by the Chief Harbor Engineer: Any unauthorized removal, alteration, or covering of this placard shall be considered a violation of the Port of San Francisco Building Code. A general description of the placards is as follows:

- 1. INSPECTED – LAWFUL OCCUPANCY PERMITTED (Green).** This placard is to be posted on any building or structure where no apparent structural hazard has been found. This placard is not intended to mean that there is no damage to the building or structure.
- 2. RESTRICTED USE (Yellow).** This placard is to be posted on each building or structure that is damaged to such an extent that restrictions on continued occupancy are required. The person or persons authorized to post this placard will note in general terms the type of damage encountered and will note with specificity any restrictions on continued occupancy.
- 3. UNSAFE – DO NOT ENTER OR OCCUPY (Red).** This placard is to be posted on each building or structure that is damaged to such an extent that continued occupancy poses a threat to life safety. Buildings or structures posted with this placard shall not be entered under any circumstance except as authorized in writing by the Chief Harbor Engineer or his or her authorized representative. Authorized safety assessment individuals or teams may enter these buildings at any time. This placard is not to be used or considered to be a demolition order. The person or persons authorized to post this placard will note in general terms the type of damage encountered.

101A.21.3 Removal or alteration prohibited. Once it has been attached to a building or structure, a placard is not to be removed, altered, or covered except by an authorized representative of the Chief Harbor Engineer or upon written notification from the Chief Harbor Engineer. Any unauthorized removal, alteration, or covering of a placard shall be considered a violation of this code.

2010 Port of San Francisco Building Code

EXCEPTION: A Green placard may be removed 60 days after posting.

SECTION 102A UNSAFE BUILDINGS, STRUCTURES OR PROPERTY

102A.1 General. All buildings, structures, property, or parts thereof, regulated by this code that are structurally unsafe or not provided with adequate egress, or that constitute a fire hazard, or are otherwise dangerous to human life, safety or health of the occupants or the occupants of adjacent properties or the public by reason of inadequate maintenance, dilapidation, obsolescence or abandonment, or by reason of occupancy not in conformance with this code, or were erected, moved, altered, constructed or maintained in violation of this code are, for the purpose of this chapter, unsafe.

Whenever the Chief Harbor Engineer determines by inspection that property or properties, either improved or unimproved, are unstable because of landslide, subsidence or inundation or that such occurrences are deemed imminent, the Chief Harbor Engineer shall give written notice to the owner or owners that said property or properties are unsafe. The notice shall specify the conditions creating the unsafe classification.

All such unsafe buildings, structures, property, or portions thereof, are hereby declared to be public nuisances and shall be vacated, repaired, altered or demolished as hereinafter provided.

102A.1.1 Fire hazard. No person operating any occupancy subject to these regulations shall permit any fire hazard, as defined in this section, to exist on premises under their control, or fail to take immediate action to abate a fire hazard when requested to do so by the Chief Harbor Engineer.

Note: "Fire hazard" as used in these regulations means any condition, arrangement or act which will increase, or may cause an increase of, the hazard or menace of fire to a greater degree than customarily recognized as normal by persons in the public service of preventing, suppressing or extinguishing fire; or which may obstruct, delay or hinder, or may become the cause of obstruction, delay or hindrance to the prevention, suppression or extinguishment of fire.

102A.2 Authority to enforce. Subject to other provisions of law, for administration, enforcement, actions, proceedings, abatement, violations and penalties in structures subject to State Housing Law, refer to Health and Safety Code Sections 17910 through 17995.5 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1.

102A.2.1 Mobile home parks and special occupancy parks. Subject to other provisions of law, for administrative, enforcement, actions, proceedings, abatement, inspections and penalties applicable to the Mobile home Parks Act, refer to California Health and Safety Code, commencing with Section 18200 and California Code of Regulations, Title 25, Division 1, Chapter 2.

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102A.2.2 Employee housing. Subject to other provisions of law, for administrative, enforcement, actions, proceedings, violations and penalties applicable to the Employee Housing Act, refer to California Health & Safety Code, Sections 17000 through 17062.5 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3.

102A.3 Inspections and complaints. The Chief Harbor Engineer is hereby authorized to inspect or cause the inspection of any building, structure or property for the purpose of determining whether or not it is unsafe in any of the following circumstances:

1. Whenever the Chief Harbor Engineer, with reasonable discretion, determines that such inspection is necessary or desirable.
2. Whenever any person files with the Chief Harbor Engineer a written complaint from which there is, in the Chief Harbor Engineer's opinion, probable cause to believe that the building, structure or property or any portion thereof, is unsafe.
3. Whenever an agency or Department of the City and County of San Francisco transmits to the Chief Harbor Engineer a written report from which there is, in the opinion of the Chief Harbor Engineer, probable cause to believe that the building, structure or property, or any portion thereof, is unsafe.

The Chief Harbor Engineer may rely on a written report transmitted from Port's Engineering Division or Maintenance Division Staff licensed in the category, to issue a Notice of Violation requiring, from the owner, a written analysis or report developed by a licensed professional addressing any unsafe conditions described in the transmitted report.

Upon the completion of any such inspection and the finding by the Chief Harbor Engineer of any condition which renders the building, structure or property unsafe, the Chief Harbor Engineer shall issue to the owner, or owner's agent, or post in or upon the building, structure or property in a conspicuous place, a Notice of Violation, which shall contain specific allegations, setting forth each code violation or condition the Chief Harbor Engineer has found, which renders the building, structure or property unsafe; any corrective action required; any time requirements for completion of any such corrective action and investigation fees set forth in this code . The Chief Harbor Engineer may notify the Port of San Francisco Real Estate Division of a Notice of Violation for possible action under lease agreement. The Port of San Francisco's cost of preparation for an appearance at the hearing required by Section 102A.4, and all prior and subsequent attendant costs, shall be assessed upon the person, agent, firm or corporation responsible for the building, structure or property to be deemed unsafe.

If the code violation or unsafe conditions observed at the building, structure or property have not been corrected within the time period stated in the Notice of Violation, the Chief Harbor Engineer shall serve a written Notice of Violation upon the owner of the building, structure or property specifying the failure to comply with the required corrective action with notification that the matter shall be set for a Chief Harbor Engineer's Hearing within 30 days of the serving of such Notice of Violation, and notice of such hearing shall be given as hereinafter provided. The owner may waive the hearing before the Chief Harbor Engineer and make a written request for

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a direct hearing before the Port Building Code Review Board in accordance with Section 105A of this code.

102A.4 Notice of Chief Harbor Engineer's Hearing.

102A.4.1 General. Notice of Hearing shall be given upon a form prescribed by the Chief Harbor Engineer. It shall set forth the Port of San Francisco's Facility Identification Number (FIN) and street address sufficient for identification of the property or premises upon which the building, structure or condition is located. It shall contain or be attached to copies of any notice of violation which specifies the code violations. It shall state the date, hour and place of the hearing and shall order all interested parties who desire to be heard in the matter to appear before the Chief Harbor Engineer, to show cause why the property, building or structure, or portion thereof, should not be ordered repaired, altered, vacated and repaired or altered, or vacated and demolished.

One copy of the Notice of Hearing and Notice of Violation, including the defined list of code violations, shall be posted in a conspicuous place upon the building or property, unless doing so is judged dangerous by the Chief Harbor Engineer.

One copy of the Notice of Hearing and Notice of Violation, including the list of code violations, shall be served upon each of the following:

1. The owner or holder of any lease of record or license to occupy the premises.
2. The person, if any, in real or apparent charge and control of the premises.

102A.4.2 Method of service. The notice of hearing shall be served on the owner, either personally or by certified or registered mail. Service by certified or registered mail shall be effective on the date of mailing the certified or registered letter is mailed, postage prepaid, return receipt requested, to each such person as their address appears on the last annual tax roll of the county or at the billing address on record with the Port of San Francisco Real Estate Division. The failure of any owner or other person to receive such notice shall not affect in any manner the validity of any proceedings taken hereunder.

102A.4.3 Proof of service. The person serving notice as provided herein shall file an affidavit or declaration thereof under penalty of perjury, certifying to the time and manner in which such notice was given. Such person shall also file therewith any receipt card of such notice by certified or registered mail. The notice shall be posted and served at least 10 days prior to the date set for the hearing.

102A.5 Hearing. The Chief Harbor Engineer's hearing shall be held, in public, at the time and place designated in the notice of hearing. For good cause shown, a hearing may be continued by the Chief Harbor Engineer, except that any such continuance shall not exceed 30 days and there shall be only one such continuance allowed. Subject to procedures prescribed by the Chief Harbor Engineer for the orderly conduct of the hearing, any person having an interest in the building, structure or property or having knowledge of facts material to the allegations of the

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notice of violation including the list of code violations, may present evidence for consideration by the Chief Harbor Engineer.

The Chief Harbor Engineer may designate a deputy who may act in place of the Chief Harbor Engineer as the hearing officer. The deputy shall have the same authority as the Chief Harbor Engineer to hear and decide the case and to make any order hereinafter provided for, or related to, the case.

102A.6 Decision. The Chief Harbor Engineer, after a full and fair consideration of the evidence and testimony received at the hearing, shall render within 30 days following the conclusion of such hearing, a decision in writing either dismissing the proceedings or, if finding that the building, structure or property, or portion thereof, is unsafe, ordering that it be repaired, altered, vacated and altered or repaired, or vacated and demolished.

102A.7 Contents of Chief Harbor Engineer's Order. The Order shall contain a statement of the particulars which render the building, structure, or property unsafe and shall contain a statement of work required to be done and the time requirements for the execution of the Order.

102A.7.1 Address. The Order shall set forth the Port of San Francisco's Facility Identification Number (FIN) and street address of the building or structure, sufficient for identification.

102A.7.2 Time. The Order shall specify the time within which the premises or portion thereof shall be vacated, if ordered, and the time within which the work required is to be commenced, which time shall not be in excess of 60 days from the date of the Order. The Order shall further specify a reasonable time, not to exceed six months from commencement, within which the work shall be completed.

102A.7.3 Extension for commencement. Upon written application of the owner and for good cause shown, and where no imminent risk to life and property is present, the Chief Harbor Engineer may grant, in writing, one extension of time not to exceed 90 days within which the required work must be commenced.

102A.7.4 Extension for completion. The time for completion may be extended by the Chief Harbor Engineer for good cause shown, except that such extension shall not exceed 90 days. Such extension shall be in writing upon the application of the owner and shall be limited to the minimum time necessary for completion. Only one such extension may be allowed.

102A.8 Posting and service of Order. A copy of the Order shall be posted in a conspicuous place upon the building, structure or property and shall be served in the manner above prescribed in the case of the notice of hearing, upon all persons to whom the notice of hearing is required to be served, and a copy shall be forwarded to Port's Real Estate Division.

102A.9 Compliance, Rescinding Order. When the property, building or structure or portion thereof that was determined to be unsafe, has been found to comply with requirements of the Chief Harbor Engineer as to rehabilitation, alteration, repair or demolition, the Chief Harbor Engineer shall issue an Order rescinding the original Order and shall forward such Order to Port's Real Estate Division.

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102A.10 Appeal of Order. Appeals of orders, decisions or determinations made by the Chief Harbor Engineer relative to the application and interpretation of this code, may be appealed to the Port Building Code Review Board provided the appeal is made in writing and filed in accordance with Section 105A of this code within 30 days after such order is posted or served. The decision of the Port Building Code Review Board shall be final.

102A.11 Prosecution of violation. If the statement of work required to be done and the time requirements for the execution of the Order are not complied with, the Chief Harbor Engineer is authorized to request the legal counsel of the jurisdiction to institute the appropriate proceeding at law or in equity to restrain, correct or abate such violation, or to require the removal or termination of the unlawful occupancy of the building, structure or nuisance in violation of the provisions of this code or of the Order made pursuant thereto.

102A.11.1 (Reserved)

102A.11.2 (Reserved)

102A.11.3 (Reserved)

102A.12 Failure to comply with Chief Harbor Engineer Order. Whenever an order to repair, alter, vacate and alter or repair, or vacate and demolish any building, structure or property, or portion thereof, has not been complied with within the time set by the Chief Harbor Engineer, or within such additional time as the Chief Harbor Engineer may for good cause extend, or within the time fixed by the Port Building Code Review Board, the Chief Harbor Engineer shall have the power, in addition to any other remedy provided herein or by law, to:

1. Cause the building, structure, property, or portion thereof, to be vacated, barricaded, or otherwise secured against use or occupancy pending the correction of all conditions ordered to be corrected, or pending demolition; or
2. Cause the building, structure, property, or portion thereof, to be dismantled or demolished and the site cleared by such means as the Chief Harbor Engineer shall deem advisable; or
3. Cause the building, structure, property, or portion thereof, to be repaired or altered, so as to render it safe and in compliance with applicable laws and ordinances, by such means as the Chief Harbor Engineer shall deem advisable.

Any work done pursuant to the authority herein shall be performed in accordance with the fees and rates for repair expenditure as contained in Section 102A.15 and with the established practices applicable to the Port of San Francisco.

102A.13 Forfeiture of owner's right to do work. Whenever, pursuant to Section 102A.12, the Chief Harbor Engineer intends to cause to be done any of the work described therein, the Chief Harbor Engineer shall provide notice in the manner set forth in Section 102A.4, of the Chief Harbor Engineer's intention to do such work, and shall specify a date certain upon which the Chief Harbor Engineer shall solicit bids to accomplish the necessary work, which shall be not sooner than 10 days from the date such notice is given. From and after said date certain the

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owner and every other person having charge or control over said building, structure or property shall be deemed to have forfeited all right to do such work and is thereafter prohibited from doing any such work except as the Chief Harbor Engineer may allow.

102A.14 Serious and Imminent hazards — Emergency Orders. Notwithstanding any other provisions of this chapter, whenever, in the judgment of the Chief Harbor Engineer, it appears from an inspection, written report transmitted in accordance with Section 102A.3 - item 3 or notice of violation, that there exists in, on, or near any building, structure, property, or portion thereof, any condition constituting an imminent and substantial hazard to the life, health or safety of the occupants or other persons, or to such building, structure, or property requiring immediate action to correct said condition, the Chief Harbor Engineer shall have the power to issue an order in writing detailing the serious and imminent hazard conditions and to require:

1. That the building, structure, property, or portion thereof, be vacated and thereafter be kept vacant until the Chief Harbor Engineer gives written permission that the same may be reoccupied, without giving the notice and holding the hearing prescribed in Sections 102A.4 through 102A.6, whenever, by reason of serious and imminent danger, immediate vacating of the premises, building, structure or property, or a portion thereof, appears necessary in the judgment of the Chief Harbor Engineer;
2. That the building, structure, property, or a portion thereof, be barricaded, boarded up, or otherwise secured against entry, occupancy or use by all persons, except as permitted by said order;
3. That the building, structure, property, or a portion thereof, be demolished or that serious and imminent hazard conditions be repaired, altered, corrected or eliminated in accordance with the particulars set forth in the order.

The order shall contain time frames required for compliance with the order and shall set forth the Port's Facility Identification Number (FIN) and address of the building or structure, or property.

In such cases of serious and imminent hazard, the order may be issued by the Chief Harbor Engineer without giving the notice and holding the hearing specified in Sections 102A.4 through 102A.6. A copy of said order shall be posted in a conspicuous place upon the building, structure, or property, a copy shall be served in the manner prescribed in Section 102A.4, and a copy shall be forwarded to Port's Real Estate Division.

The Chief Harbor Engineer shall have the further power under this section to cause or compel the work required under the order to be undertaken by such means as the Chief Harbor Engineer may deem advisable if the owner and all other persons having an interest in the building, structure, or property have failed, for a period of not more than 48 hours after the posting and service of the order, to comply with the order.

102A .15 Assessment of costs. The Chief Harbor Engineer shall request the legal counsel of the jurisdiction to take action to have the costs of all work done or caused to be done pursuant to the provisions of Section 102A.12 or Section 102A.14, including, the cost of barricading,

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securing, repairing, or demolishing the building and the clearing of the site, the cost to the Port of San Francisco for administration and supervision of such work assessed against the owner. See Section 110A, Table 1A-K — Investigation Fees, Hearings, Code Enforcement Fees and Table 1A-G – Inspections, Surveys and Reports — for applicable rates.

SECTION 103A VIOLATIONS

103A.1 General. It shall be a violation of this code for any person, firm or corporation to erect, construct, enlarge, alter, repair, move, improve, remove, convert or demolish, equip, use, occupy or maintain any building, structure, property, or portions thereof or cause or permit the same to be done in violation of this code.

SECTION 104A ORGANIZATION AND ENFORCEMENT

104A.1 Enforcement agency. The Port Commission, through the Chief Harbor Engineer, shall be the administering and enforcing agency under this code.

104A.2 General. For such purposes, the Chief Harbor Engineer is hereby authorized and directed to enforce all the provisions of this code.

104A.2.1 Port Code Procedures. The Chief Harbor Engineer shall have the power to render interpretations of this code and to adopt and enforce rules and supplemental regulations to clarify the application of its provisions. Such interpretations, rules and regulations shall be in conformance with the intent and purpose of this code. Such rules and regulations, commonly referred to as Port Code Procedures (PCP) supplemental to this code, shall not take effect until signed by the Chief Harbor Engineer except in unusual circumstances where the Chief Harbor Engineer has determined that there is an immediate need to protect the public health and safety. When the Chief Harbor Engineer finds that such circumstances exist, the Chief Harbor Engineer may order immediate enforcement of a particular rule or regulation.

NOTE: Port Code Procedures may be found at the back of this code.

104A.2.1.1 Floodplain management. As provided by Section 4.114 of the San Francisco Charter, the San Francisco Port Commission, acting by and through its Chief Harbor Engineer, is responsible for reviewing all development permit applications for buildings and structures within the Port Commission's jurisdiction. Upon adoption, this section sets forth the Port's Floodplain Management Program. All building standards for construction in Port areas designated by the City Administrator as flood prone shall be consistent with the requirements of applicable federal and state floodplain management regulations, as amended by the Port Building Code, as follows:

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- 1) California Building Code Section 1612 and ASCE 24-05 apply to buildings and structures within the Port Commission's jurisdiction that are any of the following "historic structures":
 - a) Listed individually in the National Register of Historic Places or preliminarily determined by the United States Secretary of the Interior ("Secretary") as meeting the requirements for individual listing on the National Register;
 - b) Certified or preliminarily determined by the Secretary as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
 - c) In a historic district that is listed in the National Register of Historic Places;
 - d) Individually listed on a state inventory of historic places in states with historic preservation programs that have been approved by the Secretary;
 - e) Individually listed on a local inventory of historic places in communities with historic preservation programs including, but not limited to, those structures that have been certified either by an approved state program as determined by the Secretary or directly by the Secretary in states with approved programs; or
 - f) Determined to be a historic resource in accordance with the City and County of San Francisco Planning Department's CEQA Review Procedures for Historic Resources.
- 2) For the purpose of the Port's Floodplain Management Program, the term "substantial improvement" means any reconstruction, rehabilitation, addition, or other proposed new development of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures that have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either:
 1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or
 2. Any alteration of, or attached exterior addition to, a historic structure, provided that the alteration or addition will not preclude the structure's continued designation as a historic structure.

The Chief Harbor Engineer shall post the rates at which market value will be calculated from time to time in the Port's Permit Application Procedure for Flood Prone Areas

104A.2.1.2 Floodplain variance. The Chief Harbor Engineer shall have the authority to hear, review and determine, on a case by case basis, whether a specific Floodplain Management variance shall be granted as follows:

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1. The Chief Harbor Engineer may grant a variance for new construction, substantial improvement, and other proposed new development. In addition, variances may be granted for development on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level.
2. With respect to a historic building or structure the Chief Harbor Engineer shall issue a variance in the following situations:
 - a) The variance applies to the repair or rehabilitation of a historic building or structure, and the applicable governmental agency has determined that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure; or
 - b) The variance applies to new construction, substantial improvement, or other proposed new development necessary for the conduct of a functionally dependent use, provided that structure is protected by methods that minimize flood damages during the base flood and that issuance of the permit does not result in additional threats to public safety or create a public nuisance. A "functionally dependent use" is a use that cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes, but is not limited to, docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, facilities that provide waterfront public access, and ship building and ship repair facilities.

104A.2.2 Deputies. In accordance with prescribed procedures and with the approval of the appointing authority, the Chief Harbor Engineer may appoint such number of technical officers and inspectors and other employees deemed necessary to assist with the enforcement duties and obligations required by this code. The Chief Harbor Engineer may deputize such inspectors or employees as necessary to carry out the functions of the code enforcement agency.

104A.2.3 Right of entry. When it is necessary to make an inspection to enforce the provisions of this code, or when the Chief Harbor Engineer has reasonable cause to believe that there exists in a building, structure, property or portions thereof, or upon a premises a condition that is contrary to or in violation of this code that makes the building or premises unsafe, dangerous or hazardous, the Chief Harbor Engineer may enter the building, structure, property or portions thereof, or premises at reasonable times to inspect or to perform the duties imposed by this code provided that if such building, structure, property or portions thereof, or premises is occupied that credentials be presented to the occupant and entry requested. If such building or premises is unoccupied, the Chief Harbor Engineer shall first make a reasonable effort to locate the owner or other person having charge or control of the building or premises and request entry. If entry is refused, the Chief Harbor Engineer shall have recourse to the remedies provided by law to secure entry.

104A.2.4 Stop Orders. Whenever any work is being done contrary to the provisions of this code, or other pertinent laws or ordinances implemented through the enforcement of this code, the Chief Harbor Engineer may order the work stopped by notice in writing served on any persons engaged in the doing or causing such work to be done, and any such persons shall forthwith stop such work until authorized by the Chief Harbor Engineer to proceed with the work.

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104A.2.5 Occupancy violations. Whenever any building, structure, equipment, property or portion thereof regulated by this code is being used contrary to the provisions of this code or the code in effect at the time the use was commenced, the Chief Harbor Engineer may order such use discontinued and the building, structure, equipment, property or portion thereof, vacated by notice served on any person involved in said use or causing such use to be continued. Such person shall discontinue the use within the time prescribed by the Chief Harbor Engineer after receipt of such notice to make the building, equipment, structure, property or portion thereof, comply with the requirements of this code; provided, however, that in the event of an unsafe building, equipment, structure or property the provisions of Section 102A shall apply.

104A.2.6 Liability. The Chief Harbor Engineer charged with the enforcement of this code, acting in good faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered personally liable for damages that may accrue to persons or property as a result of an act or by reason of an act or omission in the discharge of such duties. A suit brought against the Chief Harbor Engineer or employee because of such act or omission performed by the Chief Harbor Engineer or employee in the enforcement of any provision of such codes or other pertinent laws or ordinances implemented through the enforcement of this code or enforced by the code enforcement agency shall be defended by this jurisdiction until final termination of such proceedings, and any judgment resulting wherefrom shall be assumed by this jurisdiction. This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating or controlling any building or structure for any damages to persons or property caused by defects, nor shall the code enforcement agency or its parent jurisdiction be held as assuming any such liability by reason of the inspections authorized by this code or any permits or certificates issued under this code.

104A.2.7 Modifications. When there are practical difficulties involved in carrying out the provisions of this code, the Chief Harbor Engineer may grant modifications for individual cases. The Chief Harbor Engineer shall first find that a special individual reason makes the strict letter of this code impractical and that the modification is in conformance with the intent and purpose of this code and that such modification does not lessen any fire-protection requirements or any degree of structural integrity. The details of any action granting modifications shall be recorded and entered in the files of the code enforcement agency.

104A.2.8 Alternative materials, design and methods of construction. The provisions of this code are not intended to prevent the use of any material, alternate design or method of construction not specifically prescribed by this code, provided any alternate has been approved and its use authorized by the Chief Harbor Engineer.

The Chief Harbor Engineer may approve any such alternate, provided the Chief Harbor Engineer finds that the proposed design is satisfactory and complies with the provisions of this code and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in suitability, strength, effectiveness, fire resistance, durability, safety and sanitation.

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The Chief Harbor Engineer shall require that sufficient evidence or proof be submitted to substantiate any claims that may be made regarding an alternate's use. The details requesting any granting of approval of an alternate shall be described by the applicant in accordance with Sections 106A.3.2 and 106A.3.3 and submitted to the Chief Harbor Engineer with a letter of request for an alternative method of compliance. Such details of request and details of any action granting approval of an alternate shall be recorded and entered in the files of the code enforcement agency.

104A.2.8.1 Retention of original materials. Subject to other provisions of law, alterations, repairs, replacements, occupancy, use and maintenance provisions, and moved buildings are referenced in the State Housing Law, Health and Safety Code, Sections 17912, 17920.3, 17922 (c), 17922.3, 17958.8 and 17958.9 and California Code of Regulations, Title 25, Chapter 1 commencing with Section 1. Health and Safety Code Sections 17958.8 and 17958.9 are repeated here to provide clarity and read as follows:

Section 17958.8 Local ordinances or regulations governing alterations and repair of existing buildings shall permit the replacement, retention, and extension of original materials and the use of original methods of construction for any building or accessory structure subject to this part, including a hotel, lodging house, motel, apartment house, or dwelling, or portions thereof, as long as the portion of the building and structure subject to the replacement, retention, or extension of original materials and the use of original methods of construction complies with the building code provisions governing that portion of the building or accessory structure at the time of construction, and the other rules and regulations of the department or alternative local standards governing that portion at the time of its construction and adopted pursuant to Section 13143.2 and the building or accessory structure does not become or continue to be a substandard building.

Section 17958.9 Local ordinances or regulations governing the moving of apartment houses and dwellings shall, after July 1, 1978, permit the retention of existing materials and methods of construction so long as the apartment house or dwelling complies with the building standards for foundation applicable to new construction, and does not become or continue to be a substandard building.

104A.2.9 Tests. Whenever there is insufficient evidence of compliance with any of the provisions of this code or evidence that any material or construction does not conform to the requirements of this code, the Chief Harbor Engineer may require tests as proof of compliance to be made at no expense to this jurisdiction.

Testing methods shall be as specified by this code or by other recognized test standards. If there are no recognized and accepted test methods for the proposed alternate, the Chief Harbor Engineer shall determine test procedures.

All tests shall be made by an approved agency. Reports of such tests shall be retained by the Chief Harbor Engineer for the period required for the retention of public records.

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104A.2.10 Cooperation of other officials and officers. The Chief Harbor Engineer may request, and shall receive, the assistance and cooperation of other officials of this jurisdiction so far as is required in the discharge of the duties required by this code.

104A .3 Service of notices.

104A.3.1 Notices sent. Whenever a notice is required to be given under this code, unless stated otherwise, such notice may be given either by personal delivery to the person to be notified or by deposit in the United States mail in a sealed envelope, postage prepaid, addressed to the person to be notified at such person's last known business or residence address in Port Real Estate files. Service by mail shall be deemed to have been completed at the time of deposit in the United States mail.

104A.3.2 Proof of Notice. Proof of giving any notice may be made by the certificate of any officer or employee of the City and County of San Francisco or by affidavit of any person over the age of eighteen years, which shows service in conformity with the San Francisco Municipal Code or other provisions or law applicable to the subject matter concerned.

SECTION 105A APPEALS

105A.1 General. The secretary for the Port Building Code Review Board shall be selected by the Chief Harbor Engineer.

105A.2 Port Building Code Review Board (PBCRB). Provided that the public health, safety and welfare are secured and that substantial compliance with the intent and purpose of this code is maintained, there is hereby commissioned a Port Building Code Review Board to adjudicate issues and hear appeals relating to:

1. The granting or denying of any permit, or the revoking or refusing to revoke any permit under the current edition of the Port of San Francisco Building, Mechanical, Electrical and Plumbing Codes;
2. Any order of the Chief Harbor Engineer involving construction methods, assemblies or materials or where safety is involved.
3. Any order of abatement resulting from a Chief Harbor Engineer Hearing and any notice of violation order issued pursuant to Section 102A of the Port Building Code. See Section 110A, Table 1A-K - Investigation Fees, Hearings, Code Enforcement Fees – for applicable fee. Subject to the limitations on the PBCRB's authority pursuant to Section 105A.2.2, the PBCRB may uphold or reverse orders of abatement.

NOTE: Written appeals regarding action taken by the Chief Harbor Engineer in enforcement of barrier free design or physical accessibility shall be administratively processed through the Mayor's Office on Disability and/or the San Francisco Department of Building Inspection Access Appeals Commission.

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105A.2.1 Membership. The PBCRB will consist of five city staff members selected by Port Executive Director and approved by the Port Commission. Each member shall serve a maximum term of three years. The PBCRB will be composed of five members employed with the City and County of San Francisco and shall have technical skills and/or non-technical construction working experience related to construction. The PBCRB shall have a minimum of three technical members, who shall be a registered and/or licensed California structural engineer, architect, and utilities engineer, which may be an electrical, mechanical, fire protection engineer or certified building official. Three members, including a minimum of two (2) technical members, form a quorum. The Port Executive Director may appoint a replacement member for a single action to meet the minimum requirement for a quorum. Unless three or more members cast affirmative votes for the action, the PBCRB may not take any action.

105A.2.2 Limitations on authority. An application for appeal shall be based on a claim that this code or the rules adopted by this code have been incorrectly interpreted by the Chief Harbor Engineer in error. Upon the proper filing of an application for appeal, the PBCRB's review shall be limited to a review of the record for any error by the Chief Harbor Engineer, whose decision shall be reversed only upon a finding of such error. The PBCRB has no authority to waive requirements of this code.

105A.2.3 Applications to PBCRB. All applications for the review of the PBCRB shall be addressed in writing to the Chief Harbor Engineer, Port of San Francisco, Pier 1, The Embarcadero, San Francisco, CA 94111 and post marked within 30 days after the notice was given of the decision being appealed, and shall be filed by the Chief Harbor Engineer with the Secretary of the PBCRB within 14 days of receiving the letter of application. The PBCRB shall act upon each application without unreasonable or unnecessary delay.

105A.2.4 Fees. See Section 110A, - Table 1A-K – Investigation Fees, Hearings, Code Enforcement Fees– for applicable fee.

105A.2.5 Procedure. The PBCRB shall establish reasonable rules and regulations for conducting its business which are consistent with the provisions of this code and the Charter of the City and County of San Francisco and shall file such rules at the Port's Building Permit Desk for public review.

105A.2.6 Meetings. Public meetings of the PBCRB shall be held at the call of the Chief Harbor Engineer and at such times and places as the PBCRB may determine.

105A.2.7 Decisions by resolution. Details of any decisions and recommendations of the PBCRB shall be by resolution filed with the Chief Harbor Engineer and, when requested by the applicant, a written decision shall be mailed to the applicant or the applicant's designated agent.

SECTION 106A PERMITS

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106A.1 Permits required. Except as specified in Section 106A.2, no building or structure regulated by this code shall be erected, constructed, enlarged, altered, repaired, moved, improved, removed, converted or demolished unless a separate permit for each building, pier or structure has first been obtained from the Chief Harbor Engineer.

EXCEPTION: Special Events occurring on Piers 30 and 32 simultaneously may be permitted under a single permit.

106A.1.1 Separate permits required. Where buildings or structures are proposed to be constructed on top of a base structure, such as, but not limited to, a pier or wharf and such structures are likely to have their own addresses or functional identities, separate permits shall be required for the base structure and for each of the top buildings or structures.

EXCEPTION: When approved by the Chief Harbor Engineer, a single building permit to perform repair or maintenance work on an existing building or structure on top of an existing base structure may include, within the permitted work, repair or maintenance work on the existing base structure.

106A.1.2 Permit and fees for grading, excavation, or filling of land. The valuation for the permit shall be based on the volume of material to be handled, and on a cost schedule posted or otherwise available at Port's Building Permit Desk. The permit and plan review fees shall be the same as those for new construction. See Section 110A, Table 1A-A — Building Permit Fees, and Table 1A-B — Building Permit Application and Plan Review Fees. See Chapters 33, Chapter 18 and Appendix J-Grading for general grading provisions.

106A.1.3 Bi-Annual permit – Port Maintenance Division. In lieu of an individual building permit for each alteration to mechanical, electrical, plumbing or gas installations previously permitted, the Chief Harbor Engineer is authorized to issue a bi-annual (6 month) permit to the Port of San Francisco Maintenance Division, upon application there from, allowing qualified tradespersons to perform such alteration work.

In lieu of an individual building permit for a scope of work to add bearing or fender piles to existing wood framed aprons or repair such piles, the Chief Harbor Engineer is authorized to issue a bi-annual (6 month) permit to the Port of San Francisco Maintenance Division, upon application therefrom, allowing qualified tradespersons to perform such work when such work is performed under the direct observation of the Port of San Francisco Engineering Division.

106A.1.3.1 Bi-Annual permit records – Port Maintenance Division. Port of San Francisco Maintenance Division shall keep a detailed record of alterations and inspections made under such bi-annual permits and such records shall be made available to the Chief Harbor Engineer upon request.

106A.1.3.2 Bi-Annual permit inspections – Port Maintenance Division. All alteration work performed under a bi-annual permit shall be subject to inspection by the Chief Harbor Engineer, and all such alteration work shall remain accessible and exposed for inspection purposes until approved by the Chief Harbor Engineer. It shall be the duty of the Port Maintenance Division to

notify the Chief Harbor Engineer that such work is ready for inspection. It shall be the duty of the person(s) requesting the inspection to provide access and means for inspection of such work.

106A.1.4 Permits and fees for moving buildings or structures.

106A.1.4.1 General. The applicant for a permit for moving a building or structure shall pay a permit fee for documentation and inspection of the moving work. See Section 110A, Table 1A-F — Specialty Permit Fees — for applicable fee. A permit and plan review fee for work required at the building's new site shall be per Section 110A, Table 1A-A — Building Permit Fees, and Table 1A-B — Building Permit Application and Plan Review Fees. Note: A separate Port of San Francisco Encroachment Permit may be required.

106A.1.4.2 Permit application for new site. Before a permit may be issued for moving a building, a building permit must be obtained for the necessary alterations and additions to the building on the new site. The application for the alterations at the new site is to be accompanied by complete plans showing floor plans, elevations, plot plan, and such other information as contained in Section 106A.3.3 as may be required by the Chief Harbor Engineer.

106A.1.5 Permit and fees for demolition of buildings. A permit shall be required for demolishing any structure. See Section 110A, Table 1A-F — Specialty Permit Fees. See Section 3303 for general requirements.

106A.1.6 Permits and fees for chimneys, flues and shafts. Chimneys, flues and shafts, including Type I and II grease and steam hood and duct systems, shall require permits per Section 106A. Permit fees shall be based on Table 1A-A – Building Permit Fees.

106A.1.7 Permits and fees for temporary buildings or structures. A permit is required for the construction and erection of temporary reviewing stands, bleachers, grandstands and other miscellaneous structures. The Chief Harbor Engineer may require that any temporary building or structure be inspected by a registered civil engineer and found to be in compliance with all provisions of this code before it is permitted to be used by the public. See Section 107A for applicable fee.

106A.1.8 Permits and fees for special events. A Special Event permit is required for a temporary event that, in the Chief Harbor Engineer's determination, will:

1. Cause a temporary change in an existing occupancy, use or character of use.
2. Include the construction, installation or alteration of any buildings, structures, membrane structures or tent structures regulated by this code, including those regulated by Chapter 31E.
3. Include the construction, installation or alteration of any materials having an effect on an existing means of egress regulated by this code.
4. Include the construction, installation or alteration of any materials having an effect on any existing barrier-free accessibility provisions regulated by this code.

See Section 107A for applicable fees.

106A.1.9 Permits and fees for signs.

106A.1.9.1 General. A sign regulated under Chapter 31 shall not be erected or altered until a sign permit has been obtained for such work. Application for a Sign permit shall be made to the Port's Building Permit Desk. Where signs are illuminated by electric lighting, an electrical permit shall be obtained as required in the Electrical Code. See Section 110A, Table 1A-A - Building Permit Fees and Table 1A-E – Electrical Permit and Inspection Fees - for applicable fees.

EXCEPTION: Replacement, in kind, of the face of a sign, without affecting the structural members or the attachment to a building, structure, or the ground, shall not require a sign permit.

106A.1.9.2 Sign plan review fees. See Section 110A, Table 1A-B - Building Permit Application and Plan Review Fees – for applicable fees.

106A.2 Work exempt from permit. A building permit shall not be required for the following:

1. One-story detached accessory buildings or structures used as tool and storage sheds, playhouses and similar uses, provided the projected roof area does not exceed 120 square feet (11m²).
2. Fences not over 6 feet (1829 mm) high, including fences used as temporary crowd control barriers for public assembly of Special Events.
3. Amusement devices not on fixed foundations.
4. Movable cases, counters and partitions not over 5 feet 9 inches (1753 mm) high.
5. Retaining walls that are not over 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge or impounding Class I, II or III-A liquids.
6. Water tanks supported directly upon grade if the capacity does not exceed 5,000 gallons (18,927 L) and the ratio of height to diameter or width does not exceed 2:1.
7. Platforms, sidewalks, walks and driveways when not part of an exit, and not more than 30 inches (762 mm) above grade and not over any basement or story below and which, for residential buildings required to be accessible to persons with disabilities, are not part of a required accessible route.
8. Painting, papering and similar finish work.
9. Temporary motion picture, television and theater stage sets and scenery.
10. Minor repairs to existing interior plaster or wallboard, except when part of a fire- resistive assembly.
11. Prefabricated swimming pools accessory to a Group R, Division 3 Occupancy in which the pool walls are entirely above the adjacent grade and if the capacity does not exceed 5,000 gallons (18,927 L).

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12. State-owned buildings under the jurisdiction of the state fire marshal.
13. (Reserved)
14. Surface mounting of readily removable materials on interior walls.
15. Work performed on structures owned and occupied by the Federal or State government. This exemption shall not apply to structures erected on government- owned land, or to privately owned land or structures leased to the Federal or State government, or to structures owned and operated by State educational institutions unless such structures are owned and used exclusively for educational purposes or other uses related to the institution's educational purposes, such as student cafeterias or dormitories.
16. Installations or replacement of floor coverings in areas other than bathrooms and toilet rooms not requiring the removal of existing required flooring.
17. Repair and replacement of glazing in conformity with this code, and provided wire glass shall be replaced in kind.
18. Replacement of doors, except garage doors, in all occupancies, provided they are not part of fire-resistive assemblies required by this code.
19. The new installation of, or alteration to, an existing system of six or fewer automatic fire sprinkler heads.
20. Work performed on structures owned or leased by the City and County of San Francisco where the construction or modification of said structure is financed in whole or in part by the issuance of lease revenue bonds prior to July 1, 1989.
21. See Section 3107.1.1.2 for exempt signs.
22. See Section J103.2 for grading permit exemptions.
23. Installation of cameras, motion detectors, card readers and similar equipment for surveillance and security systems.

Note: Unless otherwise exempted, separate plumbing, electrical and mechanical permits shall be required for the above-exempted items.

Note: Exemptions from the permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinance of this jurisdiction.

106A.3 Application. To obtain a permit, the applicant shall first file an application in writing on a form furnished by the code enforcement agency for that purpose. Every such application shall:

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1. Identify and describe the work to be covered by the permit for which application is made.
2. Include a Facility Identification Number (FIN) and describe where the proposed work is to be done by Pier number, Shed number, Wharf number and address (if applicable).
3. For new buildings or structures, indicate the use or occupancy of all parts of the building or structure for which the proposed work is intended. For alteration work, indicate the proposed use or occupancy and the most current legal use or occupancy of all portions of the building or structure affected by or relevant to the proposed work.
4. Be accompanied by plans, diagrams, computations and specifications and other data as required in Section 106A.3.2.
5. State the valuation of any new building or structure or any addition, remodeling or alteration to an existing building.
6. Be signed by the owner, or the owner's authorized agent, who may be required to submit evidence to indicate such authority. Such agent shall be responsible for advising the owner of all conditions attached to the application by the various approving agencies.
7. Give such other data and information as may be required by the Chief Harbor Engineer.
8. Include the name, address and telephone number of the owner, and when available, the architect, engineer and contractor. When applicable, State and City license numbers shall be indicated.
9. Contain an agreement by the owner of the premises to hold harmless the Port of San Francisco and the City and County of San Francisco and its officials and indirectly, from use or occupancy of the sidewalk, street or sub-sidewalk space, employees from all costs, liability and damages resulting, whether directly or from anything in connection with the work included in the permit. The agreement shall run with the land and be binding on all of the owner's successors in title.

Applications are transferable without payment of additional fees when the new owner or owner's agent submits a letter to the Chief Harbor Engineer agreeing to all conditions of approval, stipulations and agreements contained on the application.

106A.3.1 Reviews prior to submittal. The Chief Harbor Engineer may require, prior to the receipt, filing and consideration of any permit application, that the prospective applicant submit the proposed work to other departments of the Port or other governmental agencies with jurisdiction over the proposed work, for review and approval. Such other departments or agencies may review the proposed work to verify compliance with any applicable regulations, laws, or orders under their jurisdiction or for any prior grant of rights or authorization for the proposed work required by the departments or agencies. Upon receiving such review and approval from other departments or agencies, the prospective applicant may file the permit application at the Port Building Permit Desk with appropriate documentation (provided by the Building Permit Group or the applicable agencies) showing such review and approval by other departments and agencies. Upon completion of the permit application as specified in the

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preceding Section 106A.3 and submittal of the documentation showing review and approval by the other departments or agencies, the application, plans, specifications and other information submitted may be referred for such review, and consideration and approval provided under this code.

106A.3.1.2 Application Processing. The application, plans, specifications and other information shall be reviewed in order of receipt, unless otherwise stated in this code.

106A.3.2 Submittal of documents. Plans, specifications, engineering calculations, diagrams, soil investigation reports, special inspection and structural observation programs and other data shall constitute the submittal documents for a permit. When such plans are not prepared by an architect, land surveyor, or an engineer, the Chief Harbor Engineer may require the applicant submitting such plans or other data to demonstrate that state law does not require that the plans be prepared by a licensed architect, land surveyor, or engineer. The Chief Harbor Engineer may require plans, computations and specifications to be prepared and designed by an engineer or architect licensed by the state to practice as such even if not required by State law. Materials submitted by a licensed architect, land surveyor, or engineer must be signed and sealed with an original signature. When a Sheet Index is provided on the first sheet of each set of documents, an original seal and signature shall be acceptable on the first sheet and facsimile stamps plus the required registration seal of the architect, land surveyor, or engineer on the balance of the sheets.

A minimum of two complete sets of plans and specifications and three copies of the soil investigation report (when required) shall be submitted. Additional complete sets of plans and specifications may be required for permit processing services that may be offered by the Port of San Francisco.

EXCEPTIONS: The requirements for plans or specifications may be waived by the Chief Harbor Engineer, provided that the nature and extent of the proposed construction can be clearly described in writing, and such a description is filed with the application.

106A.3.2.1 Incomplete applications. The Chief Harbor Engineer shall not process an application which is not completely or properly filled out pursuant to the requirements of this section. When the submittal documents do not contain the information required by this code the application shall not be accepted.

106A.3.2.2 Hazardous Wastes.

106A.3.2.2.1 Soil sampling and analysis required. Applicants for any building or grading permit which involves the disturbance of at least 50 cubic yards (38.23 m³) of soil shall comply with the requirements for soil sampling and analysis of Article 22A of the Public Health Code.

106A.3.2.2.2 Permit approval. No building permit application subject to the requirements of this section shall be approved until the Chief Harbor Engineer receives written notification from the Director of Public Health that the applicant has complied with all applicable provisions of Article 22A of the Public Health Code, or that the requirements have been waived.

Add the following section:

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106A.3.2.2.3 Review by Port. Port, at its sole discretion, on a case-by-case basis, may review and approve plans and applications subject to the requirements of this section. See applicable fees in Section 110A Table 1A-J — Miscellaneous Fees — for applicable fee.

106A.3.2.2.4 No Time Limits. For the purposes of completing the requirements of Section 106A.3.2.2, the time limitations set forth in Section 106A.3.7 of the Port of San Francisco Building Code do not apply.

Add the following section:

106A.3.2.3 Construction dust control.

106A.3.2.3.1 General dust control requirements. All projects that include site preparation work, demolition, or construction activities within the Port of San Francisco that have the potential to create dust or will expose or disturb more than 10 cubic yards or 500 square feet of soil as determined by the Chief Harbor Engineer shall comply with the requirements of this section whether or not the activities require a Building Permit.

106A.3.2.3.2 Practices required for all activities. The person(s) responsible for any such construction activities shall use the following practices to control construction dust on the project site or other practices that result in equivalent dust control that are acceptable to the Chief Harbor Engineer.

(a) Water all active construction areas sufficiently to prevent dust from becoming airborne. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour.

(b) Provide as much water as necessary to control dust (without creating run-off) in any area of land clearing, earth movement, excavation, drilling, and other dust-generating activity.

(c) During excavation and dirt-moving activities, wet sweep or vacuum the streets, sidewalks, paths, and intersections where work is in progress at the end of the workday.

(d) Cover any inactive (no disturbance for more than seven days) stockpiles greater than 10 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand, road base, and soil with a 10 mil (0.01 inch) polyethylene plastic or equivalent tarp and brace it down or use other equivalent soil stabilization techniques.

(e) Use dust enclosures, curtains, and dust collectors as necessary to control dust in the excavation area.

106A.3.2.3.3 Large sites. For projects that require a building permit and are over one half acre in size:

(a) SFDPH Approval. Applicants shall submit a Dust Control Plan for approval by the San Francisco Health Department as set forth in Article 22B of the San Francisco Health Code. No building permit application subject to the requirements of this section shall be approved until the Chief Harbor Engineer receives written notification from the Director of Public Health that the Applicant either has a site-specific Dust Control Plan for the project approved by the Director of Public Health or the Director of Public Health has waived the requirement and has not rescinded

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the waiver. The failure to comply with all provisions of the approved site-specific dust control plan shall be considered a violation of this code.

(b) Designation. Applicants shall designate person(s) who will be responsible for monitoring compliance with dust control requirements. The designated person(s) shall be on the site or available by telephone or other means during all times that site preparation, demolition or construction activities may be in progress, including holidays and weekends. The name and telephone number where such person(s) may be reached at all times shall be posted at the project site and provided to the Chief Harbor Engineer and to the Director of Public Health prior to commencement of work on the project.

106A.3.2.3.4 Small sites. For projects that require a building permit and are less than one half acre in size, the requirements set forth in Section 106A.3.2.3.3 apply, except that:

(a) Waiver of Requirements for Compliance. The Chief Harbor Engineer may waive any of the requirements of Section 106A.3.2.3 in writing if the Applicant demonstrates to the Chief Harbor Engineer's satisfaction that the proposed site preparation, demolition or construction activities are unlikely to result in any visible dust.

(b) Recession of Waiver. If at any time, contrary to the Applicant's assertions, the construction activities produce visible dust, the Chief Harbor Engineer may issue a written order rescinding the waiver. A copy of the recession order shall be served on the Applicant in accordance with Section 103A and posted on the job site.

(c) Compliance. If the Chief Harbor Engineer rescinds the waiver, the Applicant and the contractor or other persons responsible for construction activities at the site shall comply immediately with the dust control requirements in this section.

106A.3.2.3.5 Review by Port. Port, at its sole discretion, on a case-by-case basis, may review and approve a Dust Control Plan applying the standards set forth in Article 22B of the San Francisco Health Code. See Section 110A Table 1A-J — Miscellaneous Fees — for applicable fee.

106A.3.2.3.6 Permit notification. All building, demolition, excavation, grading, foundation, or other work that requires a permit under this Code issued by the Port shall bear notice of the above requirements and of the Applicant's responsibility to control construction dust on the site.

106A.3.2.3.7 Violations. The Chief Harbor Engineer is authorized to administer and enforce all provisions of this section and may enforce the provisions of this section by any lawful means available for such purpose, including taking actions authorized pursuant to Section 103A of this Code.

Add the following section:

106A.3.2.4 Stormwater control.

106A.3.2.4.1 Stormwater control plan required. All applicants for a building, demolition, excavation, grading, foundation, or other permit required by this Code to construct a new building, to demolish a building, to substantially alter or to add to an existing building shall comply with the requirements for stormwater control as articulated in the San Francisco Stormwater Design Guidelines ("Guidelines") and Article 4.2 of the San Francisco Public Works Code ("Stormwater Ordinance").

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106A.3.2.4.2 Permit approval. No building or other permit application subject to the requirements of this section shall be approved until the Chief Harbor Engineer or his/her designee has reviewed and approved the applicant's Stormwater Control Plan or determines that the applicant otherwise meets the requirements of the Guidelines. See Section 110A Table 1A-J — Miscellaneous Fees — for applicable fee.

106A.3.2.4.3 No Time limits. For the purposes of completing the requirements of this section, the time limitations set forth on Section 106A.3.7 of the Port of San Francisco Building Code do not apply.

106A.3.2.4.4 Violations. The Chief Harbor Engineer is authorized to administer and enforce all provisions of this section and may enforce the provisions of Section 106A.3.2.4 by any lawful means available for such purpose, including taking actions authorized pursuant to Section 103A of this Code.

106A.3.3 Information on plans and specifications. Plans and specifications shall be drawn to scale on substantial paper or cloth of a size not less than 11-inch by 17-inch (279.4 mm x 431.8 mm) and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that it will conform to the provisions of this code and all relevant laws, ordinances, rules and regulations. Electronic media documents are acceptable when approved by the Chief Harbor Engineer. Specific plans and information required shall include any of the following that is appropriate for the work being proposed:

1. Facility Identification Number on the first sheet or page of each set of plans and other submittal documents.
2. A dimensioned plot plan showing sidewalk widths, street widths, lot lines, lease lines, locations of proposed or existing buildings or structures on the property, and full widths, heights and setbacks of buildings on adjacent properties where their locations or heights affect the code requirements of the subject building or structure. Locations of parking or loading spaces and of above ground hydrants and utility poles shall also be shown. The Chief Harbor Engineer may require the owner to have the lot surveyed and staked by a registered land surveyor or registered civil engineer so that the proper location of the building on the lot, or site, may be determined. A copy of this survey shall be filed with the application for the permit.
3. All existing and future finished grades for new buildings or structures and additions to existing buildings or structures, including official curb and street grades.
4. Complete dimensioned exterior elevations showing types of wall materials, locations and sizes of wall openings, roof heights and setbacks from property lines. The existing and future exterior grade profiles on each side of the building extending to any adjoining buildings, structures or properties which might be affected by this work shown on the elevations unless a topographic map prepared by a licensed surveyor is submitted.
5. Dimensioned architectural floor plan for each floor, basement and roof unless the floor plans are identical. The scale shall be not less than 1/8 inch (3.175 mm) to 1 foot (304.8 mm) unless otherwise permitted by the Chief Harbor Engineer. The floor plan shall show the gross area of each use area on each floor, and the total area of each floor.

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Structural, mechanical and other detailed information shall not be superimposed unless the resultant floor plans are clearly legible and understandable.

6. For alteration work, all existing partitions and construction that are to be removed or altered and all that are to remain unchanged.
7. Identification on the architectural floor plans of the use or occupancy classifications of all new and existing areas of the building.
8. Cross-sections as necessary, including information on location and depth of footings of adjacent buildings or structures which might be affected by this work.
9. Information regarding all architectural and structural materials to be installed in the building.
10. Details of all fire-resistive assemblies and elements, including listed installation requirements, and provisions for maintaining the integrity of fire-resistive assemblies or elements where penetrated.
11. Information regarding the installation, location and support of building utilities, including plans for mechanical and plumbing systems, and electrical equipment, wiring and systems.
12. Structural plans and calculations detailing all components of the vertical load carrying system, including joists, beams, girders, columns, bearing walls and locations and depths of footings. Connection details and cross-sections to show how the loads are transferred and carried from the roof to the foundation. Live load clearly designated on the plan for each use area.
13. Structural plans and calculations detailing all elements of the lateral force resisting system, including horizontal and vertical diaphragms, connections and details that completely identify the lateral force load path from the roof to the foundation.
14. Special inspection and structural observation program required by Sections 106A.3.5, 1704 and 1709.
15. Information on plans demonstrating compliance with applicable requirements of Section 1612 for construction within flood hazard areas.
16. Geotechnical report when work involves significant grading, excavation or fill, or uses special foundations; or when the site is included in the State of California Seismic Hazard Zones Map, Special Soils Map or other area identified by the Chief Harbor Engineer. See Appendix J - Grading, for additional grading permit requirements.
17. Hydraulic design drawings and calculations for sprinkler systems and standpipes.
18. Information on plans demonstrating compliance with energy conservation requirements.

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19. Information on plans demonstrating compliance with applicable sound transmission requirements.
20. Information on plans to adequately demonstrate the incorporation of barrier free design for all buildings, facilities, site work and other improvements in accordance with Section 109.1 for compliance with state law for persons with disabilities.
21. Information on plans demonstrating compliance with water conservation and reclamation requirements.
22. Landscaping and irrigation plans, when required by the Port Planning and Development Division, Department of Public Works or other agencies to verify compliance with any applicable laws under their jurisdiction.
23. For a building that is an unsafe structure as defined in Section 102A, sufficient information to show how all unsafe conditions will be corrected.
24. All other information as determined by the Chief Harbor Engineer necessary for determining compliance with applicable codes and regulations.

106A.3.4 Architect or engineer of record.

106A.3.4.1 General. When it is required that documents be prepared by an architect or engineer, the Chief Harbor Engineer may require the owner to engage and designate on the building permit application an architect or engineer who shall act as the architect or engineer of record. If the circumstances require, the owner may designate a substitute architect or engineer of record who shall perform all of the duties required of the original architect or engineer of record. The Chief Harbor Engineer shall be notified in writing by the owner if the architect or engineer of record is changed or is unable to continue to perform the duties.

The architect or engineer of record shall be responsible for reviewing and coordinating all submittal documents prepared by others, including deferred submittal items, for compatibility with the design of the building.

106A.3.4.2 Deferred submittals. For the purpose of this section, deferred submittals are defined as those portions of the proposed design not submitted at the time of application for an alteration permit that include the alteration of the existing, or the installation of new, mechanical, electrical, plumbing, sprinkler or fire alarm systems required for the scope of work.

All deferred submittals shall be listed on the lead sheet of proposed plans as Deferred Submittals at the time of submittal. Deferral of any submittal items shall be subject to the Chief Harbor Engineer's approval. The holder of a permit with deferred submittals shall proceed without assurance that the deferred submittals will be approved.

Note: See Section 106A.4.1.1 for phased approval of proposed work to a building or structure.

Note: See Section 108A for inspection requirements.

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106A.3.5 Inspection and observation program. When special inspection is required under Chapter 17, the architect or engineer of record shall prepare an inspection program that shall be submitted to the Chief Harbor Engineer for approval prior to issuance of the building permit. The inspection program shall designate the portions of the work that require special inspection and the name or names of the individuals or firms who are to perform the special inspections, and indicate the duties of the special inspectors.

The special inspector shall be employed by the owner, the engineer or architect of record, or an agent of the owner, but not the contractor or any other person responsible for the work.

When structural observation is required under Chapter 17, the inspection program shall name the individuals or firms who are to perform structural observation and describe the stages of construction at which structural observation is to occur.

The inspection program shall include samples of inspection reports and provide time limits for submission of reports.

106A.3.6 (Reserved)

106A.3.7 Cancellation of application during processing. An application for a permit for any proposed work shall be deemed to have been abandoned 180 days after the date of filing and shall be cancelled in accordance with Section 106A.3.8 by the Chief Harbor Engineer, unless such application has been pursued in good faith or a permit has been issued; except that the Chief Harbor Engineer is authorized to grant one or more extensions of time for additional periods not exceeding 90 days each. The extension shall be requested in writing and shall demonstrate justifiable cause.

When the processing of an application is delayed due to actions before the PBCRB or other city agencies, or any court of competent jurisdiction, or is under review by a state or regional regulatory body, the time period for expiration shall be computed from the date of the final action at the agency or court of jurisdiction.

106A.3.8 Disapproval of application. Any application that is abandoned or that does not meet the requirements of this code or the approval of any interested bureau, department or agency of this jurisdiction in compliance with Section 106A.4.1 shall be disapproved by the Chief Harbor Engineer or upon request by the applicant. If such a request is not made, the application shall be held in abeyance for 21 days and then canceled as provided for in Section 106A.3.7. The Chief Harbor Engineer shall notify the applicant by certified mail 21 days prior to any cancellation action.

106A.3.8.1 Withdrawal of application. Applications filed for permits may be withdrawn by the owner, provided that no part of the work proposed on the application has been performed and the request for withdrawal is in writing.

106A.3.9 Cancellation of approved application. The Chief Harbor Engineer shall cancel an application 120 calendar days after notification of approval was mailed to the applicant if the applicant has failed to pay any outstanding fees and obtain the permit. The Chief Harbor

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Engineer shall notify the applicant by certified mail 21 days prior to any cancellation action. If the permit is not obtained within those 21 days, the application shall be deemed canceled without further action by the Chief Harbor Engineer. Upon written request by the applicant prior to cancellation, a one-time 60-day extension may be granted by the Chief Harbor Engineer, provided such extension had not been previously granted under Section 106A.3.7 above. See Section 110A, Table 1A-J — Miscellaneous Fees — for applicable fee.

EXCEPTIONS:

1. For applications resulting from enforcement actions initiated by the Chief Harbor Engineer to abate code violations, the above time limits shall be reduced to 30 days and 10 days, respectively. The Chief Harbor Engineer may grant a 30-day extension for hardship or procedural error.
2. The above time limits shall not apply to applications which are subject to the work without permit investigation fee per Section 110A, Table 1A-K — Investigation Fees, Hearings, Code Enforcement Fees. Such applications shall be canceled only through specific action by the Chief Harbor Engineer.

106A.4 Permit issuance.

106A.4.1 Issuance. The application, plans, specifications, computations and other data filed by an applicant for a permit shall be reviewed by the Chief Harbor Engineer. In granting or denying any permit, or revoking or refusing to revoke any permit, the Chief Harbor Engineer may consider those factors in Section 26(a) and (b) of the City and County of San Francisco Business and Tax Regulations Code, including the effect of the proposed business or calling upon surrounding property and upon its residents, and inhabitants thereof.

When the Chief Harbor Engineer issues the permit where plans are required, the Chief Harbor Engineer shall endorse in writing or stamp the plans and specifications APPROVED. Such approved plans and specifications shall not be changed, modified or altered without authorization of the Chief Harbor Engineer, and all work regulated by this code shall be done in accordance with the approved plans.

106A.4.1.1 Phased approval. The Chief Harbor Engineer may issue a permit for the construction of foundations or any other part of a building or structure before the entire plans and specifications for the whole building or structure have been submitted or approved, provided adequate information and detailed statements have been filed complying with all pertinent requirements of this code. The holder of such permit for the foundation or other parts of a building or structure shall proceed at the holder's own risk with the building operation and without assurance that the permit for the entire building or structure will be granted.

Note: See Section 106A.3.4.2 Deferred Submittals for deferred work to the mechanical, electrical, plumbing, sprinkler or fire alarm systems within the proposed scope of work for an alteration permit.

Note: See Section 108A for inspection requirements.

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106A.4.1.2 Transfer of permit. Permits are transferable without payment of fees when the new owner submits a letter to the Chief Harbor Engineer agreeing to all conditions of approval, stipulations and agreements contained on the approved application.

106A.4.2 Retention of approved construction documents. One set of approved construction documents shall be stamped Field Copy by the Chief Harbor Engineer and provided to the party obtaining the permit. The owner shall be responsible for keeping these documents stapled or bound together as a set and on the building site at all times and making them available for inspection and use by the Port Building inspector during such construction until final inspection has been approved; failure to do so shall result in stoppage of work. The approved construction documents shall not be changed, modified or altered without authorization from the Chief Harbor Engineer; all work shall be done in accordance with these documents.

One set of approved construction documents for all building permits shall be stamped File Copy and retained by the Chief Harbor Engineer in reproducible form as public records. (See Table 1A-L - Public Information - for applicable fees)

106A.4.3 Validity of permit. The issuance of a permit or approval of plans and specifications shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other applicable laws and regulations. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid.

The issuance of a permit based on plans, specifications and other data shall not prevent the Chief Harbor Engineer from thereafter requiring the correction of errors in said plans, specifications and other data, or from preventing building operations being carried on there under when in violation of this code or other applicable laws and regulations.

106A.4.4 Expiration. Every permit issued by the Chief Harbor Engineer under the provisions of this code shall expire by limitation and become invalid unless the building or work authorized by such permit is commenced within 180 days from the date of issuance of such permit, or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the time the work has been commenced or when any of the following circumstances is applicable:

1. For Special Event permits, the permit shall expire by limitation and become invalid 14 days after the time specified for the event, or if the work authorized by such permit is not commenced within 14 days after the time specified for the event to occur, or if the work authorized by such permit is suspended or abandoned for a period of 14 days after the time the work has been commenced, whichever occurs later. The maximum time limit for a Special Event permit shall be 180 days from the date of issuance.
2. For code compliance permits ordered by the Chief Harbor Engineer per Section 102A, the work shall start within 30 days from the date of such permit, unless a longer time period is specified in writing by the Chief Harbor Engineer.

Except for Special Events, an extension of time may be granted, provided a Request for Extension of Time for Building Permit form is submitted to the Building Permit Desk prior to the end of the time period accompanied by payment of a fee. Unless directly approved by the Chief

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Harbor Engineer, no more than three extensions of time may be granted. Inspection fees as set forth in Section 107A will be charged for any inspections performed at the Chief Harbor Engineer's request in order to determine the extent of work for which the extension is requested in addition to fees charged for administration and time extensions. Individual time extensions shall not exceed the following time periods:

1. For code compliance permits ordered by the Chief Harbor Engineer – 30 days for permits with a valuation of \$25,000.00 or less; 12 months for permits with a valuation exceeding \$25,000.00.
2. 180 days for permits with a valuation of \$2,000,000.00 or more.
3. A time limit for completion that is required by the corrective action on a Notice of Violation issued under a code enforcement case, unless directly approved by the Chief Harbor Engineer.
4. 90 days for all other permits.

EXCEPTION: Permits issued to the Port of San Francisco shall automatically be extended without a Request for Extension for the duration of the current edition of this code.

No extension of time shall be granted for Special Event permits.

When a permit is issued but delayed due to actions before the PBCRB or other agency, or any court of competent jurisdiction, or is under review by a state or regional regulatory body, the time period for expiration shall be computed from the date of the final action of the agency or court of jurisdiction.

106A.4.4.1 Commencement of work on permit expired due to work not started. For permits expired with no record of work being started, a new application shall be filed and no work shall commence until a new permit is obtained. If not more than one year has elapsed since the expiration of the original permit, the applicant is eligible for reduced fees, see Section 110A, Table 1A-B Building Permit Application and Plan Review Fees. All other applicable fees in Section 110A, Table 1A-A shall be collected in the full amount. To qualify for the reduced fees, the original approved plans and specifications issued in accordance with Sections 106A.4.1 and 106A.4.2 to the owner shall be submitted with the new application, together with a notarized certification that there are no changes made on those plans and specifications.

In the event a refund has been granted upon request of the applicant prior to commencement of the work, the provisions of this section shall not apply and a new permit shall be applied for and all fees shall be required to be paid.

106A.4.4.2 Recommencement of work on permit expired due to work not completed. For permits expired with no record of a final inspection and approval, in accordance with Section 108A.5.9, a new application shall be filed and no work shall commence until a new alteration permit is obtained for the work not completed. See Section 110A, Table 1A-F —Specialty Permit

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Fees — for applicable fee to defray cost of verifying site conditions. The permit fee shall be based upon the valuation of the uncompleted work. When the permit is for completing the work as shown on the original approved plans, no additional plan review fee shall be required.

Where illegal or unsafe conditions are to be corrected, the Chief Harbor Engineer shall have the authority to establish, at the time the application for the permit is approved, a reasonable time within which such alterations authorized by the permit shall be completed.

106A.4.5 Suspension or revocation. The Chief Harbor Engineer may, in writing, suspend or revoke a permit issued under the provisions of this code, whenever the permit is issued in error or on the basis of incorrect information supplied, or in violation of any ordinance or regulation of any of the provisions of this code.

Any permit issued for which the applicant has paid less than the correct permit and plan checking fees shall be considered invalid and shall be suspended until the complete fees have been paid. Failure to pay the correct fees shall be sufficient grounds for denial of a Certificate of Completion or a Certificate of Final Completion and Occupancy.

106A.4.6 Additional work, permit required. When an approved permit has been issued, a separate alteration permit shall be required for any change in work or additional work as set forth hereafter. The fees for such additional work shall be as set forth in Section 110A, fee tables, based on the difference in the valuation between the changed work and that of the original permit. The valuation shall be not less than \$1. See Section 107A.5 – Investigation Fees for applicable investigation fees. Situations which require a separate permit include the following:

1. The construction differs from the approved plans or construction documents, which, according to the Chief Harbor Engineer, requires revised plans or additional plans to be submitted for approval and/or documentation, including changes in partition layout that impact other code requirements, changes in framing directions, spans, and locations of concentrated loads, and changes in types of materials used. See Section 110A, Table 1A-F - Specialty Permit Fees - for the assessment for this type of additional work.
2. Any changes to any building or structure which alter the exterior dimensions more than 6 inches (152.4 mm) in either a vertical or horizontal dimension or alters the visual appearance through changes in exterior, such as wall materials or windows.
3. The value of the additional work or the value of the changes exceeds 10 percent of the valuation of the approved permit work or \$50,000 whichever is the lesser amount. For changes not exceeding 10% of the valuation or \$50,000, additional fees shall be required as stated in Section 110A Table 1A-A for the difference in valuation of the additional work or changes and the original permit; however, the Chief Harbor Engineer may determine a separate building permit is not required. All approved changes shall be documented, signed and dated by the reviewer or building inspector approving the change and the plan preparer of record.
4. A change in occupancy or character of use, as defined in this code.

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5. A change in the construction type of any portion of the building.
6. For any additional work the Chief Harbor Engineer determines necessary to abate any condition hazardous to the property or public.
7. There is any condition, as determined by the Chief Harbor Engineer, which requires a permit to be processed to protect the interest of the public.

Revised plans and plan review fees, including back check fees, shall be required for any such change or additional work.

106A.4.7 Replacement of approved construction documents. When the permit holder's set of approved construction documents are not available as required by Section 106A.4.2, the Chief Harbor Engineer may require the applicant to submit, at the applicant's sole expense, a duplicate set of documents along with a notarized certification that such documents are identical to the approved construction documents except for notations by the Port of San Francisco and City agencies. The Chief Harbor Engineer may then use the identical set to create a "duplicate" set for issuance. Back check fees shall be required in accordance with Table 1A-B. If identical documents are not available from the applicant, Port may have file copies duplicated by a private party at the applicant's sole expense.

See Section 110A, Table 1A-L - Public Information - for applicable fee.

106A.4.8 Pre-application plan review. When a party wishes to discuss specific design issues or submit preliminary designs for review and comment by the Chief Harbor Engineer prior to formal application for a permit, a request for pre-application plan review must be submitted in accordance with PCP-007 and appropriate fees, to the Chief Harbor Engineer. See Section 110A, Table 1A-B - Building Permit Application and Plan Review Fees - for applicable fees.

Note: See 107A.9 for pre-application surveys or inspections.

106A.4.9 Outside consultants for plan review of mechanical, electrical and plumbing plans. When an application for a permit contains mechanical, electrical or plumbing component(s) sufficient in scope or complexity to require a mechanical, electrical or plumbing plan review, the Chief Harbor Engineer may contract or employ a private entity or person on a temporary basis to perform such plan review service. See Section 110A, Table 1A-G – Inspections, Surveys and Reports - for applicable fees.

106A.4.10 Review of mechanical plans. When an application for a permit contains a mechanical component (separate from or in addition to energy conservation design) sufficient in scope or complexity to require a mechanical plan review, a fee for this service shall be assessed and is payable before issuance of the permit. See Section 110A, Table 1A-B - Building Permit Application and Plan Review Fees - for applicable fee.

106A.4.11 Review of electrical plans. When an application for a permit contains an electrical component (separate from or in addition to energy conservation design) sufficient in scope or complexity to require an electrical plan review, a fee for this service shall be assessed and is

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payable before issuance of the permit. See Section 110A, Table 1A-B - Building Permit Application and Plan Review Fees – for applicable fee.

106A.4.12 Review of plumbing plans. When an application for a permit contains a plumbing component sufficient in scope or complexity to require a plumbing plan review, a fee for this service shall be assessed and is payable before issuance of the permit. See Section 110A, Table 1A-B - Building Permit Application and Plan Review Fees - for applicable fee.

SECTION 107A FEES

107A.1 General. Fees shall be assessed in accordance with the provisions of this section or shall be as set forth in the fee schedule adopted by the jurisdiction.

107A.1.1 Administrative costs fee. An Administrative Costs Fee for Services and Regulatory Functions Provided and Not Included in Another Fee shall be Assessed and Charged to the Applicant or Persons Requesting the Service or Regulatory Function See Section 110A, Table 1A-J — Miscellaneous Fees — for applicable fee.

107A.1.2 Exemption from fees. The fees provided for in this chapter shall not apply to permits issued to perform work on buildings which are owned and occupied by the Federal or State governments. The fees provided for in this chapter shall not apply to permits issued to the Port of San Francisco for work that is performed for the Port of San Francisco including Bi-Annual permits for Port Maintenance in accordance with Section 106A.1.3. The San Francisco Housing Authority shall be exempt from all permit fees in this chapter except the strong motion instrumentation fee.

107A.2 Permit fees. The permit fee per Section 110A, Table 1A-A - Building Permit Fees - shall be paid at the time an application for a building permit is filed and shall be credited toward the final permit fee due at the time of permit issuance. The New Construction Permit Fee Schedule applies to new buildings or structures. The Alteration Permit Fee Schedule applies to alterations, repairs, additions or other work on an existing building or structure, or to the modification of the scope of an approved permit as required by Section 106A.4.6.

The determination of value or valuation under any of the provisions of this code shall be made by the Chief Harbor Engineer. The value to be used in computing the building permit and building plan review fees shall be the final valuation upon completion of all construction work for which the permit is issued, as well as all finish work, painting, roofing, mechanical, electrical, plumbing, heating, air conditioning, elevators, fire-extinguishing systems and all other permanently installed equipment and construction, even though other permits to perform such work may be required.

The valuation shall be calculated at the time of permit issuance according to a cost schedule available through Port Engineering Division. The cost schedule shall be subject to annual

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adjustment based on value construction cost data reported by an approved engineering firm experienced in valuating construction projects for the area. Contractor overhead and profit shall be reflected in the schedule. The Port Building Code Review Board is authorized to waive the annual cost schedule adjustment if it determines that increasing the fees will exceed the cost of providing the services for which the fees are paid.

107A.3 Plan review fees. When submittal documents are required by Section 106A.3.2, a plan review fee shall be paid at the time of filing an application for a building permit for which plans are required pursuant to Section 106A.3.2. Said plan review fee shall be based on the valuation determined by Section 107A.1. See Section 110A, Table 1A-B - Building Permit Application and Plan Review Fees - for applicable fee.

The plan review fees specified in this section are separate fees from the permit fees specified in Section 107A.2 and are in addition to the permit fees.

When submittal documents are incomplete or changed so as to require additional plan review or when the project involves deferred submittal items as defined in Section 106A.3.4.2, an additional plan review fee shall be charged as shown in Section 110A, Table 1A-B - Building Permit Application and Plan Review Fees.

107A.3.1 Reduced plan review fee. A reduced plan review fee shall be collected for reviewing submittal documents identical to those filed within one year of the original approved construction documents for which the full plan review fee was paid. For this purpose, plans may be considered identical when they contain only such minor differences as exterior finishes, or if they are identical but opposite hand. See Section 110A, Table 1A-B - Building Permit Application and Plan Review Fees - for the second and each subsequent set of identical submittal documents within the stated time period. To obtain this reduction, the applicant shall submit a copy of the original approved construction documents for which the full plan review fee was paid.

When the submittal documents are substantially changed from those that were previously approved, an additional plan review fee shall be charged. This fee shall be the fee indicated in the schedule of fees for the value of the portion of the building or structure affected by such changes.

107A.4 Expiration of plan review. See Section 106A.3.7.

107A.5 Investigation fees: Work without a permit. Whenever any work, for which a permit is required under the provisions of this code, has been started without a permit, a special investigation fee shall be paid by the applicant before a permit may be issued for such work. See Section 110A, Table 1A-K – Investigation Fees, Hearings, Code Enforcement Fees - for applicable fee. Where only a portion of the work has been commenced without a permit, the investigation fee shall be based upon the portion of the work done without a permit.

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The owner or owner's agent may appeal the amount of the investigation fee by filing a request for appeal in accordance with Section 105A of this code.

The Port Building Code Review Board, in reviewing the appeal of the investigation fee assessed for doing work without a permit, may reduce the amount of said fee, but in no case shall such reduced investigation fee be less than any accrued pre-application or standard inspection fees stated in Section 110A, Tables 1A-C, 1A-D and/or 1A-G.

EXCEPTION: The Chief Harbor Engineer may reduce the investigation fee to two times the amount of the permit fee as called for in Section 110A, Table 1A-A - Building Permit Fees - of this code for work that was constructed prior to the current building ownership, provided that substantiating documentation is provided.

107A.6 Fee refunds.

107A.6.1 Permit fee refunds. When an issued permit has expired and no work has been performed, the building permit fees and mechanical, electrical and plumbing permit and inspection fees paid shall be refundable upon written request of the owner when such request is made within one year of the permit expiration. When a project has been abandoned prior to expiration and no work has been performed, the permit may be revoked upon written request of the owner to revoke the permit due to abandonment of the project and the building, mechanical, electrical and plumbing permit and inspection fees paid shall be refundable upon written request of the owner when such request is made within 1 year of the permit revocation. See Section 110A, Table 1A-R - Refunds - for applicable refund and Section 110A, Table 1A-F —Specialty Permit Fees — for applicable fee to defray cost of verifying site conditions.

107A.6.1.1 Plan review fee refunds. When an application is withdrawn in accordance with Section 106A.3.8.1, the plan review fee paid shall be refundable upon a written request from the owner in the case where no site inspection had been made and plan review had not started within any division of the Port of San Francisco, or City Department. See Section 110A, Table 1A-R – Refunds – for applicable refund. For other cases, the amount of refund, if any, shall be determined by the Chief Harbor Engineer, based on the amount of time spent for permit processing work performed at the time of withdrawal. Requests for refunds must be made within 30 days of withdrawal.

107A.6.2 Fees in error. If the Chief Harbor Engineer determines that an error has been made in the assessment of fees, a refund for overcharges shall be made to the applicant by the Port of San Francisco. For undercharges, additional fees shall be requested from the applicant in writing by the Chief Harbor Engineer. Failure to pay additional fees may result in an order to stop work and suspension or revocation of the permit in accordance with Section 104A.2.4 and Section 109A.6. See Section 110A, Table 1A-R - Refunds - for applicable refund.

107A.7 Strong motion instrumentation fee. Pursuant to the provisions of Section 2705 of the Public Resources Code of the State of California, a fee shall be assessed for all building permits except demolitions and signs. See Section 110A, Table 1A-F - Specialty Permit Fees - for

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applicable fee. All such fees collected shall be handled in accordance with the provisions of Section 2706 of said Public Resources Code.

107A.7.1 Strong motion revolving fund. That portion of the strong motion instrumentation fee retained by the Port of San Francisco as provided for in Section 2705(c)1 of the Public Resources Code of the State of California shall be allocated in the Port of San Francisco Budget Engineering Business Plan to *improve the preparation for damage assessment* as provided for in Section 2705(c)2 of the Public Resources Code of the State of California. Monies from this fund shall be used, subject to the approval of the Chief Harbor Engineer, to defray personnel and equipment costs incurred in carrying out the State mandate.

107A.7.2 Green building standards fee. Pursuant to the provisions of California Health and Safety Code Sections 18930.5, 18931.6, 18931.7 and 18938.39 related to building materials, cities and counties are required to assess a fee for all building permits. See Section 110A, Table 1A-J for applicable fee. All such fees shall be handled in accordance with the provisions of Section 18931.7 of said Health and Safety Code.

107A.7.3 Technology surcharge on permits. A technology surcharge is established on the cost of building permit applications processed by the Port of San Francisco. The fee is for cost recovery for specialized license fees, maintenance of computer hardware, and computer software that are instrumental in the Port's ability to provide efficient service and maintain accurate records. See Section 110A, Table 1A-J for applicable fee.

107A.8 Delinquent fees/dishonored checks. Permits will not be issued to any person having outstanding or delinquent balances or dishonored checks on file with the Finance and Administration Division, Port of San Francisco.

107A.9 Survey. A site survey for a building inspector or staff engineer comments on code compliance or structural aspects of an existing building or structure may be obtained by submitting a Service Request Application at the Building Permit Desk with appropriate fees. See Section 110A-G for applicable fees.

107A.10 Premises identification and Facility Identification Numbers. Premises shall be identified for emergency response in the manner described in Section 501.2 of this code. For permit processing, every applicant shall obtain from the Port of San Francisco and thereafter provide an official Facility Identification Number (FIN) for processing applications for work that requires a building permit. The FIN must be provided to the Port of San Francisco when submitting an application for a building permit. The applicable fees are stated in Section 110A, Table 1A-J - Miscellaneous Fees - for applicable fees.

107A.11 Fees for reproduction of reports, records and documents for the public.

107A.11.1 General. Applicants shall pay a fee to the Port of San Francisco for copies of inspection reports, records, and documents. The fee shall be paid before reproduction of the materials. Fees shall be chargeable to all persons, as well as City Departments. When such

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reproduction is in response to subpoenas of records, the attorney requesting such records shall be required to pay the fees.

107A.11.2 Reproduction fees. The fees shall be determined based upon the actual cost per page number of pages and time for administrative services. Reproduced material shall be retrieved at the Building Permit Desk. See Section 110A, Table 1A-L – Public Information – and Table 1A-J - Miscellaneous Fees - for applicable fees.

SECTION 108A INSPECTIONS

108A.1 General. All construction or work for which a permit is required shall be subject to inspection by the Chief Harbor Engineer, and all such construction or work shall remain accessible and exposed for inspection purposes until approved by the Chief Harbor Engineer. In addition, certain types of construction shall have continuous inspection by special inspectors as specified in Section 1701.

Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Inspections presuming to give authority to violate or cancel the provisions of this code or of other ordinances of the jurisdiction shall not be valid.

It shall be the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes. Neither the Chief Harbor Engineer nor the jurisdiction shall be liable for expense entailed in the removal or replacement of any material required to allow inspection.

In the absence of clear physical characteristics to identify the legal boundaries of the lot, site, or location to which a building permit has been or may be issued, the Chief Harbor Engineer may require the owner or applicant to have the lot surveyed and staked by a registered land surveyor, or registered civil engineer, to ensure determination of the proper location of the building or construction on the lot. A copy of this survey shall be filed with the application for the permit.

108A.2 Job record card. Any work requiring a permit shall not begin until the permit holder or the permit holder's agent posts an inspection record Job Record Card on the site. This card shall be issued at the time of permit issuance by the Chief Harbor Engineer. The card must be posted in a conspicuous and readily accessible location for documentation of inspection history. The Job Record Card must remain on the job site until a final inspection of all work stated in that permit has been completed. After final inspection, the card may be removed and retained as part of the building owner's record.

108A.3 Inspection requests. It shall be the duty of the person doing the work authorized by a permit to notify the Chief Harbor Engineer that such work is ready for inspection. The Chief

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Harbor Engineer may require that every request for inspection be filed at least one working day before such inspection is desired. Such request may be in writing or by telephone at the option of the Chief Harbor Engineer.

It shall be the duty of the person requesting any inspections required by this code to provide access to and means for inspections of such work.

108A.3.1 Off-hour inspections. Applicants who seek inspections outside normal inspection hours (7:30 a.m. to 3:30 p.m., Monday through Friday, excluding legal holidays) may avail themselves of this service (dependent on staffing availability) by prior arrangement with the Building Permit Group and prepayment. See Section 110A, Table 1A-G - Inspections, Surveys and Reports - for applicable fee.

108A.3.2 Permits by other departments. Applicants applying for permits from other City departments for which an inspection approval of the Building Permit Group inspection staff is required, as a condition of issuance, shall submit a Service Request Application to the Building Permit Desk with appropriate fees and schedule an inspection for said inspection, certification or report. See Section 110A, Table 1A-G - Inspections, Surveys and Reports - for applicable fee.

108A.4 Approval required. No work shall be done on any part of the building or structure beyond the point indicated in each successive inspection without first obtaining the approval of the Chief Harbor Engineer. Such approval shall be given only after an inspection shall have been made of each successive step in the construction as indicated by each of the inspections required in Section 108A.5. Any portions which do not comply with the provisions of this code and with the approved construction documents shall be corrected, and no such portion shall be covered or concealed until approved.

108A.5. Required inspections.

108A.5.1 General. Reinforcing steel or structural framework of any part of any building or structure shall not be covered or concealed without first obtaining the approval of the Chief Harbor Engineer.

Protection of joints and penetrations in fire-resistive assemblies shall not be concealed from view until inspected and approved.

108A.5.2 Foundation inspection. An inspection is required after excavations for footings are complete and any required reinforcing steel is in place. For concrete foundations, any required forms shall be in place prior to inspection. All materials for the foundation shall be on the job site; however, where concrete is ready mixed in accordance with approved nationally recognized standards, the concrete need not be on the job site. Embedded bolts and anchorage devices designed to resist uplift and/or sliding fences shall be installed and held in place. Where the foundation is to be constructed of approved treated wood, additional inspections may be required by the Chief Harbor Engineer.

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108A.5.3 Concrete slab or under-floor inspection. An inspection is required after all in-slab or under-floor reinforcing steel, building service equipment, conduit, piping accessories and other ancillary equipment items are installed, before any concrete is placed or floor sheathing installed, including the subfloor. Embedded bolts and anchorage devices designed to resist uplift and/or sliding forces shall be installed and held in place.

108A.5.4 Reinforcing steel. An inspection is required when reinforcing steel is in place in walls, floor and roof framing and other concrete members, and before any concrete is poured or placed. All reinforcing steel shall be visible for inspection.

108A.5.5 Structural steel. An inspection is required when structural steel framework, or any structural steel member of a building, is in place and before being covered or concealed in any manner.

108A.5.6 Frame inspection. An inspection is required after the roof, roof deck or sheathing, all framing, fire blocking and bracing are in place and all conduits, plumbing pipes, chimneys and vents to be concealed are complete and the rough electrical, plumbing, and heating wires, conduits, plumbing pipes and ducts are approved.

108A.5.7 Lath or gypsum board inspection. An inspection is required after all lathing and gypsum board, interior and exterior, are in place, but before any plastering is applied or before gypsum board joints and fasteners are taped and finished.

108A.5.8 Fire-rated suspended ceilings. An inspection is required after the installation of the hangers, lighting fixtures and air diffusers, the protective fixture boxes and main suspended ceiling members and before the ceiling is installed.

108A.5.9 Final inspection. A final inspection shall be made when the construction work has been completed. The inspection shall be made when the structure, or area of work, is ready for occupancy, but before it is occupied. A final inspection and approval is required on all buildings and structures when completed and if applicable, ready for occupancy or use after plumbing, electrical and special inspection, and any other applicable approvals have been obtained. See Section 109A for certificate of occupancy requirements.

108A.6 Special inspections. For special inspections, see Chapter 17.

108A.7 Other inspections. In addition to the called-for inspections specified above, the Chief Harbor Engineer may make or require other inspections of any construction work including, but not limited to, mechanical, electrical and plumbing installations to ascertain compliance with the provisions of this code and other laws which are enforced by the code enforcement agency.

108A.7.4.1 Concealed work. Whenever any work for which inspections are required by Sections 108A through 108A.7 has been covered or concealed without inspection, or whenever work is performed and concealed without a permit, and in cases where exposure of work is necessary to determine if the building or parts thereof are considered unsafe due to any of the

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conditions as set forth in Section 102A, the Chief Harbor Engineer may require that such work be exposed for examination. The work of exposing or recovering or reconstructing such portions of the building or structure shall be at the expense of the owner.

108A.8 Re-inspection. A re-inspection fee shall be assessed for each inspection or re-inspection made necessary by any of the following conditions:

1. When such portion of work for which inspection is called for is not complete.
2. When corrections called for are not made.
3. When the inspection record "Job Record Card" is not properly posted on the work site.
4. When the approved plans are not readily available to the inspector.
5. For failure to provide access on the date for which inspection is requested.
6. For deviating from plans requiring the approval of the Chief Harbor Engineer.

The first re-inspection for failure to comply with requirements shall not be assessed a re-inspection fee. All subsequent re-inspections on a job for the same or subsequent errors or omissions shall be charged a re-inspection fee.

No inspections shall be made nor shall the job be given a Certificate of Final Completion and Occupancy or final approval until the inspection or re-inspection fees are paid. See Section 110A, Table 1A-G - Inspections, Surveys and Reports - for applicable fee.

SECTION 109A CERTIFICATE OF FINAL COMPLETION AND OCCUPANCY

109A.1 Use and occupancy. No building or structure shall be used or occupied, and no change in the existing occupancy classification of a building or structure or portion thereof shall be made until the Chief Harbor Engineer has issued a certificate of final completion and occupancy therefor as provided herein, or otherwise has been approved for use by the Chief Harbor Engineer.

Issuance of a certificate of final completion and occupancy shall not be construed as an approval of a violation of the provisions of this code or of other ordinances of the jurisdiction. Certificates presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid.

109A.2 Change in occupancy or use or character of use. Changes in the occupancy, use or character of use of a building shall not be made except as specified in Section 3406 of this code.

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A building permit to legalize a change of use, for which no work shall be performed or required, may be processed using the minimum alteration building permit fee. See Table 1A-A – Building Permit Fees - for applicable fees.

A Certificate of Final Completion and Occupancy shall be required for changes in use or occupancy as set forth in Section 3406.

109A.3 Certificate issued. The Chief Harbor Engineer shall issue Certificates of Final Completion and Occupancy for buildings or structures erected or enlarged; for each change in occupancy classification in any building, structure or portion thereof; for work requiring an Elevation Certificate or Floodproofing Certificate showing compliance with this code for buildings or structures located in a flood prone area as indicated on the San Francisco Interim Flood Plain Map; and for buildings or structures seismically upgraded in accordance with the provisions of this code.

109A.4 Temporary certificate. Temporary Certificates of Occupancy may be issued for any building or structure, or portion thereof, before completion of all work provided the Chief Harbor Engineer finds that no substantial hazard will result from occupancy or use and upon satisfactory evidence that the work could not have been completed prior to the issuance of a Certificate of Final Completion and Occupancy. The request for such temporary certificate shall be in writing, and no occupancy or use of the building or structure shall be made until such temporary certificate is issued and posted in a conspicuous place. Such temporary certificate shall be valid for a period not to exceed 12 months, unless an extension of time is approved by the Chief Harbor Engineer. The Chief Harbor Engineer may require an inspection to be made prior to making a determination. An Extension of Time shall require an additional Temporary Certificate of Occupancy fee. See Section 110A, Table 1A-G - Inspections, Surveys and Reports - for applicable fee.

109A.5 Posting. For temporary occupancy approvals, a Temporary Certificate of Occupancy shall be posted in a conspicuous place until a Certificate of Final Completion and Occupancy is issued.

109A.6 Revocation. The Chief Harbor Engineer may, in writing, suspend or revoke a certificate of occupancy issued under the provisions of this code whenever the certificate is issued in error, or on the basis of incorrect information supplied, or when it is determined that the building or structure or portion thereof is in violation of any of the provisions of this code.

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**SECTION 110A
FEE TABLES**

SCHEDULE OF FEE TABLES:

- 1A-A Building Permit Fees
 - 1. New construction permit fee
 - 2. Alteration permit Fee
 - 3. Standard Permit fee for plumbing, electrical and/or mechanical

- 1A-B Building Permit Application and Plan Review Fees
 - 1. Back check fee
 - 2. Commencement of work not started
 - 3. Electrical plan review
 - 4. Mechanical plan review
 - 5. Plan review fees for new construction, alterations, grading and demolitions
 - 6. Pre-application plan review:
 - 7. Reduced plan review fee
 - 8. Plumbing plan review
 - 9. Standard plan review fee

- 1A-C Plumbing Permit and Inspection Fees
 - 1. Permit issuance fee
 - 2. Standard inspection fees

- 1A-D Mechanical Permit and Inspection Fees
 - 1. Permit issuance fee
 - 2. Standard inspection fee

- 1A-E Electrical Permit and Inspection Fees
 - 1. Permit issuance fee
 - 2. Standard inspection fee
 - 3. Permit and inspection fees for areas of 10,000 square feet and more

- 1A-F Specialty Permit Fees
 - 1. Demolition permit fee
 - 2. Grading permits
 - 3. Building moving permit fee
 - 4. Site verification for recommencement of work not completed
 - 5. Reroofing permits
 - 6. Strong motion instrumentation fee

- 1A-G Inspections, Surveys and Reports
 - 1. Standard inspection fee
 - 2. Off-hours Inspection
 - 3. Pre-Application inspection or survey
 - 4. Re-inspection fee
 - 5. Site survey
 - 6. Temporary Certificate of Occupancy issuance fee
 - 7. Service fee for outside consultants for plan review
 - 8. Service fee for outside consultants for inspections

- 1A-H Reserved

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1A-I Reserved

1A-J Miscellaneous Fees

1. Permit processing fee
2. Facility Identification Number (FIN) processing fee
3. Extension of time: application cancellation and permit expiration
4. Hazardous Wastes review fee
5. Construction Dust Control review fee
6. Storm Water Management and Discharge Control review fee
7. Administrative costs Fee
8. Green Building Standards fee
9. Technical Surcharge fee

1A-K Investigation Fees, Hearings, Code Enforcement Fees

1. Port Building Code Review Board (PBCRB) fees
 - Request for a hearing
 - Request for a re-hearing
 - Each appeal regarding barrier free access
2. Chief Harbor Engineer's Abatement Orders
3. Emergency Order
4. Investigation of work exceeding the scope of the approved permit
5. Investigation work without permit

1A-L Public Information

1. Reproduction and Dissemination of Public Information
2. Replacement of approved construction documents
3. Record Retention Fee.

1A-R Refunds

1. Permit or inspection fees
2. Combination permit and inspection fees
3. Miscellaneous fees

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TABLE 1A-A — BUILDING PERMIT FEES

1. New construction permit fee ¹.

TOTAL VALUATION	FEE
\$1.00 to \$500.00	\$20.50 (minimum fee)
\$501.00 to \$2,000.00	\$20.50 for the first \$500.00 plus \$3.00 for each additional \$100.00 or fraction thereof, to and including \$2,000.00
\$2,001.00 to \$25,000.00	\$66.00 for the first \$2,000.00 plus \$12.50 for each additional \$1,000.00 or fraction thereof, to and including \$25,000.00
\$25,001.00 to \$50,000.00	\$354.00 for the first \$25,000.00 plus \$8.75 for each additional \$1,000.00 or fraction thereof, to and including \$50,000.00
\$50,001.00 to \$100,000.00	\$573.00 for the first \$50,000.00 plus \$6.00 for each additional \$1,000.00 or fraction thereof, to and including \$100,000.00
\$100,001.00 to \$500,000.00	\$874.00 for the first \$100,000.00 plus \$5.00 for each additional \$1,000.00 or fraction thereof, to and including \$500,000.00
\$500,001.00 to \$1,000,000.00	\$2,875.00 for the first \$500,000.00 plus \$4.25 for each additional \$1,000.00 or fraction thereof, to and including \$1,000,000.00
\$1,000,001.00 and greater	\$5,001.00 for the first \$1,000,000.00 plus \$3.25 for each additional \$1,000.00 or fraction thereof

2. Alteration permit fee ¹.

TOTAL VALUATION	FEE
\$1.00 to \$100,000	1.3 times new construction permit fee (minimum fee \$26.65)
\$100,001 and up	\$1,135.00 plus 1.25 times the new construction permit fee for values greater than \$100,000

1. These permit fees do not include other fees that may be required by other departments: Public Works, Planning, Fire, Public Health, etc., nor do they include plumbing, electrical or mechanical permit fees unless so stated in the other fee tables.

3. The Standard Permit Fee for Plumbing, Electrical and/or Mechanical permits is \$80.00

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TABLE 1A-B — BUILDING PERMIT APPLICATION AND PLAN REVIEW FEES

1.	Back check fee ¹	Standard plan review fee
2.	Commencement of work not started:	
	Building permit fee	50% of current fee
	Plan review fee	50% of current fee
3.	Electrical plan review	Standard plan review fee
4.	Mechanical plan review	Standard plan review fee
5.	Plan review fees for new construction, alterations, grading and demolitions	65% of new construction building permit fee per Table 1A-A
6.	Pre-application plan review:	
	Minimum fee (first 1 hour or fraction thereof)	2 times Standard plan review fee
	Each participating employee hour or fraction thereof after the first hour	Standard plan review fee
7.	Reduced plan review fee	Standard plan review fee
8.	Plumbing plan review	Standard plan review fee
9.	Standard plan review fee	\$80.00 per hour or fraction thereof

¹ NOTE: "Back check" is defined as: (1) that time spent checking applicant-initiated revisions to plans regardless of their effect on valuation or scope and size of the project; or (2) any additional plan check performed on required revisions to plans subsequent to the initial revision submittal.

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TABLE 1A-C — PLUMBING PERMIT FEES AND INSPECTION FEES

1. Permit issuance fee	Standard Plumbing Permit fee
2. Standard inspection fees	
For each inspection, re-inspection or additional inspection required	Standard hourly inspection fee per Table 1A-G

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TABLE 1A-D — MECHANICAL PERMIT AND INSPECTION FEES

1. Permit issuance fee	Standard Mechanical Permit fee
2. Standard inspection fees	
For each inspection, re-inspection or additional inspection required	Standard hourly inspection fee per Table 1A-G

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TABLE 1A-E — ELECTRICAL PERMIT AND INSPECTION FEES

1. Permit issuance fee Standard Permit fee

2. Standard inspection fees

For each inspection, re-inspection or additional inspection required

Standard hourly inspection fee per Table 1A-G

3. Permit and inspection fees for areas of 10,000 square feet and more

A. Residential and commercial installations where area of work is 10,000 square feet (929.3 m²) or more. (The work may include new construction and/or alterations)

10,000 square feet (929.3m ²) up to 30,000 square feet (2,787.9 m ²) (includes permit issuance and up to a maximum of 15 inspections - See item 2 for additional inspections if required)	\$1,026.00
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Over 30,000 square feet (2,787.9 m ²) (includes permit issuance fee and inspections)	\$5,026.00
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TABLE 1A-F — SPECIALTY PERMIT FEES

1. Demolition permit fee	See Table 1A-A
2. Grading permits	See Table 1A-B
3. Building moving permit fee:	\$123.00
4. Site verification for recommencement of work not completed	Standard hourly inspection fee (per Table 1A-G)
5. Reroofing permits	\$68.50
6. Strong motion instrumentation fee:	
Group R Occupancies of 3 stories or less, except hotels and motels	0.00010 times the valuation
Hotels and motels, all buildings greater than 3 stories, all occupancies other than Group R	0.00021 times the valuation
Minimum fee	\$0.50

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TABLE 1A-G — INSPECTIONS, SURVEYS AND REPORTS

1.	Standard hourly inspection fee	\$80.00/hr. or fraction thereof
2.	Off-hours inspection	1.5 times the standard hourly inspection fee, 4-hour minimum
3.	Pre-Application inspection or survey:	
	Minimum fee (first 1 hour or fraction thereof) for each participating employee	2 times the standard hourly inspection fee
	Each participating employee hour or fraction thereof after the first hour	Standard hourly inspection fee
4.	Re-inspection fee	Standard hourly inspection fee
5.	Site Survey	Minimum fee is 2 times the standard hourly inspection fee for the first hour or fraction thereof per inspector or staff engineer. The standard hourly inspection fee is charged per hour or fraction thereof after the first 2 hours.
6.	Temporary Certificate of Occupancy Issuance fee	Standard hourly inspection fee – Minimum Two Hours
7.	Service fee for outside consultants for plan review.	Actual costs including administrative and overhead costs
8.	Service fee for outside consultants for inspections.	Actual costs including administrative and overhead costs

TABLE 1A-H — RESERVED

TABLE 1A-I — RESERVED

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TABLE 1A-J — MISCELLANEOUS FEES

1.	Permit processing fee	(see Section 110A – Table 1A-A – Building Permit Fees)
2.	Facility Identification Number (FIIN) processing fee	\$16.55
3.	Extension of time: application cancellation and permit expiration:	
	Each application extension	Standard inspection fee
	Each permit extension	Standard inspection fee
	Each inspection performed during the extension period	Standard inspection fee
4.	Hazardous Wastes review	Standard plan review fee
5.	Construction Dust Control review	Standard plan review fee
6.	Stormwater Management and Discharge Control Review	Standard plan review fee
7.	Administrative costs fee	Standard inspection fee
8.	Green Building Standards fee	Pursuant to the provisions of California Health & Safety Code Section 18930.5, 18931.6, 18931.7 & 18938.39
9.	Technical Surcharge fee	2% of permit cost

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TABLE 1A-K — INVESTIGATION FEES, HEARINGS, CODE ENFORCEMENT FEES

1.	Port Building Code Review Board:	
	Filing fee	Standard Hourly Plan Review Rate – Minimum Two (2) Hours
	Request for a hearing	Standard Hourly Plan Review Rate – Minimum Two (2) Hours
	Request for a re-hearing	Standard Hourly Plan Review Rate – Minimum Two (2) Hours
	Each appeal regarding barrier free access	See NOTE at Section 105A.2 and Table-1A-G item 8
2.	Chief Harbor Engineer's abatement orders	Standard Hourly Plan Review Rate – Minimum Two (2) Hours
3.	Emergency order	Standard Hourly Plan Review Rate – Minimum Two (2) Hours
4.	Investigation of work exceeding the scope of an approved permit.	
	Building:	2 times the permit fee for the work exceeding the scope plus the permit fee for the work exceeding the scope
	Electrical Code:	2 times the permit fee plus the permit fee
	Plumbing Code:	2 times the permit fee(s) plus the permit fee(s)
	Mechanical Code:	2 times the permit fee plus the permit fee
5.	Investigation of work without permit:	
	Building:	2 times the permit fee plus the permit fee
	Electrical Code:	2 times the permit fee plus the permit fee
	Plumbing Code:	2 times the permit fee(s) plus the permit fee(s)
	Mechanical Code:	2 times the permit fee plus the permit fee

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TABLE 1A-L — PUBLIC INFORMATION

1. Reproduction and dissemination of public information:	
Copy prints (up to 8.5" x 14") each	\$0.60
Copy prints (over 8.5" x 14" to 30") each	\$1.65
Copy prints (over 30") each	\$6.00
File on Compact Disk (CD): Up to 50 Megabytes	\$50.00
Each additional Megabyte	\$1.00
2. Replacement of approved construction documents:	
Each sheet of plans	\$4.20
Each 50 pages of specifications or fraction thereof	\$7.10
3. Record retention fee	.08% of the valuation

Reproduction fees may be based on private party services plus administrative costs.

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TABLE 1A-R — REFUNDS

Partial or complete refunds of only those fees contained herein will be given, provided the applicant meets the refund requirements of the applicable section of this code. No other fees are refundable, except as follows:

1. Permit or inspection fees:

Building permit	Amount paid less two times the Standard inspection fee for 1 hr. or actual costs, whichever is greater. No refunds after work started.
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Plan review	Amount determined by the Chief Harbor Engineer less two times the Standard inspection fee for 1 hr.
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2. Combination permit and inspection fees:

Electrical permit/inspection	Amount paid less two times the Standard inspection fee for 1 hr. or actual costs, whichever is greater. No refunds after work started.
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Plumbing permit/inspection	Amount paid less two times the Standard inspection fee for 1 hr. or actual costs, whichever is greater. No refunds after work started.
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Mechanical permit/inspection	Amount paid less two times the Standard inspection fee for 1 hr. or actual costs, whichever is greater. No refunds after work started.
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3. Miscellaneous Fees:

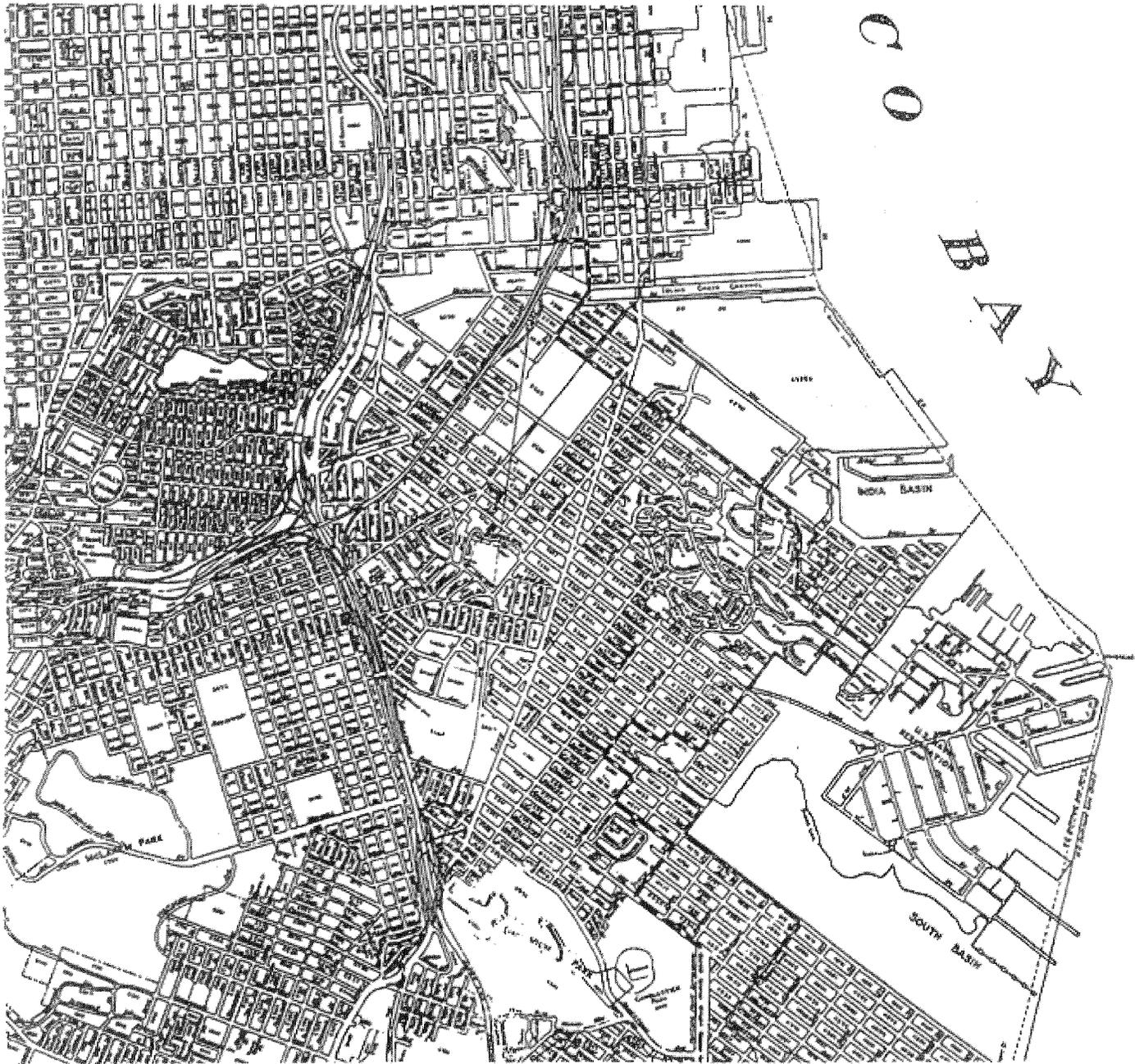
Miscellaneous Fees:	Amount paid less the Standard Inspection Fee for 1 hr. No refunds less than \$80.00
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FIGURE 1A-I

1851 HIGH-TIDE LINE MAP



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Chapter 2

DEFINITIONS

SECTION 202
DEFINITIONS

Add the following definition:

BUILDING DEPARTMENT. The Port of San Francisco Building Permit Group working under the Chief Harbor Engineer.

Revise the following definition:

BUILDING OFFICIAL. The Chief Harbor Engineer or the Chief Harbor Engineer's duly authorized representative. The Chief Harbor Engineer is the authorized representative of the Port Commission charged with the administration and enforcement of this code.

Add the following definition:

BUILDING PERMIT DESK. The permit processing desk on the second floor at Port of San Francisco's Pier 1 office.

Add the following definition:

BUILDING PERMIT GROUP. The building inspection and plan review staff working under the Chief Harbor Engineer.

Add the following definition:

CHIEF HARBOR ENGINEER. The Chief Harbor Engineer of the Port of San Francisco and is the building official.

Add the following definition:

CODE ENFORCEMENT AGENCY. The Chief Harbor Engineer of the Port of San Francisco and is the building official.

Add the following definition:

DEPARTMENT. The Port of San Francisco Building Permit Group working under the Chief Harbor Engineer.

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Replace the following definition:

ELECTRICAL CODE. The current edition of the Port of San Francisco Electrical Code.

Add the following definition:

FACILITY IDENTIFICATION NUMBER (FIN). A unique number generated and issued by Port of San Francisco Engineering Division to identify a particular location within a lease map.

Replace the following definition:

FIRE CODE. The California Fire Code currently adopted by the State Fire Marshal and amended as the San Francisco Fire Code.

Add the following definition:

LIFE HAZARD. Any condition that creates or increases the menace to the public from existing or potential hazards from fire, explosion, earthquake, panic, structural failure or other hazardous conditions below the level of safety established in this code.

Replace the following definition:

MECHANICAL CODE. The current edition of Port of San Francisco Mechanical Code.

Replace the following definition:

PLUMBING CODE. The current edition of Port of San Francisco Plumbing Code.

Add the following definition:

PORT FIRE MARSHALL. The San Francisco Fire Department assigned Port Fire Marshall(s).

Add the following definition:

PORT PLANNING AND DEVELOPMENT. The Port of San Francisco Planning and Development Division.

Add the following definition:

SPECIAL EVENT. A temporary event that includes work or activity as defined in items 1-4 of Sec. 106A.1.6.1 of this code.

Add the following definition:

START OF WORK. The date of permit issuance for new construction and substantial improvements to existing structures; provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement or other improvement is within 180 days after the date of issuance. The actual start of construction means the first placement of permanent construction of a building or structure on a site, such as the pouring of a slab or footings, installation of pilings or construction of columns.

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Chapter 3

USE AND OCCUPANCY CLASSIFICATION

No Port of San Francisco Building Code amendments.

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Chapter 4

SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

SECTION 446 FENCES

446.1 Add the following section:

446.1 Fences. Fences on any property containing a Group R Occupancy shall not be higher than 10 feet (3.048 m). Fences located less than 10 feet (3.048 m) from any public sidewalk shall not be higher than 10 feet (3.048 m) unless they are of open-type materials such as chain link fabric. Fence height shall be measured from the level of general existing adjacent ground of the general area prior to the improvement of the properties. A fence or railing placed on top of the retaining wall shall be measured from the top of the wall.

Fences constructed wholly or in part of barbed wire are prohibited, except when permitted with the express written permission of the Chief Harbor Engineer and the Fire Department in the following situations:

1. On top of a fence more than 7 feet (2.134 m) high, protecting a dangerous or hazardous area.
2. Within a private area, enclosed by a seven-foot-high (2.134 m) fence, such that entry to the area is limited by the outer, non-barbed fence.
3. In special instances for localized protection, and in areas within or atop a building to isolate dangerous conditions.

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Chapter 5

GENERAL BUILDING HEIGHTS AND AREAS

No Port of San Francisco Building Code amendments.

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Chapter 6

TYPES OF CONSTRUCTION

SECTION 602
CONSTRUCTION CLASSIFICATION

602.1.2 Add the following section

602.1.2. Piers. Unless otherwise approved by the Chief Harbor Engineer; new construction on, or within structures on, piers built over water shall be of either noncombustible materials or of one hour fire resistive construction minimum.

602.1.3 Add the following section:

602.1.3. Wharfs. Unless otherwise approved by the Chief Harbor Engineer; new construction on, or within structures on, wharfs built over water shall be of either noncombustible materials or of one hour fire resistive construction minimum.

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Chapter 7

FIRE-RESISTANCE-RATED CONSTRUCTION

SECTION 703 FIRE RESISTANCE RATINGS AND FIRE TESTS

Section 703.6 Revise the first paragraph as follows:

703.6 Marking and identification. Fire walls, fire barriers, fire partitions, smoke barriers and smoke partitions or any other wall required to have protected openings or penetrations shall be effectively and permanently identified with stenciled signs.

Section 703.6 Revise item 3 as follows:

3. Include lettering not less than 1.5 inches (38mm) in height, incorporating the suggested wording: "FIRE AND/OR SMOKE BARRIER – PROTECT ALL OPENINGS," or other wording as approved by the Chief Harbor Engineer.

SECTION 707 FIRE BARRIERS

707.1 General.

707.1 Add a second paragraph to this section as follows:

Information technology rooms shall be in accordance with the Fire Code and Electrical Code.

SECTION 709 FIRE PARTITIONS

709.4 Continuity.

709.4 Add exception to list of exceptions as follows:

7. Non-bearing fire partitions separating Group B tenant spaces in fully sprinklered high-rise office buildings are not required to extend beyond the underside of a ceiling that is not part of a fire-resistance-rated assembly. A wall is not required in attic spaces above tenant separation walls.

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Chapter 7A

**MATERIALS AND CONSTRUCTION METHODS
FOR EXTERIOR WILDFIRE EXPOSURE**

No Port of San Francisco Building Code amendments.

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Chapter 8

INTERIOR FINISHES

SECTION 804
INTERIOR FLOOR FINISH

804.1 General.

804.1 Add the following sentence after the Exception:

See Section 2304.11.4.2 for additional requirements for wood frame floor construction.

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Chapter 9

FIRE PROTECTION SYSTEMS

SECTION 901
GENERAL

901.4 Threads.

901.4 Add a second paragraph as follows:

Notwithstanding any other provisions of the California Building Code or other codes or regulations, Fire Department connections shall have 3-inch (76.2 mm) National Standard hose threads.

SECTION 902
DEFINITIONS

902.1 Definitions.

902.1 Revise the first sentence following two definitions under STANDPIPE SYSTEM:

STANDPIPE SYSTEM, CLASSES OF. Standpipe classes are as follows:

Class I system. A system providing 3" (76.2 mm) hose connections to supply water for use by fire departments and those trained in handling heavy fire streams.

Class III system. A system providing 1-1/2-inch (38 mm) hose stations to supply water for use by building occupants and 3" (76.2 mm) hose connections to supply a larger volume of water for use by fire departments and those trained in handling heavy fire streams.

SECTION 903
AUTOMATIC SPRINKLER SYSTEMS

903.2.8 Group R.

903.2.8 Revise exceptions 3 and 4 as follows:

3. Pursuant to Health and Safety code Section 131113 existing occupancies housing ambulatory children only, none of whom are mentally ill or mentally retarded, and buildings or portions thereof in which such children are housed are not more than two stories in height, and buildings or portions thereof housing such children have an automatic fire alarm system activated by approved smoke detectors.

4. Pursuant to Health and Safety code Section 13143.3 existing occupancies licensed for protective social care which house ambulatory clients only, none of whom is a child (under the age of 18 years), or who is elderly (65 years of age or over).

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903.2.8 Add the following section:

903.2.8.1 [CRC R313.1] Townhouse automatic fire sprinkler systems. An automatic residential fire sprinkler system shall be installed in townhouses.

Exception. An automatic residential fire sprinkler system shall not be required when additions or alterations are made to existing townhouses that do not have an automatic residential fire sprinkler system installed.

903.2.8.1.1 [CRC R313.1.1] Design and installation. Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with Section 903.3.1.3 unless a different standard is required by other provisions of this code.

903.2.8 Add the following section:

903.2.8.2 [CRC R313.2] One- and two-family dwelling automatic fire sprinkler systems. An automatic residential fire sprinkler system shall be installed in one- and two-family dwellings.

Exception. An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential fire sprinkler system installed.

903.2.8.2.1 [CRC R313.2.1] Design and installation. Automatic residential fire sprinkler systems shall be designed and installed in accordance with Section 903.3.1.3 unless a different standard is required by other provisions of this code.

Table 903.2.11.6 Additional Required Suppression Systems.

Add a new line to the end of the Table as follows:

**TABLE 903.2.11.6
ADDITIONAL REQUIRED SUPPRESSION SYSTEMS**

SECTION	SUBJECT
3202.3.4	Pedestrian Walkways over Public Streets

**SECTION 905
STANDPIPE SYSTEMS**

905.3.4 Revise this section as follows:

905.3.4 Stages. Stages greater than 1,000 square feet in area (93 m²) shall be equipped with a Class III wet standpipe system with 1-1/2 inch and 3 inch (38 mm and 76.2 mm) hose connections on each side of the stage.

**SECTION 907
FIRE ALARM AND DETECTION SYSTEMS**

907.2.9.1 Manual fire alarm system.

907.2.9.1 Revise Item 3 as follows:

3. The building contains more than 6 dwelling units or sleeping units.

907.2.9.1 Revise Item 4 as follows:

4. Congregate living facilities or congregate residences three or more stories in height or having an occupant load of 11 or more.

907.2.9.4 Add the following section:

907.2.9.4 Automatic smoke detection system. An automatic smoke detection system that activates the occupant notification system in accordance with Section 907.6 shall be installed throughout all interior corridors serving sleeping units.

Exceptions:

1. An automatic smoke detection system is not required in buildings that do not have interior corridors serving sleeping units and where each sleeping unit has a means of egress door opening directly to an exit or to an exterior exit access that leads directly to an exit.

2. An automatic smoke detection system is not required in buildings when all of the following conditions are met:

2.1 The building is equipped throughout with a supervised automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

2.2 The notification devices will activate upon sprinkler water flow; and

2.3 At least one manual fire alarm box is installed in an approved location.

907.2.11.5 Add a second paragraph as follows:

Group R-3 congregate living facilities having an occupant load of 6 or more shall be provided with a manual fire alarm system.

912.6 Add the following section:

912.6 Number of connections required. Sprinkler systems requiring a 4-inch (101.6 mm) or larger water service shall have two or more inlet connections as necessary to meet hydraulic demand.

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Chapter 10

MEANS OF EGRESS

SECTION 1001 ADMINISTRATION

1001.1 General.

1001.1 Add second and third paragraphs as follows:

Stairs or ladders used only to attend equipment or window wells are exempt from the requirements of this chapter.

Stairways that replace existing stairways in residential occupancies and which complied with the code in effect at the time they were constructed, and which have been adequately maintained and increased in relation to any increase in occupant load, alteration or addition, or any change in occupancy, may be reconstructed in the same configuration and construction as the existing stairways.

1009.11 Ship ladders.

1009.11 Revise the first paragraph as follows:

1009.11 Ship ladders. Ship ladders are permitted to be used in Group I-3 as a component of a means of access to and from control rooms or elevated facility observation stations not more than 250 square feet (23 m²) with not more than three occupants and for access to unoccupied roofs and for access to facilities used as single occupancy security workstations where a guard is stationed to visually inspect vehicles for home security purposes.

SECTION 1011 EXIT SIGNS

1011.1 Where required.

1011.1 Add the following sentence after the Exceptions:

Doorways or other openings leading to fire escape, except within individual dwelling units, shall be provided with a sign reading "FIRE ESCAPE" in letters not less than 6 inches (152 mm) high.

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Chapter 10A SECURITY REQUIREMENTS

Add the following chapter:

SECTION 1001A SCOPE

1001A.1 General. This chapter shall apply to all Group R, Division 1 and Group R, Division 2 Occupancies.

1001A.2 Apartment houses. Apartment houses (Group R, Division 1 and Group R, Division 2 Occupancies) and buildings containing more than two residential condominium units shall meet the security requirements of this chapter.

1001A.3 Hotels and motels. Hotels and motels shall comply with the security requirements of this chapter. For the purpose of this chapter, any building open to the public and offering accommodations to transient persons for compensation shall be considered as a hotel or motel.

SECTION 1002A DEFINITIONS

For the purpose of this chapter, certain terms are defined as follows:

AUXILIARY LOCKING DEVICE. A secondary locking system added to the primary locking system to provide additional security.

BURGLARY-RESISTANT GLAZING MATERIALS. Burglary-resistant glazing materials which are defined in ANSI/UL Standard 972.

DEADBOLT. A lock bolt which must be actuated by a key, a knob or thumb-turn and when projected becomes locked against return by end pressure, and does not have spring action, as a latch bolt does. A SINGLE CYLINDER DEADBOLT is a deadbolt lock which is activated from the outside by a key and from the inside by a knob, thumb-turn lever or similar mechanism. A DOUBLE CYLINDER DEADBOLT is a deadbolt which can only be activated by a key from both interior and exterior.

DEADLATCH or DEADLOCKING LATCH BOLT. A spring-actuated latch bolt having a beveled end and an incorporated plunger which, when depressed, automatically locks the projected latch bolt against return by end pressure.

PRIMARY LOCKING DEVICE. The single locking system on a door or window unit whose function is to prevent unauthorized entry.

WINDOW LOCKING DEVICE. Part of a window assembly which is intended to prevent movement of the movable sash, and may be the sash lock or sash operator.

SECTION 1003A GENERAL REQUIREMENTS FOR SECURITY

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1003A.1 Clearances. The clearance between the door and the frame and between meeting edges of doors swinging in pairs shall not exceed 1/8 inch (3.2 mm). The clearance between the door and the floor with either flush or raised sill shall be not more than 3/4 inch (19.1 mm).

1003A.2 Door assemblies. Excluding main entry doors, all exterior swinging doors, and swinging interior and exterior entry doors, including assemblies and related hardware, which are directly accessible from the ground level or by stairs or by ramp, or from roof areas, or parking lot, or garage areas, shall meet the requirements of Grade 20 of ANSI/ASTM F476, Standard Test Methods for Security of Swinging Door Assemblies.

All such doors shall be self-closing continuously locked, and operable from the interior with no special effort or knowledge or key. Where electrically operated locks are used, they must be self-latching and locking and shall have manual release capability from the interior requiring no special effort or knowledge or key.

1003A.2.1 Main entrance. All main entry doors, including electrically operated main entry doors, shall be provided with a primary locking device. "Main entry doors" shall be defined as exterior doors leading directly into the lobby, registration areas or employee entrances.

1003A.2.2 Viewer. Each door shall be provided with a minimum 135-degree viewer which does not have sighting capability when viewed from the outside. Mounting height shall not exceed 58 inches (1473 mm).

1003A.3 Fire-rated door assemblies. Fire-rated door assemblies shall meet the requirements of Grade 20 of ANSI/ASTM F476.

1003A.4 Glazing. All glazing within 40 inches (1016 mm) of any locking mechanism of exterior and interior dwelling unit doors shall be of safety glass or burglar-resistant glazing. This requirement shall not exempt the swinging door assembly standards of Grade 20 of ANSI/ASTM F476.

1003A.5 Metal gates. Metal gates shall conform to the following:

1. Latch bolt shall be protected by a security plate.
2. Hinges, bolts, screws shall be non-removable.
3. Areas within 40 inches (1016 mm) of a latch mechanism shall be protected by mesh screen or approved equal.
4. Interior release mechanism shall be protected with cover.
5. For electrically operated locks, see Section 1003A.2.

1003A.6 Sliding glass doors. Sliding glass door assemblies shall be so designed that the door cannot be lifted from the track when the door is in a locked position.

In addition to the primary locking device, all sliding glass doors shall have an auxiliary locking device permanently mounted and not accessible from the exterior of the building but easily accessible from the interior.

1003A.7 Sliding glass windows. Sliding glass window assemblies shall be so designed that the moving panel cannot be lifted from the track while in a closed position.

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1003A.8 Parking areas. Parking space numbering shall not correspond to the guest room or dwelling unit number.

Exterior parking areas and access thereto shall be provide with a minimum of ½ foot-candle (5.38 1x) of light on the parking surface when the area is unoccupied. Lighting devices shall be protected from weather and by vandalism-resistant covers.

SECTION 1004A SPECIAL HOTEL AND MOTEL SECURITY REQUIREMENTS

1004A.1 Entry doors to guest rooms.

EXCEPTION: Residential care facilities licensed by the State of California under Title 22 of the California Code of Regulations shall not be required to comply with the requirements of this subsection.

Locks shall be a combination of minimum 1/2-inch (12.7 mm) throw dead-latch with a minimum 1-inch (25.4 mm) deadbolt.

All locks shall be capable of locking out all keys, except the emergency keys for guest privacy while inside the room, and so constructed that both dead-latch and deadbolt are retracted simultaneously by a single knob or lever.

1004A.2 Communicating door between guest rooms. Communicating doors between guest rooms, if not required to be fire-rated, shall meet the requirements of Grade 20 of ANSI/ASTM F476 and be of minimum 1 3/8-inch (35 mm) bonded wood core or approved equal.

1004A.3 Roof openings. All skylights leading directly to guest rooms, offices and enclosed commercial space shall be provided with burglary-resistant glazing as defined in Section 1002A.

1004A.4 Message and key box – front desk. The message and room key location at the front desk shall not be visible from public view so as to determine an unoccupied room.

SECTION 1005A SPECIAL APARTMENT HOUSE AND CONDOMINUM SECURITY REQUIREMENTS

1005A.1 Voice communications. A two-way voice communication system shall be provided between the common entry door and all interior dwelling units. All systems shall provide direct communication.

1005A.2 Lighting. Lighting shall be a minimum of ½ foot-candle (5.38 1x) of light on the ground surface from the street to the entry door. Lighting devices shall be protected by weather-and vandalism-resistant covers.

1005A.3 Master keying. Exterior and main entrance door locks shall not be on any master key system.

1005A.4 Entry doors. Entry doors and door assemblies shall comply with the following:

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1005A.4.1 Locks. Shall be combination -inch (12.7 mm) throw deadlatch with a minimum 1-inch (25.4 mm) throw deadbolt, and so constructed that both the deadlatch and deadbolt retract simultaneously by knob or lever. The deadbolt shall have the ability to be thrown from the exterior.

1005A.5 Exit doors. All exit doors from corridors to exit stairways and from interior stairwells and interior fire escapes shall meet the requirements of Grade 20 of ANSI/ASTM F476 and be continuously locked from the outside.

Locking devices shall be self-latching or self-locking and shall be operable from the interior with no special effort or knowledge or key. [See Section 1003.3.1.8.]

1005A.6 Glazed openings. Glazed openings accessible from the ground level, by stairs, ramps, parking lots or garage areas, shall be with approved safety glass or burglar-resistant glazing as defined in Section 1002A. Protective iron grill work may only be installed where it does not interfere with the required means of egress.

1005A.7 Roof openings. All skylights leading directly to interior corridors, stairwells, dwelling units and utility rooms shall be provided with burglary-resistant glazing as defined in Section 1002A.

1005A.8 Garage doors. All doors of the sectional overhead, one-piece overhead, swing or sliding types used on the exterior of a building shall conform to the following standards:

1005A.8.1 Panels of wood doors. Shall be at least 5/16-inch (7.94 mm) thick, except sectional overhead doors may have panels 1/4-inch (6.35 mm) thick.

1005A.8.2 Aluminum doors. Shall be constructed of at least 0.025-inch (0.635 mm) thick sheet aluminum, riveted, welded or bolted to framing members at least 12 inches (305 mm) on center.

1005A.8.3 Steel doors. Shall be constructed of at least 0.023-inch (0.584 mm) thick galvanized steel, riveted, welded or bolted to framing members at least 12 inches (305 mm) on center.

1005A.8.4 Fiberglass sectional doors. Shall be constructed of formed fiberglass panels of density of at least 5½ oz. per square foot (1678 g/m²), pressure sealed to aluminum framing members.

1005A.8.5 Overhead doors. Shall be made lockable by either:

Doors 16 feet (4877 mm) wide or less, a slide bolt – minimum diameter 3/8-inch (9.5 mm) minimum projection 1½ inches (38 mm) – locking into the door jamb, capable of utilizing a padlock with a minimum 9/32-inch (7.14 mm) shackle.

Doors over 16 feet (4877 mm) wide, except sectional doors, two slide bolt locks shall be required. Slide bolt assemblies shall be attached to the door with bolts which are non-removable from the exterior.

Electrical operator with automatic locking capability, either inherently in the mechanism or as an added feature.

By at least one single-bar lock mounted in the end stile, with locking bar or bolt extending into the receiving guide a minimum of 1 inch (25.4 mm), and with minimum five-pin tumble

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operation. For doors over 16 feet (4877 mm) wide, except sectional doors, two single-bar locks shall be required.

Center locking-handle devices will require actuating straps to be enclosed by rigid conduits securely fastened to the door.

1005A.8.6 Winging garage doors. Shall be lockable by a cylinder deadbolt.

1005A.8.7 Doors operated by electrical means. Shall be provided with manual release capability from the interior, requiring no special effort or knowledge or key.

1005A.8.8 Manually operated chain-driven garage doors. Shall require approval of the Chief Harbor Engineer.

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Chapter 11

ACCESSIBILITY

No Port of San Francisco Building Code amendments.

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Chapter 11A

HOUSING ACCESSIBILITY

No Port of San Francisco Building Code amendments.

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Chapter 11B

**ACCESSIBILITY TO PUBLIC BUILDINGS, PUBLIC ACCOMMODATIONS, COMMERCIAL BUILDINGS
AND PUBLICLY FUNDED HOUSING**

No Port of San Francisco Building Code amendments.

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Chapter 11C

STANDARDS FOR CARD READERS AT GASOLINE FUEL-DISPENSING FACILITIES

No Port of San Francisco Building Code amendments.

Chapter 12

INTERIOR ENVIRONMENT

SECTION 1203
VENTILATION

1203.4 Natural ventilation.

1203.4 Add a second paragraph as follows:

In other than high-rise buildings, public corridors, public hallways and other public spaces having openings into adjoining dwelling units, guest rooms, or congregate residences within Group R, Division 1 and Group R, Division 2 Occupancies, shall be provided with natural ventilation by means of operable exterior openings with an area of not less than 1/25 of the floor area of such rooms or spaces with a minimum of 4 square feet (0.37 m²).

1203.5 Lighting.

1203.5 Add a second paragraph as follows:

In lieu of required exterior openings for natural ventilation, a mechanical ventilating system may be provided. Such system shall be capable of providing two air changes per hour in public corridors, public hallways and other public spaces having openings into adjoining dwelling units, guest rooms, or congregate residences with Group R, Division 2 occupancies, with a minimum of 7½ cubic feet per minute (3½ L/s) of outside air per occupant during such time as the building is occupied.

SECTION 1205
LIGHTING

1205.2.2 Exterior openings.

1205.2.2 Add the following paragraphs after the Exceptions:

The depth of all structural projections, including balconies, decks, porches, rooms or roofs, shall not exceed 7 feet (2.134 m) when extending over areas required for light and ventilation.

The height above a balcony, deck or porch shall not be less than 7 feet (2.134 m) measured from the floor to the lowest projection above.

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Chapter 13

RESOURCE CONSERVATION (ENERGY EFFICIENCY)

No Port of San Francisco Building Code amendments.

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**Chapter 13A
COMMERCIAL WATER CONSERVATION**

Add this following chapter

**SECTION 1301A
TITLE**

This chapter shall be known as the “Commercial Water Conservation Ordinance.”

**SECTION 1302A
INTENT**

It is the intent of this chapter to conserve existing water supplies by managing the overall demand for water in commercial buildings, including tourist hotels and motels, by requiring the installation of water conservation devices in commercial buildings upon the occurrence of specific events.

**SECTION 1303A
DEFINITIONS**

For the purpose of this chapter, certain terms are defined as follows:

ACCESSIBLE. Means there is sufficient space in which to install the specified water and energy conservation measure without significant alteration to the structure. For ducts, plenums or pipes, “accessible” shall mean all ductwork, plenums or pipes located in mechanical rooms, on roofs and around all air handling units. In addition, pipes located above movable ceiling panels shall be considered accessible, but not ducts or plenums.

ACCESSIBLE ATTIC SPACE. Means a space between a ceiling joist and roof rafter where the vertical clear height from the top of the bottom chord of the truss or ceiling joist to the underside of the roof sheathing at the roof ridge is greater than 18 inches (957 mm).

BUILDING OCCUPANCY. Means OCCUPANCY as defined in Chapter 3 of this code and shall also, where practicable, include the primary business activity of the property as classified by Standard Industrial Classification (SIC).

BUILDING TYPE. Means the type of building construction, as defined in Chapter 6 of this code, and shall take into consideration whether the building is a high-rise building as defined by Section 403 of this code.

COMMERCIAL BUILDING. Means any building except residential buildings and residential portions of mixed residential-commercial buildings.

COST-EFFECTIVE. Means having a simple economic payback that does not exceed four years or the expected life of an energy conservation measure, whichever is shorter.

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DEPARTMENT. See Section 202A of this code.

ESTABLISHED CONTRACTOR'S COST. Means the contractor's fee, including labor and material, plus the engineer's fee to do the required work.

OWNER. See Section 202A of this code.

PERMIT APPLICANT. Means the person listed on the building permit application as the owner or lessee of the building.

QUALIFIED INSPECTOR. Means an inspector defined in Section 1314A, who is authorized to perform a water conservation inspection.

QUALIFIED PROFESSIONAL. Means a person regularly engaged in the field of making repairs, adjustments and inspection of energy-using equipment contained in HVAC, lighting or service hot water systems.

SERVICE HOT WATER. Means the supply of hot water for domestic or commercial purposes other than comfort heating.

SIMPLE ECONOMIC PAYBACK. Means the time needed to recover a conservation investment on the basis of expected energy savings at current energy costs. Simple economic payback is expressed in years, and is calculated by dividing the established contractor's cost of a conservation measure by the estimated dollar savings in the first year. Available tax credits, incentives and future energy costs are not considered in the calculation.

WATER CONSERVATION INSPECTION. Means inspection of a commercial building for compliance with the requirements of this chapter.

SECTION 1304A RULES AND GUIDELINES

1304A.1 Adopt rules. The Chief Harbor Engineer, in cooperation with the General Manager of the Public Utilities Commission and other advisors as the Chief Harbor Engineer may deem appropriate, shall adopt reasonable rules and guidelines implementing the provisions and intent of this chapter and shall make them available to the public along with the informational brochure described in Section 1307A. The Chief Harbor Engineer, in cooperation with the General Manager of the Public Utilities Commission, may amend these rules and guidelines from time to time after considering public input.

1304A.2 Inspection procedures. The Chief Harbor Engineer shall include coverage of this chapter's requirements in the Water Inspection Procedures established by the Department.

SECTION 1305A ENFORCEMENT

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1305A.1 Abatement. A commercial building shall constitute a nuisance under the terms of Section 102A of this code and may be referred for a hearing or action under Section 102A of this code when the installation of a water conservation measure in a commercial building is required pursuant to this chapter and the water conservation measure has not been installed.

SECTION 1306A REQUIREMENTS

1306A.1 Building additions. For building additions where the sum of concurrent building permits by the same permit applicant would increase the floor area of the space in a building by more than ten percent, the permit applicant shall obtain a valid water conservation inspection and shall comply with the applicable water conservation measures required by this chapter as a condition for issuance of a Certificate of Final Completion and Occupancy by the Department upon completion of the addition.

1306A.1.1 Scope. This subsection shall apply to the entire building.

1306A.2 Building alterations and improvements.

1306A.2.1 For alterations or improvements where the total construction cost estimated in the building permit is greater than \$150,000, as a condition for issuance of a Certificate of Final Completion and Occupancy, or final permit sign off, by the Department upon completion of the alterations or improvements, the permit applicant shall obtain a valid water conservation inspection and shall install the applicable water conservation devices required by this chapter that serve the specific area of alteration or improvement.

1306A.2.2 Notwithstanding Section 1306A.2.1, for any alterations or improvements to a room containing any of the water conservation devices identified in Section 1313A, as a condition for issuance of a Certificate of Final Completion and Occupancy or final permit sign off by the Department upon completion of the alterations or improvements, the permit applicant shall install the applicable water conservation devices required by this chapter in that room.

1306A.3 (Reserved)

SECTION 1307A INFORMATION FOR CONSERVATION TECHNIQUES

1307A.1 Information on water conservation techniques is available at the SFPUC website: sfwater.org.

SECTION 1308A POSTPONEMENTS OF REQUIREMENTS

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1308A.1 Postponement for demolition. The duty of an owner or permit applicant to comply with inspection and water conservation requirements applicable to any portion of a building subject to this chapter shall be postponed for one year from the date of issuance of a demolition permit for said building. If the building is demolished and a certificate of completion is issued by the Department before the end of the one-year postponement, the requirements of this chapter shall not apply. If the building is not demolished after the expiration of one year, the provisions of this chapter shall apply, subject to appeal, even though the demolition permit is still in effect or a new demolition permit has been issued.

SECTION 1309A EARLY COMPLIANCE WITH WATER CONSERVATION MEASURES

1309A.1 Early compliance. To encourage early compliance with the requirements of this chapter, compliance pursuant to Section 1311A may be completed at any time before compliance would otherwise be required. In the event of early compliance, a water conservation inspection shall be completed and a certificate of compliance shall be filed with the Department in accordance with Section 1311A.

SECTION 1310A WATER CONSERVATION INSPECTIONS

1310A.1 Inspections. A water conservation inspection which satisfies the requirements of this chapter shall be performed as required by this chapter.

SECTION 1311A PROOF OF COMPLIANCE WITH WATER CONSERVATION MEASURES

1311A.1 Inspection form. The Department shall provide standardized forms, that may be paper and / or electronic suitable for conducting a valid water conservation inspection and certifying compliance with the requirements of this chapter. The inspection form shall be completed and signed by a qualified inspector, furnished to the permit applicant, building owner or the owner's authorized representative, and submitted to the Department in accordance with this Section.

1311A.2 Certificate of Compliance. When all of the water conservation requirements have been met, a certificate of compliance shall be signed and submitted to the Department.

1311A.3 Public records. Water conservation inspection results and certificates of compliance shall be public information, shall be available for inspection by any interested person during regular business hours at the Pier 1 Permit Desk, and may be made available at the Port of San Francisco internet website.

1311A.4 Fees. (Reserved)

1311A.4.1 Fee Schedule. (Reserved)

1311A.4.2 Fee Review. (Reserved)

**SECTION 1312A
APPEALS FROM RESULTS OF A WATER CONSERVATION INSPECTION OR
REQUEST FOR EXEMPTION**

1312A.1 Notice of appeal. Any person with an interest in the property subject to a water conservation inspection who contests the determination of a qualified inspector regarding required water conservation measures may appeal said decision to the Chief Harbor Engineer within ten working days from the date the completed inspection form was filed with the Department. The notice of appeal shall state, clearly and concisely, the grounds upon which the appeal is based. The burden of proof shall be on the applicant to demonstrate that the water conservation measure is not required under this chapter. The determination of the Chief Harbor Engineer may be appealed to the Port Building Code Review Board in accordance with Section 105A.

1312A.2 Exemptions. Any person with an interest in the property subject to a water conservation inspection who claims an exemption pursuant to Section 1313A.3 and 1313A.4 of this chapter may request a determination of exemption from the Chief Harbor Engineer by submitting the request in writing and stating the basis for the claim. The burden of proof shall be on the applicant to demonstrate the qualifications for the exemption. The Chief Harbor Engineer's review of an exemption request pursuant to this section shall be subject to Administrative Costs fees. See Section 110 Table 1A-J Miscellaneous Fees – for appropriate fee.

The determination of the Chief Harbor Engineer may be appealed to the Port Building Code Review Board in accordance with Section 105A. See Section 110A Table 1A-K Investigation Fees, Hearings, Code Enforcement Assessments and– for applicable fee.

**SECTION 1313A
REQUIRED WATER CONSERVATION MEASURES**

The following water conservation measures are required for commercial buildings:

1313A.1 Showerheads. Replace all showerheads having a maximum flow rate exceeding 2.5 gallons (9.46 liters) per minute, with showerheads not exceeding the maximum flow rate established by the California Energy Commission, as set forth in the Appliance Efficiency Regulations, California Code of Regulations, Title 20, Sections 1601 to 1608, as it may be amended. Showers shall have no more than one showerhead per valve. For purposes of this subsection, the term “showerheads” includes rain heads, rain tiles, or any other fitting that transmits water for purposes of showering.

1313A.2 Faucet aerators. Replace all faucets and faucet aerators having a maximum flow rate exceeding 2.2 gallons per minute at a water pressure of 60 pounds per square inch, with plumbing fittings not exceeding the maximum flow rate established by the California Energy Commission, as set forth in the Appliance Efficiency Regulations, California Code of Regulations, Title 20, Sections 1601 to 1608, as it may be amended. Health-care facilities that are required by this chapter to install faucet aerators may

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satisfy that requirement by installing other flow restricting devices, such as laminar flow control devices.

1313A.3 Water closets. Replace all water closets that have a rated water consumption exceeding 1.6 gallons per flush with fixtures not exceeding the rated maximum water consumption established in the Port of San Francisco Plumbing Code Chapter 4, Section 402.2, as it may be amended. An owner of a commercial building may request an exemption from replacing a water closet in the building if the replacement would detract from the historical integrity of the building, as determined by the Chief Harbor Engineer pursuant to the California Historic Building Code and Section 1312A.2.

1313A.4 Urinals. Replace all urinals that have a flow rate exceeding one gallon per flush with fixtures not exceeding the maximum flow rate established in the Port of San Francisco Plumbing Code, Section 402.3, as it may be amended. An owner of a commercial building may request an exemption from replacing a urinal in the building if the replacement would detract from the historical integrity of the building, as determined by the Chief Harbor Engineer pursuant to the California Historical Building Code and Section 1312A.2.

1313A.5 Leak repair. All water leaks shall be located and repaired by the owner. The following inspections or tests are required to determine the existence of leaks.

1. Visual inspection or water meter registration. If water meter registration is used, compliance is achieved if there is no meter movement for ten minutes while all fixtures are shut off.

2. All tank type water closets shall be tested with leak detector tablets or dye to detect slow valve leaks and all flushometer type fixtures shall be visually checked for proper operation with respect to timing and leaks.

SECTION 1314A WATER CONSERVATION INSPECTIONS

1314A.1 Inspections. Inspections to determine compliance with the water conservation requirements of this chapter may be conducted by one of the following:

1. A Port inspector authorized by the Chief Harbor Engineer;
2. A private inspector authorized by the Chief Harbor Engineer pursuant to established rules and guidelines;
3. A private inspector hired by the Port, or Public Utilities Commission, on a contractual basis under terms and fees to be recommended by the Chief Harbor Engineer and established by the Port Commission.

1314A.2 Qualified inspector duties. The duties of a qualified inspector shall be as follows:

1. To inspect portions of a building that are subject to this chapter to determine whether the water conservation standards specified in Section 1313A have been met and, if met, to sign a certificate of compliance, pursuant to Section 1311A, and to furnish

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it to the permit applicant, building owner or owner's agent;

2. To record on an official inspection form, pursuant to Section 1311A, all measures required by this chapter for which the building is in noncompliance, and to sign the inspection form and furnish it to the permit applicant, building owner or owner's agent.

1314A.3 Private water inspectors. Private inspectors shall be required to demonstrate financial responsibility by being insured and / or bonded in amounts to be determined by the Chief Harbor Engineer.

1314A.4 Conflict of interest. No authorized inspector may conduct a water inspection on any building in which that inspector has a financial interest. For the purposes of this section, an inspector shall be deemed to have a financial interest in a building if the inspector:

1. Is an owner of the building or the property upon which the building is located in full or in part;

2. Is a full- or part-time employee of the building or its owners, except for employees noted in 1314A.1(1) above;

3. Is regularly placed on the building staff by a company that provides building engineering, operations and maintenance, or other building services to the property.

1314A.5 Inspector as employee. No inspector may approve a certificate of water conservation compliance for a building where that inspector is an employee or officer of a company that performed construction or repair work required by this chapter, except for employees noted in 1314A.1(1) above.

1314A.6 Limitation. Water conservation inspections are intended to enforce the provisions of this chapter only, and are not intended to determine compliance or noncompliance with any other portions of this code.

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**Chapter 13B
CONSTRUCTION AND DEMOLITION DEBRIS RECOVERY PROGRAM**

Add this following chapter

**SECTION 1301B
TITLE**

This chapter shall be known as the “Construction and Demolition Debris Recovery Program.”

**SECTION 1302B
RECOVERY OF CONSTRUCTION AND DEMOLITION DEBRIS**

All construction and demolition debris in amounts of one cubic yard or greater generated in the course of a construction or demolition project must be transported off the site by a registered transporter, unless transported by the owner of the site, and handled, processed and otherwise managed by a registered facility for recovery of the materials in compliance with the requirements of Chapter 14 of the Environmental Code. For purposes of this chapter, all work shall be presumed to generate one cubic yard or greater of construction and demolition debris, unless the Applicant demonstrates otherwise. All persons subject to this requirement, including an applicant for any building or demolition permit shall comply with the requirements for construction and demolition debris recovery set forth in Chapter 14 of the Environment Code.

**SECTION 1303B
DEFINITIONS**

“Construction and Demolition Debris” shall mean building materials and solid waste generated from construction and demolition activities, including, but not limited to, fully-cured asphalt, concrete, brick, rock, soil, lumber, gypsum wallboard, cardboard and other associated packaging, roofing material, ceramic tile, carpeting, fixtures, plastic pipe, metals, tree stumps, and other vegetative matter resulting from land clearing and landscaping for construction, deconstruction, demolition or land developments. This term does not include refuse regulated under the 1932 Refuse Collection and Disposal Initiative Ordinance or sections of the Municipal Code that implement the provisions of that ordinance; materials from the public right-of-way; or, unless specified in Chapter 14 of the Environment Code, materials source separated for reuse or recycling. Hazardous waste, as defined in California Health and Safety Code Section 25100 et seq., as amended, is not Construction and Demolition Debris for purposes of this chapter.

“Registered Transporter” or “Registered Facility” shall mean a person who holds a valid registration issued by the Director of the Department of the Environment pursuant to Chapter 14 of the Environment Code. “Transporter” does not include a person that owns and operates only vehicles with no more than two axles and no more than two tires per axle.

**SECTION 1304B
PERMIT CONDITION**

The provisions of Chapter 14 of the Environment Code and any approvals or conditions imposed in writing by the Department of the Environment are conditions of the permit issued by the Department under Section 106A.1, and a violation of Chapter 14 or such approvals or conditions shall be deemed non-compliance with the permit.

**SECTION 1305B
PERMIT NOTIFICATION**

Permit application documents shall bear notice of and reference to the above requirements and the owner's responsibility for compliance with such requirements.

**SECTION 1306B
ENFORCEMENT**

Prior to concealing any work, unless otherwise approved by the Chief Harbor Engineer, the applicant shall submit to the Chief Harbor Engineer copies of all receipts from the registered transporter(s) and facility(s) used for recovery of all construction and demolition debris from the project. Such receipts shall include the following information:

1. The name of the registered facility(s) the debris was transported to and the amount of waste transported.
2. The total amount of construction and demolition debris generated and transported off the site
3. The name and registration of the transporter

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Chapter 13C GREEN BUILDING REQUIREMENTS

Add this following chapter

The Port of San Francisco adopts the 2010 Cal Green Code as amended by the Port of San Francisco and herein printed as Chapter 13C of the Port of San Francisco Building Code.

Replace the chapters as follows:

CHAPTER 13C.1 GENERAL

SECTION 13C.101 GENERAL

13C.101.1 Title. These regulations shall be known as the Port of San Francisco Green Building Code and may be cited as such and will be referred to herein as "this code". The Port of San Francisco Green Building Code is Chapter 13C of the official compilation and publication of the adoption, amendment and repeal of building regulations to the Port Commission amendments to as the California Building Standards Code.

13C.101.2 Purpose. The purpose of this chapter is to promote the health, safety and welfare of San Francisco residents, workers, and visitors by minimizing the use and waste of energy, water and other resources in the construction and operation of buildings in the Port of San Francisco and by providing a healthy indoor environment. The green building practices required by this chapter will also further the goal of reducing the greenhouse gas emissions in the Port of San Francisco to 20 percent below 1990 levels by the year 2012, as stated in Port Commission Resolution No. 158-02 and the City's 2004 Climate Action Plan.

13C.101.3 Scope. The provisions of this code shall apply to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure, unless other-wise indicated in this code, as well as alterations to existing buildings throughout the Port of San Francisco.

While this code references the standards of green building programs, the Port of San Francisco does not confer certification under any green building program.

13C.101.3.1 Regulated buildings, structures and applications. Provisions of this code shall apply to all occupancy types regulated by the Port of San Francisco Building Code, including: A, B, E, F, H, I, L, M, R, S, and U as defined by California Building Code Title 24 Section 302 (2010) as amended.

13C.101.4 Appendices. (Reserved)

13C.101.5 Referenced codes and standards. (Reserved)

13C.101.6 Order of precedence and use.

13C.101.6.1 Differences. In the event of any differences between these building standards and the standard reference documents, the text of this chapter shall govern.

13C.101.6.2 Specific provision. Where a specific provision varies from a general provision, the specific provision shall apply.

13C.101.6.3 Conflicts. When the requirements of this code conflict with the requirements of any other part of the California Building Standards Code, Title 24, the most restrictive requirement shall prevail.

13C.101.6.4. Explanatory notes. Explanatory material, such as references to web sites or other sources where additional information may be found, is included in this code in the form of notes. Notes are informational only and are not enforceable requirements of this code.

13C.101.7 Port of San Francisco amendments, additions and deletions. This chapter includes the amendments, deletions, and additions necessary to enforce California green building minimum mandatory measures as well as maintain stricter local standards.

13C.101.8 Equivalency. Wherever reference is made to the LEED® or GreenPoint Rated systems, a comparable equivalent rating system may be used if approved by the Chief Harbor Engineer. The applicable LEED®, GreenPoint Rated or equivalent versions of performance standards for applications subject to this chapter are:

LEED® for Green Interior Design and Construction v2009
LEED® for Building Design and Construction v2009
GreenPoint Rated (GPR) Single Family New Home Construction – v2009-11 version
GreenPoint Rated (GPR) New Multifamily Construction – v2009-11 version
LEED® for Homes v2009 (applicable as an equivalent compliance path for residential projects of 4 stories or greater, where CalGreen mandatory measures are not required.)

Wherever specific LEED® prerequisites or credits are cited, such references are to LEED® BD&C 2009. More recent LEED® and GreenPoint Rated versions may be used, provided the credits and points achieved are at least as stringent as LEED® BD&C 2009 or GPR 2009-11.

Wherever the LEED® or GreenPoint Rated systems include a minimum energy or other performance requirement, the permit applicant may choose to meet the minimum performance requirements with an alternative equivalent method approved by the Chief Harbor Engineer.

Compliance with any of these requirements may be verified and/or certified by any means, including third-party review, as approved by the Chief Harbor Engineer.

13C.101.9 Effective use of this code. The following steps may be used to establish which provisions of this code are applicable to a specific occupancy:

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1. Establish the type of occupancy.
2. Find the chapter which covers the established occupancy.
3. Identify the minimum requirements of this code for the established occupancy in Chapters 4 and 5.

13C.101.10 Construction documents and installation verification.

1. **Submittal documents.** Construction documents and other data shall be submitted in one or more sets with each application for a permit. Where special conditions exist, the Chief Harbor Engineer is authorized to require additional construction documents to be prepared by a licensed design professional and may be submitted separately. **Exception:** The Chief Harbor Engineer is authorized to waive the submission of construction documents and other data not required to be prepared by a licensed design professional.
2. **Information on construction documents.** Construction documents shall be of sufficient clarity to indicate the location, nature and scope of the proposed green building feature and show that it will conform to the provisions of this code, the California Building Standards Code, and other relevant laws, ordinances, rules and regulations as determined by the Chief Harbor Engineer.
3. **Verification.** Documentation of conformance for applicable green building measures shall be provided to the Chief Harbor Engineer. Alternate methods of documentation shall be acceptable when the Chief Harbor Engineer finds that the proposed alternate documentation is satisfactory to demonstrate substantial conformance with the intent of the proposed green building measure.

CHAPTER 13C.2 DEFINITIONS

SECTION 13C.201 GENERAL

13C.201.1 Scope. The following words and terms shall, for the purposes of this chapter, have the meanings indicated.

SECTION 13C.202 DEFINITIONS

AUTOMATIC. Automatic means capable of operating without human intervention.

BUILDING ENVELOPE. The ensemble of exterior and demising partitions of a building that enclose conditioned space.

CONDITIONED FLOOR AREA. The floor area (in square feet) of enclosed conditioned space on all floors of a building, as measured at the floor level of the exterior surfaces of exterior walls enclosing the conditioned space.

CONDITIONED SPACE. A space in a building that is either directly conditioned or indirectly conditioned.

CONDITIONED SPACE, DIRECTLY. An enclosed space that is provided with wood heating, is provided with mechanical heating that has a capacity exceeding 10 Btu/hr-ft², or is provided with mechanical cooling that has a capacity exceeding 5 Btu/hr-ft², unless the space-conditioning system is designed for a process space. (See "**PROCESS SPACE**")

CONDITIONED SPACE, INDIRECTLY. Enclosed space, including, but not limited to, unconditioned volume in atria, that (1) is not directly conditioned space; and (2) either (a) has a thermal transmittance area product (UA) to directly conditioned space exceeding that to the outdoors or to unconditioned space and does not have fixed vents or openings to the outdoors or to unconditioned space, or (b) is a space through which air from directly conditioned spaces is transferred at a rate exceeding three air changes per hour.

COOLING EQUIPMENT. Equipment used to provide mechanical cooling for a room or rooms in a building.

DEMOLITION. The removal of sufficient material from an existing building to meet the definition in Planning Code.

DISPOSAL. Means the management of solid waste through landfilling or transformation at permitted solid waste facilities.

DIVERSION. Means activities which reduce or eliminate the amount of solid waste from solid waste disposal for purposes of this code.

ENERGY COMMISSION. The California State Energy Resources Conservation and Development Commission.

EXFILTRATION. The uncontrolled outward air leakage from inside a building, including leakage through cracks and interstices, around windows and doors, and through any other exterior partition or duct penetration.

GREEN BUILDING. A holistic approach to design, construction, and demolition that minimizes the building's impact on the environment, the occupants, and the community.

GREENPOINT RATED, GREENPOINTS and GREENPOINTS CHECKLIST. The residential green building rating system and checklist and certification methodology of the non-profit organization Build It Green.

HAZARDOUS WASTE.

(a) Means a waste, defined as a "hazardous waste" in accordance with Section 25117 of the Health and Safety Code, or a combination of wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may do either of the following:

(1) Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.

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(2) Pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

(b) Unless expressly provided otherwise, "hazardous waste" includes extremely hazardous waste and acutely hazardous waste.

HIGH-RISE RESIDENTIAL BUILDING. A high-rise building that contains Group R residential occupancies.

HISTORICAL RESOURCE. A property that meets the terms of the definitions in Section 21084.1 of the CEQA Statute (The California Environmental Quality Act [Public Resources Code Section 21084.1]) and Section 15064.5 of the CEQA Guidelines, as determined by the San Francisco Planning Department.

INERT SOLIDS OR INERT WASTE. Inert solids or inert waste means a non-liquid solid waste including, but not limited to, soil and concrete, that does not contain hazardous waste or soluble pollutants at concentrations in excess of water-quality objectives established by a regional water board pursuant to Division 7 (commencing with Section 13000) of the California Water Code and does not contain significant quantities of decomposable solid waste.

INFILTRATION. An uncontrolled inward air leakage from outside a building or unconditioned space, including leakage through cracks and interstices, around windows and doors and through any other exterior or demising partition or pipe or duct penetration.

LARGE COMMERCIAL BUILDING. A commercial building or addition of Group B, M, A, or I occupancy that is 25,000 gross square feet or more.

LEED® and LEED® Checklist. The Leadership in Energy and Environment Design rating system, certification methodology, and checklist of the United States Green Building Council (USGBC).

MAJOR ALTERATIONS. Alterations where interior finishes are removed and significant upgrades to structural and mechanical, electrical and/or plumbing systems are proposed where areas of such construction are 25,000 gross square feet or more in Group B, M or R occupancies of existing buildings.

MID-SIZE COMMERCIAL BUILDING. A commercial building of Group B or M occupancy that is 5,000 or more and less than 25,000 gross square feet, and is not a high-rise building.

MID-SIZE RESIDENTIAL BUILDING. A building that contains five or more dwelling units and is not a high-rise building.

NEWLY CONSTRUCTED (or NEW CONSTRUCTION). A newly constructed building (or new construction) is a building that has never before been used or occupied for any purpose and does not include additions, alterations or repairs.

OUTDOOR AIR (Outside air). Air taken from outdoors and not previously circulated in the building.

NEW LARGE COMMERCIAL INTERIORS. First-time tenant improvements where areas of such construction are over 25,000 gross square feet or more in Group B or M occupancy areas of existing buildings.

PLANTS.

Adaptive plants. Adaptive plants are plants that grow well in a given habitat with minimal attention in the form of winter protection, pest protection, irrigation and fertilization once established.

Note: Adaptive plants are considered low in maintenance and are not Invasive plants.

Invasive plants. Invasive plants are both indigenous and non-indigenous species with growth habits that are characteristically aggressive.

Note: Invasive plants typically have a high reproductive capacity and tendency to overrun the ecosystems they inhabit.

Native plants. Native plants are plants that have adapted to a given area and are not invasive.

PROCESS SPACE. A space that is thermostatically controlled to maintain a process environment temperature less than 55° F or to maintain a process environment temperature greater than 90° F for the whole space that the system serves, or that is a space with a space-conditioning system designed and controlled to be incapable of operating at temperatures above 55° F or incapable of operating at temperatures below 90° F at design conditions.

RECYCLE or RECYCLING. The process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace. "Recycling" does not include transformation, as defined in California Public Resources Code Section 40201.

RESILIENT FLOORING. Refers to non-textile flooring materials which have a relatively firm surface, yet characteristically have "give" and "bounce back" to their original surface profile from the weight of objects that compress its surface. Resilient flooring materials are made in various shapes and sizes including both tile and roll form. Common types of resilient flooring include but are not limited to:

1. Vinyl composition tile
2. Vinyl tile and sheet flooring
3. Linoleum tile and sheet
4. Cork tile and sheet flooring
5. Rubber tile and sheet flooring
6. Polymeric poured seamless flooring
7. Other types of non-textile synthetic flooring

RE-USE. Means the use, in the same form as it was produced, of a material which might otherwise be discarded.

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SMALL RESIDENTIAL BUILDING. A building that has four or fewer dwelling units and is not a high-rise building.

SOLID WASTE.

(a) Solid waste means all putrescible and nonputrescible solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated, or chemically fixed sewage sludge which is not hazardous waste, manure, vegetable or animal solid and semisolid wastes, and other discarded solid and semisolid wastes.

(b) "Solid waste" does not include any of the following wastes:

(1) Hazardous waste, as defined in California Public Resources Code Section 40141.

(2) Radioactive waste regulated pursuant to the California Radiation Control Law (Chapter 8 (commencing with Section 114960) of Part 9 of Division 104 of the California Health and Safety Code).

(3) Medical waste regulated pursuant to the Medical Waste Management Act (Part 14 commencing with Section 117600) of Division 104 of the California Health and Safety Code). Untreated medical waste shall not be disposed of in a solid waste landfill, as defined in California Public Resources Code Section 40195.1. Medical waste that has been treated and deemed to be solid waste shall be regulated pursuant to this chapter.

VAPOR BARRIER. Material that has a permeance rating of one perm or less when tested in accordance with the desiccant method using procedure A of ASTM E96 and that provides resistance to the transmission of moisture vapor.

CHAPTER 13C.3 GREEN BUILDING

SECTION 13C.301 GENERAL

13C.301.1 Scope. Newly constructed buildings in the Port of San Francisco shall fulfill the measures specified as mandatory under the California Green Building Standards Code (CALGreen) through compliance with the more stringent requirements set forth in this chapter.

The following scopes of work shall also fulfill measures specified as mandatory under CALGreen through compliance with the more stringent requirements set forth in this chapter.

(1) Major alterations and first-time build-outs of commercial interiors that are 25,000 gross square feet or more in existing buildings of Group B, M.

(2) R occupancies, where interior finishes are removed and significant upgrades to structural and mechanical, electrical and/or plumbing systems are proposed.

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The following scopes of work are not subject to the more stringent requirements of this chapter and are subject only to the CALGreen mandatory measures, unless otherwise noted:

- (1) Any new building in which laboratory use of any occupancy classification is the primary use, and
- (2) Any building undergoing renovation in which the area of renovation will be primarily for laboratory use of any occupancy classification.
- (3) Newly constructed buildings of Group B, M, A, and I occupancies that are 5,000 gross square feet or less.

SECTION 13C.302 MIXED OCCUPANCY BUILDINGS

13C.302.1 Mixed occupancy buildings. In mixed occupancy buildings, each portion of a building shall comply with the specific CALGreen mandatory measures applicable to each specific occupancy. However, to fulfill requirements of this chapter, the project sponsor may apply a single required green building standard to the entire building.

SECTION 13C.303 PHASED PROJECTS

13C.303.1 Phased projects. For shell buildings and others constructed for future tenant improvements, only those code measures relevant to the building components and systems considered to be new construction (or newly constructed) shall apply.

13C.303.1.1 Maintenance of required features. Any structure subject to this chapter shall maintain the green building features required herein, or equivalent, regardless of subsequent alterations, additions, or changes of use.

CHAPTER 13C.4 RESIDENTIAL REQUIREMENTS

13C.4.1 - PLANNING AND DESIGN

SECTION 13C.4.101 GENERAL

13C. 4.101.1 Purpose. This chapter outlines green building requirements for all newly constructed Group R occupancy buildings as well as major alterations of Group R occupancy buildings to promote the health, safety and welfare of Port of San Francisco residents.

**SECTION 13C.4.102
DEFINITIONS**

13C.4.102.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

FRENCH DRAIN. A trench, hole or other depressed area loosely filled with rock, gravel, fragments of brick or similar pervious material used to collect or channel drainage or runoff water.

**SECTION 13C.4.103
REQUIREMENTS FOR GROUP R OCCUPANCY BUILDINGS**

13C.4.103.1 New small and midsize residential buildings.

13C.4.103.1.1 Rating requirements.

Effective January 1, 2011, a new building must be GreenPoint Rated and applicants must submit documentation demonstrating that a minimum of 75 GreenPoints from the GreenPoints Single Family New Construction Checklist or the GreenPoints Multifamily New Construction Checklist will be achieved.

13C.4.103.1.2 Stormwater management.

In addition to any stormwater measures required in the course of meeting the GreenPoint Rated standard, projects disturbing 5,000 square feet or more in ground area shall meet or exceed the “Best Management Practices” included in the “Stormwater Design Guidelines” available under Permit Services at www.sfport.com, including LEED® SS 6.1® and 6.2 as applicable. All new building projects – including those less than one acre in area – must also develop and implement a construction activity pollution prevention plan meeting the Best Management Practices included in the Stormwater Design Guidelines, as applicable.

13C.4.103.2 New high-rise residential buildings.

13C.4.103.2.1 Rating requirement.

Effective January 1, 2011, permit applicants must submit documentation to achieve LEED® “Silver” certification. Alternatively, this rating requirement may be met by obtaining the GreenPoint Rated designation and submitting documentation demonstrating that a minimum of 75 GreenPoints from the GreenPoint Rated Multifamily New Construction checklist will be achieved.

13C.4.103.2.2 Indoor water use reduction. Permit applicants must submit documentation verifying that a minimum 30 percent reduction in the use of indoor potable water is achieved, as calculated to meet LEED® credit WE3.2.

13C.4.103.2.3 Construction debris management. Permit applicants must submit documentation verifying the diversion of a minimum 75 percent of the project’s construction and demolition debris, as calculated to meet LEED® credit MR2.2. The waste management plan necessary to meet this requirement shall be updated as necessary and shall be accessible during construction for examination by the Department.

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Permit applicants must also meet the requirements of San Francisco Environment Code Chapter 14 and Port of San Francisco Building Code Chapter 13B (Construction and Demolition Debris Recovery Program.)

13C.4.103.2.4 Stormwater management. Stormwater management shall meet the “Stormwater Design Guidelines” available under Permit Services at www.sfport.com, and shall meet or exceed the applicable LEED® SS 6.1 and SS 6.2 credits.

13C.4.103.2.4.1 Construction activity stormwater pollution prevention. All projects, whether greater or lesser than one acre, must develop and implement a construction activity pollution prevention plan meeting the Best Management Practices included in the Stormwater Design Guidelines available under Permit Services at www.sfport.com, as well as LEED® prerequisite SSp1, as applicable.

13C.4.103.3 Major alterations to existing group r occupancy buildings.

13C.4.103.3.1 Rating requirement.

Effective January 1, 2011, permit applicants must submit documentation to achieve LEED® “Silver” certification. Effective January 1, 2012, applicants must submit documentation achieve a LEED® Gold rating. Alternatively, this rating requirement may be met by obtaining the GreenPoint Rated designation and submitting documentation demonstrating that a minimum of 75 GreenPoints from the GreenPoint Rated Multifamily New Construction checklist will be achieved.

13C.4.103.3.2 Low-emitting materials.

Alterations utilizing LEED® must submit documentation to verify the use of low-emitting materials meeting the LEED® credits EQ 4.1 (adhesives and sealants), EQ 4.2 (paints and coatings), and EQ 4.3 (carpet systems) where applicable.

Alterations utilizing GreenPoint Rated must submit documentation to verify the use of low-emitting materials meeting the GreenPoint Rated Multifamily New Homes measures for low-emitting coatings, adhesives and sealants, and carpet systems.

SECTION 13C.4.104 HISTORIC PRESERVATION

13C.4.104.1 On-site retention of historical features. For alterations of buildings determined to be historical resources, after demonstrating compliance with all applicable codes, including the 2008 California Building Energy Efficiency Standards (Title 24, Part 6) and the 2010 California Historical Building Code (Title 24, Part 8), the minimum points or credits required under this chapter shall be reduced for retention and in-situ reuse or restoration of certain character defining features, as follows:

TABLE 13C.4.104.A

SIGNIFICANT HISTORICAL ARCHITECTURAL FEATURES	PERCENT RETAINED*	ADJUSTMENT TO MINIMUM LEED POINT REQUIREMENT	ADJUSTMENT TO MINIMUM GREENPOINTS REQUIREMENT
Windows @ principal façade(s)	At least 50%	2	7
Windows @ principal façade(s)	At least 75%	3	11
Windows @ principal façade(s)	100%	4	15
Other windows	At least 50%	1	3
Other windows	100%	2	6
Exterior doors @ principal façade(s)	100%	1	3
Siding or wall finish @ principal façade(s)	80%	1	4
Trim & casing @ wall openings on principal façade(s)	100%	1	3
Roof cornices or decorative eaves visible from right-of-way	100%	1	3
Sub-cornices, belt courses, water tables, and running trim visible from right-of-way	80%	1	3
Character-defining elements of significant interior spaces	At least 50%	2	7
Character-defining elements of significant interior spaces	100%	4	15
Other exterior ornamentation (e.g. cartouches, corbels, quoins, etc.) visible from right-of-way	80%	1	3

* Retention includes the rehabilitation and repair of character-defining features that conform to the Secretary of the Interior's Standards for the Treatment of Historic Properties.

**SECTION 13C.4.105
DEMOLITION OF EXISTING STRUCTURES**

13C.4.105.1 LEED® Projects. For projects attaining a LEED® certification:

- (1) Where the building demolished was an historical resource, the required points shall be increased by 10 points.
- (2) Where the building demolished was not an historical resource, the required points shall be increased by 6 additional points.
- (3) Where the building demolished was not an historical resource and the number of dwellings in the residential portion of the replacement structure are tripled, the required points shall be increased by 5 additional points.

13C.4.105.1.2 GreenPoint Rated Projects. For projects attaining GreenPoint Rated:

- (1) Where the building demolished was an historical resource, the required points shall be increased by 25 additional points.

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- (2) Where the building demolished was not an historical resource, the required points shall be increased by 20 additional points.
- (3) Where the building demolished was not an historical resource and the number of dwellings in the residential portion of the replacement structure are tripled, the required points shall be increased by 17 additional points.

SECTION 13C.4.106 SITE DEVELOPMENT

13C.4.106.1 General. The requirements of this section shall be completely met in the course of compliance with Section 13C.4.103, which is either equivalent or stricter in all of its requirements. This section is therefore included for reference only.

13C.4.106.2 Storm water drainage and retention during construction. See 13C.4.103

13C.4.106.3 Surface drainage. The site shall be planned and developed to keep surface water from entering buildings. Construction plans shall indicate how the site grading or drainage system will manage surface water flows. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales.
2. Water collection and disposal systems.
3. French drains.
4. Water retention gardens.
5. Other water measures which keep surface water away from building and aid in groundwater recharge.

13C.4.2 - ENERGY EFFICIENCY

SECTION 13C.4.201 GENERAL

13C.4.201.1 Scope. A 15% reduction in energy usage when compared to statewide mandatory energy efficiency standards is required.

13C.4.201.1.1 Energy performance. To demonstrate compliance with this section applicant may use an Alternative Calculation Method (ACM) approved by the California Energy Commission to calculate the building's energy use, and to then compare this calculated building energy use of the Proposed Design to the Standard Design or the "budget" building to show a 15% savings margin over Title 24 Part 6 2010 California Energy Standards.

Alternatively, high rise projects utilizing LEED® to meet the requirements of this chapter may:

- (1) Document compliance with Title 24 Part 6 2010 California Energy Standards, including submittal of all standard Title 24 Part 6 2010 compliance documentation, and

(2) Additionally demonstrate that the project achieves a 15% or greater compliance margin over ASHRAE 90.1 2007 energy cost baseline using the published LEED® 2009 rules. Such analysis must include all on-site building energy use, including exterior and security lighting, elevators, all process loads, and receptacle loads.

13C.4.3 - WATER EFFICIENCY AND CONSERVATION

SECTION 13C.4.301 GENERAL

13C.4.301.1 Scope. The provisions of this section establish the means of conserving water used indoors, outdoors and in wastewater conveyance. The requirements of this section will be completely met in the course of compliance with Section 13C.4.103, which is either equivalent or stricter in all of its requirements. Therefore, this section is included for reference only.

SECTION 13C.4.302 DEFINITIONS (Reserved)

SECTION 13C.4.303 INDOOR WATER USE

13C.4.303.1 20% Savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by at least 20% shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fitting as required by the California Building Standards Code. The 20% reduction in potable water use shall be demonstrated by one of the following methods.

1. Each plumbing fixture and fitting shall meet reduced flow rates specified in Table 13C.4.303.1; or
2. A calculation demonstrating a 20% reduction in the building "water use" baseline as established in Table 13C.4.303.1 shall be provided. For low-rise residential occupancies, the calculation shall be limited to the following plumbing fixture and fitting types: water closets, urinals, lavatory faucets and showerheads.

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**TABLE 13C.4.303.1
WATER USE BASELINE¹**

Fixture Type	Flow-rate ²	Duration	Daily uses	Occupants ³
Showerheads Residential	2.5 gpm @ 80 psi	8 min.	1	
Lavatory Faucets Residential	2.2 gpm @ 60 psi	.25 min.	3	
Kitchen Faucets	2.2 gpm @ 60 psi	4 min.	1	
Replacement Aerators	2.2 gpm @ 60 psi			
Gravity tank type Water Closets	1.6 gallons/flush	1 flush	1 male 3 female	
Flushometer Tank Water Closets	1.6 gallons/flush	1 flush	1 male 3 female	
Flushometer Valve Water Closets	1.6 gallons/flush	1 flush	1 male 3 female	
Electromechanical Hydraulic Water Closets	1.6 gallons/flush	1 flush	1 male 3 female	
Urinals	1.0 gallons/flush	1 flush	2 male	

Fixture "Water Use" = Flow rate x Duration x Occupants x Daily uses

¹ Use Worksheet WS-1 to calculate baseline water use.

² The Flow-rate is from the CEC Appliance Efficiency Standards, Title 20 California Code of Regulations; where a conflict occurs, the CEC standards shall apply.

³ For low rise residential occupancies, the number of occupants shall be based on two persons for the first bedroom, plus one additional person for each additional bedroom.

**TABLE 13C.4.303.2
FIXTURE FLOW RATES**

Fixture Type	Flow-rate	Maximum flow rate at ≥ 20% Reduction
Showerheads	2.5 gpm @ 80 psi	2 gpm @ 80 psi
Lavatory Faucets Residential	2.2 gpm @ 60 psi	1.5 gpm @ 60 psi ²
Kitchen Faucets	2.2 gpm @ 60 psi	1.8 gpm @ 60 psi
Gravity tank type Water Closets	1.6 gallons/flush	1.28 gallons/flush ¹
Flushometer Tank Water Closets	1.6 gallons/flush	1.28 gallons/flush ¹
Flushometer Valve Water Closets	1.6 gallons/flush	1.28 gallons/flush ¹
Electromechanical Hydraulic Water Closets	1.6 gallons/flush	1.28 gallons/flush ¹
Urinals	1.0 gallons/flush	.5 gallons/flush

¹ Includes single and dual flush water closets with an effective flush of 1.28 gallons or less.

Single Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is the average flush volume when tested in accordance with ASME A112.19.233.2.

Dual Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush. Flush volumes will be tested in

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accordance with ASME A112.19.2 and ASME A112.19.14.

² Lavatory Faucets shall not have a flow rate less than 0.8 gpm at 20 psi.

13C.4.303.3 Plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall meet the standards referenced in Table 13C.4.303.3.

**TABLE 13C.4.303.3
STANDARDS FOR PLUMBING FIXTURES AND FIXTURE FITTINGS**

REQUIRED STANDARDS	
Water closets (toilets) – flushometer valve type single flush, maximum flush volume	ASME A112.19.2/CSA B45.1 – 1.28 gal (4.8 L)
Water closets (toilets) – flushometer valve type dual flush, maximum flush volume	ASME A112.19.14 and USEPA WaterSense Tank-Type High Efficiency Toilet Specification – 1.28 gal (4.8 L).
Water closets (toilets) – tank-type	U.S. EPA WaterSense Tank-Type High-Efficiency Toilet Specification
Urinals, maximum flush volume	ASME A112.19.2/CSA B45.1 – 0.5 gal (1.9 L)
Urinals, non-water urinals	ASME A112.19.19 (vitreous china) ANSI Z124.9–2004 or IAPMO Z124.9 (plastic)
Public lavatory faucets: Maximum flow rate – 0.5 gpm (1.9 L/min)	ASME A112.18.1/CSA B125.1
Public metering self-closing faucets: Maximum water use – 0.25 gal (1.0 L) per metering cycle	ASME A112.18.1/CSA B125.1
Residential bathroom lavatory sink faucets: Maximum flow rate – 1.5 gpm (5.7 L/min)	ASME A112.18.1/CSA B125.1

**SECTION 13C.4.304
OUTDOOR WATER USE**

13C.4.304.1 Irrigation controllers. Automatic irrigation system controllers for landscaping provided by the builder and installed at the time of final inspection shall comply with the following:

1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.
2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

Note: More information regarding irrigation controller function and specifications is available from the Irrigation Association at <http://www.irrigation.org/SWAT/Industry/ia-tested.asp>.

**SECTION 13C.4.4.305
WATER REUSE SYSTEMS
(Reserved)**

13C.4.4 – MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

**SECTION 13C.4.401
GENERAL**

13C.4.401.1 Scope. The requirements of this section are completely met in the course of compliance with Section 13C.4.103, which is either equivalent or stricter in all of its requirements. Therefore, this section is included for reference only. The provisions of this section outline means of achieving material conservation and resource efficiency through protection of buildings from exterior moisture, construction waste diversion, employment of techniques to reduce pollution through recycling of materials, and building commissioning or testing, adjusting and balancing.

**SECTION 13C.4.402
DEFINITIONS
(Reserved)**

**SECTION 13C.4.403
FOUNDATION SYSTEMS
(Reserved)**

**SECTION 13C.4.404
EFFICIENT FRAMING TECHNIQUES
(Reserved)**

**SECTION 13C.4.405
MATERIAL SOURCES
(Reserved)**

**SECTION 13C.4.406
ENHANCED DURABILITY AND REDUCED MAINTENANCE**

13C.4.406.1 Joints and openings. Openings in the building envelope separating conditioned space from unconditioned space needed to accommodate gas, plumbing, electrical lines and other necessary penetrations must be sealed in compliance with the California Energy Code.

Exception: Annular spaces around pipes, electric cables, conduits, or other openings in plates at exterior walls shall be protected against the passage of rodents by closing such

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openings with cement mortar, concrete masonry or similar method acceptable to the Chief Harbor Engineer.

SECTION 13C.4.407 WATER RESISTANCE AND MOISTURE MANAGEMENT (Reserved)

SECTION 13C.4.408 CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING

13C.4.408.1 Construction waste. Applicants must comply with Port Building Code Chapter 13B.

13C.4.408.2 Construction waste management plan. High-rise residential structures must additionally comply with PSFBC 13C.4.103.2.4 or the requirements of GreenPoint Rated, as applicable, to submit documentation that a construction waste management plan has been prepared and implemented.

SECTION 13C.4.409 LIFE-CYCLE ASSESSMENT (Reserved)

SECTION 13C.4.410 BUILDING MAINTENANCE AND OPERATION

13C.4.410.1 Operation and maintenance manual. At the time of final inspection, a manual, compact disc, web-based reference or other media acceptable to the Chief Harbor Engineer which includes all of the following shall be placed in the building:

1. Directions to the owner or occupant that the manual shall remain with the building throughout the life-cycle of the structure.
2. Operation and maintenance instructions for the following:
 - a. Equipment and appliances, including water saving devices and systems, HVAC systems, water heating systems and other major appliances and equipment.
 - b. Roof and yard drainage, including gutters and downspouts.
 - c. Space conditioning systems including condenser and air filters.
 - d. Landscape irrigation systems.
 - e. Water reuse systems.
3. Information from local utility, water and waste recovery providers on methods to further reduce resource consumption including recycle programs and locations.
4. Public transportation and/or carpool options available in the area.
5. Educational material on the positive impacts of an interior relative humidity between 30-60% and what methods an occupant may use to maintain the relative humidity level in that range.
6. Information about water conserving landscape and irrigation design and controllers which conserve water.

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7. Instructions for maintaining gutters and downspouts and importance of diverting water at least five feet away from foundation.
8. Information on required routine maintenance measures, including, but not limited to, caulking, painting, grading around building, etc.
9. Information about State solar energy and incentive programs available.
10. A copy of all special inspection verifications required by the Chief Harbor Engineer_or this code.

13C.4.410.2 Solid waste. Areas must be provided for the storage, collection and loading of recycling, composting and trash. All such areas, including any chute systems, must be designed for equal convenience for all users to separate those three material streams, and must provide space to accommodate a sufficient quantity and type of containers to be compatible with current methods of collection.

13C.4.5 - ENVIRONMENTAL QUALITY

SECTION 13C.4.501 GENERAL

13C.4.501.1 Scope. The requirements of this section will be completely met in the course of compliance with Section 13C.4.103, which is either equivalent or stricter than the requirements noted in this Section in all of its requirements. The provisions of this chapter shall outline means of reducing the quantity of air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of a building's installers, occupants and neighbors, for reference purposes only.

SECTION 13C.4.502 DEFINITIONS

13C.4.502.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

AGRIFIBER PRODUCTS. Agrifiber products include wheatboard, strawboard, panel substrates and door cores, not including furniture, fixtures and equipment (FF&E) not considered base building elements.

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard, and medium density fiberboard. Composite wood products does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber as specified in "Structural Glue Laminated Timber" (ANSI A190.1-2002) or prefabricated wood I-joists.

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g O₃ /g ROG).
Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

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MOISTURE CONTENT. The weight of the water in wood expressed in percentage of the weight of the oven-dry wood.

PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).

Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521(a).

REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.

VOC. A volatile organic compound broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a).

Note: Where specific regulations are cited from different agencies such as South Coast Air Quality Management District (SCAQMD), California Air Resources Board (ARB), etc., the VOC definition included in that specific regulation is the one that prevails for the specific measure in question.

SECTION 13C.4.503 FIREPLACES

13C.4.503.1 General. Any installed gas fireplace shall be a direct-vent sealed-combustion type.

SECTION 13C.4.504 POLLUTANT CONTROL

13C.4.504.1 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation, or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the Chief Harbor Engineer to reduce the amount of dust or debris which may collect in the system.

13C.4.504.2 Finish material pollutant control. Finish materials shall comply with this section.

13C.4.504.2.1 Adhesives, sealants and caulks. Adhesives, sealants and caulks used on the project shall meet the requirements of the following standards unless more stringent local or regional air pollution or air quality management district rules apply:

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as

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shown in Tables 13C.4.504.1 or 13C.4.504.2 as applicable. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene), except for aerosol products as specified in subsection 2 below.

2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507.

Note: Title 17 may be found at <http://ccr.oal.ca.gov/>

13C.4.504.2.2 Paints and coatings. Architectural paints and coatings shall comply with VOC limits in Table I of the ARB Architectural Suggested Control Measure as shown in Table 13C.4.504.3 unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 13C.4.504.3, shall be determined by classifying the coating as a Flat, Nonflat, or Nonflat-High Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat, or Nonflat-High Gloss VOC limit in Table 13C.4.504.3 shall apply.

13C.4.504.2.3 Aerosol paints and coatings. Aerosol paints and coatings shall meet the Product-Weighted MIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.

Notes:

1. Title 17 may be found at <http://ccr.oal.ca.gov/>
2. See Bay Area Air Quality Management District Regulation 8 Rule 49 at <http://www.arb.ca.gov/DRDB/BA/CURHTML/R8-49.HTM>

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**TABLE 13C.4.504.1
ADHESIVE VOC LIMIT¹**

Less Water and Less Exempt Compounds in Grams per Liter

Architectural Applications	Current VOC Limit
Indoor Carpet Adhesives	50
Carpet Pad Adhesives	50
Outdoor Carpet Adhesives	150
Wood Flooring Adhesive	100
Rubber Floor Adhesives	60
Subfloor Adhesives	50
Ceramic Tile Adhesives	65
VCT and Asphalt Tile Adhesives	50
Dry Wall and Panel Adhesives	50
Cove Base Adhesives	50
Multipurpose Construction Adhesives	70
Structural Glazing Adhesives	100
Single Ply Roof Membrane Adhesives	250
Other Adhesive not specifically listed	50
Specialty Applications	Current VOC Limit
PVC Welding	285
CPVC Welding	270
ABS Welding	325
Plastic Cement Welding	250
Adhesive Primer for Plastic	250
Contact Adhesive	80
Special Purpose Contact Adhesive	250
Structural Wood Member Adhesive	140
Top and Trim Adhesive	250
Substrate Specific Applications	Current VOC Limit
Metal to Metal	30
Plastic Foams	50
Porous Material (except wood)	50
Wood	30
Fiberglass	80

¹ For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168, <http://www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF>.

**TABLE 13C.4.504.2
SEALANT VOC LIMIT**

Less Water and Less Exempt Compounds in Grams per Liter

Sealants	Current VOC Limit
Architectural	250
Marine Deck	760
Nonmembrane Roof	300
Roadway	250
Single-Ply Roof Membrane	450
Other	420
Sealant Primers	Current VOC Limit
Architectural	
Non Porous	250
Porous	775
Modified Bituminous	500
Marine Deck	760
Other	750

13C.4.504.2.4 Verification. Verification of compliance with this section shall be provided at the request of the Chief Harbor Engineer. Documentation may include, but is not limited to, the following:

1. Manufacturers product specification.
2. Field verification of on-site product containers.

13C.4.504.3 Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the following:

1. Carpet and Rug Institute's Green Label Plus Program
2. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350)
3. NSF/ANSI 140 at the Gold level
4. Scientific Certifications Systems Indoor Advantage™ Gold

Notes:

1. For Green Label Plus, see <http://www.carpet-rug.com/> .
2. For NSF/ANSI 140, see <http://www.carpet-rug.org/carpet-and-rug-industry/sustainability/sustainable-carpet-list.cfm>.
3. For Indoor Advantage™ Gold, see <http://www.scscertified.com/iaq/indooradvantage.htm> .
4. Scientific Certifications Systems Indoor Advantage™ <http://www.scscertified.com/iaq/indooradvantage.htm>.

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13C.4.504.3.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.

13C.4.504.3.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 13C.4.504.1.

13C.4.504.4 Resilient flooring systems. Where resilient flooring is installed, at least 50% of floor area receiving resilient flooring shall comply with the VOC-emission limits defined in the Collaborative for High Performance Schools (CHPS) Low-emitting Materials List or certified under the Resilient Floor Covering Institute (RCFI) FloorScore program.

13C.4.504.5 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections as shown in Table 13C.4.504.5.

13C.4.504.5.1 Documentation. Verification of compliance with this section shall be provided as requested by the Department. Documentation shall include at least one of the following:

1. Product certifications and specifications.
2. Chain of custody certifications.
3. Other methods acceptable to the Chief Harbor Engineer.

**TABLE 13C.4.504.5
FORMALDEHYDE LIMITS¹**

Maximum formaldehyde emissions in parts per million.

Product	Current Limit	Jan 1, 2012	Jul 1, 2012
Hardwood Plywood Veneer Core	0.05		
Hardwood Plywood Composite Core	0.08		0.05
Particle Board	0.09		
Medium Density Fiberboard	0.11		
Thin Medium Density Fiberboard ²	0.21	0.13	

¹ Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E1333-96 (2002). For additional information, see California Code of Regulations, Title 17, Sections 93120 through 93120.12.

² Thin medium density fiberboard has a maximum thickness of eight millimeters.

**SECTION 13C.4.505
INTERIOR MOISTURE CONTROL**

13C.4.505.2 Concrete slab foundations. Concrete slab foundations required to have a

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vapor retarder by California Building Code, CCR, Title 24, Part 2, Chapter 19, shall also comply with this section.

13C.4.505.2.1 Capillary break. A capillary break shall be installed in compliance with at least one of the following:

1. A 4-inch (101.6 mm) thick base of ½ inch (12.7 mm) or larger clean aggregate shall be provided with a vapor barrier in direct contact with concrete and a concrete mix design which will address bleeding, shrinkage, and curling shall be used. For additional information, see American Concrete Institute, ACI 302.2R-06.
2. Other equivalent methods approved by the Chief Harbor Engineer.
3. A slab design specified by a licensed design professional.

13C.4.505.3 Moisture content of building materials. Building materials with visible signs of water damage shall not be installed. Wall and floor framing shall not be enclosed when the framing members exceed 19% moisture content. Moisture content shall be verified in compliance with the following:

1. Moisture content shall be determined with either a probe-type or a contact-type moisture meter.
2. Moisture readings shall be taken at a point 2 feet (610 mm) to 4 feet (1219 mm) from the grade stamped end of each piece to be verified.
3. At least three random moisture readings shall be performed on wall and floor framing with documentation acceptable to the Chief Harbor Engineer provided at the time of approval to enclose the wall and floor framing.

Insulation products which are visibly wet or have a high moisture content shall be replaced or allowed to dry prior to enclosure in wall or floor cavities. Wet applied insulation products shall follow the manufacturers' drying recommendations prior to enclosure.

SECTION 13C.4.506 INDOOR AIR QUALITY AND EXHAUST

13C.4.506.1 Bathroom exhaust fans. Mechanical exhaust fans which exhaust directly from bathrooms shall comply with the following requirements. For the purposes of this section, a bathroom is a room which contains a bathtub, shower, or tub/shower combination.

1. Fans shall be ENERGY STAR compliant and be ducted to terminate outside the building.
2. Unless functioning as a component of a whole house ventilation system, fans must be controlled by a humidistat which shall be readily accessible.
 - a. Humidistat controls shall be capable of adjustment between a relative humidity range of 50 to 80 percent.

**SECTION 13C.4.507
ENVIRONMENTAL COMFORT**

13C.4.507.1 Openings. Whole house exhaust fans shall have insulated louvers or covers which close when the fan is off. Covers or louvers shall have a minimum insulation value of R-4.2.

13C.4.507.2 Heating and air conditioning system design. Heating and air conditioning systems shall be sized, designed, and equipment is selected using the following methods:

1. The heat loss and heat gain is established according to ACCA Manual J, ASHRAE handbooks or other equivalent design software or methods.
2. Duct systems are sized according to ACCA 29-D Manual D, ASHRAE handbooks or other equivalent design software or methods.
3. Select heating and cooling equipment according to ACCA 36-S Manual S or other equivalent design software or methods.

Exception: Use of alternate design temperatures necessary to ensure the systems function are acceptable.

**SECTION 13C.4.508
OUTDOOR AIR QUALITY
(Reserved)**

**CHAPTER 13C.5
NONRESIDENTIAL REQUIREMENTS**

13C.5.1 PLANNING AND DESIGN

**SECTION 13C.5.101
GENERAL**

13C.5.101 Purpose. This chapter outlines green building requirements for all newly constructed buildings that do not contain Group R occupancies, as well as Major Alterations to Group B and M occupancy buildings to promote the health, safety and welfare of Port of San Francisco residents.

**SECTION 13C.5.102
DEFINITIONS**

13C.5.102 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

BUILDING COMMISSIONING. A systematic quality assurance process that spans the

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entire design and construction process, including verifying and documenting that building systems and components are planned, designed, installed, tested, operated, and maintained to meet the owner's project requirements.

CUTOFF LUMINAIRES. Luminaires whose light distribution is such that the candela per 1000 lamp lumens does not numerically exceed 25 (2.5%) at an angle of 90° above nadir, and 100 (10%) at a vertical angle of 80° above nadir. This applies to all lateral angles around the luminaire.

LOW-EMITTING AND FUEL EFFICIENT VEHICLES. Eligible vehicles are limited to the following:

1. Zero emission vehicle (ZEV), including neighborhood electric vehicles (NEV), partial zero emission vehicle (PZEV), advanced technology PZEV (AT ZEV), or CNG fueled (Original equipment manufacturer only) regulated under Health and Safety Code Section 43800 and CCR, Title 13, Sections 1961 and 1962.
2. High efficiency vehicles, regulated by US EPA, bearing High-Occupancy Vehicle (HOV) car pool lane stickers issued by the Department of Motor Vehicles.

NEIGHBORHOOD ELECTRIC VEHICLE (NEV). A motor vehicle that meets the definition of "low-speed vehicle" either in Section 385.5 of the Vehicle Code or in 49 CFR571.500 (as it existed on July 1, 2000), and is certified to zero-emission vehicle standards.

PZEV. Any vehicle certified by the California Air Resources Board as a Partial Credit Zero Emission Vehicle.

TENANT-OCCUPANTS. Building occupants who inhabit a building during its normal hours of operation as permanent occupants, such as employees, as distinguished from customers and other transient visitors.

VANPOOL VEHICLE. Eligible vehicles are limited to any motor vehicle, other than a motortruck or truck tractor, designed for carrying more than 10 but not more than 15 persons including the driver, which is maintained and used primarily for the nonprofit work-related transportation of adults for the purposes of ridesharing.

Note: Source: Vehicle Code, Division 1, Section 668

ZEV. Any vehicle certified to zero-emission standards.

SECTION 13C.5.103 GREEN BUILDING REQUIREMENTS

13C.5.103.1 New large commercial buildings. The requirements of this section fulfill and replace all CALGreen mandatory measures, except where noted.

13C.5.103.1.1 Rating Requirement. Permit applicants must submit documentation to achieve LEED® "Silver" certification. Effective January 1, 2012, applicants must submit documentation to achieve a LEED® "Gold" certification.

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13C.5.103.1.2 Indoor water use reduction. Permit applicants must submit documentation verifying that a minimum 30 percent reduction in the use of indoor potable water is achieved, as calculated to meet LEED® credit WE3.2.

13C.5.103.1.3 Construction debris management. Permit applicants must submit documentation verifying the diversion of a minimum 75 percent of the projects construction and demolition debris, as calculated to meet LEED® credit MR2.2. Permit applicants must also meet the requirements of San Francisco Environment Code Chapter 14 and Port of San Francisco Building Code Chapter 13B (Construction and Demolition Debris Recovery Program.) The waste management plan necessary to meet this requirement shall be updated as necessary and shall be accessible during construction for examination by the Department.

13C.5.103.1.4 Commissioning. Permit applicants must submit documentation verifying that the facility has been or will meet the criteria necessary to meet LEED® credit EA 3.0 (Enhanced Commissioning), in addition to LEED® prerequisite EAp1 (Fundamental Commissioning of Building Energy Systems.)

13C.5.103.1.5 Renewable energy. Effective January 1, 2012, permit applicants must submit documentation verifying that:

(1) At least 1% of the building's energy costs are offset by on-site renewable energy generation, meeting LEED® credit EA 2, including any combination of: photovoltaic, solar thermal, wind, biofuel-based electrical systems, geothermal heating, geothermal electric, wave, tidal, or low-impact hydroelectric systems. OR

(2) Engage in at least a 2-year renewable energy contract from renewable energy sources located in the State of California to provide at least 100% of the building's electricity as estimated in energy efficiency compliance documentation or US Department of Energy Commercial Building Energy Consumption Survey median annual electrical intensity for similar types of facilities (in kilowatt hours per square foot per year,) meeting LEED® credit EA 6, OR

(3) In addition to meeting 13C.5.103.2.8 Energy Performance requirement, achieve an additional 10% compliance margin over Title 24 Part 6 2008 California Energy Standards, for a total compliance margin of at least 25%,

13C.5.103.1.6 Stormwater management. Stormwater management shall meet the "Stormwater Design Guidelines" of the Port of San Francisco available under Permit Services at www.sfport.com and Port of San Francisco Building Code Section 106A.3.2.4 and shall meet or exceed the applicable LEED® SS 6.1 and SS 6.2 credits. All new building projects, regardless of size, must develop and implement a construction activity pollution prevention plan meeting LEED® prerequisite SSp1, and meet the Port of San Francisco's Best Management Practices included in the Stormwater Guidelines.

13C.5.103.1.7 Energy performance. To demonstrate compliance with this section applicant may use an Alternative Calculation Method (ACM) approved by the California Energy Commission, to calculate the project's energy use, and then compare this calculated building energy use of the Proposed Design to the "Standard Design" or

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“budget” project to show a 15% savings margin over Title 24 Part 6 2010 California Energy Standards.

Alternatively, projects may:

(1) Document compliance with 2010 Title 24 Part 6 2010 California Energy Standards, including submittal of all standard documentation, and

(2) Additionally demonstrate that a project achieves a 15% or greater compliance margin over ASHRAE 90.1 2007 energy cost baseline using the published LEED® 2009 rules. Such analysis must include all on-site building energy use, including exterior and security lighting, elevators, all process loads, and receptacle loads.

13C.5.103.1.8 IAQ management during construction. Permit applicants must submit documentation verifying that an Indoor Air Quality Management Plan is prepared and implemented which meets LEED® credit EQ 3.1. This includes meeting or exceeding the recommended Control Measures of the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) IAQ Guidelines for Occupied Buildings under Construction, 2nd Edition 2007, ANSI-SMACNA 008-2008 (Chapter 3), and which meets LEED® credit EQ 3.1.

13C.5.103.1.9 Low emitting materials. Permit applicants must submit documentation verifying that low-emitting materials are used, subject to on-site verification, meeting LEED® credits EQ 4.1, EQ 4.2, EQ 4.3, and EQ 4.4 wherever applicable:

(1) Adhesives, sealants and sealant primers must meet LEED® credit EQ 4.1, including compliance with South Coast Air Quality Management District (SCAQMD) Rule #1168, amended January 7, 2005, as may be amended time to time.

(2) Interior paints and coatings applied on-site must meet LEED® credit EQ 4.2, including:

(a) Architectural paints and coatings must meet the VOC content limits of Green Seal Standard GS-11 (1st Edition, 1993).

(b) Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates must not exceed the VOC content limit of Green Seal Standard GC-03 (2nd Edition, 1997) of 250 g/L.

(c) Clear wood finishes, floor coatings, stains, primers, and shellacs applied to interior elements must not exceed SCAQMD Rule 1113 (2004) VOC content limits.

(3) Flooring systems shall meet LEED® credit EQ 4.3 Option 1, including:

(a) Interior carpet must meet the testing and product requirements of the Carpet and Rug Institute Green Label Plus program.

(b) Interior carpet cushion must meet the requirements of the Carpet and Rug Institute Green Label program.

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(c) Hard surface flooring, including vinyl, linoleum, laminate flooring, wood flooring, ceramic flooring, rubber flooring, and wall base must be certified as compliant with the FloorScore standard.

Exceptions: 100% reused or 100% post consumer recycled hard surface flooring may be exempted from this requirement. Projects exercising this exemption must otherwise be eligible for LEED® credit EQ 4.3.

(4) Interior composite wood and agrifiber products shall meet LEED® credit EQ 4.4 by containing no added urea formaldehyde resins. Interior and exterior hardwood plywood, particleboard, and medium density fiberboard composite wood products shall additionally meet California Air Resources Board Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections.

13C.5.103.1.10 CALGreen mandatory measures. The following sections found later in this chapter, are mandatory in California, and therefore required for New Large Commercial Buildings. Alternatively, relevant LEED® credits may be used as alternative compliance paths, as noted below:

SFBC Chapter 13C Section(s)	Topic/Requirement	Alternate Compliance Option:
13C.5.106.4	Bicycle Parking	N/A
13C.5.106.5	Fuel efficient vehicle and carpool parking	Meet LEED® SSc4.3 and/or SSc4.4, and Demonstrate that 8% of parking is designated for fuel efficient vehicle and carpool parking.
13C.5.106.8	Light pollution reduction	Meet LEED® credit SS 8
13C.5.106.10	Drainage management plan	N/A
13C.5.303.1	Water Submeters	N/A
13C.5.303.2.1	Multiple showerheads in one shower stall must not exceed maximum flow rate for single showerhead	N/A
13C.5.503.1	Fireplaces in non-residential occupancy must meet residential efficiency and emissions requirements,	N/A
13C.5.407.2.2 13C.5.504.5.3	Indoor Chemical and Pollutant Source Control	Meet LEED® credit EQ 5
13C.5.507.4 13C.5.507.4.1 13C.5.507.4.2	Acoustical control and noise transmission	N/A
13C.5.508.1.2	Halons not allowed in HVAC, refrigeration and fire suppression equipment.	Meet LEED® credit EA 4, and additionally document that all HVAC&R systems do not contain CFCs or Halons.

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13C.5.103.2 New mid-size commercial buildings. The requirements of this section are additional to the State's CALGreen mandatory measures, except where noted.

13C.5.103.2.2 Construction debris management. Permit applicants must submit documentation verifying the diversion of a minimum 75 percent of the projects construction and demolition debris, as calculated either to meet LEED® credit MR2.2 or equivalent. Permit applicants must also meet the requirements of San Francisco Environment Code Chapter 14 and Port of San Francisco Building Code Chapter 13B (Construction and Demolition Debris Recovery Program.) The waste management plan necessary to meet this requirement shall be updated as necessary and shall be accessible during construction for examination by the Department of Building Inspection.

13C.5.103.2.3 Renewable energy. Effective January 1, 2012, permit applicants must submit documentation verifying that:

(1) At least 1% of the building's energy costs are offset by on-site renewable energy generation, meeting LEED® credit EA 2, including any combination of: photovoltaic, solar thermal, wind, biofuel-based electrical systems, geothermal heating, geothermal electric, wave, tidal, or low-impact hydroelectric systems. OR

(2) Engage in at least a 2-year renewable energy contract from renewable energy sources located in the State of California to provide at least 100% of the building's electricity as estimated in energy efficiency compliance documentation or US Department of Energy Commercial Building Energy Consumption Survey median annual electrical intensity for similar types of facilities (in kilowatt hours per square foot per year,) meeting LEED® credit EA 6, OR

(3) In addition to meeting 13C.5.103.2.8 Energy Performance requirement, achieve an additional 10% compliance margin over Title 24 Part 6 2008 California Energy Standards, for a total compliance margin of at least 25%,

13C.5.103.2.4 Stormwater management and pollution. Stormwater management shall meet the "Stormwater Design Guidelines" of the Port of San Francisco available under Permit Services at www.sfport.com and Port of San Francisco Building Code Section 106A.3.2.4, and shall meet or exceed the applicable LEED® SS 6.1 and SS 6.2 credits. All new building projects, regardless of size, must develop and implement a construction activity pollution prevention plan meeting LEED® prerequisite SSp1, and meet the Port of San Francisco's Best Management Practices included in the Stormwater Guidelines as applicable.

13C.5.103.2.5 Energy performance. To demonstrate compliance with this section applicant may use an Alternative Calculation Method (ACM) approved by the California Energy Commission to calculate the project's energy use, and then compare this calculated building energy use of the Proposed Design to the "Standard Design" or "budget" project to show a 15% savings margin over Title 24 Part 6 2010 California Energy Standards.

Alternatively, projects may:

(1) Document compliance with Title 24 Part 6 2008 California Energy Standards,

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including submittal of all standard documentation, and

(2) Additionally demonstrate that a project achieves a 15% or greater compliance margin over ASHRAE 90.1 2007 energy cost baseline using the published LEED® 2009 rules. Such analysis must include all on-site building energy use, including exterior and security lighting, elevators, all process loads, and receptacle loads.

13C.5.103.3 Major alterations to existing non residential buildings.

13C.5.103.3.1 Rating requirement. Permit applicants must submit documentation to achieve LEED® “Silver” certification. Effective January 1, 2012, applicants must submit documentation to achieve a LEED® “Gold” certification.

13C.5.103.3.2 Low emitting materials. Permit applicants must submit documentation to verify the use of low-emitting materials meeting LEED® EQ4.1, 4.2, and 4.3.

13C.5.103.4 New large commercial interiors

13C.5.103.4.1 Rating requirement. Permit applicants must submit documentation to achieve LEED® “Silver” certification. Effective January 1, 2012, applicants must submit documentation to achieve a LEED® “Gold” certification.

13C.5.103.4.2 Low emitting materials. Permit applicants must submit documentation to verify the use of low-emitting materials meeting LEED® EQ4.1, 4.2, and 4.3.

**SECTION 13C.5.104
HISTORIC PRESERVATION**

13C.5.104.1 On-site retention of historical features. For alterations of buildings determined to be historical resources, after demonstrating compliance with all applicable codes, including the 2010 California Building energy Efficiency Standards (Title 24, Part 6) and the 2010 California Historical Building Code (Title 24, Part 8), the minimum points or credits required under this chapter shall be reduced for retention and in-situ reuse or restoration of certain character defining features, as follows:

TABLE 13C.5.104.A

SIGNIFICANT HISTORICAL ARCHITECTURAL FEATURES	PERCENT RETAINED*	ADJUSTMENT TO MINIMUM LEED POINT REQUIREMENT	ADJUSTMENT TO MINIMUM GREENPOINTS REQUIREMENT
Windows @ principal façade(s)	At least 50%	2	7
Windows @ principal façade(s)	At least 75%	3	11
Windows @ principal façade(s)	100%	4	15
Other windows	At least 50%	1	3
Other windows	100%	2	6
Exterior doors @ principal façade(s)	100%	1	3
Siding or wall finish @ principal façade(s)	80%	1	4

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Trim & casing @ wall openings on principal façade(s)	100%	1	3
Roof cornices or decorative eaves visible from right-of-way	100%	1	3
Sub-cornices, belt courses, water tables, and running trim visible from right-of-way	80%	1	3
Character-defining elements of significant interior spaces	At least 50%	2	7
Character-defining elements of significant interior spaces	100%	4	15
Other exterior ornamentation (e.g. cartouches, corbels, quoins, etc.) visible from right-of-way	80%	1	3

* Retention includes the rehabilitation and repair of character-defining features that conform to the Secretary of the Interior's Standards for the Treatment of Historic Properties.

SECTION 13C.5.105 DEMOLITION OF EXISTING STRUCTURES

13C.5.105.1 LEED® projects. For projects attaining a LEED® certification:

- (1) Where the building demolished was an historical resource, the required points shall be increased by 10 points, which is 10% of the total available in the LEED® rating system, absent demolition.
- (2) Where the building demolished was not an historical resource, the required points shall be increased by 6 additional points, which is 10% of the maximum total required points under this chapter, absent demolition.
- (3) Where the building demolished was not an historical resource and the number of dwellings in the residential portion of the replacement structure are tripled, the required points shall be increased by 5 additional points, which is 8% of the maximum total required points under this chapter, absent demolition.

13C.5.105.2 GreenPoint rated projects. For projects attaining GreenPoint Rated:

- (1) Where the building demolished was an historical resource, the required points shall be increased by 25 additional points.
- (2) Where the building demolished was not an historical resource, the required points shall be increased by 20 additional points.
- (3) Where the building demolished was not an historical resource and the number of dwellings in the residential portion of the replacement structure are tripled, the required points shall be increased by 17 additional points.

SECTION 13C.5.106 SITE DEVELOPMENT

13C.5.106.1 Storm water pollution prevention plan. For newly constructed projects of less than one acre, applicants shall develop a Storm Water Pollution Prevention Plan

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(SWPPP) that is designed, specific to its site, which conforms to the State Storm water NPDES Construction Permit or Port of San Francisco Building Code Section 106A.3.2.4, whichever is stricter, as is required for projects one acre or more. The plan should cover prevention of soil loss by storm water run-off and/or wind erosion, of sedimentation, and/or of dust/particulate matter air pollution.

Note: Informational guidelines available under Permit Services at www.sfport.com.

13C.5.106.4 Bicycle parking and changing rooms. Comply with Sections 13C.5.106.4.1 and 513C.5.106.4.2; or meet the applicable requirements of San Francisco Planning Code Sec 155, whichever is stricter.

13C.5.106.4.1 Short-term bicycle parking. If the project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 100 feet of the visitors' entrance, readily visible to passers-by, for 5% of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack.

13C.5.106.4.2 Long-term bicycle parking. For buildings with over 10 tenant-occupants, provide secure bicycle parking for 5% of motorized vehicle parking capacity, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and may include:

1. Covered, lockable enclosures with permanently anchored racks for bicycles;
2. Lockable bicycle rooms with permanently anchored racks; and
3. Lockable, permanently anchored bicycle lockers.

Note: Additional information on recommended bicycle accommodations may be found at http://www.sacbike.org/advocacy/state_bicycle_facilities/

13C.5.106.5.2 Designated parking. Provide designated parking for any combination of low-emitting, fuel- efficient, and carpool/van pool vehicles as follows:

Table 13C.5.106.5.2

Total Number of Parking Spaces	Number of Required Spaces
0-9	0
10-25	1
26-50	3
51-75	6
76-100	8
101-150	11
151-200	16
201 and over	At least 8% of total

13C.5.106.5.2.1 Parking stall marking. Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle:

"CLEAN AIR VEHICLE"

13C.5.106.8 Light pollution reduction. Comply with lighting power requirements in the California Energy Code, CCR, Part 6, and design interior and exterior lighting such that zero direct-beam illumination leaves the building site. Meet or exceed exterior light levels and uniformity ratios for lighting zones 1-4 as defined in Chapter 10 of the California Administrative Code, CCR, Part 1, using the following strategies:

1. Shield all exterior luminaires or provide cutoff luminaires per Section 132 (b) of the California Energy Code.
2. Contain interior lighting within each source.
3. Allow no more than .01 horizontal lumen footcandles to escape 15 feet beyond the site boundary.
4. Automatically control exterior lighting dusk to dawn to turn off or lower light levels during inactive periods.

Exceptions:

1. Part 2, Chapter 12, Section 1205.6 for campus lighting requirements for parking facilities and walkways.
2. Emergency lighting and lighting required for nighttime security.

13C.5.106.10 Grading and paving. The site shall be planned and developed to keep surface water from entering buildings. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows.

13C.5.2 ENERGY EFFICIENCY

SECTION 13C.5.201 GENERAL

13C.5.201.1 Scope. Most common definitions of a green building include at least a 15% reduction in energy usage when compared to statewide mandatory energy efficiency standards.

A13C.5.201.1.1 Energy performance. To demonstrate compliance with this section applicant may use an Alternative Calculation Method (ACM) approved by the California Energy Commission, to calculate the building's energy use, and then compare this calculated building energy use of the Proposed Design to the "Standard Design" or "budget" building to show a 15% savings margin over Title 24 Part 6 2010 California Energy Standards.

Alternatively, projects utilizing LEED® to meet the requirements of this section may:

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(1) Document compliance with Title 24 Part 6 2008 California Energy Standards, including submittal of all standard documentation, and

(2) Submit documentation demonstrating that the project achieves a 15% or greater compliance margin over ASHRAE 90.1 2007 energy cost baseline using the published LEED® 2009 rules. Such analysis must include all on-site building energy use, including exterior and security lighting, elevators, all process loads, and receptacle loads.

Note: It is the intent of this code to encourage buildings to achieve exemplary performance in the area of energy efficiency. For the purposes of energy efficiency standards, the California Energy Commission believes specifically, a green building should achieve at least a 15% reduction in energy usage when compared to the State's mandatory energy efficiency standards.

13C.5.3 WATER EFFICIENCY AND CONSERVATION

SECTION 13C.5.301 GENERAL

13C.5.301.1 Scope. The provisions of this chapter establish the means of conserving water used indoors, outdoors, and in wastewater conveyance.

SECTION 13C.5.302 DEFINITIONS

13C.5.302.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

GRAYWATER. Untreated household waste which has not come into contact with toilet waste. Graywater includes used water from bathtubs, showers, bathroom wash basins, and water from clothes washing machines and laundry tubs. It shall not include waste water from kitchen sinks, dishwashers, or laundry water from soiled diapers.

MODEL WATER EFFICIENT LANDSCAPE ORDINANCE. The California ordinance regulating landscape design, installation and maintenance practices that will ensure commercial, multifamily and other developer installed landscapes greater than 2500 square feet meet an irrigation water budget developed based on landscaped area, and climatological parameters.

POTABLE WATER. Water that is drinkable and meets the U. S. Environmental Protection Agency (EPA) Drinking Water Standards. See definition in the California Plumbing Code, Part 5.

RECYCLED WATER. Water which, as a result of treatment of waste, is suitable for a direct, beneficial use or a controlled use that would not otherwise occur (Water Code Section 13050 (n)). Simply put, recycled water is water treated to remove waste matter attaining a quality that is suitable to use the water again.

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SUBMETER. A meter installed subordinate to a site meter. Usually used to measure water intended for one purpose, such as landscape irrigation. For the purposes of this section, a Dedicated Meter may be considered a submeter.

WATER BUDGET. Estimated total landscape irrigation water use shall not exceed the maximum applied water allowance calculated in accordance with the Department of Water Resources Model Efficient Landscape Ordinance (MLO).

SECTION 13C.5.303 INDOOR WATER USE

13C.5.303.1 Meters. Separate meters or metering device shall be installed for the uses described in Sections 503.1.1 and 503.1.2.

13C.5.303.1.1 Buildings in excess of 50,000 square feet. Separate submeters shall be installed as follows:

1. For each individual leased, rented, or other tenant space within the building projected to consume more than 100 gal/day.
2. For spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop projected to consume more than 100 gal/day.

13C.5.303.1.2 Excess consumption. Any building within a project or space within a building that is projected to consume more than 1,000 gal/day.

13C.5.303.2 20% Savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20% shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fittings as required by the California Building Standards Code. The 20% reduction in potable water use shall be demonstrated by one of the following methods.

1. Each plumbing fixture and fitting shall meet the 20% reduced flow rate specified in Table 13C.5.303.2.3, or
2. A calculation demonstrating a 20% reduction in the building "water use baseline" as established in Table 13C.5.303.2.2 shall be provided.

13C.5.303.2.1 Multiple showerheads serving one shower. When single shower fixtures are served by more than one showerhead, the combined flow rate of all the showerheads shall not exceed the maximum flow rates specified in the 20% reduction column contained in Table 13C.5.303.2.2 or the shower shall be designed to only allow one showerhead to be in operation at a time.

Exception: The maximum flow rate for shower heads when using the calculation method specified in Section 13C.5.303.2.1, Item 2 is 2.5 gpm @ 80 psi.

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TABLE 13C.5.303.2.2
INDOOR WATER USE BASELINE 4

Fixture Type	Flow-rate ²	Duration	Daily uses	Occupants ^{3,4}
Showerheads	2.5 gpm @ 80 psi	8 min.	1	X
Lavatory Faucets Nonresidential	0.5 gpm @ 60 psi	.25 min.	3	X
Kitchen Faucets	2.2 gpm @ 60 psi	4 min.	1	X
Replacement Aerators	2.2 gpm @ 60 psi			X
Wash Fountains	2.2 [rim space (in.) / 20 gpm @ 60 psi]			X
Metering Faucets	0.25 gallons/cycle	.25 min.	3	X
Metering Faucets for Wash Fountains	.25 [rim space (in.) / 20 gpm @ 60 psi]	.25 min.		X
Gravity tank type Water Closets	1.6 gallons/flush	1 flush	1 male ¹ 3 female	X
Flushometer Tank Water Closets	1.6 gallons/flush	1 flush	1 male ¹ 3 female	X
Flushometer Valve Water Closets	1.6 gallons/flush	1 flush	1 male ¹ 3 female	X
Electromechanical Hydraulic Water Closets	1.6 gallons/flush	1 flush	1 male ¹ 3 female	X
Urinals	1.0 gallons/flush	1 flush	2 male	X

Fixture "Water Use" = Flow rate x Duration x Occupants x Daily uses

¹ The daily use number shall be increased to three if urinals are not installed in the room.

² The Flow-rate is from the CEC Appliance Efficiency Standards, Title 20 California Code of Regulations; where a conflict occurs, the CEC standards shall apply.

³ Refer to Table A, Chapter 4, California Plumbing Code, for occupant load factors.

⁴ Use Worksheet WS-1 to calculate base line water use.

**TABLE 13C.5.303.2.3
FIXTURE FLOW RATES**

Fixture Type	Flow-rate	Maximum flow rate at 20% Reduction
Showerheads	2.5 gpm @ 80 psi	2 gpm @ 80 psi
Lavatory Faucets Nonresidential	0.5 gpm @ 60 psi	0.4 gpm @ 60 psi
Kitchen Faucets	2.2 gpm @ 60 psi	1.8 gpm @ 60 psi
Wash Fountains	2.2 [rim space (in.) / 20 gpm @ 60 psi]	1.8 [rim space (in.) / 20 gpm @ 60 psi]
Metering Faucets	0.25 gallons/cycle	0.2 gallons/cycle
Metering Faucets for Wash Fountains	.25 [rim space (in.) / 20 gpm @ 60 psi]	.20 [rim space (in.) / 20 gpm @ 60 psi]
Gravity tank type Water Closets	1.6 gallons/flush	1.28 gallons/flush ¹
Flushometer Tank Water Closets	1.6 gallons/flush	1.28 gallons/flush ¹
Flushometer Valve Water Closets	1.6 gallons/flush	1.28 gallons/flush ¹
Electromechanical Hydraulic Water Closets	1.6 gallons/flush	1.28 gallons/flush ¹
Urinals	1.0 gallons/flush	.5 gallons/flush

¹ Includes single and dual flush water closets with an effective flush of 1.28 gallons or. Single Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is the average flush volume when tested in accordance with ASME A112.19.233.2. Dual Flush Toilets - The effective flush volume shall not exceed 1.28 gallons (4.8 liters). The effective flush volume is defined as the composite, average flush volume of two reduced flushes and one full flush. Flush volumes will be tested in accordance with ASME A112.19.2 and ASME A112.19.14.

13C.5.303.4 Wastewater reduction. Each building shall reduce by 20% wastewater by one of the following methods:

1The installation of water-conserving fixtures (water closets, urinals) meeting the criteria established in Sections 13C.5.303.2 or 13C.5.303.3 or

2. Utilizing non-potable water systems (captured rainwater, graywater, and municipally treated wastewater [recycled water] complying with the current edition of the California Plumbing Code or other methods described in Section A13C.5.304).

13C.5.303.6 Plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall meet the standards referenced in Table 13C.5.503.6.

**TABLE 13C.5.303.6
STANDARDS FOR PLUMBING FIXTURES AND FIXTURE FITTINGS**

REQUIRED STANDARDS	
Water closets (toilets) – flushometer valve type single flush, maximum flush volume	ASME A112.19.2/CSA B45.1 – 1.28 gal (4.8 L)
Water closets (toilets) – flushometer valve type dual flush, maximum flush volume	ASME A112.19.14 and USEPA WaterSense Tank-Type High Efficiency Toilet Specification – 1.28 gal (4.8 L).
Water closets (toilets) – tank-type	U.S. EPA WaterSense Tank-Type High-Efficiency Toilet Specification
Urinals, maximum flush volume	ASME A112.19.2/CSA B45.1 – 0.5 gal (1.9 L)
Urinals, non-water urinals	ASME A112.19.19 (vitreous china) ANSI Z124.9-2004 or IAPMO Z124.9 (plastic)
Public lavatory faucets: Maximum flow rate – 0.5 gpm (1.9 L/min)	ASME A112.18.1/CSA B125.1
Public metering self-closing faucets: Maximum water use – 0.25 gal (1.0 L) per metering cycle	ASME A112.18.1/CSA B125.1
Residential bathroom lavatory sink faucets: Maximum flow rate – 1.5 gpm (5.7 L/min) ¹	ASME A112.18.1/CSA B125.1

**SECTION 13C.5.304
OUTDOOR WATER USE**

13C.5.304.1 Water budget. A water budget shall be developed for landscape irrigation use that conforms to San Francisco Administrative Code Chapter 63.

Note: Rules to assist in compliance with the water budget are included in the San Francisco Public Utilities Commission Rules for Water Efficient Irrigation, which may be found at: <http://sfwater.org>

13C.5.304.2 Outdoor potable water use. For new water service for landscaped areas between 1000 square feet and 5000 square feet (the level at which CA Water Code §535 applies), separate meters or submeters shall be installed for indoor and outdoor potable water use.

13C.5.304.3 Irrigation design. In new nonresidential construction with between 1000 and 2500 square feet of landscaped area where irrigation is to be provided, install irrigation controllers and sensors which include the following criteria, and meet manufacturer's recommendations.

13C.5.304.3.1 Irrigation controllers. Automatic irrigation system controllers installed at the time of final inspection shall comply with the following:

1. Controllers shall be weather or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.

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2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

Note: More information regarding irrigation controller function and specifications is available from the Irrigation Association at <http://www.irrigation.org/SWAT/Industry/ia-tested.asp>.

SECTION 13C.5.305 WATER REUSE SYSTEMS (Reserved)

13C.5.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

SECTION 13C.5.401 GENERAL

13C.5.401.1 Scope. The provisions of this chapter outline means of achieving material conservation and resource efficiency through protection of buildings from exterior moisture, construction waste diversion, employment of techniques to reduce pollution through recycling of materials, and building commissioning or testing, adjusting and balancing.

SECTION 13C.5.402 DEFINITIONS

13C.5.402.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

ADJUST. To regulate fluid flow rate and air patterns at the terminal equipment, such as to reduce fan speed or adjust a damper.

BALANCE. To proportion flows within the distribution system, including submains, branches, and terminals, according to design quantities.

TEST. A procedure to determine quantitative performance of a system or equipment.

SECTION 13C.5.403 FOUNDATION SYSTEMS (Reserved)

SECTION 13C.5.404 EFFICIENT FRAMING TECHNIQUES (Reserved)

**SECTION 13C.5.405
MATERIAL SOURCES
(Reserved)**

**SECTION 13C.5.406
ENHANCED DURABILITY AND REDUCED MAINTENANCE
(Reserved)**

**SECTION 13C.5.407
WATER RESISTANCE AND MOISTURE MANAGEMENT**

13C.5.407.1 Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by California Building Code Section 1403.2 (Weather Protection) and California Energy Code Section 150, (Mandatory Features and Devices), manufacturer's installation instructions, or local ordinance, whichever is more stringent.

13C.5.407.2 Moisture control. Employ moisture control measures by the following methods.

13C.5.407.2.1 Sprinklers. Design and maintain landscape irrigation systems to prevent spray on structures.

13C.5.407.2.2 Entries and openings. Design exterior entries and/or openings subject to foot traffic or wind-driven rain to prevent water intrusion into buildings.

Notes:

1. Use features such as overhangs and recesses, and flashings integrated with a drainage plane.
2. Use non-absorbent floor and wall finishes within at least two feet around and perpendicular to such openings.

**SECTION 13C.5.408
CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING**

13C.5.408.1 Construction waste diversion. Applicants must comply with the Port of Building Code Chapter 13B.

**SECTION 13C.5.409
LIFE CYCLE ASSESSMENT
(Reserved)**

**SECTION 13C.5.410
BUILDING MAINTENANCE AND OPERATION**

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13C.5.410.1 Solid waste. Areas must be provided for the storage, collection and loading of -recycling, composting and trash. All such areas, including any chute systems, must be designed for equal convenience for all users to separate those three material streams, and must provide space to accommodate a sufficient quantity and type of containers to be compatible with current methods of collection.

13C.5.410.2 Commissioning. For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this Section by trained personnel with experience on projects of comparable size and complexity. Commissioning requirements shall include:

1. Owner's Project Requirements.
2. Basis of Design.
3. Commissioning measures shown in the construction documents.
4. Commissioning Plan.
5. Functional Performance Testing.
6. Documentation & Training.
7. Commissioning Report.

All building systems and components covered by Title 24, Part 6, as well as process equipment and controls, and renewable energy systems shall be included in the scope of the Commissioning Requirements.

13C.5.410.2.1 Owner's or Owner representative's Project Requirements (OPR). The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. This documentation shall include the following:

1. Environmental and Sustainability Goals.
2. Energy Efficiency Goals.
3. Indoor Environmental Quality Requirements.
4. Project program, including facility functions and hours of operation, and need for after hours operation.
5. Equipment and Systems Expectations.
6. Building Occupant and O&M Personnel Expectations.

13C.5.410.2.2 Basis of Design (BOD). A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project, and updated as necessary during the design and construction phases. The Basis of Design document shall cover the following systems:

1. Heating, Ventilation, Air Conditioning (HVAC) Systems and Controls.
2. Indoor Lighting System and Controls.
3. Water Heating System.
4. Renewable Energy Systems.
5. Landscape Irrigation Systems.
6. Water Reuse Systems.

13C.5.410.2.3 Commissioning plan. Prior to permit issuance a commissioning plan

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shall be completed to document how the project will be commissioned and shall be started during the design phase of the building project. The Commissioning Plan shall include the following:

1. General Project Information.
2. Commissioning Goals.
3. Systems to be commissioned. Plans to test systems and components shall include:
 - a. An explanation of the original design intent,
 - b. Equipment and systems to be tested, including the extent of tests,
 - c. Functions to be tested,
 - d. Conditions under which the test shall be performed,
 - e. Measurable criteria for acceptable performance.
4. Commissioning Team Information.
5. Commissioning Process Activities, Schedules & Responsibilities - plans for the completion of Commissioning Requirements listed in 13C.5.410.4.4 through A13C.5.410.4.6 shall be included.

13C.5.410.2.4 Functional performance testing. Functional performance tests shall demonstrate the correct installation and operation of each component, system, and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made.

13C.5.410.2.5 Documentation and training. A Systems Manual and Systems Operations Training are required, including Occupational Safety and Health Act (OSHA) requirements in California Code of Regulations (CCR), Title 8, Section 5142, and other related regulations.

13C.5.410.2.5.1 Systems manual. Documentation of the operational aspects of the building shall be completed within the Systems Manual and delivered to the building owner or representative and facilities operator. The Systems Manual shall include the following:

1. Site Information, including facility description, history and current requirements.
2. Site Contact Information.
3. Basic Operations & Maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log
4. Major Systems.
5. Site Equipment Inventory and Maintenance Notes.
6. A copy of all special inspection verifications required by the Chief Harbor Engineer_or this code.
7. Other Resources & Documentation.

13C.5.410.2.5.2 Systems operations training. The training of the appropriate maintenance staff for each equipment type and/or system shall be documented in the commissioning report and shall include the following:

1. System/Equipment overview (what it is, what it does and what other systems and/or

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equipment it interfaces with).

2. Review and demonstration of servicing/preventive maintenance.
3. Review of the information in the Systems Manual.
4. Review of the record drawings on the system/equipment.

13C.5.410.2.6 Commissioning report. A complete report of commissioning process activities undertaken through the design, construction and reporting recommendations for post-construction phases of the building project shall be completed and provided to the owner or representative.

13C.5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for buildings less than 10,000 square feet.

13C.5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting shall include at a minimum, as applicable to the project:

1. HVAC systems and controls
2. Indoor and outdoor lighting and controls
3. Water heating systems
4. Renewable energy systems
5. Landscape Irrigation Systems
6. Water Reuse Systems.

13C.5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with industry best practices and applicable standards on each system as determined by the Chief Harbor Engineer.

13C.5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, the system shall be balanced in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; or Associated Air Balance Council National Standards or as approved by the Chief Harbor Engineer.

13C.5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.

13C.5.410.4.5 Operation and Maintenance (O & M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of warranties/guaranties for each system. O & M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.

13C.5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the Chief Harbor Engineer.

13C.5.5 ENVIRONMENTAL QUALITY

SECTION 13C.5.501 GENERAL

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13C.5.501.1 Scope. The provisions of this chapter outline means of reducing the quantity of air contaminants that are odorous, irritating, and/or harmful to the comfort and well-being of a building's installers, occupants, and neighbors.

SECTION 13C.5.502 DEFINITIONS

13C.5.502.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

COMPOSITE WOOD PRODUCTS. Composite wood products include hardwood plywood, particleboard, and medium density fiberboard. "Composite wood products" does not include hardboard, structural plywood, structural panels, structural composite lumber, oriented strand board, glued laminated timber, prefabricated wood I-joists, or finger-jointed lumber.

Note: See CCR, Title 17, Section 93120.1.

MERV. Filter minimum efficiency reporting value, based on ASHRAE 52.2-1999.

MAXIMUM INCREMENTAL REACTIVITY (MIR). The maximum change in weight of ozone formed by adding a compound to the "Base Reactive Organic Gas (ROG) Mixture" per weight of compound added, expressed to hundredths of a gram (g O₃ /g ROC).

Note: MIR values for individual compounds and hydrocarbon solvents are specified in CCR, Title 17, Sections 94700 and 94701.

PRODUCT-WEIGHTED MIR (PWMIR). The sum of all weighted-MIR for all ingredients in a product subject to this article. The PWMIR is the total product reactivity expressed to hundredths of a gram of ozone formed per gram of product (excluding container and packaging).

Note: PWMIR is calculated according to equations found in CCR, Title 17, Section 94521(a).

REACTIVE ORGANIC COMPOUND (ROC). Any compound that has the potential, once emitted, to contribute to ozone formation in the troposphere.

VOC. A volatile organic compound broadly defined as a chemical compound based on carbon chains or rings with vapor pressures greater than 0.1 millimeters of mercury at room temperature. These compounds typically contain hydrogen and may contain oxygen, nitrogen and other elements. See CCR Title 17, Section 94508(a).

Note: Where specific regulations are cited from different agencies such as SCAQMD, ARB, etc, the VOC definition included in that specific regulation is the one that prevails for the specific measure in question.

SECTION 13C.5.503 FIREPLACES

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13C.5.503.1 General. Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove or pellet stove, and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150. Woodstoves, pellet stoves and fireplaces shall comply with applicable local ordinances.

13C.5.503.1.1 Woodstoves. Woodstoves and pellet stoves shall comply with US EPA Phase II emission limits.

SECTION 13C.5.504 POLLUTANT CONTROL

13C.5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation, or during storage on the construction site and until final startup of the heating and cooling equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the Chief Harbor Engineer to reduce the amount of dust or debris which may collect in the system.

13C.5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 13C.5.504.4.1 through 13C.5.504.4.4.

13C.5.504.4.1 Adhesives, sealants, and caulks. Adhesives, sealants, and caulks used on the project shall meet the requirements of the following standards.

1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 13C.5.504.4.1 and 13C.5.504.4.2. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene), except for aerosol products as specified in subsection 2, below.

2. Aerosol adhesives, and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507.

Note: Title 17 may be found at <http://ccr.oal.ca.gov/>.

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**TABLE 13C.5.504.4.1
ADHESIVE AND SEALANT VOC LIMIT¹**

Less Water and Less Exempt Compounds in Grams per Liter

Architectural Applications	Current VOC Limit
Indoor Carpet Adhesives	50
Carpet Pad Adhesives	50
Outdoor Carpet Adhesives	150
Wood Flooring Adhesive	100
Rubber Floor Adhesives	60
Subfloor Adhesives	50
Ceramic Tile Adhesives	65
VCT and Asphalt Tile Adhesives	50
Dry Wall and Panel Adhesives	50
Cove Base Adhesives	50
Multipurpose Construction Adhesives	70
Structural Glazing Adhesives	100
Single Ply Roof Membrane Adhesives	250
Other Adhesive not specifically listed	50
Specialty Applications	Current VOC Limit
PVC Welding	285
CPVC Welding	270
ABS Welding	325
Plastic Cement Welding	250
Adhesive Primer for Plastic	250
Contact Adhesive	80
Special Purpose Contact Adhesive	250
Structural Wood Member Adhesive	140
Top and Trim Adhesive	250
Substrate Specific Applications	Current VOC Limit
Metal to Metal	30
Plastic Foams	50
Porous Material (except wood)	50
Wood	30
Fiberglass	80

¹ If an adhesive is used to bond dissimilar substrates together the adhesive with the highest VOC content shall be allowed.

² For additional information regarding methods to measure the VOC content specified in this table, see South Coast Air Quality Management District Rule 1168, <http://www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF> .

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**TABLE 13C.5.504.4.2
SEALANT VOC LIMIT**

Less Water and Less Exempt Compounds in Grams per Liter

Sealants	Current VOC Limit
Architectural	250
Marine Deck	760
Nonmembrane Roof	300
Roadway	250
Single-Ply Roof Membrane	450
Other	420
Sealant Primers	Current VOC Limit
Architectural	
Non Porous	250
Porous	775
Modified Bituminous	500
Marine Deck	760
Other	750

Note: For additional information regarding methods to measure the VOC content specified in these tables, see South Coast Air Quality Management District Rule 1168: <http://www.arb.ca.gov/DRDB/SC/CURHTML/R1168.PDF> .

13C.5.504.4.3 Paints and coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 13C.5.504.4.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 13C.5.504.4.3, shall be determined by classifying the coating as a Flat, Nonflat, or Nonflat-High Gloss coating, based on its gloss, as defined in subsections 4.21, 4.36, and 4.37 of the 2007 California Air Resources Board, Suggested Control Measure, and the corresponding Flat, Nonflat, or Nonflat-High Gloss VOC limit in Table 13C.5.504.4.3 shall apply.

13C.5.504.4.3.1 Aerosol paints and coatings. Aerosol paints and coatings shall meet the Product- Weighted MIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.

Notes:

1. Title 17 may be found at <http://ccr.oal.ca.gov/>
2. See Bay Area Air Quality Management District Regulation 8 Rule 49 at <http://www.arb.ca.gov/DRDB/BA/CURHTML/R8-49.HTM>

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**TABLE 13C.5.504.4.3
VOC CONTENT LIMITS FOR ARCHITECTURAL COATINGS^{2,3}**

Grams of VOC Per Liter of Coating, Less Water and Less Exempt Compounds

Coating Category	Effective 1/1/2010	Effective 1/1/2012
Flat Coatings	50	
Nonflat Coatings	100	
Nonflat - High Gloss Coatings	150	
Specialty Coatings		
Aluminum Roof Coatings	400	
Basement Specialty Coatings	400	
Bituminous Roof Coatings	50	
Bituminous Roof Primers	350	
Bond Breakers	350	
Concrete Curing Compounds	350	
Concrete/Masonry Sealers	100	
Driveway Sealers	50	
Dry Fog Coatings	150	
Faux Finishing Coatings	350	
Fire Resistive Coatings	350	
Floor Coatings	100	
Form-Release Compounds	250	
Graphic Arts Coatings (Sign Paints)	500	
High Temperature Coatings	420	
Industrial Maintenance Coatings	250	
Low Solids Coatings ¹	120	
Magnesite Cement Coatings	450	
Mastic Texture Coatings	100	
Metallic Pigmented Coatings	500	
Multi-Color Coatings	250	
Pre-Treatment Wash Primers	420	
Primers, Sealers, and Undercoaters	100	
Reactive Penetrating Sealers	350	
Recycled Coatings	250	
Roof Coatings	50	
Rust Preventative Coatings	400	250
Shellacs		
Clear	730	
Opaque	550	
Specialty Primers, Sealers, and Undercoaters	350	100
Stains	250	
Stone Consolidants	450	
Swimming Pool Coatings	340	
Traffic Marking Coatings	100	
Tub and Tile Refinish Coatings	420	
Waterproofing Membranes	250	
Wood Coatings	275	
Wood Preservatives	350	
Zinc-Rich Primers	340	

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¹ Grams of VOC Per Liter of Coating, Including Water and Including Exempt Compounds

² The specified limits remain in effect unless revised limits are listed in subsequent columns in the Table.

³ Values in this table are derived from those specified by the California Air Resources Board, Architectural Coatings Suggested Control Measure, February 1, 2008. More information is available at http://www.arb.ca.gov/coatings/arch/Approved_2007_SCM.pdf.

13C.5.504.4.3.2 Verification. Verification of compliance with this section shall be provided at the request of the Chief Harbor Engineer. Documentation may include, but is not limited to, the following:

1. Manufacturers product specification.
2. Field verification of on-site product containers.

13C.5.504.4.4 Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the following:

1. Carpet and Rug Institute's Green Label Plus Program
2. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350)
3. NSF/ANSI 140 at the Gold level
4. Scientific Certifications Systems Sustainable Choice

Notes:

1. For Green Label Plus, see <http://www.carpet-rug.com/>.
2. For NSF/ANSI 140, see <http://www.carpet-rug.org/carpet-and-rug-industry/sustainability/sustainable-carpet-list.cfm>.
3. For Sustainable Choice, see <http://www.scscertified.com/gbc/sustainablecarpet.php>.

13C.5.504.4.4.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.

13C.5.504.4.4.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 13C.5.504.4.1.

13C.5.504.4.5 Composite wood products. Hardwood plywood, particleboard, and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those Sections, as shown in Table 13C.5.504.4.5

13C.5.504.4.5.1 Early compliance. (Reserved.)

13C.5.504.4.5.2 Documentation. Verification of compliance with this section shall be provided as requested by the Chief Harbor Engineer. Documentation shall include at least one of the following.

1. Product certifications and specifications.
2. Chain of custody certifications.
3. Other methods acceptable to the Chief Harbor Engineer.

**TABLE 13C.5.504.4.5
FORMALDEHYDE LIMITS¹**

Maximum formaldehyde emissions in parts per million.

Product	Current Limit	Jan 1, 2012	Jul 1, 2012
Hardwood Plywood Veneer Core	0.05		
Hardwood Plywood Composite Core	0.08		0.05
Particle Board	0.09		
Medium Density Fiberboard	0.11		
Thin Medium Density Fiberboard ¹	0.21	0.13	

¹ Values in this table are derived from those specified by the California Air Resources Board, Air Toxics Control Measure for Composite Wood as tested in accordance with ASTM E1333-96 (2002). For additional information, see California Code of Regulations, Title 17, Sections 93120 through 93120.12.

² Thin medium density fiberboard has a maximum thickness of eight millimeters.

13C.5.504.4.6 Resilient flooring systems. For 50% of floor area receiving resilient flooring, install resilient flooring complying with the VOC-emission limits defined in the 2009 Collaborative for High Performance Schools (CHPS) criteria and listed on its Low-emitting Materials List (or Product Registry) or certified under the Resilient Floor Covering Institute (RFCI) FloorScore program.

Documentation shall be provided that verifies that finish materials are certified to meet the pollutant emission limits.

13C.5.504.4.6.1 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.

Notes:

1. CHPS Low-emitting Materials List may be found at www.chpsregistry.com/live or <http://www.chps.net/dev/Drupal/node/381>.
2. Products certified under the FloorScore program may be found at: http://www.rfci.com/int_FS-ProdCert.htm.
3. Products certified under the Greenguard Children & Schools program and compliant with CHPS criteria may be found at: <http://www.greenguard.org/Default.aspx?tabid=135>.

13C.5.504.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 8.

13C.5.504.7 Environmental tobacco smoke (ETS) control. Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and in buildings; or as enforced by ordinances, regulations, or policies of any city, county, city and county, California Community College, campus of the California State University, or campus of the University of

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California, whichever are more stringent. When ordinances, regulations, or policies are not in place, post signage to inform building occupants of the prohibitions.

SECTION 13C.5.505 INDOOR MOISTURE CONTROL

13C.5.505.1 Indoor moisture control. Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1203 (Ventilation) and Chapter 14 (Exterior Walls). For additional measures not applicable to low-rise residential occupancies, see Section 13C.5.407.2 of this code.

SECTION 13C.5.506 INDOOR AIR QUALITY

13C.5.506.1 Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 121 (Requirements For Ventilation) of the California Energy Code, CCR, Title 24, Part 6, or the applicable local code, whichever is more stringent, and Chapter 4 of CCR, Title 8.

13C.5.506.2 Carbon dioxide (CO₂) monitoring. For buildings equipped with demand control ventilation, CO₂ sensors and ventilation controls shall be specified and installed in accordance with the requirements of the current edition of the California Energy Code, CCR, Title 24, Part 6, Section 121(c).

SECTION 13C.5.507 ENVIRONMENTAL COMFORT

13C.5.507.4 Acoustical control. Employ building assemblies and components with Sound Transmission Coefficient (STC) values determined in accordance with ASTM E90 and ASTM E413.

13C.5.507.4.1 Exterior noise transmission. Wall and roof-ceiling assemblies making up the building envelope shall have an STC of at least 50, and exterior windows shall have a minimum STC of 30 for any of the following building locations:

1. Within 1000 ft. (300 m.) of right of ways of freeways.
2. Within 5 mi. (8 km.) of airports serving more than 10,000 commercial jets per year.
3. Where sound levels at the property line regularly exceed 65 decibels, other than occasional sound due to church bells, train horns, emergency vehicles and public warning systems.

Exception: Buildings with few or no occupants and where occupants are not likely to be affected by exterior noise, as determined by the enforcement authority, such as factories, stadiums, storage, enclosed parking structures, and utility buildings.

13C.5.507.4.2 Interior sound. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.

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Note: Examples of assemblies and their various STC ratings may be found at:
http://www.toolbase.org/PDF/CaseStudies/stc_icc_ratings.pdf.

SECTION 13C.5.508 OUTDOOR AIR QUALITY

13C.5.508.1 Ozone depletion and greenhouse gas reductions. Installations of HVAC, refrigeration, and fire suppression equipment shall comply with Sections 13C.5.508.1.1 and 13C.5.508.1.2.

13C.5.508.1.1 Chlorofluorocarbons (CFCs), Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs.

13C.5.508.1.2 Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain Halons.

CHAPTER 13C.6 REFERENCED ORGANIZATIONS AND STANDARDS

SECTION 13C.6.601 GENERAL

13C.6.601.1 General. This chapter lists the standards that are referenced in various sections of this document. The standards are listed herein by the promulgating agency of the standard.

Organization	Standard
AABC Associated Air Balance Council	
1518 K St NW Washington, DC 20005 www.aabc.com	National Standards, 1989
ACCA Air Conditioning Contractors of America	
2800 Shirlington Road, Suite 300 Arlington, VA 22206 www.acca.org	ACCA 29-D Manual D ACCA 36-S Manual S ACCA Manual J
ANSI American National Standards Institute	
Operations Office 25 West 43rd Street Fourth Floor New York, NY 10036 www.ansi.org	ANSI A190.1-2002 NSF/ANSI 140-2007
ASHRAE American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.	
1791 Tullie Circle, NE Atlanta, GA 30329 www.ashrae.org	52.1-92 52.2-99 62.2 90.1
ASME American Society of Mechanical Engineers	

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Three Park Avenue New York, NY 10016-5990 www.asme.org	A112.18.1 A112.19 A112.19.2 A112.19.14
ASTM International	
100 Barr Harbor Drive West Conshohocken, PA 19428-2859 www.astm.org	C33 C-1371-98 E90 E408-71(2002) E413 E1333-96 (2002) E1903-97
Build It Green	
1434 University Ave Berkeley, CA 94702	GreenPoint Rated New Home
CSA Canadian Standards Association	
5060 Spectrum Way, Suite 100 Mississauga, Ontario, Canada L4W 5N6 www.csa.ca	CSA B125.1
IAPMO International Association of Plumbing and Mechanical Officials	
5001 E. Philadelphia St. Ontario, CA 91761 iapmo@iapmo.org	IAPMO Z124.9
NEBB National Environmental Balancing Bureau	
8575 Grovemont Cir Gaithersburg, MD 20877 http://nebb.org/index.php	Procedural Standards, 1983
NSF International	
789 Dixboro Rd. Ann Arbor, MI 48113-0140 http://www.nsf.org/	NSF/ANSI 140-2007
TABB Testing, Adjusting and Balancing Bureau	
601 N Fairfax St, Ste 250 Alexandria, VA 22314 http://www.tabbcertified.org/contact.html	National Standards, 2003
USGBC U.S. Green Building Council	
2101 L Street, NW, Suite 500, Washington, DC 20037 http://www.usgbc.org	LEED® (Building Design and Construction, Interior Design and Construction, Homes)
SF Environment - City & County of San Francisco	
11 Grove Street San Francisco, CA 94102 sfenvironment.org	Chapter 14 of the Environment Code

**CHAPTER 13C.7
INSTALLER AND SPECIAL INSPECTOR QUALIFICATIONS**

**SECTION 13C.7.701
GENERAL**

13C.7.701.1 Application. These requirements apply to installers and Special inspectors with regards to the requirements of this chapter.

**SECTION 13C.7.702
QUALIFICATIONS**

13C.7.702.1 Installer training. HVAC system installers shall be trained and certified in the proper installation of HVAC systems including ducts and equipment by a nationally or regionally recognized training or certification program. Uncertified persons may perform HVAC installations when under the direct supervision and responsibility of a person trained and certified to install HVAC systems or contractor licensed to install HVAC systems. Examples of acceptable HVAC training and certification programs include but are not limited to the following:

1. State certified apprenticeship programs.
2. Public utility training programs.
3. Training programs sponsored by trade, labor or statewide energy consulting or verification organizations.
4. Programs sponsored by manufacturing organizations.
5. Other programs acceptable to the Chief Harbor Engineer.

13C.7.702.2 Special inspection. The owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this chapter. Special inspectors shall demonstrate competence to the satisfaction of the Chief Harbor for the particular type of inspection or task to be performed. In addition to other certifications or qualifications acceptable to the Chief Harbor, the following certifications or education may be considered by the Chief Harbor when evaluating the qualifications of a special inspector.

1. Certification by the applicable national or regional green building program or standard publisher.
2. Certification by a statewide energy consulting or verification organization, such as HERS raters, building performance contractors, and home energy auditors.
3. Successful completion of a third party apprentice training program in the appropriate trade.
4. Other programs acceptable to the Chief Harbor Engineer.

Notes:

1. Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.
2. HERS raters are special inspectors certified by the California Energy Commission (CEC) to rate homes in California according to the Home Energy Rating System (HERS).

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13C.7.702.3 Special inspection. When required by the Chief Harbor Engineer, the owner or the responsible entity acting as the owner's agent shall employ one or more special inspectors to provide inspection or other duties necessary to substantiate compliance with this code. Special inspectors shall demonstrate competence to the satisfaction of the Chief Harbor Engineer for the particular type of inspection or task to be performed. In addition, the special inspector shall have a certification from a recognized state, national, or international association, as determined by the Chief Harbor Engineer. The area of certification shall be closely related to the primary job function, as determined by the local agency.

Note: Special inspectors shall be independent entities with no financial interest in the materials or the project they are inspecting for compliance with this code.

13C.7.702.4 Special inspection. The Chief Harbor Engineer may require special inspection to verify compliance with this code or other laws that are enforced by the agency. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the Chief Harbor Engineer, for inspection of the particular type of construction or operation requiring special inspection.

SECTION 13C.7.703 VERIFICATIONS

13C.7.703.1 Documentation. Documentation used to show compliance with this code shall include but is not limited to, construction documents, plans, specifications, builder or installer certification, inspection reports, or other methods acceptable to the Chief Harbor Engineer which demonstrate substantial conformance. When specific documentation or special inspection is necessary to verify compliance, that method of compliance will be specified in the appropriate section or identified in the application checklist.

13C.7.703.2 Documentation. Verification of compliance with this code shall include construction documents, plans, specifications builder or installer certification, inspection reports, or other methods acceptable to the Chief Harbor Engineer which show substantial conformance. Where specific documentation is necessary to verify compliance, that method of compliance will be specified in the appropriate section.

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Chapter 13D
COMMERCIAL LIGHTING EFFICIENCY STANDARD

Add this following chapter

The Port of San Francisco adopts the following Chapter 13D for the purpose of reducing public demand for electricity and the associated detriment to the environment of energy production and delivery by requiring commercial buildings to install or adopt more energy efficient lighting measures.

SECTION 1301D
TITLE

This chapter shall be known as the “Commercial Lighting Efficiency Standards”

SECTION 1302D
PURPOSE

The purpose of this chapter is to reduce public demand for electricity and the associated detriment to the environment of energy production and delivery by requiring commercial buildings to install or adopt more energy efficient lighting measures.

SECTION 1303D
SCOPE

The provisions of this chapter apply to all non-residential buildings, including school facilities, the non-residential portions of mixed-use commercial and residential buildings, tourist hotels, and the common areas of residential hotels and multiple-unit residential buildings, all as herein defined.

EXCEPTIONS:

The provisions of this chapter do not apply to:

1. Residential buildings and residential hotels, except that it shall apply to their common areas.
2. The residential portions of mixed-use commercial and residential buildings, except that it shall apply to their common areas.

SECTION 1304D
DEFINITIONS

For the purpose of this chapter, certain terms are defined as follows:

COMMERCIAL BUILDING. is any building that is occupancy group A, B, E, F, H, I, L, M or S as defined in this Code and any tourist hotels, as herein defined. When a building is designated for more than one type of occupancy, “Commercial Building” shall mean

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those spaces within the mixed use building designated as A, B, E, F, H, I, L, M or S or tourist hotel, as herein defined. Except for tourist hotels as herein defined, "Commercial Building" shall include only the common areas of any R ("residential") occupancy buildings for the common areas of any R ("residential") occupancy portions of mixed use buildings.

COMMON AREA. is any area, space or room of a building that is made available to the general public as either a client or guest.

CHIEF HARBOR ENGINEER. is the Chief Harbor Engineer of the Port of San Francisco, or his or her designee.

EXIT SIGNS. are signs located and illuminated as required by the Port of San Francisco Building Code or the San Francisco Fire Code.

LINEAR FLUORESCENT LAMP. is a "tube" or "bulb" formed in a straight shape, as distinguished from a circular or u-shape, but not including linear specialty lamps such as black lights.

LUMENAIRE. is an interior or exterior complete lighting unit, including internally or externally illuminated signs, consisting of the lamp and the parts designed to distribute the light, to protect the lamp, and to connect the lamp to the power supply, but not including illuminated utilization equipment or exit signs as defined herein.

OCCUPANY SENSOR CONTROL DEVICE. is a device that automatically turns off a luminaire or series of luminaires not more than 30 minutes after it senses that the area is vacated.

TOURIST HOTEL. is any residential building, or portion thereof, which is occupied as a hotel, motel or inn and which has a certificated of use for tourist occupancy, or any portion of a residential building which is converted to tourist hotel use pursuant to the Residential Hotel Conversion and Demolition Requirements in S.F. Administrative Code, Article 41.

UTILIZATION EQUIPMENT. is commercial, retail or industrial equipment, including but not limited to refrigeration equipment, fully enclosed retail display cases, vending machines, printing equipment or conveyors, which uses 4-foot or 8-foot linear fluorescent lamps as an integrated part of such equipment. "Utilization Equipment" shall not include furniture or workstations.

SECTION 1305D COMPLIANCE REQUIREMENTS

1305D.1 Compliance Deadline. No later than December 31, 2011 ("Compliance Deadline"), the owner of each building subject to this chapter shall self-certify that the entire building meets the standards specified in this Chapter 13D, and if the building is not certified, the building owner shall make such repairs as may be required to conform to this chapter.

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1305D.2 Stay of Compliance Deadline. The Compliance Deadline stated in Section 1305D.1 shall be stayed for up to two years from the date of an application for a demolition permit for any building subject to this chapter. If the building is demolished and a Certificate of Completion issued by the Department before the end of the two-year postponement, the requirements of this chapter shall not apply. If the building is not demolished after the expiration of two years, the provisions of this chapter shall apply even though the demolition permit is still in effect or a new demolition permit has been issued.

SECTION 1306D LIGHTING EFFICIENCY MEASURES

1306D.1 Mercury content. The mercury content of each 4-foot linear fluorescent lamp installed after the Compliance Deadline in a luminaire in a building subject to this chapter shall not exceed 5 mg. The mercury content of each 8-foot linear fluorescent lamp installed after the Compliance Deadline in a luminaire in a building subject to this chapter shall not exceed 10 mg.

1306D.2 Energy efficiency. The lamp and ballast system in each luminaire that utilizes one or more 4-foot or 8-foot linear fluorescent lamps to provide illumination in a building subject to this chapter must meet at least one of the following requirements:

1. The lamp and ballast system emits 81 or more lumens per watt of electricity consumed.
2. The luminaire is controlled by an occupancy sensor control device that does not control an area in the building of more than 250 square feet.
3. The luminaire is fitted with a lighting efficiency measure approved by the Chief Harbor Engineer as equivalent to the measures in subsection (1) or (2).
4. The Chief Harbor Engineer finds, based on the facts of the particular building and luminaire, that the energy savings from installing lighting efficiency measures meeting the requirements of this section will be so insignificant over the life of the luminaire that the measure is not cost efficient.
5. If the owner of a Commercial Building elects to meet the requirements of this Section 1306D.2 with measures that require permits, such permits shall comply with all other applicable requirements of this Code.

SECTION 1307D ENFORCEMENT

Any building maintained in violation of this chapter shall constitute a public nuisance and may be referred for a hearing or action under Section 102A of this Code.

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Chapter 14

EXTERIOR WALLS

SECTION 1403
PERFORMANCE REQUIREMENTS

1403.7 Add a new section as follows:

1403.7 Projections and appendages. Provisions shall be made at the outer edge of all projections and appendages to control rainwater backflow under the projection. Ventilation shall be provided for all enclosed spaces of exposed soffits, bays and other projections in wood framed construction.

Where an uncovered balcony or deck with an impervious surface exceeds 200 square feet (18.58 m²) in area, drainage shall be conveyed directly to a building drain or building sewer or be conveyed to an approved alternative location based on geotechnical and engineering design approved by Port of San Francisco's Engineering Division's Environmental specialist.

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Chapter 15

ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

SECTION 1501
GENERAL

1501.1 Scope.

1501.1 Add a second paragraph as follows:

For qualified historical buildings or properties, see Section 3407.

SECTION 1503
WEATHER PROTECTION

1503.4 Class C roof assemblies.

1503.4 Add a second paragraph as follows:

All storm or casual water from roof areas which total more than 200 square feet (18.58 m²) shall drain or be conveyed directly to the building drain or storm drain or to an approved alternative location based on geotechnical and engineering design approved by Port of San Francisco's Engineering Divisions Environmental Specialist. Such drainage shall not be directed to flow onto adjacent property or over public sidewalks. Building projections not exceeding 12 inches (305 mm) in width are exempt from drainage requirements without area limitations.

SECTION 1505
FIRE CLASSIFICATION

1505.1 General.

1505.1 Revise the second sentence as follows:

Roof assemblies shall be divided into the classes defined below. Class A, or B, roof assemblies and roof coverings required to be listed by this section shall be tested in accordance with ASTM E 108 or UL 790.

1505.1 Add the following at the end of the first paragraph:

Class B or better roof coverings shall be used on all buildings.

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1505.1 Add the following second Exception:

2. Detached accessory structures with a roof of less than 200 square feet (18.58 m²) may have roof coverings of Class A, B or C.

**TABLE 1505.1
MINIMUM ROOF COVERING CLASSIFICATION FOR TYPES OF CONSTRUCTION**

Table 1505.1 – Revise the table as follows:

IA	IB	IIA	IIB	IIIA	IIIB	IV	VA	VB
B	B	B	B	B	B	B	B	B

**SECTION 1507
REQUIREMENTS FOR ROOF COVERINGS**

1507.8 Wood shingles.

1507.8 Add the following sentence at the end of the paragraph:

Untreated wood shingles shall not be permitted.

1507.9 Wood shakes.

1507.9 Add the following sentence at the end of the paragraph:

Untreated wood shakes shall not be permitted.

**SECTION 1509
ROOFTOP STRUCTURES**

1509.2 Penthouses.

1509.2 Add the following sentence at the end of this section:

Penthouses shall be of a size no larger than the minimum clearances required for the mechanical equipment to be installed or no larger than the vertical shaft opening in the roof.

1509.6 Add the following section:

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1509.6 Roof decks. May be constructed of wood when the following conditions are met:

1. The deck is less than 500 square feet (46.45 m²) in area.
2. The deck boards are spaced not greater than 1/8 inch (3.2 mm) apart.
3. Any open space around the perimeter between the deck and the roof surface shall be enclosed to within 1 inch (25.4 mm) of the roof surface.
4. The deck is constructed of fire-retardant-treated wood approved for exterior use, or the deck is constructed of 2-inch (50.8 mm) nominal all heart redwood.
5. The deck is installed on top of a Class A or B fire-resistive roof assembly. The deck shall not be considered part of such roof assembly.

SECTION 1510 REROOFING

1510.1 General.

1510.1 Add the following sentence to the first paragraph.:

New roofing shall not be applied without first obtaining a building permit for reroofing.

Add the following section:

1510.7 Final inspection. A final inspection and approval shall be obtained when the reroofing work is complete.

Chapter 16

STRUCTURAL DESIGN

SECTION 1604
GENERAL DESIGN REQUIREMENTS

1604.11 Add the following section:

1604.11 Minimum lateral force for existing buildings

1604.11.1 General. [This section is applicable to existing buildings when invoked by Section 3401.8. This section may be used as a standard for voluntary upgrades]

An existing building or structure which has been brought into compliance with the lateral force resistance requirements of the San Francisco Building Code in effect on or after May 21, 1973, shall be deemed to comply with this section except when a vertical extension or other alterations are to be made which would increase the mass or reduce the seismic resistance capacity of the building or structure.

1604.11.2 Wind forces. Buildings and structures shall be capable of resisting wind forces as prescribed in Section 1609.

1604.11.3 Seismic forces. Buildings and structures shall comply with the applicable provisions of Section 1613, except that, when compliance with this section is required by Section 3401.8, then structures and elements may be designed for seismic forces of not less than 75 percent of those given in Section 1613, and the building separation limitations of Section 12.12.3 of ASCE 7-10 do not apply.

When upper floors are exempted from compliance by Section 3406, the lateral forces generated by their masses shall be included in the analysis and design of the lateral force resisting systems for the strengthened floor. Such forces may be applied to the floor level immediately above the topmost strengthened floor and distributed in that floor in a manner consistent with the construction and layout of the exempted floor.

In lieu of meeting the specific requirements of this section, an alternative lateral analysis procedure incorporating inelastic behavior may be submitted for approval in accordance with procedures and guidelines established by the Chief Harbor Engineer pursuant to Section 104A.2.1.

1604.11.4 Design values for existing materials. The incorporation of existing materials, construction and detailing into the designed lateral force system shall be permitted when approved by the Chief Harbor Engineer. Minimum quality levels and

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maximum load and stress values shall comply with Table 16C-D of this code, Tables 8-8-A and 8-8-B of the State Historical Building Code, or with other rules, regulations and standards adopted by the Chief Harbor Engineer pursuant to Section 104A.2.1.

1604.12 Add the following section:

1604.12 Earthquake recording instrumentation. Sections 1604.12.1 thru 1604.12.4 are adopted by the Port of San Francisco for the purpose of evaluating the performance of instrumented building in earthquakes.

1604.12.1 General. Every building over six stories in height with an aggregate floor area of 60,000 square feet (5574 m²) or more, and every building over 10 stories in height regardless of floor area, shall be provided with not less than three approved recording accelerographs. The accelerographs shall be interconnected for common start and common timing.

1604.12.2 Location. The instruments shall be located in the basement, midportion, and near the top of the building. Each instrument shall be located so that access is maintained at all times and is unobstructed by room contents. A sign stating MAINTAIN CLEAR ACCESS TO THIS INSTRUMENT shall be posted in a conspicuous location.

1604.12.3 Maintenance. Maintenance and service of the instruments shall be provided by the owner of the building, subject to the approval of the Chief Harbor Engineer. Data produced by the instruments shall be made available to the Chief Harbor Engineer on request.

1604.12.4 Instrumentation of existing buildings. With the agreement of the owners of existing structures selected by the Chief Harbor Engineer, such structures shall have provided accessible space for the installation of appropriate earthquake recording instruments. Location of said instruments shall be determined by the Chief Harbor Engineer. The Chief Harbor Engineer shall make arrangements to provide, maintain, and service the instruments. Data shall be the property of the jurisdiction, but copies of individual records shall be made available to the public on request and the payment of an appropriate fee.

TABLE 1607.1 MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS AND CONCENTRATED LIVE LOADS

Table 1607.1 Add the following footnote n to Occupancy or Use 32, Sidewalks, Vehicular Driveways and Yards, Subject to Trucking

n. Driveways subject to vehicle loading shall be designed in accordance with the American Association of State Highway and Transportation Officials (AASHTO) HS-20 Standard Specification for Highways and Bridges. Sidewalks subject to vehicle

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loading shall be designed for a concentrated load of 10,000 pounds placed upon any space 2½ feet (762 mm) square, wherever this load upon an otherwise unloaded sidewalk would produce stresses greater than those caused by the required uniform load of 250 psf.

1612.3 *Revise this section as follows:*

1612.3 Establishment of flood hazard areas. Flood hazard areas, specific to the Port of San Francisco's jurisdictional area, are designated on San Francisco Interim Floodplain Maps posted @ www.sfgov.org.

Add the following section:

1612.6 Alternate flood load provisions. In the absence of more advanced numerical modeling procedures or laboratory test procedures (physical modeling) as per Section 5.4.4 of ASCE 7-05, the analytic procedures described herein may be substituted for the analytic procedures of Section 5.4 of ASCE 7-05 for a limited number of structures under certain wave and current conditions as described herein.

1612.6.1 Geographic limits of applicability. The alternate flood load provisions contained in Section 1612.6 are applicable to the area encompassed by the Port of San Francisco jurisdiction, as indicated in Figure 1612.6(1) consisting of shoreline between and inclusive of Hyde Street Pier and Pier 96.

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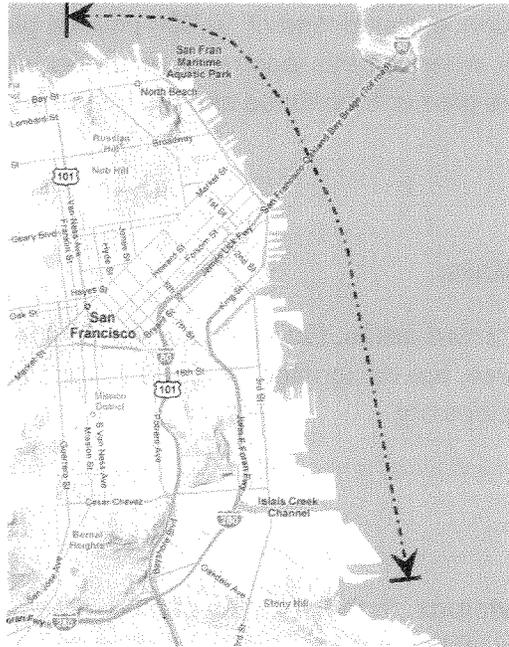


Figure 1612.6 (1) Geographic Limits of Applicability (Google 2008)

1612.6.2 Design parameters. The Port of San Francisco performed a detailed analysis to establish design parameters associated with 100 Year Base Flood for various offshore points along the Port of San Francisco waterfront. The coordinates and associated design parameters for these points are listed in Table 1612.6.2 (1). The Figure 1612.6.2 (1) indicates locations of these points. In the absence of a site-specific detailed analysis, the design parameters associated with nearest point listed in Table 1612.6.2 (1) may be used for wave load calculations using these provisions or provisions of ASCE 7-05.

1612.6.2.1 Project design criteria: The following design criteria shall be provided on project drawings-

EHW, Highest Observed Water Level or Extreme High Water

MHHW, Mean Higher High Water

MSL, Mean Sea Level

MLLW, Mean Lower Low Water

ELW, Lowest Observed Water Level or Extreme Low Water

Base Flood Elevation

1612.6.3 Breaking wave height

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Breaking wave height may be determined by Equation 16-45.

$$H_b = 0.14 L \tanh(k d_s) \quad (\text{Equation 16-45})$$

Where:

H_b = breaking wave height, feet

d_s = still water depth, feet

L = wave length at depth d_s , feet

k = wave number at depth d_s , 1/feet

Wave number k may be determined with Equations 16-46 and 16-47, and wave length L may be determined with Equation 16-48.

$$x = \frac{2\pi \cdot d_s}{T \sqrt{g d_s}} \quad (\text{Equation 16-46})$$

$$k = \frac{x^2}{d_s} \left[1 - \exp\left(-x^{2.5}\right) \right]^{\left(\frac{1}{2.5}\right)} \quad (\text{Equation 16-47})$$

$$L = \frac{2\pi}{k} \quad (\text{Equation 16-48})$$

Where:

T = peak wave period (wave period associated with peak energy density), sec

g = gravitational acceleration, feet/sec²

d_s = still water depth, feet

1612.6.4 Nonbreaking wave horizontal loads on vertical pilings and columns. The vertical distribution of horizontal non-breaking wave force on vertical pilings and columns may be determined using Equation 16-49.

$$f(z) = \frac{1}{2} C_D \rho_w A u(z) |u(z)| + C_M \rho_w V a(z) \quad (\text{Equation 16-49})$$

Where:

$f(z)$ = non-breaking wave horizontal force per unit height of pile at height z above the seabed, lbf/foot

z = height above the seabed, feet

A = projected area per unit height of pile, feet²/foot

V = displaced volume per unit height of pile, feet³/foot

ρ_w = density of seawater, slug/cubic foot

C_D = drag coefficient

C_M = inertia coefficient

$u(z)$ = horizontal water velocity at height z above the seabed, feet/sec

$a(z)$ = horizontal water acceleration at height z above the seabed, feet/sec²

Horizontal water velocity $u(z)$ and acceleration $a(z)$ may be evaluated in accordance with Equations 16-50 and 16-51, if used in combination with the force correction factor evaluated in accordance with Equations 16-52 and 16-53.

$$u(z) = \frac{H_{\text{design}}}{2} \frac{g T}{L} \frac{\cosh[k(z + d_s)]}{\cosh(k d_s)} \cos(\theta) \pm c \quad (\text{Equation 16-50})$$

$$a(z) = H_{\text{design}} \frac{g \pi}{L} \frac{\sinh[k(z + d_s)]}{\cosh(k d_s)} \sin(\theta) \quad (\text{Equation 16-51})$$

Where:

$H_{\text{design}} = 1.65 H_s$, feet

H_s = significant wave height (average of 1/3 highest waves in a storm), feet

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g = gravitational acceleration, feet/sec²

L = wave length at depth d_s , feet

k = wave number at depth d_s , 1/feet

d_s = still water depth, feet

θ = wave phase (between 0 and 2π), radians

T = peak wave period (wave period associated with peak energy density), sec

c = steady tidal/river current in the direction of (+) or opposing (-) wave travel, feet/sec

Following summation of the force per unit height over the height of the vertical pile, a total horizontal force is obtained. To account for possible nonlinear wave effects, the total horizontal force should be modified by the multiplication factor K_f determined by Equations 16-52 and 16-53.

$$K_f = d_s \left(1.39 \frac{H_{\text{design}}}{d_s} + 0.56 \right) \quad \text{for } \frac{H_{\text{design}}}{d_s} > 0.3 \quad \text{(Equation 16-52)}$$

$$K_f = 1.0 \quad \text{for } \frac{H_{\text{design}}}{d_s} \leq 0.3 \quad \text{(Equation 16-53)}$$

Pile types and associated drag/inertia coefficients recommended for San Francisco waterfront conditions are indicated in Table 1612.6.4 (1).

Table 1612.6.4 (1) Drag and Inertia Coefficients

Pile type	Direction to flow/waves	C_D	C_M
Circular	\Rightarrow ○	0.7	2.0
Square	\Rightarrow □	2.0	2.5
Square	\Rightarrow ◇	1.6	2.2
Square chamfered	\Rightarrow ◻	0.6	2.5
Square chamfered	\Rightarrow ◊	0.5	2.5

1612.6.5 Nonbreaking wave horizontal loads on vertical walls. The provisions of this section apply to vertically-oriented non-porous wall that extends fully to the seafloor and does not allow wave energy to transmit through or beneath the wall.

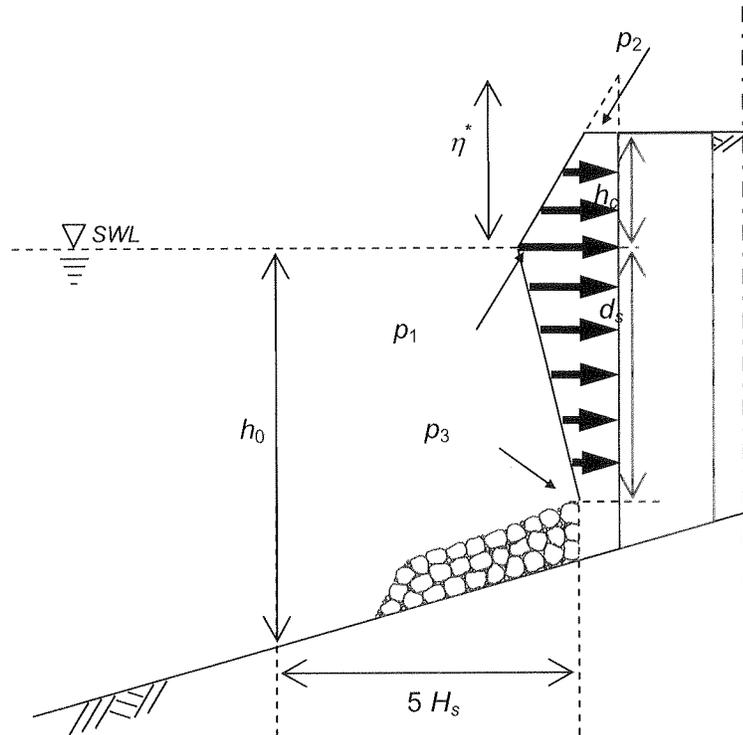


Figure 1612.6.5 (1)

Dynamic wave pressures p_1 (at the still water level), p_2 (at top of seawall or top of wave crest) and p_3 (at toe of seawall) as per Figure 1612.6.5 (1) may be evaluated in accordance with Equations 16-54, 16-55, 16-56, and 16-57.

$$p_1 = 0.5 (1 + \cos \beta) (\alpha_1 + \alpha_2 \cos^2 \beta) \rho_w g H_{\text{design}} \quad (\text{Equation 16-54})$$

$$p_2 = 0 \quad \text{for cases without overtopping } (\eta^* < h_c) \quad (\text{Equation 16-55})$$

$$p_2 = \left(1 - \frac{h_c}{\eta^*}\right) p_1 \quad \text{for cases with overtopping } (\eta^* > h_c) \quad (\text{Equation 16-56})$$

$$p_3 = \alpha_3 p_1 \quad (\text{Equation 16-57})$$

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Where:

p_1 = dynamic pressure at the still water level, lbf/foot²

p_2 = dynamic pressure at the top of the seawall (or top of wave crest), lbf/foot²

p_3 = dynamic pressure at the toe of the seawall, lbf/foot³

β = plan angle of incident waves relative to seawall (zero is normally incident), degrees

ρ_w = density of seawater, slug/foot³

g = gravitational acceleration, feet/sec²

h_c = freeboard of seawall above still water level, feet

H_s = significant wave height at horizontal distance L seaward of the structure, feet

h_0 = still water depth at horizontal distance of $5 \cdot H_s$ seaward of the structure, feet

$H_{\text{design}} = \min \{1.65 H_s; 0.14 L \tanh(kh_0)\}$, feet

d_s = depth at toe of seawall relative to still water level, feet

k = wave number at depth h_0 , 1/feet

L = local wavelength at depth h_0 , feet

The values of η^* , α_1 , α_2 and α_3 used in conjunction with Equations 16-54 through 16-57 shall be evaluated in accordance with Equations 16-58 through 16-61.

$$\eta^* = 0.75 (1 + \cos \beta) H_{\text{design}} \quad \text{(Equation 16-58)}$$

$$\alpha_1 = 0.6 + 0.5 \left[\frac{4\pi h_0/L}{\sinh(4\pi h_0/L)} \right]^2 \quad \text{(Equation 16-59)}$$

$$\alpha_2 = \min \left\{ \frac{h_0 - d_s}{3h_0} \left(\frac{H_{\text{design}}}{d_s} \right)^2; \frac{2d_s}{H_{\text{design}}} \right\} \quad \text{(Equation 16-60)}$$

$$\alpha_3 = 1 - \frac{d_s}{h_0} \left[1 - \frac{1}{\cosh(2\pi h_0/L)} \right] \quad \text{(Equation 16-61)}$$

Wave number k and wave length L are as evaluated with Equations 16-46 to 16-48.

Total wave force (F_T) is the sum of dynamic (F_D) and hydrostatic (F_H) components and is evaluated in accordance with Equations 16-62 through 16-65.

$$F_D = 0.5(p_1 + p_3)d_s + 0.5(p_1 + p_2)\eta^* \text{ for no overtopping } (\eta^* \leq h_c) \quad (\text{Equation 16-62})$$

$$F_D = 0.5(p_1 + p_3)d_s + 0.5(p_1 + p_2)h_c \text{ for overtopping } (\eta^* > h_c) \quad (\text{Equation 16-63})$$

$$F_H = 0.5 \rho_w g d_s^2 \quad (\text{Equation 16-64})$$

$$F_T = F_D + F_H \quad (\text{Equation 16-65})$$

1612.6.6 Nonbreaking wave horizontal loads on nonvertical walls. Nonbreaking wave forces given by the methodology of Section 1612.6.5 shall be modified in instances where the walls or surfaces upon which the nonbreaking waves act are nonvertical. The total nonbreaking wave force given by Equation 16-65 of Section 1612.6.5 is modified according to Equation 5-8 of ASCE 7-05 Chapter 5, substituting F_T of Equation 16-65 for F_t of Equation 5-8 of ASCE 7-05.

1612.6.7 Nonbreaking wave horizontal loads on vertical and nonvertical walls from obliquely incident waves. Nonbreaking wave forces on walls in instances where waves are obliquely incident are determined as indicated in Section 1612.6.5.

1612.6.8 Nonbreaking wave vertical loads on horizontal surfaces. Nonbreaking wave vertical forces on horizontal surfaces may be evaluated as indicated in this section.

$$F_v = F_v^* a \left(\frac{\eta_{\max} - c_l}{H_s} \right)^{-b} \quad (\text{Equation 16-66})$$

$$F_v^* = b_w b_l p_2 \quad (\text{Equation 16-67})$$

$$p_2 = (\eta_{\max} - c_l) \rho_w g \quad (\text{Equation 16-68})$$

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Where:

F_v = quasi-static non-breaking wave vertical force on horizontal surfaces, lbf

F_v^* = "basic" vertical force, lbf

p_2 = hydrostatic pressure at bottom of horizontal surfaces, lbf/foot²

H_s = significant wave height (average of 1/3 highest waves in a storm), foot

$a = 0.82$

$b = 0.61$

b_w = width of affected horizontal surface in direction perpendicular to wave attack, feet

b_l = length of affected horizontal surface in direction of wave attack, feet

η_{\max} = maximum wave crest elevation above still water level, feet

c_l = clearance of deck above still water level, feet

ρ_w = density of seawater, slug/foot³

g = gravitational acceleration, feet/sec²

Maximum crest elevation η_{\max} should be evaluated using stream function wave theory. If this theory is not available, maximum crest elevation may be estimated using Equation 16-69.

$$\eta_{\max} = \left(0.78 \frac{H_{\text{design}}}{d_s} + 1 \right) \frac{H_{\text{design}}}{2} \quad (\text{Equation 16-69})$$

Where:

$H_{\text{design}} = \min \{ 1.65 H_s ; 0.14 L \tanh(kd_s) \}$, feet

d_s = still water depth, feet

k = wave number at depth d_s , 1/feet

L = wave length at depth d_s , feet

Wave number k and wave length L are evaluated with Equations 16-46 to 16-48.

1612.6.9 Nonbreaking wave horizontal loads on down-standing beams.

Nonbreaking wave horizontal forces on down-standing beams may be determined as indicated in this section.

$$F_h = F_h^* a \left(\frac{\eta_{\max} - c_l}{H_s} \right)^{-b} \quad \text{(Equation 16-70)}$$

$$F_h^* = b_w (\eta_{\max} - c_l) \frac{p_2}{2} \quad \text{for } \eta_{\max} \leq c_l + b_h \quad \text{(Equation 16-71)}$$

$$F_h^* = b_w b_h \frac{(p_1 + p_2)}{2} \quad \text{for } \eta_{\max} > c_l + b_h \quad \text{(Equation 16-72)}$$

$$p_1 = [\eta_{\max} - (b_h - c_l)] \rho g \quad \text{(Equation 16-73)}$$

$$p_2 = (\eta_{\max} - c_l) \rho g \quad \text{(Equation 16-74)}$$

Where:

F_h = quasi-static non-breaking wave horizontal force on down-standing beam, lbf

F_h^* = “basic” horizontal force, lbf

p_1 = hydrostatic pressure at top of down-standing beam, lbf/foot²

p_2 = hydrostatic pressure at bottom of down-standing beam, lbf/foot²

H_s = significant wave height (average of 1/3 highest waves in a storm), feet

$a = 0.72$

$b = 2.30$

b_w = width of down-standing beam in direction perpendicular to wave attack, feet

b_h = height (vertical dimension) of down-standing beam, feet

η_{\max} = maximum crest elevation above still water level, feet

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c_f = clearance of down-standing beam above still water level, feet

ρ_w = density of seawater, slug/foot³

g = gravitational acceleration, feet/sec²

Maximum crest elevation η_{\max} should be evaluated using stream function wave theory. If this theory is not available, maximum crest elevation may be estimated using Equation 16-69.

1612.6.10 Breaking wave horizontal loads on vertical pilings and columns.

Breaking wave horizontal forces on vertical pilings and columns may be evaluated in accordance with Equations 16-75 and 16-76 and Section 1612.6.4.

$$F_b = 0.5 \rho_w D C_b^2 (\cos^2 \beta) C_s \lambda \eta_b \quad (\text{Equation 16-75})$$

Where:

F_b = wave force contribution due to breaking, lbf

ρ_w = density of seawater, slug/foot³

D = pile diameter, feet

$C_b = L/T$, individual wave celerity at breaking point, feet/sec

L = wave length at pile location, feet

T = peak wave period (wave period with peak energy density), sec

β = inclination of pile with respect to vertical, degrees ($\beta > 0$ indicates pile inclined towards the incident waves)

$C_s = \pi (3.14159)$, slamming coefficient

$\lambda = 0.4$ (curling factor)

η_b = wave crest elevation above still water level at point of wave breaking, feet

The wave force contribution due to breaking F_b is included as a horizontal point load at a vertical location between the wave crest and trough that is conservative for piling/column

design, and must be added to the total non-breaking wave force distribution calculated in Section 1612.6.4.

Wave length L is evaluated with Equation 16-48. Wave crest elevation at the point of wave breaking may be evaluated according to Equation 16-76.

$$\eta_b = \left(0.78 \frac{H_b}{d_s} + 1 \right) \frac{H_b}{2} \quad \text{(Equation 16-76)}$$

Where:

H_b = breaking wave height, feet

d_s = still water depth at pile location, feet

H_b is calculated using Equation 16-45.

1612.6.11 Breaking wave horizontal loads on vertical walls. Breaking wave horizontal forces on vertical walls are calculated as indicated in Section 1612.6.5 for non-breaking waves.

1612.6.12 Breaking wave horizontal loads on nonvertical walls. Breaking wave horizontal forces on non-vertical walls are calculated as indicated in Section 1612.6.6 for non-breaking waves.

1612.6.13 Breaking wave horizontal loads on vertical and nonvertical walls from obliquely incident waves. Breaking wave forces from obliquely incident waves on vertical and nonvertical walls may be calculated as indicated in Sections 1612.6.7 for nonbreaking waves.

1612.6.14 Breaking wave vertical loads on horizontal surfaces. Breaking wave vertical forces on horizontal surfaces may be determined as indicated in Section 1612.6.8 for nonbreaking wave forces.

1612.6.15 Breaking wave horizontal loads on down-standing beams. Breaking wave horizontal forces on down-standing beams (F_i) may be determined in accordance with Equations 16-77 and 16-78.

$$F_i = K_i \frac{F_h}{b_w (\eta_{\max} - c_l)} \quad \text{for} \quad \eta_{\max} \leq c_l + b_h \quad \text{(Equation 16-77)}$$

$$F_i = K_i \frac{F_h}{b_w b_h} \quad \text{for} \quad \eta_{\max} > c_l + b_h \quad \text{(Equation 16-78)}$$

Where:

F_h = non-breaking wave horizontal force on down-standing beam as computed in section 1612.6.9, lbf

b_w = width of down-standing beam in direction perpendicular to wave attack, feet

b_h = height (vertical dimension) of down-standing beam, feet

η_{\max} = maximum crest elevation above still water level, feet

c_l = clearance of down-standing beam above still water level, feet

F_i = breaking wave horizontal impact pressure on down-standing beam, lbf/foot²

K_i = 3.35

Maximum crest elevation η_{\max} should be evaluated using stream function wave theory. If this theory is not available, maximum crest elevation may be estimated using Equation 16-69.

STRUCTURAL DESIGN
Table 1612.6.2 (1) 100 Year Base Flood Data and other Design Parameters for Wave Load Calculations

Location Point	Point Coordinates, Easting (CA State Plane NAD83 Zone 3, US Survey feet)	Point Coordinates, Northing (CA State Plane NAD83 Zone 3, US Survey feet)	Base Flood Elevation (feet, MLLW) See footnotes 1,4 and 6	100yr Significant Wave Height (feet), see footnote 2 and 4	Peak Wave Period associated with 100 year significant wave height (seconds)	Peak Flood Current Speed (feet/sec), see Footnote 3	Peak Ebb Current Speed (feet/sec)see Footnote 3
1 (Hyde St Pier)	6,006,173	2,123,948	8.84	2.6	3.7	1.4	1.7
2 (Pier 47)	6,007,217	2,123,799	8.78	3.2	4.0	1.0	2.4
3 (Pier 45)	6,006,965	2,123,980	8.82	3.2	3.7	1.3	3.1
4 (Pier 45 Outer)	6,007,195	2,123,974	9.22	4.5	4.0	1.6	3.4
5 (Pier 45 Inner)	6,007,438	2,123,967	9.01	4.1	4.0	2.1	3.9
6 (Pier 43.5)	6,008,470	2,123,913	9.30	4.3	4.0	1.9	1.3
7 (Pier 43)	6,008,995	2,123,899	9.04	3.5	4.0	1.8	1.7
8 (Pier 41)	6,009,208	2,123,880	9.13	3.6	4.0	2.7	2.7
9 (Pier 39)	6,009,773	2,123,865	10.91	5.0	4.6	4.0	5.0
10 (Pier 35)	6,010,988	2,123,074	10.90	4.1	5.0	4.2	5.4
11 (Pier 33)	6,011,652	2,122,597	10.91	4.2	5.0	4.4	5.8
12 (Pier 31)	6,012,087	2,122,261	10.97	4.2	5.0	4.9	5.8
13 (Pier 29)	6,012,664	2,122,052	11.04	4.5	5.0	5.0	5.6
14 (Pier 27)	6,012,765	2,121,766	11.05	4.5	5.0	5.0	5.5
15 (Pier 23)	6,013,328	2,120,959	11.16	4.4	5.0	4.8	5.3
16 (Pier 19)	6,013,515	2,120,670	11.19	4.4	5.0	5.1	5.2
17 (Pier 17)	6,013,734	2,120,359	11.24	4.4	5.0	5.0	5.0
18 (Pier 15)	6,013,869	2,120,182	11.26	4.4	5.0	5.1	4.9
19 (Pier 9)	6,014,102	2,119,828	11.26	4.4	5.0	5.2	4.8
20 (Pier 7)	6,014,442	2,119,361	11.31	4.5	5.0	5.3	4.6

STRUCTURAL DESIGN
Table 1612.6.2(1) 100 Year Base Flood Data and other Design Parameters for Wave Load Calculations

Location Point	Point Coordinates, Easting (CA State Plane NAD83 Zone 3, US Survey feet)	Point Coordinates, Northing (CA State Plane NAD83 Zone 3, US Survey feet)	Base Flood Elevation (feet, MLLW) See footnotes 1,4 and 6	100yr Significant Wave Height (feet), see footnote 2 and 4	Peak Wave Period associated with 100 year significant wave height (seconds)	Peak Flood Current Speed (feet/sec) See Footnote 3	Peak Ebb Current Speed (feet/sec) See Footnote 3
21 (Pier 5)	6,014,510	2,119,023	11.18	4.2	5.0	5.2	4.5
22 (Pier 3)	6,014,615	2,118,877	11.18	4.3	5.0	4.9	4.5
23 (Pier 1.5)	6,014,686	2,118,723	11.15	4.3	5.0	4.8	4.4
24 (Pier 1)	6,014,773	2,118,608	11.17	4.3	5.0	4.9	4.4
25 (Pier 0.5)	6,014,970	2,118,359	10.45	3.9	5.0	5.0	3.4
26 (Ferry Plaza)	6,015,267	2,117,962	10.89	4.5	5.0	4.8	3.6
27 (Agriculture Building)	6,015,358	2,117,824	11.20	4.5	5.0	4.3	3.3
28 (Pier 14)	6,015,704	2,117,273	11.32	4.9	5.0	5.8	4.5
29 (Rincon Park)	6,015,954	2,116,757	11.45	5.2	5.0	5.1	4.1
30 (Pier 22.5)	6,016,457	2,116,170	11.57	5.4	5.0	5.3	4.6
31 (Pier 26)	6,016,975	2,115,447	11.72	5.7	5.0	5.5	4.5
32 (Pier 28)	6,016,983	2,114,997	11.76	5.6	5.0	5.4	4.3
33 (Pier 30/32)	6,017,186	2,114,355	11.78	5.7	5.0	5.5	4.1
34 (Pier 38)	6,017,281	2,113,067	11.67	5.7	5.0	5.7	3.3
35 (Pier 40)	6,017,269	2,112,601	9.51	2.8	3.7	5.2	1.0
36 (Pier 46)	6,017,782	2,111,048	11.83	5.8	5.0	4.7	2.7
37 (Pier 48)	6,017,855	2,110,478	11.83	5.8	5.0	5.3	2.4
38 (Pier 50)	6,017,881	2,109,451	11.77	5.6	4.9	5.5	3.0
39 (Pier 54)	6,018,200	2,108,263	11.82	5.7	5.4	4.9	1.3

STRUCTURAL DESIGN
Table 1612.6.2(1) 100 Year Base Flood Data and other Design Parameters for Wave Load Calculations

Location Point	Point Coordinates, Easting (CA State Plane NAD83 Zone 3, US Survey feet)	Point Coordinates, Northing (CA State Plane NAD83 Zone 3, US Survey feet)	Base Flood Elevation (feet, MLLW) See footnotes 1,4 and 6	100yr Significant Wave Height (feet), see footnote 2 and 4	Peak Wave Period associated with 100 year significant wave height (seconds)	Peak Flood Current Speed (feet/sec) See Footnote 3	Peak Ebb Current Speed (feet/sec) See Footnote 3
40 (South end of Pier 54)	6,018,274	2,107,706	11.84	5.7	5.4	4.8	1.5
41 (Pier 64)	6,018,432	2,107,120	11.83	5.7	5.4	4.6	1.2
42 (Pier 70)	6,019,060	2,105,301	11.89	5.7	5.0	5.5	2.5
43 (Pier 80)	6,019,835	2,101,282	11.79	5.4	5.0	5.1	2.3
44 (Pier 92)	6,020,108	2,100,415	11.80	5.3	5.0	4.6	2.5
45 (Pier 94)	6,020,798	2,099,589	11.79	5.4	5.0	4.7	1.7
46 (Pier 94 South End)	6,021,110	2,099,107	11.78	5.3	5.0	4.5	1.8
47 (Pier 96)	6,021,650	2,098,417	11.80	5.2	5.0	4.5	1.6

FOOTNOTES TO TABLE 1612.6.2(1):

1. **100 Year Total Water Level-Base Flood Elevation** is identical to Total Water Elevation as defined in and is determined in accordance with Pacific Coast Guidelines by FEMA (United States Federal Emergency Management Agency) for the seaward ends of the piers, and as such does not include shoreline effects such as seawall reflections and runup.

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2. **100 Year Significant Wave Height and associated Peak Wave Period**-(a) 100 year waves developed with two dimensional modeling (SWAN model), and tidal elevation used for modeling is MHHW at San Francisco Presidio Station (negligible effect on wave heights), (b) 100 year wind data for modeling is from United States Naval Air Station at Alameda, CA.
3. **Peak Current Speed**-Values are estimated surface current velocity based on bay-wide 3D model and extracted during 15-day simulation with largest tidal ranges in present tidal epoch. Current velocities include protection from breakwaters. Current directions are typically parallel to shoreline (seawall).
4. **Tabulated data include the consideration of breakwater protection structures at some Piers**
5. **Tabulated data do not consider Sea Level Rise associated with global warming**
6. **MLLW (Mean Lower Low Water) = -11.34 feet (San Francisco City Datum)**

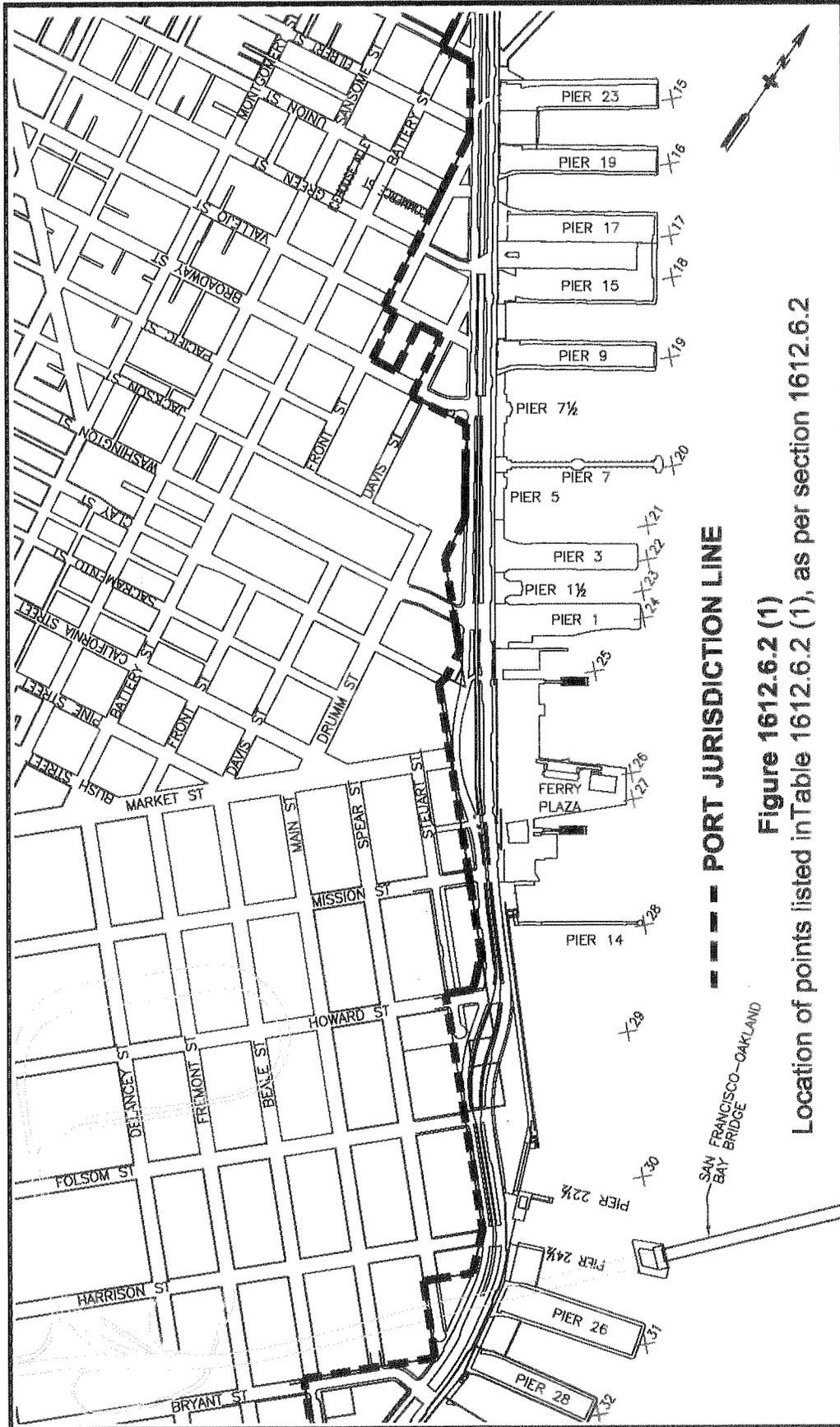


Figure 1612.6.2 (1)
Location of points listed in Table 1612.6.2 (1), as per section 1612.6.2

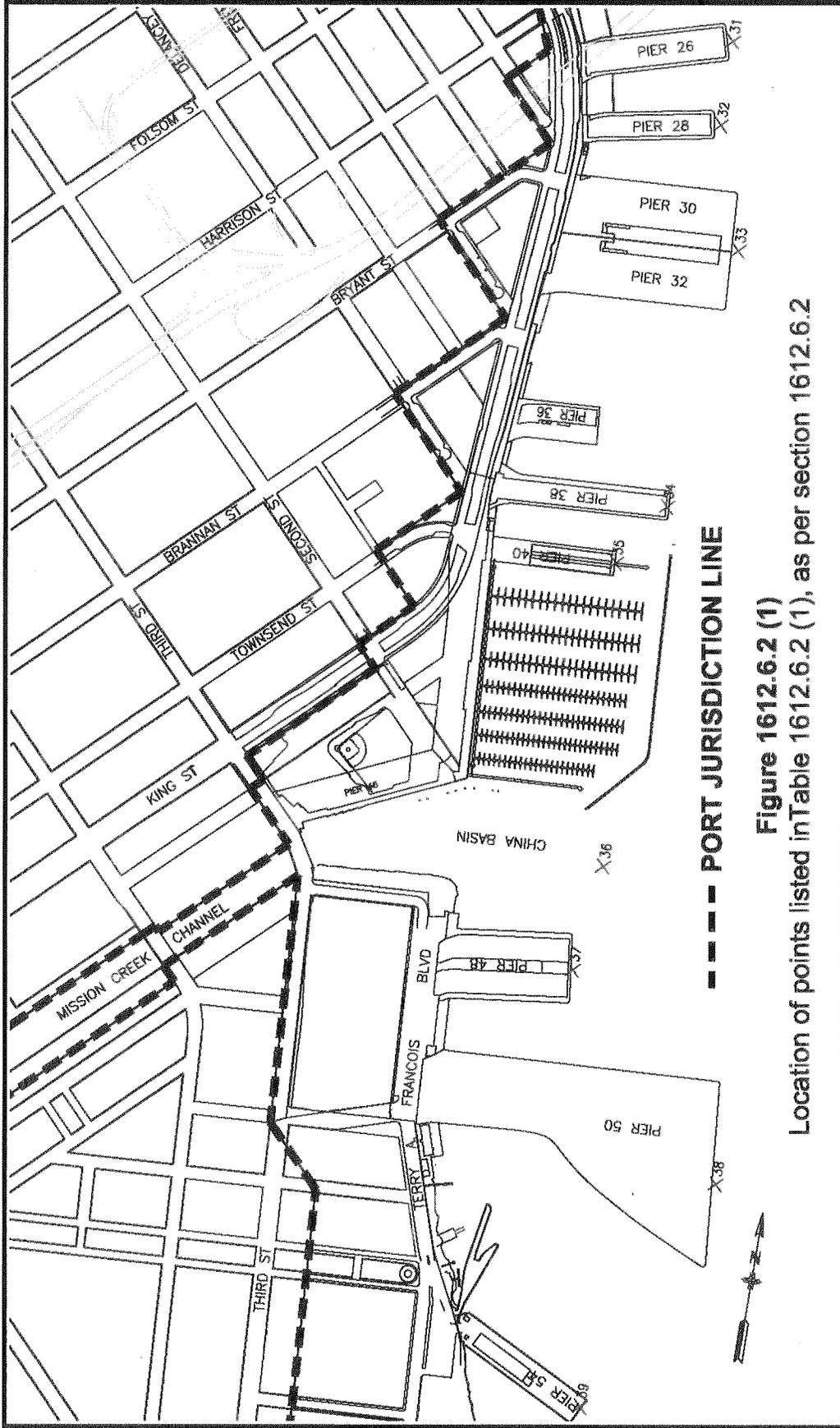


Figure 1612.6.2 (1)
Location of points listed in Table 1612.6.2 (1), as per section 1612.6.2

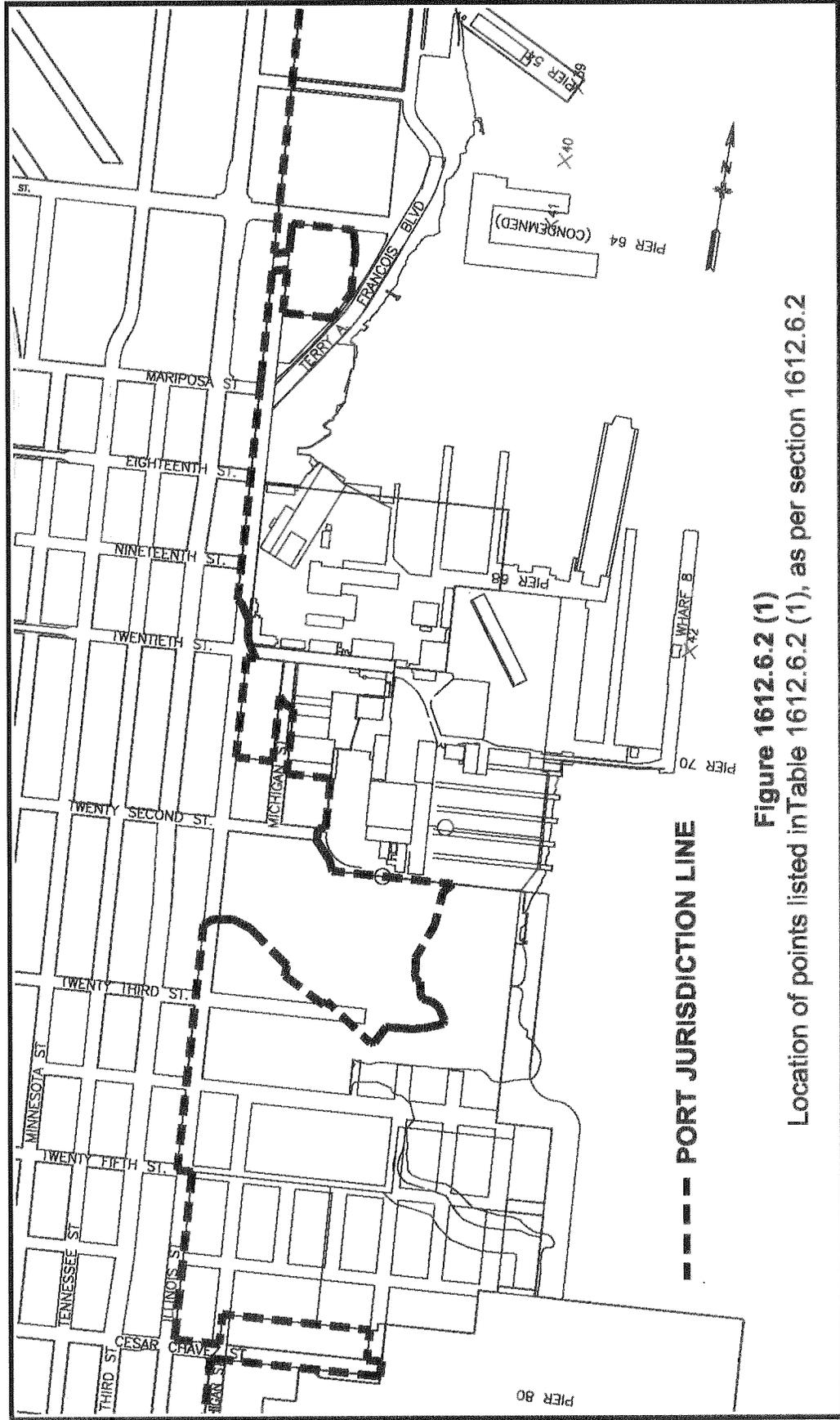


Figure 1612.6.2 (1)
Location of points listed in Table 1612.6.2 (1), as per section 1612.6.2

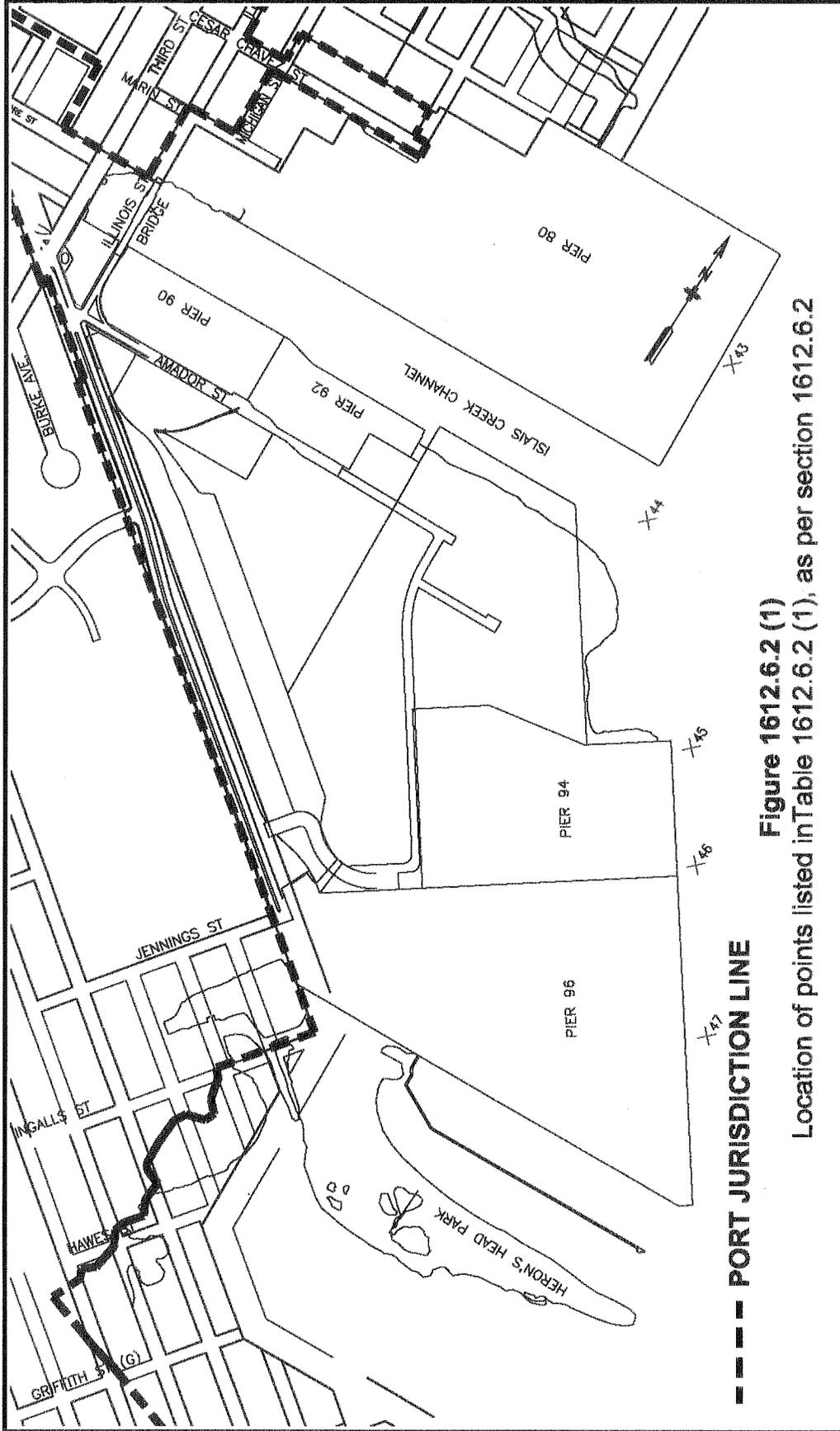


Figure 1612.6.2 (1)

Location of points listed in Table 1612.6.2 (1), as per section 1612.6.2

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1613.1.1 Add the following section:

1613.1.1 Alternative earthquake design method. In lieu of meeting the specific requirements of this section, an alternative lateral analysis procedure incorporating inelastic behavior may be submitted for approval in accordance with procedures and guidelines established by the Chief Harbor Engineer pursuant to Section 104A.2.1

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Chapter 16A

STRUCTURAL DESIGN

No Port of San Francisco Building Code amendments.

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Chapter 16B

**UNREINFORCED MASONRY BEARING WALL BUILDING
SEISMIC MITIGATION PROGRAM**

Add the following chapter

**SECTION 1601B
PURPOSE**

The purpose of this program is to promote public safety and welfare by reducing the risks of injury and damage that may result from the effects of an earthquake in and around the Port's existing un-reinforced masonry buildings ("UMB").

The provisions of this program are intended to set minimum requirements for vacating, barricading and securing these buildings. This program also sets a timeline for the UMB building strengthening and establishes the minimum seismic resistance repair requirements to reduce the risk of death or injury from earthquake ground shaking. Compliance with these provisions will not necessarily prevent loss of life or injury, prevent earthquake damage or protect the function of rehabilitated structures.

**SECTION 1602B
UMB USE RESTRICTION AND MITIGATION REQUIREMENT**

The provisions of this program apply to Port Buildings 104 and 113, the Port's only buildings that have one or more bearing walls of unreinforced masonry and qualify as UMBs. The requirement for seismic strengthening of these buildings shall be as specified in Chapter 16C of the PBC. Compliance with this program does not supersede the requirements for compliance otherwise required in PBC Chapter 34.

A permit issued solely for compliance with the provisions of this program shall not be considered "substantial change" or "structural work" as defined in Chapter 3403 and compliance with PBC 3401.8 will not be required.

These structures shall be secured, sealed and strengthened to meet the minimum standards specified in this program. Construction and repair work shall commence and a certificate of Final Completion and Occupancy or final inspection shall be obtained within the time limits set forth in Table 16B-A. If the buildings should become an imminent hazard to life/safety, the Chief Harbor Engineer is authorized to request the legal counsel of the jurisdiction to institute the appropriate proceeding of law or in equity to restrain, correct or abate the hazard.

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TABLE 16B – A

PROGRAM IMPLEMENTATION SCHEDULE

Phase	Description	Deadline
I – Vacate	<p>Vacate the premises including people, equipment and storage. Non-movable equipment considered a part of the structure, such as various cranes, shall not be removed. Place signs prominently on the building to notify the public of the dangers.</p> <p>One month prior to vacating, Port Planning staff to prepare inventory of historic resources in buildings that are to remain and send to Real Estate to be part of lease vacation facility review.</p>	January 31, 2004
II – Seal/Barricade and Submit 10-year Plan	<ul style="list-style-type: none"> a. Submit a UMB Development and Funding Program proposal identifying development and fund-raising efforts, community partnership plans and milestone schedules. Proposal shall include analysis of historic preservation needs, environmental review requirements, use opportunities, projected costs, identification of Port capital funds and external sources, and community issues. b. Seal and barricade the structure(s) to reasonably prevent unlawful entry and protect the public from hazards related to the buildings.¹ c. Submit a Rapid Assessment Report to the Commission in accordance with the Facility Assessment protocol to document the structural condition of each of the facilities. d. Submit a Security Monitoring Plan to the Commission to clearly identify oversight schedule and reporting procedures. 	March 30, 2004
III- Mothballing	Carry out a more extensive mothballing and documentation program in accordance with the standards of the Secretary of the US Department of the	February-August, 2004

¹ Building sealing shall include placing a rigid plywood cover over wall openings, to be attached in such a way, if physical feasible, that the walls and windows are not irreversibly damaged, doors and window to a minimum of 8 feet high above the adjacent grade. The barricades shall consist of an 8 feet high assembly of k-rail and chain link fences, or just chain link fences where there is no traffic, located approximately 8 feet from the building walls. Utility disconnects shall be included.

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and Documentation	Interior and the National Park Service.	
IV – Implement 10-year Plan	<p>Each year, prior to the first Commission meeting in March, Port Planning to prepare an UMB Annual Staff Report for each of the Port’s UMBs to include the following:</p> <ul style="list-style-type: none"> a. Status report on Development and Funding Program progress based upon proposal submitted in Phase II. b. Overall structural condition of the buildings and surrounding barricade system. Such report shall be based upon an initial report submitted to the Commission in Phase II. Relative significant changes shall be noted to the Commission in the report. The Report shall be based upon visual inspections of the building exteriors only and will not be intended to suffice as a detailed condition survey upon which repair plans shall be based. c. Summary of prior year Security Monitoring reports. d. Annual status report may include recommendations on actions appropriate to protect public safety: <ul style="list-style-type: none"> i. Modifications to the structures or surrounding barricade system ii. Modifications to the Security <p>Monitoring Plan</p> <ul style="list-style-type: none"> a. If funds are obtained, submit strengthening and renovation plans for Port's Building Permit. b. If, however, in the course of monitoring the facilities, staff determines public safety as it relates to one or both of these buildings cannot be maintained, and if no building permit application for retrofitting is made, submit an Emergency Report to the Commission to obtain approval for demolition intent. Upon approval, send notice to the public of intent to prepare an Environmental Impact Report to demolish one or both of the buildings, as applicable. The demolition will be performed in accordance with a demolition plan involving detailed examination, drawings, documentation, etc that is consistent with applicable code requirements. 	March of years 2004 to 2012; continue to 2014

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<p>V– Complete Structural Alterations or Demolition</p>	<p>Complete one of the two actions below, at which time the building can be removed from the UMB Inventory by the Chief Harbor Engineer:</p> <p>Seismically retrofit the buildings in accordance with applicable code requirements and issue a Certificate of Final Completion by the Chief Harbor Engineer; or</p> <p>b. Demolish the buildings in accordance with applicable code requirements. The Port Commission shall have the sole authority to authorize an extension of the deadline for Phase V. Such extension shall be considered based upon the full and balanced analysis to include: the risk to public health and safety, the exposure to the Port of San Francisco and the community, financial hardship, UMB Annual Staff Reports, status of Development and Funding Program, and the impact to the environment.</p>	<p>March 30, 2014</p>
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Chapter 16C SEISMIC STRENGTHENING PROVISIONS FOR UNREINFORCED MASONRY BEARING WALL BUILDINGS

Add the following chapter

SECTION 1601C PURPOSE

The purpose of this chapter is that stated in Section 1601B.

SECTION 1602C SCOPE

1602C.1 General. The seismic strengthening of unreinforced masonry bearing wall buildings shall comply with the provisions of this chapter when strengthening is required by Chapter 16B. The elements regulated by this chapter shall be determined in accordance with Table 16C-A. Except as provided herein, other structural provisions of this code shall apply.

1602C.2 Essential and hazardous facilities. The provisions of this chapter are not intended to apply to the strengthening of buildings or structures in Occupancy Categories III and IV of Table 1604.5. Such buildings or structures shall be strengthened to meet the requirements of this code for new buildings of the same occupancy category or to such other criteria as has been established by the Chief Harbor Engineer.

1602C.3 Unreinforced masonry private school buildings. The strengthening of unreinforced masonry private school buildings shall comply with Sections 39160-39176 of the California Education Code.

1602C.4 Qualified historical buildings. Qualified historical buildings shall be strengthened to comply with this chapter or the alternative provisions contained in Title 24, California Code of Regulations, Part 8, the State Historical Building Code, reprinted as Chapter 34, Division II of this code.

1602C.5 Party wall buildings. In buildings separated by party walls, all segments sharing the party walls shall be strengthened at the same time whenever feasible. When such action is not feasible, a party wall in any segment undergoing strengthening shall be provided with the capacity to resist a reasonable estimate of the shear forces generated by the adjacent un-strengthened segments.

1602C.6 Buildings of mixed construction. When buildings having at least one bearing wall of unreinforced masonry also utilize other structural systems, the following requirements shall apply:

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1602C.6.1 Masonry wood or steel mix. When the lower stories of the building are of unreinforced masonry bearing wall construction and the upper stories are of wood frame or steel stud construction, the unreinforced masonry stories shall be strengthened to meet the requirements of the general procedure of this chapter and the other stories need not be strengthened.

1602C.6.2 Masonry-concrete mix. When a building is of mixed unreinforced masonry bearing wall construction and reinforced concrete or masonry construction, the entire building shall be strengthened in accordance with a program developed by the owner's architect or engineer and approved by the Chief Harbor Engineer.

SECTION 1603C DEFINITIONS

For the purpose of this chapter, the applicable definitions in this code shall also apply.

COLLAR JOINT. The vertical space between adjacent wythes and may contain mortar.

CROSSWALL. A new or existing wall that meets the requirements of Section 1611C.3. A cross-wall is not a shear wall.

CROSSWALL SHEAR CAPACITY. The allowable shear value times the length of the cross-wall, $v_c L_o$.

DIAPHRAGM EDGE. The intersection of the horizontal diaphragm and a shear wall.

DIAPHRAGM SHEAR CAPACITY. The allowable shear value times the depth of the diaphragm, $v_u D$.

ESSENTIAL FACILITY. Any building or structure classified as Occupancy Category IV in Table 1604.5.

HAZARDOUS FACILITY. Any building or structure classified as Occupancy Category III in Table 1604.5.

NORMAL WALL. A wall perpendicular to the direction of seismic forces.

OPEN FRONT. An exterior building wall line, without vertical elements of the lateral force resisting system in one or more stories.

PARTY WALL. A wall common to two or more buildings located on separate parcels of land.

POINTING. The partial reconstruction of the bed joints of an unreinforced masonry wall as defined in Section 1616C.

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QUALIFIED HISTORICAL BUILDING. A building or structure as defined in the current edition of Title 24, California Code of Regulations, Part 8, Section 8-302.

UNREINFORCED MASONRY. Includes burned clay, concrete or sand-lime brick, hollow clay or concrete block, plain concrete and hollow clay tile. These materials shall comply with the requirements of Section 1606C.

UNREINFORCED MASONRY WALL. A masonry wall in which the area of reinforcing steel is less than 25 percent of the minimum steel ratios required by this code for reinforced masonry. To qualify, reinforcing steel must have been installed in grouted cells within the masonry.

UNREINFORCED MASONRY BEARING WALL. An unreinforced masonry wall which provides the vertical support for a floor or roof for which the total superimposed load exceeds 200 pounds per linear foot (298 kg/m) of wall.

YIELD STORY DRIFT. The lateral displacement of one level relative to the level above or below at which yield stress is first developed in a frame member.

SECTION 1604C SYMBOLS AND NOTATIONS

1604C.1 Applicable symbols and notations. For the purpose of this chapter, the applicable symbols and notations in this code shall apply.

A = cross sectional area of unreinforced masonry pier or wall, square inches.

A_b = total area of the bed joints above and below the test specimen for each in-place shear test.

C_p = numerical coefficient as specified in Section 1630.2a and given in Table 16-O for wall anchorage and parapet and appendage strengthening and Table 16C-C for Special Procedure diaphragm shear transfer.

D = in-plane width dimension of pier, inches, or depth of diaphragm, feet.

DCR = demand-capacity ratio specified in Section 1611C.4.2.

F_{wx} = force applied to a wall at level x , pounds.

H = least clear height of opening on either side of a pier, inches.

h/t = height-to-thickness ratio of an unreinforced masonry wall. Height, h , is measured between wall anchorage levels and/or slab-on-grade.

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- L = span of diaphragm between shear walls, or span between shear wall and open front, feet.
- L_o = length of cross-wall, feet.
- L_i = effective span for an open front building specified in Section 1611C.8, feet.
- P_D = superimposed dead load at the location under consideration, pounds. For determination of the rocking shear capacity, dead load at the top of the pier under consideration shall be used.
- P_{D+L} = stress resulting from the dead plus actual live load in place at the time of testing, pounds.
- P_w = weight of wall, pounds.
- V_a = the allowable shear in any unreinforced masonry pier, pounds.
- V_{ca} = total shear capacity of cross-walls in the direction of analysis immediately above the diaphragm level being investigated, $\hat{a}v_cL_o$, pounds.
- V_{cb} = total shear capacity of cross-walls in the direction of analysis immediately below the diaphragm level being investigated, $\hat{a}v_cL_o$, pounds.
- V_p = shear force assigned to a pier on the basis of its relative shear rigidity, pounds.
- V_r = pier rocking shear capacity of any unreinforced masonry wall or wall pier, pounds.
- V_{test} = load at incipient cracking for each in-place shear test per Section 1614C, pounds.
- V_{wx} = total shear force resisted by a shear wall at the level under consideration, pounds.
- v_a = allowable shear stress for unreinforced masonry, pounds per square inch (psi).
- v_c = allowable shear value for a cross-wall sheathed with any of the materials given in Table 16C-D or 16C-E, pounds per foot.
- v_t = mortar shear strength as specified in Section 1606C.3.3.4, pounds per square inch (psi).
- v_{to} = mortar shear test values as specified in Section 1606C.3.3.4, pounds per square inch (psi).
- v_u = allowable shear value for a diaphragm sheathed with any of the materials given in Table 16C-D or 16C-E, pounds per foot.
- $\sum v_u D$ = sum of diaphragm shear capacities of both ends of the diaphragm, pounds.

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$\sum \sum v_u D$ = for diaphragms coupled with cross-walls, $v_u D$ includes the sum of shear capacities of both ends of diaphragms coupled at and above the level under consideration.

W = total seismic dead load as defined in Chapter 16, pounds.

W_d = total dead load tributary to a diaphragm, pounds.

$\sum W_d$ = total dead load to all the diaphragms at and above the level under consideration, pounds.

W_w = total dead load of an unreinforced masonry wall above the level under consideration or above an open front building, pounds.

SECTION 1605C GENERAL REQUIREMENTS

1605C.1 General. All buildings shall have a seismic resisting system conforming with Section 1603.3, except as modified by this chapter.

1605C.2 Alterations and repairs. Alterations and repairs required to meet the provisions of this chapter shall comply with all other applicable structural requirements of this code unless specifically provided for in this chapter.

1605C.3 Requirements for plans. In addition to the requirements of Section 106A.3.3 of this code, the following construction information shall be included in the plans required by this chapter:

1. Dimensioned floor and roof plans showing existing walls and the size and spacing of floor and roof framing members and sheathing materials. The plans shall indicate all existing and new cross-walls and shear walls and their materials of construction. The location of these walls and their openings shall be fully dimensioned and drawn to scale on the plans.
2. Dimensioned wall elevations showing openings, piers, wall classes as defined in Section 1606C.3.3.6, thicknesses, heights, wall shear test locations, and cracks or damaged portions requiring repairs. Where the exterior face is veneer, the type of veneer, its thickness and its bonding and/or ties to the structural wall masonry shall also be noted.
3. The type of interior wall and ceiling materials and framing.
4. The extent and type of existing wall anchorage to floors and roof when used in the design.
5. The extent and type of parapet and appendage corrections which were previously performed, if any.
6. Repair details, if any, of cracked or damaged unreinforced masonry walls required to resist forces specified in this chapter.

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7. All other plans, sections and details necessary to delineate required retrofit construction.
8. The design procedure used shall be stated on both the plans and the permit application.
9. Details of the anchor prequalification program required by Section 1615C, if utilized, including location and results of all tests.
10. In buildings with party walls, the details of construction on both sides of each party wall shall be shown. Where required by Section 1611C.1, Item 5, the owners' consent statements shall be included with the plans.

SECTION 1606C MATERIALS REQUIREMENTS

1606C.1 General. All materials permitted by this chapter, including their appropriate allowable design values and those existing configurations of materials specified herein, may be utilized to meet the requirements of this chapter.

1606C.2 Existing materials. All existing materials utilized as part of the required vertical load-carrying or lateral force-resisting system shall be in sound condition or shall be repaired or removed and replaced with new materials. All unreinforced masonry materials shall comply with the following requirements:

1. The construction (lay-up) of the masonry units complies with Section 1606C.3.2 and the quality of bond between the units has been verified to the satisfaction of the Chief Harbor Engineer.
2. Concrete masonry units are verified to be load-bearing units complying with U.B.C. Standard 21-4 or such other standard as is acceptable to the Chief Harbor Engineer.
3. Hollow clay tile units are verified to be structural load-bearing units complying with ASTM Standard Specification C 34 or such other standard as is acceptable to the Chief Harbor Engineer.
4. The compressive strength of plain concrete walls shall be determined based on cores taken from each class of concrete wall. The location and number of tests shall be the same as prescribed for strength tests in Sections 1606C.3.3.2 and 1606C.3.3.3.

1606C.3 Existing unreinforced masonry walls.

1606C.3.1 General. All unreinforced masonry walls utilized to carry vertical loads or seismic forces parallel and perpendicular to the wall plane shall be tested as specified in this section. All masonry that does not meet the minimum standards established by this chapter shall be removed and replaced with new materials, repaired or alternatively shall have its structural functions replaced with new materials and shall be anchored to supporting elements.

1606C.3.2 Construction (lay-up) of walls.

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1606C.3.2.1 Multi-wythe solid brick. The facing and backing shall be bonded so that not less than 10 percent of the exposed face area is composed of solid headers extending not less than 4 inches (101.6 mm) into the backing. The clear distance between adjacent full-length headers shall not exceed 24 inches (609.6 mm) vertically or horizontally. Where the backing consists of two or more wythes, the headers shall extend not less than 4 inches (101.6 mm) into the most distant wythe or the backing wythes shall be bonded together with separate headers whose area and spacing conform to the foregoing. Wythes of walls not bonded as described above shall be considered as veneer. Veneer wythes shall not be included in the effective thickness used in calculating the height to thickness and the shear capacity of the wall.

1606C.3.2.2 Grouted or un-grouted hollow concrete or clay block and structural hollow clay tile. These materials shall be laid in a running-bond pattern.

Other lay-up patterns may be acceptable if their performance can be justified as being at least equal to those specified above.

1606C.3.3 Mortar.

1606C.3.3.1 Tests. The quality of mortar in all masonry walls shall be determined by performing in-place shear tests in accordance with Section 1614C. Alternative methods of testing may be approved by the Chief Harbor Engineer for masonry walls other than brick.

1606C.3.3.2 Location of tests. The shear tests shall be taken at locations representative of the mortar conditions throughout the entire building, taking into account variations in workmanship at different building height levels, variations in weathering of the exterior surfaces, and variations in the condition of the interior surfaces due to deterioration caused by leaks and condensation of water and/or by the deleterious effects of other substances contained within the building. The exact test locations shall be determined at the building site by the engineer or architect in responsible charge of the structural design work. An accurate record of all such tests and their location in the building shall be recorded, and these results shall be submitted to the Chief Harbor Engineer for approval as part of the structural analysis.

1606C.3.3.3 Number of tests. The minimum number of tests per class shall be as follows:

1. At each of both the first and top stories, not less than two tests per wall or line of wall elements providing a common line of resistance to lateral forces.
2. At each of all other stories, not less than one test per wall or line of wall elements providing a common line of resistance to lateral forces.
3. In any case, not less than one test per 1,500 square feet (139.355 m²) of wall surface nor less than a total of eight tests.

1606C.3.3.4 Minimum quality of mortar.

1. Mortar shear test values, v_{to} , in psi shall be obtained for each in-place shear test in accordance with the following equation:

$$v_{to} = (V_{test}/A_b) - p_{D+L} \quad (16C-1)$$

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2. The mortar shear strength, v_b , is the value in psi that, after discarding the lowest 20 percent of the mortar shear test values, v_{to} , is the lowest of the remaining 80 percent of the mortar shear test values.
3. Any unreinforced masonry bearing wall with v_{to} , or with mortar shear strength, v_b , less than 30 psi (206.84 kPa) shall be either removed, entirely pointed and retested or have its structural function replaced and shall be anchored to supporting elements in accordance with Section 1606C.3.1 and Section 1613C.8. When existing mortar in any wythe is pointed to increase its shear strength and retested, the condition of the mortar in the adjacent bed joints of the inner wythe or wythes and the opposite outer wythe shall be examined for extent of deterioration. The shear strength of any wall class shall be no greater than that of the weakest wythe of that class.

1606C.3.3.5 Collar joints. The collar joints shall be inspected at the test locations during each in-place shear test, and estimates of the percentage of the surfaces of adjacent wythes which are covered with mortar shall be reported along with the results of the in-place shear tests.

1606C.3.3.6 Unreinforced masonry classes. All existing unreinforced masonry shall be categorized into one or more classes based on quality of construction, state of repair, deterioration and weathering. A class shall be characterized by the allowable masonry shear stress determined in accordance with Section 1608C.2. Classes shall be defined for whole walls, not for small areas of masonry within a wall.

1606C.3.3.7 Pointing. All deteriorated mortar joints in unreinforced masonry bearing walls shall be pointed according to Section 1616C. Nothing shall prevent pointing of any deteriorated masonry wall joints before the tests are made, except as required in Section 1607C.1.

SECTION 1607C QUALITY CONTROL

1607C.1 Pointing. All preparation and mortar pointing shall be performed with special inspection.

EXCEPTION: At the discretion of the Chief Harbor Engineer, incidental pointing may be performed without special inspection.

1607C.2 Masonry shear tests. In-place shear tests shall comply with Section 1614C.

1607C.3 Existing wall anchors. Existing wall anchors utilized as all or part of the required tension anchors shall be tested in pullout according to Section 1615C. The minimum number of anchors tested shall be four per floor, with two tests at walls with joists framing into the wall and two tests at walls with joists parallel to the wall, but not less than 10 percent of the total number of existing tension anchors at each level.

1607C.4 New bolts. Twenty-five percent of all new embedded bolts resisting only shear forces in unreinforced masonry walls shall be tested using a calibrated torque wrench in accordance with Section 1615C.

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EXCEPTION: The number of bolts tested may be reduced to 10 percent when special inspection in accordance with Section 1701 is provided during installation but in no case shall less than two bolts per 500 square feet (46.45 m²) of wall or four bolts per wall be tested.

All new embedded bolts resisting tension forces or a combination of tension and shear forces shall be subject to periodic special inspection in accordance with Section 1701.1 prior to placement of the bolt and grout or adhesive in the drilled hole. Five percent of all embedded bolts resisting tension forces, but not less than two bolts, shall be subject to a direct tension test and an additional 20 percent, but not less than three bolts, shall be tested using a torque calibrated wrench. Testing shall be performed in accordance with Section 1615C.

New through bolts and existing bolts installed under the Parapet Safety Program need not be tested.

SECTION 1608C ALLOWABLE DESIGN VALUES

1608C.1 Allowable values.

1608C.1.1 Existing materials. Allowable values for existing materials are given in Table 16C-D, and for new materials in Table 16C-E.

1608C.1.2 Values not specified. Allowable values not specified in this chapter shall be as specified elsewhere in this code.

1608C.2 Masonry shear. The allowable unreinforced masonry shear stress, v_a shall be determined for each masonry class from the following equation:

$$v_a = 0.1v_t + 0.15P_D/A \quad (16C-2)$$

The mortar shear test value, v_t , shall be determined in accordance with Section 1606C.3.3, and shall not exceed 100 psi (689.476 kPa) for the determination of v_a .

The one-third increase in allowable values of this code for short-term loading is not allowed for v_a .

1608C.3 Masonry compression. Where any increase in dead plus live compression stress occurs, the allowable compression stress in unreinforced masonry shall not exceed 100 psi (689.476 kPa). The one-third increase in allowable stress of this code is allowed.

1608C.4 Masonry tension. Unreinforced masonry shall be assumed as having no tensile capacity.

1608C.5 Unreinforced masonry materials other than solid brick. The provisions of this chapter are primarily intended for brick construction but are also applicable to other unreinforced masonry materials when the following conditions are satisfied:

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1. The building does not exceed two stories in height.
2. In the case of hollow concrete and clay block, the shear stress is limited to that permitted by Equations 16C-1 and 16C-2 based on the net area in contact through the bed joints but not more than that calculated using a mortar shear strength, v_t , of 100 psi (689.476 kPa).
3. In the case of plain concrete, the compressive strength (f'_c) shall be not less than 900 psi (6,205.28 kPa) and the allowable shear strength is limited to not more than $0.02f'_c$.
4. In the case of all other unreinforced masonry materials, the shear stress is limited to 3 psi (20.684 kPa) based on the net area in contact through the bed joint.

Unreinforced masonry not meeting the above criteria shall have its structural function replaced and shall be re-supported, if required, in accordance with Section 1613C.8.

1608C.6 Existing. Tension Anchors. The allowable resistance values of the existing anchors shall be 40 percent of the average of the tension tests of existing anchors having the same wall thickness and joist orientation. The one-third increase in allowable value of this code is not allowed for existing tension anchors.

1608C.7 Foundations. For existing foundations, new total dead loads may be increased over existing dead load by 25 percent. New total dead load plus live load plus seismic forces may be increased over existing dead load plus live load by 50 percent.

EXCEPTION: In buildings located in poor soil areas as defined in Chapter 16B, any increase in dead load shall require an evaluation of the existing foundation system.

Higher values may be justified only in conjunction with a geotechnical investigation. A foundation investigation shall be also submitted with the building permit application when:

1. A building has an existing full or partial pile supported, or similar foundation system or whenever the installation of such a system is proposed as part of the strengthening.
2. Whenever there is evidence of significant distress attributable to foundation or geotechnical conditions.
3. An investigation is required by Section 1804 or 1805.
4. It is desired to prove that the building is not on poor soil as permitted by the exception to Section 1603B.

SECTION 1609C SELECTION OF PROCEDURE

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1609C.1 General. Except as modified herein, the analysis and design relating to the structural alteration of existing buildings shall be in accordance with this code.

1609C.2 Selection of procedure. All buildings shall be analyzed by either the General Procedure of Section 1610C or, when applicable, buildings may be analyzed by the Special Procedure of Section 1611C.

EXCEPTIONS:

1. A building may be strengthened to the Bolts-plus level by complying only with the requirements for wall anchorage (tension bolts), diaphragm shear transfer (shear bolts) and out-of-plane wall and parapet and appendage bracing, provided the entire building complies with all of the following requirements:

(1) The building does not have any vertical irregularities of Types 1 (Soft Story), 4 (In-Plane Discontinuity) or 5 (Weak Story) as defined in Table 16-L, or horizontal irregularities of Types 3 (Diaphragm Discontinuity) or 4 (Out-of-Plane Offset) as defined in Table 16-M, or those irregularities are corrected.

(2) The building does not contain any Group A, Division 1, 2, or 2.1 Occupancies, or Group E, Group I or Group H, Division 1, 2 or 7 Occupancies.

(3) The building has a mortar shear strength, v_i , as determined by Section 1606C.3.3, of 30 psi (206.843 kPa) or more for all masonry classes.

(4) The building has wood or plywood diaphragms at all levels above the base of building.

(5) The building contains a maximum of six stories above the base of the building. The base shall be the ground level and basement or basements shall be excluded from the story count.

EXCEPTION: In an otherwise qualifying building of greater than six stories, a maximum of six of the uppermost contiguous stories may be retrofitted using the Bolts-Plus Procedure, providing the building is not located on poor soil as defined in Section 1603B. The masonry walls required by Item 7 below shall occupy not less than 50 percent of the wall length in the lowest two of the uppermost six stories. Non-qualifying stories and stories below the uppermost six shall be retrofitted to any other procedure for which they qualify.

(6) The building has or will be provided with cross-walls as defined in Section 1611C.3 at a spacing that does not exceed 40 feet (12.192 m) on center. Any story which does not have or is not provided with complying cross-walls and all stories below that story shall be analyzed using the General Procedure of Section 1610C or, where applicable, the Special Procedure of Section 1611C. The floor structure that separates the Bolts-Plus and General or Special Procedure stories shall be investigated for its adequacy to act as a diaphragm in accordance with Section 1610C.1 or, where the Special Procedure is applicable, Section 1611C.4.

(7) The building has or will be provided with a minimum of two lines of vertical elements of the lateral force resisting system parallel to each axis. Masonry walls shall have wall piers with a

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height-to-width ratio that does not exceed 2 to 1 and shall occupy not less than 40 percent of the wall's length in order to be considered as providing a line of resistance. Existing moment frames and other lines of resistance added or altered to comply with this requirement shall fully comply with Section 1612C. At least one line in each direction shall be a masonry or concrete shear wall.

(8) In buildings containing one or more party walls, the Bolts-Plus Procedure shall not be used unless each building sharing a party wall individually complies with all of the limitations set forth above and the owner of each such building consents to the use of the procedure in writing.

When the Bolts-Plus Procedure is applicable, the forces to be used for diaphragm shear transfer and irregularity correction shall be those specified in Sections 1611C.5 and 1611C.6 and h/t ratios shall be evaluated in accordance with Section 1611C.7. When the intersection of the diaphragm span and demand capacity ratio falls outside the three regions of Figure 16C-1, the h/t ratios for "all other buildings" in Table 16C-B shall be used. The measures used to comply shall be part of, and be coordinated with, the complete strengthening scheme described in the engineering report required by Section 1604B.2.3.

2. Buildings which are strengthened to conform to the requirements of Section 3403.5 in effect on or after May 21, 1973, are exempt from compliance with the provisions of this chapter.

SECTION 1610C GENERAL PROCEDURE

1610C.1 Minimum design lateral forces. Buildings shall be analyzed to resist minimum lateral forces assumed to act non-concurrently in the direction of each of the main axes of the structure in accordance with the following:

$$V = 0.10 W \quad (16C-3)$$

EXCEPTION: The lateral forces need not exceed those prescribed by Section 1605.4.3.

For buildings more than one story in height, the total force shall be distributed over the height of the building in accordance with the procedures of Chapter 16.

For the purpose of this chapter, a dynamic analysis need not be performed for those buildings with irregularities, as defined in Table 16-L and Table 16-M which would otherwise require such analysis. All other design and analysis requirements of those tables shall apply.

1610C.2 Lateral forces on elements of structures. Parts of structures shall be analyzed and designed as required in Chapter 16.

EXCEPTIONS:

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1. Unreinforced masonry walls for which height-to-thickness ratios do not exceed ratios set forth in Table 16C-B need not be analyzed for out-of-plane loading. Unreinforced masonry walls which exceed the allowable h/t ratios of Table 16C-B shall be braced according to Section 1613C.5.
2. Parapets complying with Section 1613C.6 need not be analyzed for out-of-plane loading.
3. Out-of-plane anchorage of the walls shall be designed to 0.3 times the mass of the wall.

1610C.3 Shear walls (in-plane loading). Shear walls shall comply with Section 1612C.

1610C.4 Chords. When required by the structural analysis, chord forces of horizontal diaphragms shall be developed in existing materials or by the addition of new materials.

SECTION 1611C SPECIAL PROCEDURE

1611C.1 Limits for application. The Special Procedure of this section may only be applied to buildings with the following characteristics:

1. The building is not an essential or hazardous facility.
2. Wood or plywood diaphragms at all levels above the base of structure.
3. A maximum of six stories above the base of the building. The base shall be the ground level, and basement or basements shall be excluded from the story count.

EXCEPTION: An otherwise qualifying building of greater than six stories may also be retrofitted using the Special Procedure, provided the building is not located on poor soil as defined in Section 1603B or does not contain any Group A, Division 1, 2, or 2.1 Occupancies, or Group E, or Group I Occupancies.

4. Except for single-story buildings with an open front on one side only, a minimum of two lines of vertical elements of the lateral force resisting system complying with Section 1612C parallel to each axis. At least one line in each direction shall be a masonry or concrete shear wall. Requirements for open front buildings are contained in Section 1611C.8.
5. In buildings containing one or more party walls, the Special Procedure shall not be used unless each building sharing a party wall individually complies with all of the limitations set forth above, and the owner of each such building consents to the use of the procedure in writing.

1611C.2 Lateral forces on elements of structures. With the exception of the diaphragm provisions in Section 1611C.4, elements of structures shall comply with Section 1610C.2.

1611C.3 Cross-walls. When used shall meet the requirements of this section.

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1611C.3.1 Cross-wall definition. A wood-framed wall sheathed with any of the materials described in Table 16C-D or 16C-E or other system as defined in Section 1611C.3.5. Spacing of cross-walls shall not exceed 40 feet (12.19 m) on center measured perpendicular to the direction under consideration and shall be placed in each story of the building. Cross-walls shall extend the full story height between diaphragms.

EXCEPTIONS:

1. Cross-walls need not be provided at all levels in accordance with Section 1611C.4.2(4).
2. Existing cross-walls need not be continuous below a wood diaphragm at or within 4 feet (1.219 m) of grade, provided:
 - (1). Shear connections and anchorage requirements, Section 1611C.5 are satisfied at all edges of the diaphragm.
 - (2). Cross-walls with total shear capacity of $0.20Z\hat{A}W_d$ interconnect the diaphragm to the foundation.
 - (3). The demand-capacity ratio of the diaphragm between the crosswalls that are continuous to their foundations shall be calculated as:

$$DCR = (0.83ZW_d + V_{ca}) / (2v_uD) \quad (16C-4)$$

and DCR shall not exceed 2.5.

1611C.3.2 Cross-wall shear capacity. Within any 40 feet (12.19 m) measured along the span of the diaphragm, the sum of the cross-wall shear capacities shall be at least 30 percent of the diaphragm shear capacity of the strongest diaphragm at or above the level under consideration.

1611C.3.3 Existing cross-walls. Shall have a maximum height-to-length ratio between openings of 1.5 to 1. Existing cross-wall connections to diaphragms need not be investigated as long as the cross-wall extends to the framing of the diaphragm above and below.

1611C.3.4 New cross-walls. Connections to the diaphragm shall develop the cross-wall shear capacity. New cross-walls shall have the capacity to resist an overturning moment equal to the cross-wall shear capacity times the story height. Cross-wall overturning moments need not be cumulative over more than two stories.

1611C.3.5 Other cross-wall systems. Such as moment resisting frames, may be used as cross-walls, provided that the yield story drift does not exceed 1 inch (25.4 mm) in any story.

1611C.4 Wood Diaphragms.

1611C.4.1 Acceptable diaphragm span. If the point (L,DCR) on Figure 16C- 1 falls within Regions 1, 2 or 3.

1611C.4.2 Demand-capacity ratios. Shall be calculated for the diaphragm at any level according to the following formulas: [Amended 10-7-2003 by Ord. No. 245-03]

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1. For a diaphragm without qualifying cross-walls at levels immediately above or below:

$$DCR = 0.83ZW_d/\sum v_u D \quad (16C-5)$$

2. For a diaphragm in a single-story building with qualifying cross-walls:

$$DCR = 0.83ZW_d/(\sum v_u D + V_{cb}) \quad (16C-6)$$

3. For diaphragms in a multi-story building with qualifying cross-walls in all levels:

$$DCR = 0.83Z\sum W_d/(\sum \sum v_u D + V_{cb}) \quad (16C-7)$$

DCR shall be calculated at each level for the set of diaphragms at and above the level under consideration. In addition, the roof diaphragm shall also meet the requirements of Formula (16C-6).

4. For a roof diaphragm and the diaphragm directly below if coupled by crosswalls:

$$DCR = 0.83Z\sum W_d/\sum v_u D \quad (16C-8)$$

1611C.4.3 Chords. An analysis for diaphragm flexure need not be made and chords need not be provided.

1611C.4.4 Collectors. An analysis of diaphragm collector forces shall be made for the transfer of diaphragm edge shears into vertical elements of the lateral force resisting system. Collector forces may be resisted by new or existing elements.

1611C.4.5 Diaphragm openings.

1611C.4.5.1 Forces. Diaphragm forces at corners of openings shall be investigated and shall be developed into the diaphragm by new or existing materials.

1611C.4.5.2 Demand-capacity ratio. In addition to the demand-capacity ratios of Section 1611C.4.2, the demand-capacity ratio of the portion of the diaphragm adjacent to an opening shall be calculated using the opening dimension as the span.

1611C.4.5.3 End quarter of diaphragm. Where an opening occurs in the end quarter of the diaphragm span, $v_u D$ for the demand-capacity ratio calculation shall be based on the net depth of the diaphragm.

1611C.5 Diaphragm shear transfer. Diaphragms shall be connected to shear walls with connections capable of developing a minimum force given by the lesser of the following formulas:

$$V = \frac{1}{2}ZC_p W_d \quad (16C-9)$$

using the C_p values in Table 16C-C, or

$$V = v_u D \quad (16C-10)$$

1611C.6 Shear walls (in-plane loading).

1611C.6.1 Wall story force. The wall story force distributed to a shear wall at any diaphragm level shall be calculated as:

1. For buildings without crosswalls:

$$F_{wx} = 0.33Z (W_{wx} + W_d / 2) \quad (16C-11)$$

but need not exceed

$$F_{wx} = 0.33ZW_{wx} + v_u D \quad (16C-12)$$

2. For buildings with crosswalls in all levels:

$$F_{wx} = 0.25Z (W_{wx} + W_d / 2) \quad (16C-13)$$

but need not exceed

$$F_{wx} = 0.25Z [W_{wx} + \sum W_d (v_u D / \sum v_u D)] \quad (16C-14)$$

and need not exceed

$$F_{wx} = 0.25ZW_{wx} + v_u D \quad (16C-15)$$

1611C.6.2 Wall story shear. The wall story shear shall be the sum of the wall story forces at and above the level of consideration.

$$V_{wx} = \sum F_{wx} \quad (16C-16)$$

1611C.6.3 Shear wall analysis. Shear walls shall comply with Section 1612C.

1611C.6.4 Moment frames. Moment frames used in place of shear walls shall be designed as required in Chapter 16 except that the forces shall be as specified in Section 1611C.6.1 and the story drift ratio shall be limited to 0.005, except as further limited by Section 1612C.4.2.

1611C.7 Out-of-plane forces - unreinforced masonry walls.

1611C.7.1 Allowable unreinforced masonry wall height-to-thickness ratios. The provisions of Section 1610C.2 are applicable except the allowable height-to-thickness ratios given in Table 16C-B shall be determined from Figure 16C-1 as follows:

1. In Region 1, height-to-thickness ratios for buildings with crosswalls may be used if qualifying crosswalls are present in all stories.

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2. In Region 2, height-to-thickness ratios for buildings with crosswalls may be used whether or not qualifying crosswalls are present.
3. In Region 3, height-to-thickness ratios for “all other buildings” shall be used whether or not qualifying crosswalls are present.

1611C.7.2 Walls with diaphragms in different regions. When diaphragms above and below the wall under consideration have demand-capacity ratios in different regions of Figure 16C-1, the lesser height-to-thickness ratio shall be used.

1611C.8 Open front design procedure. A single-story building with an open front on one side and crosswalls parallel to the open front may be designed by the following procedure:

1. Effective diaphragm span, L_i , for use in Figure 16C-1 shall be determined in accordance with the following formula:

$$L_i = 2 [(W_w/W_d)L + L]x \quad (16C-17)$$

2. Diaphragm demand-capacity ratio shall be calculated as:

$$DCR = 0.83Z (W_d + W_w) / [(v_u D) + V_{cb}] \quad (16C-18)$$

SECTION 1612C ANALYSIS AND DESIGN

1612C.1 Analysis of vertical elements of the lateral force-resisting system. General. The following requirements are applicable to both the General Procedure and Special Procedure.

1612C.2 Existing unreinforced masonry walls.

1612C.2.1 Flexural rigidity. Flexural components of deflection may be neglected in determining the rigidity of an unreinforced masonry wall.

1612C.2.2 Shear walls with openings. Wall piers shall be analyzed according to the following procedure which is diagrammed in Figure 16C-2:

1612C.2.2.1 For any pier:

1. The pier shear capacity shall be calculated as:

$$V_a = v_a A_x \quad (16C-19)$$

2. The pier rocking shear capacity shall be calculated as:

$$V_r = 0.5P_D/H \quad (16C-20)$$

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1612C.2.2.2 Pier behavior. The wall piers at any level are acceptable if they comply with one of the following modes of behavior:

1. Rocking controlled mode. When the pier rocking shear capacity is less than the pier shear capacity, i.e., $V_r < V_a$ for each pier in a level, forces in the wall at that level, V_{wx} , shall be distributed to each pier in proportion to $P_D D/H$.

For the wall at that level:

$$V_{wx} < \sum V_r \quad (16C-21)$$

2. Shear controlled mode. Where the pier shear capacity is less than the pier rocking capacity, i.e., $V_r < V_a$ in at least one pier in a level, forces in the wall at the level, V_{wx} , shall be distributed to each pier in proportion to D/H .

For each pier at that level:

$$V_p < V_a \quad (16C-22)$$

and

$$V_p < V_r \quad (16C-23)$$

If $V_p < V_a$ for each pier and $V_p > V_r$ for one or more piers, such piers shall be omitted from the analysis, and the procedure shall be repeated for the remaining piers, unless the wall is strengthened and reanalyzed.

1612C.2.2.3 Masonry pier tension stress. Unreinforced masonry wall piers need not be analyzed for tension stress.

1612C.2.3 Shear walls without openings. Shear walls without openings shall be analyzed as for walls with openings except that V_r shall be calculated as follows:

$$V_r = (0.50P_D + 0.25P_w) D/H \quad (16C-24)$$

1612C.3 Plywood sheathed shear walls. Plywood sheathed shear walls may be used to resist lateral forces for buildings with wood diaphragms analyzed according to provisions of Section 1610C. Plywood sheathed shear walls may not be used to share lateral forces with other materials along the same line of resistance.

1612C.4 Combinations of vertical elements.

1612C.4.1 Lateral force distribution. Lateral forces shall be distributed among the designated vertical resisting elements in a line in proportion to their relative rigidities except that moment frames shall comply with Section 1612C.4.2.

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1612C.4.2 Moment-resisting frames. A moment frame shall not be used with an unreinforced masonry wall in a single line of resistance unless the wall has piers that are capable of sustaining rocking in accordance with Section 1612C.2.2, the frames are designed to carry 100 percent of the lateral forces, and the story drift ratio shall be limited to 0.0025.

1612C.5 Shear force. The shear force used in the design of any party wall shall be the sum of the shear forces contributed by each building sharing that wall.

SECTION 1613C DETAILED SYSTEM DESIGN REQUIREMENTS

1613C.1 Wall anchorage.

1613C.1.1 Anchor locations. All unreinforced masonry walls shall be anchored at the roof and floor levels as required in Section 1610C.2. Ceilings of plaster, gypsum board or similar heavier materials, when not attached directly to roof or floor framing, and abutting masonry walls, shall be either anchored to the walls at a maximum spacing of 6 feet (1.829 m) or removed.

1613C.1.2 Anchor requirements. Anchors shall consist of bolts installed through the wall as specified in Table 16C-E, or by an approved equivalent at a maximum anchor spacing of 6 feet (1.829 m). All existing wall anchors shall be secured to the joists to develop the required forces.

1613C.1.3 Minimum wall anchorage. Anchorage of masonry walls to each floor or roof shall resist a minimum force determined in accordance with Chapter 16 or 200 pounds per linear foot (298 kg/m), whichever is greater, acting normal to the wall at the level of the floor or roof. Anchor spacing shall not exceed 6 feet (1.829 m) on center. Existing through-the-wall anchors, if used, must meet the requirements of this chapter or must be upgraded.

1613C.1.4 Anchors at corners. At the roof and floor levels, both shear and tension anchors shall be provided within 2 feet (0.609 m) horizontally from the inside of the corners of the walls.

1613C.1.5 Anchors with limited access. When access to the exterior face of the masonry wall is prevented, wall anchors conforming to Item 4.b. in Table 16C-E may be used.

1613C.1.6 Anchors at interior and party walls. When floor or roof framing aligns vertically at party and interior masonry walls, continuous anchors shall be utilized to directly connect the floor or roof framing on either side of the wall. Where the roof or floor framing is offset more than the least depth of any adjacent framing, the intervening wall section shall be investigated for cross wythe shear assuming that the diaphragm to wall tensions on either side of the wall are acting in opposite directions.

1613C.2 Diaphragm shear transfer. Bolts transmitting shear forces shall have a maximum bolt spacing of 6 feet (1.829 m) and shall have nuts installed over malleable iron or plate washers when bearing on wood and heavy cut washers when bearing on steel.

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1613C.3 Collectors. Collector elements shall be provided which are capable of transferring the seismic forces originating in other portions of the building to the element providing the resistance to those forces.

1613C.4 Ties and continuity. Ties and continuity shall conform to Section 1631.2.5.

1613C.5 Wall bracing.

1613C.5.1 General. Where a wall height-to-thickness ratio exceeds the specified limits, the wall may be laterally supported by vertical bracing members per Section 1613C.5.2 or by reducing the wall height by bracing per Section 1613C.5.3.

1613C.5.2 Vertical bracing members. Vertical bracing members shall be attached to floor and roof construction for their design loads independently of required wall anchors. Horizontal spacing of vertical bracing members shall not exceed one-half the unsupported height of the wall nor 10 feet (3.048 m). Deflection of such bracing members at design loads shall not exceed one-tenth of the wall thickness.

1613C.5.3 Intermediate wall bracing. The wall height may be reduced by bracing elements connected to the floor or roof. Horizontal spacing of the bracing elements and wall anchors shall be as required by design but shall not exceed 6 feet (1.829 m) on center. Bracing elements shall be detailed to minimize the horizontal displacement of the wall by the vertical displacement of the floor or roof.

1613C.6 Parapets. Parapets and appendages not conforming to this chapter shall be removed, or stabilized or braced to ensure that the parapets and appendages remain in their original position.

EXCEPTIONS:

1. Parapets, appendages and roof-to wall-tension anchors which have already been removed, stabilized or braced to comply with Chapter 16D of this code or Section 251 of previous codes pursuant to an application filed before the effective date of this ordinance need not be reanalyzed or restrengthened.
2. Parapets whose heights do not exceed 3 times their thicknesses need not be removed, stabilized or braced, provided they are located either immediately adjacent to a normally inaccessible court or yard or another building. In the case of an adjoining building, the top of the parapet of the building under consideration shall not be more than 12 inches (0.305 m) above the top of the parapet of the adjoining building. In order to qualify for this exception, the owner must execute an agreement with the Chief Harbor Engineer to voluntarily abate any hazard that may arise as a result of changed conditions such as demolition of the adjacent building or development or occupancy of the adjoining court or yard. The owner must record the agreement with the County Recorder on a form satisfactory to the Chief Harbor Engineer and supply a copy of the recorded agreement to the Chief Harbor Engineer.

Parapets previously exempted that would not be exempted under exception 2 above shall be removed, or stabilized or braced when the building is strengthened.

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The maximum height of an un-braced unreinforced masonry parapet above the lower of either the level of tension anchors or roof sheathing shall not exceed $1\frac{1}{2}$ times the thickness of the parapet wall. If the required parapet height exceeds this maximum height, a bracing system designed for the forces determined in accordance with Chapter 16 shall support the top of the parapet. Parapet corrective work must be performed in conjunction with the installation of tension roof anchors.

The minimum height of a parapet above any wall anchor shall be 12 inches (0.305 m).

EXCEPTION: If a reinforced concrete beam is provided at the top of the wall, the minimum height above the wall anchor may be 6 inches (170.44 mm).

1613C.7 Veneer.

1613C.7.1 Anchorages. Veneer shall be anchored with approved anchor ties, conforming to the required design capacity specified in this code and placed at a maximum spacing of 24 inches (610 mm) with a maximum supported area of 4 square feet (0.372 m²).

EXCEPTION: Existing anchor ties for attaching brick veneer to brick backing may be acceptable, provided the ties are in good condition and are corrugated galvanized iron strips not less than 1 inch (25.4 mm) in width, 8 inches (203.2 mm) in length and 1/16 inch (1.59 mm) in thickness or equal.

1613C.7.2 Verification. The location and condition of existing veneer anchor ties shall be verified as follows:

1. An approved testing laboratory shall verify the location and spacing of the ties and shall submit a report to the Chief Harbor Engineer for approval as part of the structural analysis.
2. The veneer in a selected area shall be removed to expose a representative sample of ties (not less than four) for inspection by the Chief Harbor Engineer.

1613C.8 Nonstructural masonry walls. Unreinforced masonry walls which carry no design vertical or lateral loads and are not required by the design to be part of the lateral force resisting system shall be adequately anchored to new or existing supporting elements. The anchors and elements shall be designed for the out-of-plane forces specified in Chapter 16. The height or length to thickness ratio between such supporting elements for such walls shall not exceed 13.

1613C.9 Truss and beam supports. Where trusses and beams, other than rafters or joists, are supported on masonry, independent secondary columns shall be installed to support vertical loads of the roof or floor members.

1613C.10 Adjacent buildings. Where elements of adjacent buildings do not have a separation of at least 5 inches (127 mm), the allowable height-to-thickness ratios for "all other buildings" per Table 16C-B shall be used in the direction under consideration.

**SECTION 1614C
IN-PLACE MASONRY SHEAR TESTS**

1614C.1 Scope. This section applies when this chapter requires in-place testing of the quality of masonry mortar.

1614C.2 Preparation of sample. The bed joints of the outer wythe of the masonry shall be tested in shear by laterally displacing a single brick relative to the adjacent bricks in the same wythe. The head joint opposite the loaded end of the test brick shall be carefully excavated and cleared. The brick adjacent to the loaded end of the test brick shall be carefully removed by sawing or drilling and excavating to provide space for a hydraulic ram and steel loading blocks.

1614C.3 Application of load and determination of results. Steel blocks, the size of the end of the brick, shall be used on each end of the ram to distribute the load to the brick. The blocks shall not contact the mortar joints. The load shall be applied horizontally, in the plane of the wythe, until either a crack can be seen or slip occurs. The strength of the mortar shall be calculated by dividing the load at the first cracking or movement of the test brick by the nominal gross area of the sum of the two bed joints.

**SECTION 1615C
TEST OF ANCHORS IN UNREINFORCED MASONRY WALLS**

1615C.1 Scope. Shear and tension anchors embedded in existing masonry construction shall be tested in accordance with this section when and as required by this chapter.

1615C.2 Direct tension testing of existing anchors and new bolts. The test apparatus shall be supported on the masonry wall. The distance between the anchor and the test apparatus support shall not be less than one-half the wall thickness for existing anchors and 75 percent of the embedment for new embedded bolts. Existing wall anchors shall be given a preload of 300 pounds (136.4 kg) prior to establishing a datum for recording elongation. The tension test load reported shall be recorded at 1/8 inch (3.18 mm) relative movement of the existing anchor and the adjacent masonry surface. New embedded tension bolts shall be subject to a direct tension load of not less than 2.5 times the design load but not less than 1,500 pounds (682 kg) for five minutes (10 percent deviation).

1615C.3 Torque testing of new bolts. Bolts which are embedded in unreinforced masonry walls shall be tested using a torque calibrated wrench to the following minimum torques:

1/2-inch-diameter bolts - 40 foot-pounds.

(12.7 mm) (5.54 M-Kg)

5/8-inch-diameter bolts - 50 foot-pounds.

(16 mm) (6.93 M-Kg)

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3/4-inch-diameter bolts - 60 foot-pounds.

(19 mm) (8.31 M-Kg)

1615C.4 Prequalification test for bolts and other types of anchors. This section is applicable when it is desired to use tension or shear values for anchors greater than those permitted by Table 16C-E. The direct tension test procedure set forth in Section 1615C.2 for existing anchors may be used to determine the allowable tension values for new embedded or through bolts except that no preload is required. Bolts shall be installed in the same manner and using the same materials as will be used in the actual construction. A minimum of 5 tests for each bolt size and type shall be performed for each class of masonry in which they are proposed to be used. The allowable tension value for such anchors shall be 40 percent of the average value of the tests for each size and type of bolt and class of masonry.

Shear bolts may be similarly prequalified. The test procedure shall comply with ASTM E 488-96(2003) or such other procedure as is approved by the Chief Harbor Engineer.

The allowable values determined in this manner may exceed those set forth in Table 16C-E.

1615C.5 Reports. Results of all tests shall be reported. The report shall include the test results as related to anchor size and type, orientation of loading, details of the anchor installation and embedment, wall thickness and joist orientation.

SECTION 1616C POINTING OF UNREINFORCED MASONRY WALLS

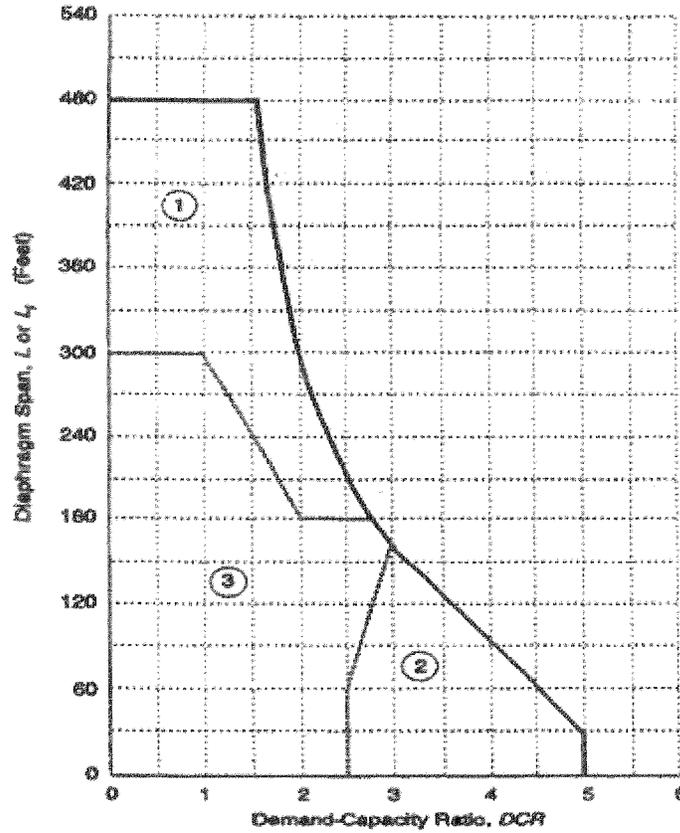
1616C.1 Scope. Pointing of deteriorated mortar joints when required by this chapter shall be in accordance with this section.

1616C.2 Joint preparation. The old or deteriorated mortar should be cut out, by means of a toothing chisel or non-impact power tool, to a uniform depth of $\frac{3}{4}$ inch (19.1 mm) until sound mortar is reached. Care shall be taken not to damage the brick edges. After cutting is completed, all loose material shall be removed with a brush, air or water stream.

1616C.3 Mortar preparation. The mortar mix shall be Type N or S proportions as required by the construction specifications. The pointing mortar shall be pre-hydrated by first thoroughly mixing all ingredients dry, and then mixing again, adding only enough water to produce a damp unworkable mix which will retain its shape when pressed into a ball. The mortar shall be kept in a damp condition for 1½ hours; then sufficient water shall be added to bring it to a proper consistency that is somewhat drier than conventional masonry mortar.

1616C.4 Packing. The joint into which the mortar is to be packed shall be damp but without freestanding water. The mortar shall be tightly packed into the joint in layers not exceeding $\frac{1}{4}$ inch (6.35 mm) in depth until it is filled; then it shall be tooled to a smooth surface to match the original profile.

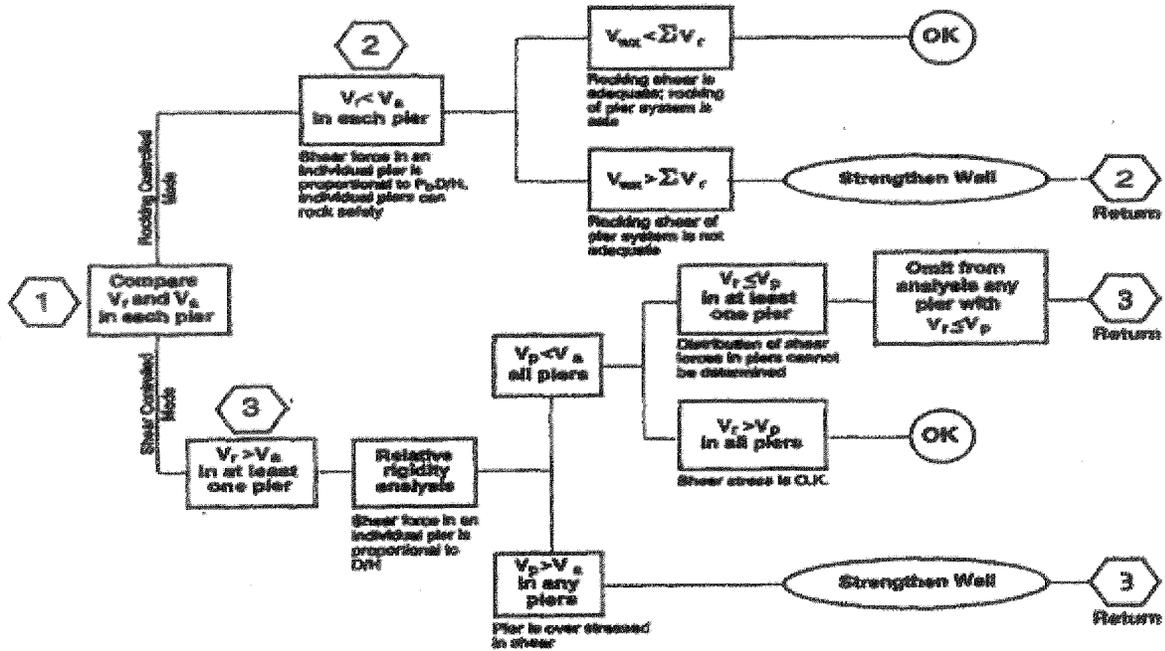
FIGURE 16C-1 — ACCEPTABLE DIAPHRAGM SPAN



- ① Region of demand-capacity ratios where crosswalls may be used to increase h/t ratios.
- ② Region of demand-capacity ratios where h/t ratios of "with crosswalls" may be used.
- ③ Region of demand-capacity ratios where h/t ratios of "all other buildings" shall be used.

NOTE: To convert feet to meters, multiply by 0.3048.

FIGURE 16C-2 — ANALYSIS OF UNREINFORCED MASONRY WALL IN-PLANE SHEAR FORCES



- V_r = Rocking shear capacity of pier.
- V_{wt} = Total Shear Force resisted by the wall.
- ΣV_r = Rocking shear capacity of all piers in the wall.
- V_p = Shear force assigned to a pier on the basis of a relative shear rigidity analysis.
- V_a = Allowable shear strength of a pier.

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TABLE 16C-A -- ELEMENTS REGULATED BY THIS CHAPTER

ELEMENTS	SECTION	PROCEDURE			
		BOLTS-PLUS	SPECIAL	GENERAL	3403.62
Masonry Shear Strength	1606C.3.3	X	X	X	X
Diaphragms	1610C.1			X	
	1611C.4		X		
	1605.4			X	
Diaphragm Shear Transfer	1610C.1	X ¹			
	1611C.5	X ¹	X		
	1613C.2	X	X	X	
Chords	1611C.4			X	
Diaphragm Capacity Ratios	1605.1		X		
Collectors	1613C.3			X	
	1611C.4.4		X		
	1605.4				X ⁴
Analysis of Vertical Elements	1612C		X	X	
Crosswalls	1611C.3		X		
Shear Walls	1610C.3		X		
	1611C.6		X		
	1605.4				X ^{3,4}
Out of Plane Wall Anchorage	1613C.1	X	X	X	
	1605.4			X	
Ties & Continuity	1613C.4		X	X	
	1605.4			X	X
Wall Bracing	1613C.5	X	X	X	X ⁵
Parapets	1613C.6	X	X	X	X
Veneer	1613C.7	X	X	X	X
Nonstructural Masonry Walls	1613C.8		X	X	X
Truss & Beam Supports	1613C.9		X	X	X
Adjacent Buildings	1613C.10		X	X	X
Subdiaphragms	1605.4				X
	1633.2.8				
	1633.2.94				

- 1 Diaphragm shear transfer forces shall be calculated using the General Procedures unless the building qualifies for the use of the Special Procedure.
- 2 Retrofit procedure per Section 3403.6.
- 3 Wood shear walls allowed only for one- or two-story buildings per Section 2315.2.
- 4 Only in-plane shear check required. (Rocking not allowed)
- 5 Use (h/t) for "All other walls" from Table 16C-B.

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TABLE 16C-B — ALLOWABLE VALUE OF HEIGHT-TO-THICKNESS RATIO OF UNREINFORCED MASONRY WALLS

WALL TYPES	SEISMIC ZONE 0, 1 & 2A BUILDINGS	SEISMIC	SEISMIC	SEISMIC ZONE 4	SEISMIC ZONE 4
		ZONE 2B BUILDINGS	ZONE 3 BUILDINGS	BUILDINGS WITH CROSSWALLS ¹	ALL OTHER BUILDINGS
Walls of one-story buildings	NOT APPLICABLE			16 ^{2,3}	13
First story wall of multistory buildings				16	15
Walls in top story of multistory buildings				14 ^{2,3}	9
All other walls				16	13

1. Applies to the Special Procedure of Section 1611C and the Bolts-plus Procedure of the last paragraph of exception 1 to Section 1609C.2 only. See Section 1611C.7 for other restrictions.
2. This value of height-to-thickness ratio may be used only where mortar shear tests establish a tested mortar shear strength, v_t , of not less than 100 psi (689.48 kPa). This value may also be used where the tested mortar strength is not less than 60 psi (413.69 kPa) and a visual examination of the collar joint indicates not less than 50 percent mortar coverage.
3. Where a visual examination of the collar joint indicates not less than 50 percent mortar coverage, and the tested mortar shear strength, v_t , is greater than 30 psi (206.84 kPa) but less than 60 psi (413.69 kPa), the allowable height-to-thickness ratio may be determined by linear interpolation between the larger and smaller ratios in direct proportion to the tested mortar strength.

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TABLE 16C-C — HORIZONTAL FORCE FACTOR, C_p ¹

CONFIGURATION OF MATERIALS	C_p
Roofs with straight or diagonal sheathing and roofing applied directly to the sheathing, or floors with straight tongue-and-groove sheathing	0.50
Diaphragms with double or multiple layers of boards with edges offset, and blocked plywood systems	0.75

¹ Applicable to the Special Procedure of Section 1611C only.

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TABLE 16C-D — ALLOWABLE VALUES FOR EXISTING MATERIALS

EXISTING MATERIALS OR CONFIGURATION OF MATERIALS ¹	ALLOWABLE VALUES
1. HORIZONTAL DIAPHRAGMS ²	(x 14.5939 for N/m)
a. Roofs with straight sheathing and roofing applied directly to the sheathing	100 pounds per foot seismic shear
b. Roofs with diagonal sheathing and roofing applied directly to the sheathing	250 pounds per foot seismic shear
c. Floors with straight tongue-and-groove sheathing	100 pounds per foot seismic shear
d. Floors with straight sheathing and finished wood flooring with board edges offset or perpendicular	500 pounds per foot seismic shear
e. Floors with diagonal sheathing and finished wood flooring	600 pounds per foot seismic shear
2. CROSSWALLS ^{2,3}	(x 14.5939 for N/m)
a. Plaster on wood or metal lath	per side: 200 pounds per foot seismic shear
b. Plaster on gypsum lath	175 pounds per foot seismic shear
c. Gypsum wallboard, unblocked edges	75 pounds per foot seismic shear
d. Gypsum wallboard, blocked edges	125 pounds per foot seismic shear
3. EXISTING FOOTINGS, WOOD FRAMING, STRUCTURAL STEEL AND REINFORCING STEEL	(x 6.895 for kPa)
a. Plain concrete footings	$f'_c = 1,500$ psi unless otherwise shown by tests ⁴
b. Douglas fir wood	Allowable stress same as D.F. No. 1 ⁴
c. Reinforcing steel	$f_t = 18,000$ psi maximum ⁴
d. Structural steel	$f_t = 20,000$ psi maximum ⁴

1. Material must be sound and in good condition.
2. A one-third increase in allowable stress is not allowed.
3. Shear values of these materials may be combined, except the total combined value shall not exceed 300 pounds per foot (2068.43 kPa).
4. Stresses given may be increased for combinations of loads as specified in this code.

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**TABLE 16C-E — ALLOWABLE VALUES OF NEW MATERIALS USED
IN CONJUNCTION WITH EXISTING CONSTRUCTION**

NEW MATERIALS OR CONFIGURATIONS OF MATERIALS	ALLOWABLE VALUES ¹
1. HORIZONTAL DIAPHRAGMS ¹⁰	(x 14.5939 for N/m)
a. Plywood sheathing nailed directly over existing straight sheathing with ends of plywood sheets bearing on joists or rafters and edges of plywood located on center of individual sheathing boards	225 pounds per foot seismic shear
b. Plywood sheathing nailed directly over existing diagonal sheathing with ends of plywood sheets bearing on joists or rafters	375 pounds per foot seismic shear
c. Plywood sheathing nailed directly over existing straight or diagonal sheathing with ends of plywood sheets bearing on joists or rafters with edges of plywood located over new blocking and nailed to provide a minimum nail penetration into framing and blocking of 1 5/8 inches (41.28 mm)	75 percent of the values specified in Table 23-I-J-1
2. SHEAR WALLS: (GENERAL PROCEDURE)	
Plywood sheathing applied directly over wood studs. No value shall be given to plywood applied over existing plaster or wood sheathing.	100 percent of the value specified in Table 23-I-K-1 for shear walls
3. CROSSWALLS: (SPECIAL PROCEDURE)	
a. Plywood sheathing applied directly over wood studs. No value shall be given to plywood applied over existing plaster or wood sheathing	133 percent of the value specified in Table 23-I-K-1 for shear walls
b. Drywall or plaster applied directly over wood studs	100 percent of the values in Table 25-I
c. Drywall or plaster applied to sheathing over existing wood studs	The values in Table 25-I reduced as noted in Footnote 1 of that table ²
4. TENSION BOLTS	(x 4.448 for N)
a. Bolts extending entirely through unreinforced masonry walls secured with bearing plates on far side of a 3 wythe minimum wall with at least 30 square inches (19,355 mm ²) of area ^{3,4,11}	1,800 pounds per bolt 900 pounds per bolt for 2 wythe walls ⁸
b. Bolts extending to the exterior face of the wall with a 2½-inch (63.5 mm) round plate under the head and drilled at an angle of 22½ degrees to the horizontal, installed as specified for shear bolts ^{3,4,5}	1,200 pounds per bolt
5. SHEAR BOLTS	
Bolts embedded a minimum of 8 inches into unreinforced masonry walls and centered in a 2½-inch diameter hole filled with dry-pack or non-shrink grout. Through bolts with first 8 inches as noted above and embedded bolts as noted in item 4b. ^{4,5,9}	½ inch dia. = 350 pounds ^{7,8} 5/8 inch dia. = 500 pounds ^{7,8} ¾ inch dia. = 750 pounds ^{7,8}

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6. INFILLED WALLS	
Reinforced masonry infilled openings in existing unreinforced masonry walls. Provide keys or dowels to match reinforcing.	Same values as for unreinforced masonry walls
7. REINFORCED MASONRY	
Masonry piers and walls reinforced per Chapter 21	Same values as specified in Section 2107 ⁶
8. REINFORCED CONCRETE	
Concrete footings, walls and piers reinforced as specified in Chapter 19 and designed for tributary loads	Same values as specified in Chapter 19 ⁶

1. A one-third increase in allowable stress is not allowed, except as noted.
2. In addition to existing sheathing value.
3. Bolts to be ½ inch (12.7 mm) minimum in diameter.
4. Drilling for bolts and dowels shall be done with an electric rotary drill. Impact tools shall not be used for drilling holes or tightening anchors and shear bolt nuts.
5. Embedded bolts to be tested as specified in Section 1607C.
6. Stress given may be increased for combinations of load as specified in this code.
7. A one-third increase in allowable stress is allowed for short-term loading.
8. Other bolt sizes, values and installation methods may be used, provided a testing program is conducted in accordance with Section 1615C. Bolt spacing shall not exceed 6 feet (1.83 m) on center and shall not be less than 12 inches (0.305 m) on center.
9. Tension and shear from seismic loads need not be assumed to act simultaneously.
10. Values and limitations are for nailed plywood. Higher values may be used for other approved fastening systems such as staples when approved by the Chief Harbor Engineer.
11. Plate size may be reduced to not less than 9 square inches (5805 mm²), provided the bearing stress on the masonry at design load does not exceed 60 pounds per square inch, psi (414 kPa).

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Chapter 17

STRUCTURAL TESTS AND SPECIAL INSPECTIONS

SECTION 1704
SPECIAL INSPECTIONS

1704.1 General.

1704.1. Revise exception 3 as follows:

3. The special inspections and verifications for foundation concrete, other than cast-in-place drilled piles or caissons, are not required for occupancies in Group R, Division 3 and occupancies in Group U that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.

This exception shall not apply to foundations serving as retaining walls of soil over 5 feet (1829 mm) in height measured from the base of the foundation, or the structural design of the footing based on a specified compressive strength, f'_c , greater than 2,500 pounds per square inch (psi) (17.2 MPa), regardless of the compressive strength specified in the construction documents or used in the footing construction.

1704.5. Revise the following section:

1704.5 Masonry construction. Masonry construction shall be inspected and verified in accordance with the requirements of Section 1704.5.1 through 1704.5.5, depending on the occupancy category of the building or structure.

1704.5.4 Add the following section:

1704.5.4 Exterior facing. During fastening of all exterior veneer and ornamentation facing units constructed of concrete, masonry, stone or similar materials, and all curtain walls weighing more than 15 pounds per square foot (73.23 kg/m²) of wall.

EXCEPTIONS:

1. Veneers weighing less than 5 pounds per square foot (24.46 kg/m²) located less than 15 feet (4.57 m) above grade.
2. Anchored veneer located less than 10 feet (3.048 m) above grade.

1704.5. Add the following section:

1704.5.5 Retrofit of unreinforced masonry bearing wall buildings.

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1. During the testing of mortar quality and performance of masonry shear tests in accordance with Section 1614C when required by Sections 1606C.3.3 and 1607C.2.
2. During repointing operations in accordance with Section 1616C when required by Sections 1606C.3.3.7 and 1607C.1.
3. During the installation of new shear bolts when required by the exception to Section 1607C.4.
4. Prior to the placement of the bolt and grout or adhesive for embedded bolts as required by Section 1607C.4.
5. During the prequalification tests in accordance with Section 1615C.4 as permitted by Footnote 8 to Table 16C-E.

1704.6 Add the following section:

1704.6.3 Shear walls and floor systems used as shear diaphragms. All connections, including nailing, tiedowns, framing clips, bolts and straps, for those parts of a lateral force resisting system utilizing the following components:

1. Plywood diaphragms, where shear values exceed 2/3 the values in Tables 2306.3.1 and 2306.3.2.
2. Double sheathed shear walls, in all cases.
3. Plywood sheathed shear walls, wherever nailing or hardware are not visible to the inspector at the time of cover-up inspection.
4. Gypsum wallboard shearwalls where shear values exceed one-half of the values permitted by Footnote a of Table 2306.4.5.
5. Fiberboard shearwalls where shear values exceed one-half of the values in Table 2306.4.4.
6. Particle-board diaphragms, where shear values exceed one-half of the values in Table 2306.4.3.

1704.15 Special cases.

1704.15. Add item 4 as follows:

4. Work which, in the opinion of the Chief Harbor Engineer, involves unusual hazards or conditions such as underpinning, shoring removal of hazardous materials and new construction methods not covered by this code.

1704.17. Add the following section:

1704.17 Demolition. Demolition of buildings more than two stories or 25 feet (7.62 m) in height. See Section 3307.1 for demolition requirements.

EXCEPTION: Type V buildings.

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1704.18. Add the following section:

1704.18 Bolts installed in existing masonry or concrete. Except for through-bolts with plate washers conforming to Table 16C-E, bolts that are newly installed in existing masonry or concrete shall be tested in accordance with Section 1615C. The number and type of tests required shall be the same as required by Section 1607C.

1704.19 Add the following section:

1704.19 Crane safety. No owner or other person shall operate, authorize or allow the operation of a tower crane on a high-rise building structure until a signed Crane Site Safety Plan, Submittal Form and Crane Safety Compliance Agreement have been accepted by the Chief Harbor Engineer.

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Chapter 17A

STRUCTURAL TESTS AND SPECIAL INSPECTIONS

No Port of San Francisco Building Code amendments.

2010 Port of San Francisco Building Code

2010 Port of San Francisco Building Code

Chapter 18

SOILS AND FOUNDATIONS

No Port of San Francisco Building Code amendments.

2010 Port of San Francisco Building Code

2010 Port of San Francisco Building Code

Chapter 18A

SOILS AND FOUNDATIONS

No Port of San Francisco Building Code amendments.

2010 Port of San Francisco Building Code

2010 Port of San Francisco Building Code

Chapter 19

CONCRETE

No Port of San Francisco Building Code amendments.

2010 Port of San Francisco Building Code

2010 Port of San Francisco Building Code

Chapter 19A

CONCRETE

No Port of San Francisco Building Code amendments.

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Chapter 20

ALUMINUM

No Port of San Francisco Building Code amendments.

2010 Port of San Francisco Building Code

2010 Port of San Francisco Building Code

Chapter 21

MASONRY

No Port of San Francisco Building Code amendments.

2010 Port of San Francisco Building Code

2010 Port of San Francisco Building Code

Chapter 21A

MASONRY

No Port of San Francisco Building Code amendments.

2010 Port of San Francisco Building Code

2010 Port of San Francisco Building Code

Chapter 22

STEEL

No Port of San Francisco Building Code amendments.

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2010 Port of San Francisco Building Code

Chapter 22A

STEEL

No Port of San Francisco Building Code amendments.

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Chapter 23

WOOD

SECTION 2304 GENERAL CONSTRUCTION REQUIREMENTS

2304.11 Protection against decay and termites.

2304.11.2.6 Add the following second paragraph:

Walls not accessible for maintenance shall have exterior covering of siding or plywood that is either treated wood or wood of natural resistance to decay. Or, when approved by the Chief Harbor Engineer, a listed non-cellulosic siding or covering. Plywood shall be exterior type, C-C Grade minimum, and not less than 1/2-inch (12.7 mm) thickness unless applied over sheathing. Plywood manufactured with redwood or cedar faces but with inner plies of other species conforming to DOC Standard PS1-95 may be used, provided the exposed outer face is plugged and not grooved or patterned.

2304.11.4.2 Wood structural members.

2304.11.4.2 Revise this section with the following and add a second paragraph with Exception:

Wood structural members that support moisture permeable floors or roofs that are exposed to the weather, such as concrete or masonry slabs, shall be of naturally durable or preservative-treated wood unless separated from such floors or roofs by an impervious moisture barrier extending up the walls not less than 4 inches (101.6 mm) or shall otherwise be adequately flashed and counter-flashed.

Regardless of finish flooring type or structural materials, the wood sub-floor of toilet rooms and bathrooms shall be protected by a waterproof membrane. Where a single ply sheet membrane is used, all adhesives shall be of a waterproof type and shall be applied so as to form a full unbroken coat between the backing and the membrane being applied. All seams and joints shall be thoroughly sealed.

EXCEPTION: Interior floors in Group R, Division 3 Occupancies.

2304.11.5 Supporting member for permanent appurtenances.

2304.11.5 Add the following 2nd paragraph with Exception, and 3rd paragraph:

Weather-exposed stairways constructed with concrete, masonry, brick, tile or terrazzo shall be supported on hot-dipped galvanized steel or reinforced concrete stringers.

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EXCEPTION: In Group R, Division 3 Occupancies, wood construction on masonry or concrete foundations may be used as supports, when the area under the stair is ventilated in compliance with 2304.11.9.

Weather-exposed stairs of precast concrete or metal pan treads may be supported on wood stringers provided the entire stairway is exposed and the treads are connected to the stringers with hot-dipped galvanized steel or other approved corrosion-resistant fasteners.

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Chapter 24

GLASS AND GLAZING

No Port of San Francisco Building Code amendments.

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2010 Port of San Francisco Building Code

Chapter 25

GYPSUM BOARD AND PLASTER

No Port of San Francisco Building Code amendments.

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Chapter 26

PLASTIC

SECTION 2603
FOAM PLASTIC INSULATION

2603.3 Surface burning characteristics.

2603.3 Revise the first sentence of exception 3 as follows:

3. Foam plastic insulation that is part of a Class A or B roof-covering assembly provided the assembly with the foam plastic insulation satisfactorily passes FM 4450 or UL 1256.

2603.4.1.5 Roofing.

2603.4.1.5 Revise the second sentence as follows:

Foam plastic insulation under a roof assembly or roof covering that is installed in accordance with the code and the manufacturer's instructions shall be separated from the interior of the building by wood structural panel sheathing not less than 0.47 inch (11.9mm) in thickness bonded with exterior glue, and identified as Exposure 1 with edges supported by blocking, tongue-and-groove joints or other approved type of edge support, or an equivalent material. A thermal barrier is not required for foam plastic insulation that is part of a Class A or B roof-covering assembly, provided the assembly with the foam plastic insulation satisfactorily passes FM 4450 or UL 1256.

2603.6 Revise this section as follows:

2603.6 Roofing. Foam plastic insulation meeting the requirements of Sections 2603.2, 2603.3 and 2603.4 shall be permitted as a part of a roof-covering assembly, provided the assembly with the foam plastic insulation is a Class A or B roofing assembly where tested in accordance with ASTM E 108 or UL 790.

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Chapter 27

ELECTRICAL

**SECTION 2701
GENERAL**

2701.1 Scope. Revise the section as follows:

2701.1 Scope. This chapter governs the electrical components, equipment and systems used in buildings and structures covered by this code. Electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of the *California Electrical Code*, as adopted and amended by the Port of San Francisco Commission through the Port of San Francisco Electrical Code.

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Chapter 28

MECHANICAL SYSTEMS

SECTION 2801
GENERAL

2801.1 Scope. Revise the section as follows:

2801.1 Scope. Mechanical appliances, equipment and systems shall be constructed, installed and maintained in accordance with the *California Mechanical Code*, as adopted and amended by the Port of San Francisco Commission through the Port of San Francisco Mechanical Code. Masonry chimneys, fireplaces and barbecues shall comply with the *California Mechanical Code* and Chapter 21 of this code.

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Chapter 29

PLUMBING SYSTEMS

2901

GENERAL

2901.1 Scope. Revise the section as follows:

2901.1 Scope. The provisions of the *California Plumbing Code*, as adopted and amended by the San Francisco Port Commission through the Port of San Francisco Plumbing Code, shall govern the erection, installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing equipment and systems. Plumbing systems and equipment shall be constructed, installed and maintained in accordance with the California Plumbing Code. Private sewage disposal systems shall conform to the California Plumbing Code.

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Chapter 30

ELEVATORS AND CONVEYING SYSTEMS

3008 Add the following new sections:

**SECTION 3008
PRIVATE RESIDENCE ELEVATORS**

3008.1 Private residence type elevator. Is defined as a power passenger elevator which is limited in size, capacity, rise and speed and is installed in a private residence or in a multiple dwelling as a means of access to a private residence.

3008.2 Construction. The construction and installation of private residence elevators, dumbwaiters, and private residence special access lifts shall comply with ANSI/ASME 17.1-1996.

Note: For other than private residence elevators, dumbwaiters, and private residence special access lifts, see Title 24, Part 7, California Code of Regulations, California Elevator Safety Regulations.

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Chapter 31

SPECIAL CONSTRUCTION

SECTION 3103
TEMPORARY STRUCTURES

3103.1.1 Permit required.

3103.1.1 Add this sentence to the end of the paragraph.

See Section 106A.1.7 and 106A.1.8 for permit requirements.

SECTION 3107
SIGNS

3107.1 Add the following sections:

3107.1.1 Scope.

3107.1.1.1 Sign Permit. Except as otherwise provided herein, all signs placed upon or attached to any building, structure or property shall comply with this chapter and shall be installed under a valid sign permit.

The electrical portion of the sign shall be constructed in accordance with the requirements of the Electrical Code, and an electrical permit shall be obtained in accordance with that code.

Plans shall be filed with the application for a permit for any sign. When required, computations shall be provided.

3107.1.1.2 Exempt Signs. The following signs are exempt from the requirements of this code:

1. Signs painted on structures that comply with the Port of San Francisco Sign Guidelines posted at www.sfport.com.
2. Bulletin boards for public, charitable or religious institutions, when such boards are located on the premises of said institutions.
3. Real estate signs advertising the sale, rental or lease of the premises on which they are maintained, which do not exceed 15 square feet (1.39 m²) in size, and which are mounted flush to the building.
4. Professional occupation signs denoting only the name and profession of an occupant in a commercial building, public institutional building or dwelling house, and not exceeding 3 square feet (0.278 m²) in area for each occupant.

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3107.1.2 General.

3107.1.2.1 Prohibitions. The following prohibitions apply to signs:

1. No signs shall be erected, relocated or maintained so as to block any exits or required windows. No sign shall be attached to a standpipe, gutter drain, stairway or fire escape, or interfere with the function or operation of any standpipe or fire escape. No roof sign shall be located within 6 feet (1.829 m) of a standpipe outlet.
2. No sign shall be increased in size, altered in shape or changed by the addition of other signs or advertising matter not specifically allowed by the provisions of this code and the Port of San Francisco Sign Guidelines posted at www.sfport.com.
3. No wall sign shall extend across or in front of any window or other exterior opening located above the first story of a building, except as approved by the Chief Harbor Engineer.
4. No wall sign erected on a wall adjacent to and facing a street, public space or yard shall project above the parapet walls.

EXCEPTIONS:

1. On a building located on a corner lot, a wall sign may project a maximum of 7 feet (2.134 m) above the roof line on only one street.
2. On any frontage, signs not more than 10 feet (3.048 m) long for any 40-foot (12.19 m) frontage and occupying no more than 25 percent of the lot frontage may project a maximum of 7 feet (2.134 m) above the roof line.

3107.1.2.2 Revocable permits. The permit for any sign over public property may be revoked. A permit granted under Chapter 1A and this chapter for a sign over public property shall not be construed to create any perpetual right but is a revocable license which may be terminated by revocation by the Chief Harbor Engineer.

3107.1.2.3 Existing signs. This chapter shall not render unlawful the existence or maintenance of any sign erected or maintained by a lawful permit issued prior to the adoption of this ordinance.

EXCEPTION: Signs for which lawful permits were issued and which, due to a sidewalk narrowing or street widening project, no longer conform to the requirements of Section 3103 shall be altered to conform not later than 90 days following completion of such project.

3107.1.2.5 Definitions. For the purposes of this chapter, certain terms are defined as follows:

3107.1.2.5 DEFINITIONS.

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APPROVED PLASTIC. Material found to be suitable functionally for the purpose for which it is intended and which complies with the requirements of Chapter 26. For outdoor signs, the approval of the plastic shall be based upon considerations of flame spread value only. For indoor signs, the approval shall be based upon flame spread and smoke density values.

AREA OF A SIGN. Exposed vertical surface which is included within a rectangle enclosing all the features of the sign. In cases of an irregular sign, it is the sum of the areas of the enclosing rectangles estimated to the nearest 5 square feet (0.465 m²).

BUSINESS SIGN. Directs attention to a business, commodity, service, industry or other activity which is sold, offered or conducted on the premises upon which such sign is located, or to which it is affixed.

SIGN. Any structure, part thereof, or device or inscription which is located upon, attached to or painted, projected or represented on the exterior of any building or structure, including an awning, canopy, marquee or similar appendage, or affixed to the glass on the outside or inside of a window so as to be seen from the outside of the building, and which displays or includes any numeral, letter, word, model, banner, emblem, insignia, symbol, device, light, trademark or other representation used as, or in the nature of, an announcement, advertisement or designation by or of any person, firm, group, organization, place, commodity, product, service, business, profession, enterprise or industry. A sign includes the support, uprights and framework of the display.

3107.1.3 Height, projection and location.

3107.1.3.1 General. Height, projection and location of all signs shall be as specified in the Port of San Francisco Sign Guidelines. No sign shall project past the curb line of any street, alley or public way.

The minimum vertical clearance of signs over public sidewalks shall be 10 feet (3.048 m). Additionally, signs or portions within the outer one-third of a sidewalk shall have 12-foot (3.658 m) clearance, and when within 2 feet (0.61 m) of the curb line shall have 14-foot (4.267 m) clearance.

Roof signs shall be not less than 5 feet (1.524 m) above the roof. Supports shall be spaced at least 6 feet (1.829 m) apart.

3107.1.4 Design.

3107.1.4.1 General. The design shall make allowances for the effects of corrosion and lack of maintenance.

No anchor or support of any sign shall be connected to, or suspended by, an un-braced parapet wall, unless such wall is designed in accordance with the requirements for parapet walls specified in Chapter 16.

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Fasteners and braces shall be of noncombustible construction, except that stringers for attachment of roof signs may be of 6-inch (152.4 mm) minimum dimension redwood or approved preservative-treated lumber.

3107.1.5 Construction.

3107.1.5.1 General All signs shall be constructed of noncombustible materials except that approved plastics may be used in sign facings as described in Section 3107.1.5.2. All ferrous metal and all fastenings used in construction or installation, excluding stainless steel, shall be hot-dipped galvanized, porcelain-enameled or otherwise protected in an approved manner against corrosion.

Aluminum may only be used for minor internal members, such as stiffeners and closures, and for sign faces and nonstructural trim. The minimum thickness shall be 0.0299 inch (22 gage).

Steel shapes or plates used for primary support shall be not less than 3/16 inch (4.76 mm) in thickness. Sheet metal formed integrally with the sign face or used as cabinet cover shall be not less than 0.0239 inch (24 gage). Secondary support members not formed integrally with the design face shall be not less than 0.1046 (12 gage) inch.

The minimum material thickness requirements in this section pertain to the base metal before application of protective covering and need not apply to signs located inside a building.

3107.1.5.2 Plastics. Where plastics are included in a sign, the application to install a sign shall set forth the manufacturer's trade name, or the common name of the plastic material to be used in the sign, thickness of plastic, aspect ratio, corrugation type, if any, and span. The plastic employed in the signs shall be identified as set forth in Chapter 26 with the manufacturer's trade name, or with the common name of the plastic material.

Plastic sign facing shall conform to the provisions of this section. Plastic sign faces, formed or flat, letters and decorations shall be of sufficient thickness or so formed or supported that they will withstand all loads required by this code.

Plastic facing shall be mounted in a metal frame. Proper provision shall be made for the difference in thermal expansion between plastic members and the frame.

3107.1.5.3 Electric plastic signs. Every electric sign containing approved plastics shall comply with the minimum requirements set forth in the standard for Electric Signs, UL No. 48. The attachment of Underwriters Laboratories label, or other approved laboratory per the Electrical Code, shall be sufficient proof that a sign has complied with the requirements of the Electrical Code.

3107.1.5.4 Wood-faced signs. Projecting signs with wood facing or backing are permitted on any building. Plywood used for signs shall be exterior grade and not less than 5/8-inch (15.88 mm) thickness. Lumber shall be not less than 1-inch (25.4 mm) nominal and shall be finished to provide a weather-resistant finish.

3107.1.6 Ground signs.

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3107.1.6.1 Height. The maximum height of a ground sign constructed with wood supports shall be 30 feet (9.14 m), as measured from the top of the sign to the sidewalk in front of the sign or the existing ground under the sign, whichever is higher.

3107.1.6.2 Design and construction. The design and construction of wood signs shall comply with Chapters 16 and 23 of this code. All wood within 12 inches of the ground shall be pressure-treated wood.

3107.1.7 Removal of business signs. It shall be unlawful for any person to allow any business sign to remain posted more than 180 days after the activity for which the business sign has been posted has ceased operation on the premises if such person (1) owns, leases or rents the property on which the sign is posted, or (2) owns or operates such business, service, industry or other activity.

3111 *Add a new section as follows:*

SECTION 3111 WOOD BURNING APPLIANCES

3111.1 General. All woodburning appliances installed in new buildings or woodburning appliances being added, reconstructed or replaced in existing buildings shall comply with this section.

3111.2 DEFINITIONS.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT. Agency for the San Francisco Bay area established pursuant to California Health and Safety Code Section 40200.

EPA. United States Environmental Protection Agency.

EPA CERTIFIED WOOD HEATER. Any wood heater that meets the standards in Title 40, Part 60, Subpart AAA, Code of Federal Regulations in effect at the time of installation and is certified and labeled pursuant to those regulations.

FIREPLACE. Any permanently installed masonry or factory-built appliance that burns wood, except a pellet-fueled wood heater, designed to be used with an air-to-fuel ratio greater than or equal to 35 to 1.

GARBAGE. All solid, semisolid and liquid wastes generated from residential, commercial and industrial sources, including trash, refuse, rubbish, industrial wastes, asphaltic products, manure, vegetable or animal solids and semisolid wastes, and other discarded solid and semisolid wastes.

GAS FIREPLACE. Any device designed to burn natural gas in a manner that simulates the appearance of a wood-burning fireplace.

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PAINTS. All exterior and interior house and trim paints, enamels, varnishes, lacquers, stains, primers, sealers, under-coatings, roof coatings, wood preservative, shellacs, and other paints or paint-like products.

PAINT SOLVENTS. All original solvents sold or used to thin paints or to clean up painting equipment.

PELLET-FUELED WOOD HEATER. Any appliance that burns wood and operates exclusively on wood pellets.

RECONSTRUCTION. The complete rebuilding of the wood burning appliance such that all or a substantial portion of its parts are new. It does not include repairs made to the appliance in order to make it safer or more efficient.

SOLID FUEL. Wood or any other nongaseous or non-liquid fuel.

TREATED WOOD. Of any species that has been chemically impregnated, painted or similarly modified to improve resistance to insects or weathering. It does not include products such as Dura-flame or Presto logs that are specifically designed and sold to be burned in a wood burning appliance.

WASTE PETROLEUM PRODUCTS. Other than gaseous fuels that have been refined from crude oil and have been used and, as a result of use, have been contaminated with physical or chemical impurities.

WOOD BURNING APPLIANCE. Fireplace wood heater, or pellet fueled wood heater or any similar device burning any solid fuel used for aesthetic or space-heating purposes.

WOOD HEATER. A stove that burns wood.

3111.3 Unauthorized appliances prohibited. No person shall install a wood burning appliance that is not one of the following:

1. A pellet-fueled wood heater;
2. An EPA-certified wood heater; or
3. A fireplace certified by the Northern Sonoma Air Pollution Control District.

EXCEPTIONS:

1. Wood burning appliances that are designed primarily for food preparation in new or existing restaurants or bakeries.
2. Historic wood burning appliances installed in historic structures, as determined by the Chief Harbor Engineer in consultation with the Port of San Francisco Planning & Development Division.

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3111.4 Prohibited fuels. The following fuels are prohibited from use in a wood burning appliance:

1. Garbage
2. Treated wood
3. Plastic products
4. Rubber products
5. Waste petroleum products
6. Paints or paint solvents
7. Coal
8. Glossy or colored paper
9. Particle board
10. Saltwater driftwood

3111.5 Certification. Any person who plans to install a wood burning appliance must submit documentation to the Chief Harbor Engineer demonstrating that the appliance is a pellet-fueled wood heater, a certified wood heater, or a fireplace certified by Northern Sonoma Air Pollution Control District.

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Chapter 31B

PUBLIC SWIMMING POOLS

No Port of San Francisco Building Code amendments.

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Chapter 31C

RADIATION

No Port of San Francisco Building Code amendments.

2010 Port of San Francisco Building Code

2010 Port of San Francisco Building Code

Chapter 31D

FOOD ESTABLISHMENTS

No Port of San Francisco Building Code amendments.

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CHAPTER 31E

TENTS AND MEMBRANE STRUCTURES

Add the following chapter:

**SECTION 3101E
GENERAL PROVISIONS**

3101E.1 This code shall govern the use of tents, awnings or other fabric enclosures, including membrane (air-supported and air-inflated) structures and places of assemblage, in or under which 5 or more persons may gather for any lawful purpose.

Exceptions:

1. Tents, awnings or other fabric enclosures erected and used within a sound stage, or other similar structural enclosure which is equipped with an overhead automatic sprinkler system.
2. Tensioned membrane roof materials supported by rigid frames or installed on a mast and cable system, provided such structures conform to the requirements of one of the types of construction as described in these regulations.
3. Fabric structures which are part of mobile homes, recreational vehicles, or commercial coaches governed by the provisions of Division 13, Part 2, Health and Safety Code (Department of Housing and Community Development).

**SECTION 3102E
DEFINITIONS**

3002E.1 For the purpose of this chapter, certain terms are defined as follows:

AIR-INFLATED STRUCTURE. Refer to Chapter 31.

AIR-SUPPORTED STRUCTURE. Refer to Chapter 31.

CABLE STRUCTURE. Refer to Chapter 31.

CPAI-8. is a specification for flame-resistant materials used in camping tentage, promulgated in 1975 by Canvas Products Association International.

FLAME RETARDANT OR FLAME RESISTANT. is fabric or material resistant to flame or fire to the extent that it will successfully withstand standard flame-resistance tests adopted and promulgated by the state fire marshal.

FRAME-COVERED STRUCTURE. Refer to Chapter 31.

MEMBRANE. Refer to Chapter 31.

NONCOMBUSTIBLE MEMBRANE STRUCTURE. Refer to Chapter 31.

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OCCUPANT LOAD shall be as set forth in Chapter 10.

PLACES OF ASSEMBLAGE. is any circus, side show, carnival, tent show, theater, skating rink, dance hall or any other exhibition, production, engagement or offering, or other place of assemblage in or under which 5 or more persons may gather for any lawful purpose.

TENT. is a shelter, structure or enclosure made of fabric or similar pliable material which derives its support from mechanical means such as poles, ropes, cables, stakes or similar devices.

ASSEMBLAGE TENT. is a tent used or intended for use as a place of assemblage.

LARGE TENT. is a tent designed and intended for any use for occupancy by 5 or more persons.

SMALL TENT. is a tent designed and intended for any use for occupancy by less than 5 persons.

SECTION 3103E TENTS HAVING AN OCCUPANT LOAD OF 5 OR MORE

3103E.1 Tents having an occupant load of 5 or more persons shall conform to the provisions of this chapter.

SECTION 3104E LOCATION OF TENTS

3104E.1 Any tent or combination of tents having a floor area of 1,500 square feet (139 m²) or less shall be located not less than 10 feet (3048 mm) from any real property line or building. (See Sections 3104E.4 and 3014E.5.)

3104E.2 Any tent or combination of tents having a floor area in excess of 1,500 square fee (139 m²), but less than 15,000 square fee (1394 m²), shall be located not less than 30 feet (9144 mm) from any real property line or building. (See Sections 3104E.4 and 3104E.5.)

3104E.3 Any tent or combination of tents having a floor area in excess of 15,000 square feet (1394 m²) shall be located not less than 50 feet (15240 mm) from any real property line or building. (See Sections 3104E.4 and 3104E.5.)

3104E.4 Tents shall be arranged to exit independently of each other. Such tents may, however, be joined together by means of corridors, and such corridors shall be open to the sky. On each side of such corridor and directly opposite each other, there shall be provided openings equivalent to the width of the corridor. These openings shall be equipped with sliding curtains or left entirely open and clear of any obstruction.

3104E.5 When approved by the Chief Harbor Engineer, tents may be located in or on permanent buildings, provided such use does not constitute an undue hazard.

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3104E.6 The Chief Harbor Engineer may also approve the location of tents closer than that specified in this section if required passageways are provided and, in his or her opinion, adequate safety is afforded.

3104E.7 An unobstructed passageway not less than 6 feet (1829 mm) in width and free from guy ropes or other obstructions shall be maintained on all sides of all tents having an area of more than 1,500 square feet (139 m²), but less than 15,000 square feet (1394 m²). If the area of the tent exceeds 15,000 square feet (1394 m²), or if the seating capacity exceeds 1,000 persons, the unobstructed passageway shall not be less than 10 feet (3048 mm) in clear width.

SECTION 3105E STRUCTURAL REQUIREMENTS

3105E.1 Tents shall be adequately guyed, supported and braced to withstand a wind pressure or suction of 10 pounds per square foot (0.48 kN/m²). The poles and their supporting guys, stays, stakes, fastenings and similar supporting members or devices shall be of sufficient strength and attached so as to resist wind pressure of 20 pounds per square foot (0.96 kN/m²) of projected area of the tent. The enforcing authority may require certification of the provisions of this section from a structural, civil or other qualified registered engineer.

SECTION 3106E EXIT REQUIREMENTS

3106E.1 Except as provided in this section, the requirements of Chapter 10 shall prevail.

3106E.2 Spacing. Exits shall be spaced at approximately equal intervals around the perimeter of the tent and shall be so located that no point is more than 100 feet (30480 mm) from an exit.

3106E.3 Number and width. Exits shall be provided in accordance with Table 31E-A.

3106E.4 Passageways. Smooth-surfaced passageways free and clear of any steps or obstruction whatsoever and equal in width to the exits they serve shall be provided from all exits to a public way.

Exception: Tents located in or on permanent buildings may have exits through such buildings, provided the building exits are adequate to accommodate the occupant load.

3106E.5 Obstructions. Exits, aisles and passageways shall not be blocked or have their minimum clear width obstructed in any manner by ticket offices, turnstiles, concessions, chairs, equipment, animal chutes, poles or guy ropes, or anything whatsoever, nor shall they be blocked by persons for whom no seats are available.

In occupancies having fixed seating, and on request of the owner or manager, the Chief Harbor Engineer may permit modifications from the provisions of this code to accommodate seating for handicapped persons using mechanical aids such as, but not limited to, walkers and wheelchairs.

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3106E.6 Exit signs. Exits signs shall be installed in accordance with Chapter 10.

SECTION 3107E HEATING EQUIPMENT

3107E.1 All heating equipment installed in tents shall be approved for such use by the enforcing authority. Only comfort heating equipment shall be permitted.

3107E.2 All gas-, solid- or liquid-fuel comfort heating equipment shall be vented to the outside air by means of a flue or vent approved for use with the type of equipment used and in such a manner that no portion of the tent is within 12 inches (305 mm) of the flue or vent. Vents for solid-fuel-fired heating equipment shall be equipped with spark arresters having openings no larger than ¼-inch (6.4 mm) wire mesh.

Exception: Approved heaters designed for use without vents may be used in approved locations where otherwise permitted.

3107E.3 Comfort heating equipment shall be rigidly supported to prevent overturning and shall be provided with guards to protect against ignition of clothing and other combustible material.

3107E.4 Comfort heating equipment shall not be located within 10 feet (3048 mm) of exits, aisles or passageways.

3107E.5 All other gas-, solid- or liquid-fuel-fired appliances, including, but not limited to, forges, kitchen ranges and stoves and water heaters, shall be located not less than 50 feet (15240 mm) from any tent used as a place of public assemblage.

SECTION 3108E MEMBRANE (AIR-SUPPORTED AND AIR-INFLATED) STRUCTURES

3108E.1 Except as provided in this chapter, membrane structures having an occupant load of 5 or more shall comply with the provisions of Chapter 31.

SECTION 3109E ALTERNATIVE MEANS OF PROTECTION

3109E.1 When approved by the Chief Harbor Engineer, exceptions to the provisions of these building standards may be permitted, provided alternate means of protection, which are at least equal to these regulations in quality, strength, effectiveness, fire resistance, durability and safety, and barrier free access are provided.

Electrical installations serving and installed within tents shall comply with the applicable requirements of the California Electrical Code.

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**TABLE 31E-A
NUMBER AND WIDTH OF EXITS**

CAPACITY OF TENT	MINIMUM NUMBER OF EXITS	WIDTH OF EACH EXIT (feet)	TOTAL OF ALL EXITS (feet)
20 to 49	2	3 (914 mm)	6 (1829 mm)
50 to 299	2	4 (1219 mm)	8 (2438 mm)
300 to 599	3	5 (1524 mm)	15 (4572 mm)
600 to 999	4	6 (1829 mm)	24 (7315 mm)
1,000 to 1,999	5	8 (2438 mm)	40 (12192 mm)
2,000 or more	6	(1 additional foot for each 50 persons)	

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Chapter 31F

MARINE OIL TERMINALS

No Port of San Francisco Building Code amendments.

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Chapter 32

ENCROACHMENTS INTO THE PUBLIC RIGHT-OF-WAY

SECTION 3201
GENERAL

3201.4 *Revise this section as follows:*

3201.4 Drainage. Drainage water collected from a roof, awning, canopy, or marquee, and condensate from mechanical equipment shall be conducted to the building drain or building sewer, and shall not flow over a public walking surface.

SECTION 3202
ENCROACHMENTS

3202.3.1 *Replace this section as follows:*

3202.3.1. Awnings, canopies, marquees and signs. Awnings, canopies, marquees and signs shall be constructed so as to support applicable loads as specified in Chapter 16. Canopies shall be allowed only over entrance doorways and only for Occupancy Groups A, B, F-1, M, R, S-1, and S-2. Canopies may be constructed as awnings and with the same limitations except that:

1. The maximum width shall be 10 feet (3.048 m); and
2. The maximum extension over public sidewalk may be to a point 2 feet (0.61 m) from the curb; and
3. The outer column support shall be located in the outer one-third of the sidewalk.

3202.3.2 *Replace this section as follows:*

3202.3.2 Windows, balconies, architectural features and mechanical equipment. A 3-foot (0.914 m) projection shall be permitted for bay and oriel windows when the clearance above grade is at least 10 feet (3.048 m) and the width of the sidewalk is greater than 9 feet (2.74 m). Where the sidewalk width is 9 feet (2.74 m) or less, the projection shall not exceed 2 feet (0.61 m). For all other appendages, a 2-foot (0.61 m) projection is permitted when the clearance above grade is at least 10 feet (3.048 m). The projection may be increased 1 inch (25.4 mm) for each additional foot of clearance over 10 feet (3.048 m), to a maximum of 4 feet (1.219 m).

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Chapter 33

SAFEGUARDS DURING CONSTRUCTION

SECTION 3302 CONSTRUCTION SAFEGUARDS

3302 *Add a new section as follows:*

3302.3 Fencing. Provide for the enclosing, fencing, and boarding up or by fire watch or other means of preventing access to the site by unauthorized persons when work is not in progress.

SECTION 3303 DEMOLITION

3303.1 *Add new sections as follows:*

3303.1.1 Buildings other than type V. The demolition of structures of Types I, II, III and IV construction greater than two stories or 25 feet (7.62 m) in height shall comply with the requirements of this section.

The requirements of this section shall also apply to the demolition of post-tensioned and pre-tensioned concrete structures.

3303.1.2 Required plans. Prior to approval of an application for a demolition permit, two sets of detailed plans shall be submitted for approval, showing the following:

1. The sequence of operation floor by floor, prepared by a registered civil engineer or licensed architect.
2. The location of standpipes.
3. The location and details of protective canopies.
4. The location of truck crane during operation.
5. Any necessary fence or barricade with lights.
6. Any floor or wall left standing.
7. The schedule of the days when the demolition will be done, i.e., on weekdays, Saturdays, Sundays, or holidays.

3303.4 *Replace this section with the following:*

3303.4 Vacant lot or building site. When a building is demolished, the permittee must remove all debris and remove all parts of the structure above grade except those parts that are necessary to provide support for the adjoining property.

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3303.7 *Add a new section as follows:*

3303.7 Special inspection. A registered civil engineer or licensed architect shall supervise the demolition work in accordance with rules and regulations adopted by the Chief Harbor Engineer pursuant to Section 104A.2.1 to assure the work is proceeding in a safe manner and shall submit written special inspection and structural observation reports to the Chief Harbor Engineer in accordance with Chapter 17.

SECTION 3304 SITE WORK

3304.1 Excavation and fill.

3304.1 *Add a second paragraph as follows:*

The Port of San Francisco adopts Appendix J for the purpose of regulating excavation and grading.

3304.1 *Add a third paragraph as follows:*

All wood used for temporary shoring, lagging or forms that will be backfilled against or otherwise left permanently in place below grade shall be treated wood as defined in Section 2302.

SECTION 3306 PROTECTION OF PEDESTRIANS

3306.10 *Add a new section as follows:*

3306.10 Chutes. Chutes for the removal of materials and debris shall be provided in all parts of demolition operations that are more than 20 feet (6.096 m) above the point where the removal of material is effected. Such chutes shall be completely enclosed. They shall not extend in an unbroken line for more than 25 feet (7.62 m) vertically but shall be equipped at intervals of 25 feet (7.62 m) or less with substantial stops or offsets to prevent descending material from attaining dangerous speeds.

The bottom of each chute shall be equipped with a gate or stop with suitable means for closing or regulating the flow of material.

Chutes, floors, stairways and other places affected shall be watered sufficiently to keep down the dust.

3306.11 *Add a new section as follows:*

3306.11 Falling debris. Wood or other construction materials shall not be allowed to fall in large pieces onto an upper floor. Bulky materials, such as beams and columns, shall be lowered and not allowed to fall.

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3306.12 *Add a new section as follows:*

3306.12 Structure stability. In buildings of wood frame construction, the supporting structure shall not be removed until the parts of the structure being supported have been removed.

In buildings with basements, the first floor construction shall not be removed until the basement walls are braced to prevent overturning, or an analysis acceptable to the Chief Harbor Engineer is submitted which shows the walls to be stable without bracing.

SECTION 3307 PROTECTION OF ADJOINING PROPERTY

3307.1 Protection required.

3307.1 *Insert the following note at the end of this section:*

Note: Other requirements for protection of adjacent property of adjacent and depth to which protection is requested are defined by California Civil Code Section 832, and is reprinted herein for convenience.

Section 832 Each coterminous owner is entitled to the lateral and subjacent support which his land receives from the adjoining land, subject to the right of the owner of the adjoining land to make proper and usual excavations on the same for purposed of construction or improvement, under the following conditions:

1. Any owner of land or his lessee intending to make or to permit an excavation shall give reasonable notice to the owner or owners of adjoining lands and of buildings or other structures, stating the depth to which such excavation is intended to be made, and when the excavating will begin.

2. In making any excavation, ordinary care and skill shall be used, and reasonable precautions taken to sustain the adjoining land as such, without regard to any building or other structure which may be thereon, and there shall be no liability for damage done to any such building or other structure by reason of the excavation, except as otherwise provided or allowed by law.

3. If at any time it appears that the excavation is to be of a greater depth than are the walls or foundations of any adjoining building or other structure, and is to be so close as to endanger the building or other structure in any way, then the owner of the building or other structure must be allowed at least 30 days, if he so desires, in which to take measures to protect the same from any damage, or in which to extend the foundations thereof, and he must be given for the same purposes reasonable license to enter on the land on which the excavation is to be or is being made.

4. If the excavation is intended to be or is deeper than the standard depth of foundations, which depth is defined to be a depth of nine feet below the adjacent curb level, at the point where the joint property line intersects the curb and if on the land of the coterminous

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owner there is any building or other structure the wall or foundation of which goes to standard depth or deeper than the owner of the land on which the excavation is being made shall, if given the necessary license to enter on the adjoining land, protect the said adjoining land and any such building or other structure thereon without cost to the owner thereof, from any damage by reason of the excavation, and shall be liable to the owner of such property for any such damage, excepting only for minor settlement cracks in buildings or other structures.

SECTION 3311 STANDPIPES

3311.2 Replace this section with the following:

3311.2 Fire safety during demolition. All existing dry standpipes shall be maintained in an operative condition and with all inlets and outlets accessible for use within two floors of the highest remaining portion of a floor of the building. The inlets shall be so identified at the street level as to be easily located by the Fire Department. They shall be removed in place with floor removal and the upper ends capped above the highest remaining valve. The remaining system on the lower floors shall continue operative until all construction above the third floor has been removed.

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Chapter 34

EXISTING STRUCTURES

3401 GENERAL

3401.8 Add the following section:

3401.8 Lateral force design requirements for existing buildings. Whenever other provisions of this code require compliance with this section, the lateral force provisions of Section 1604.11 shall apply to the entire building or structure except as otherwise provided therein.

3401.9 Add the following section:

3401.9 Homeless shelters. Notwithstanding any other provision of this section, any addition, alteration, repair, installation, change or reconstruction of any building or structure, which is made in order to initiate, expand or continue a facility which, as approved by an authorized government agency, shelters otherwise homeless persons and which is operated by an organization exempt from federal income tax under Internal Revenue Code Sections 501(c)(3) or 501a(d), shall meet only those requirements of this code which are determined by the Chief Harbor Engineer, pursuant to rules and regulations adopted by the Chief Harbor Engineer in accordance with Section 104A.1, after consultation with the Fire Department, to be necessary or appropriate to prevent a life hazard, or to prevent the building or structure from being or becoming substandard. With respect to minimum lateral force requirements, said procedure shall not waive any requirement which can be satisfied by work eligible to receive financial assistance from the State of California. Any provisions waived by said bulletin shall be applied when homeless shelter use ceases and may be applied when homeless shelter use is reduced.

3403 ADDITIONS

3403.4.1 Add the following section:

3403.4.1.1 Horizontal additions. Horizontal additions shall meet the following requirements:

When the cumulative area of horizontal additions, excluding basement additions, exceeds 30 percent of the area of the original building or structure, excluding basements, and the additions are structurally interconnected to, or not separated to comply with Section 12.12.3 of ASCE 7-10, the entire structure shall comply with Section 3401.8.

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For the purpose of this section, the term "original building or structure" shall mean the building or structure as it existed on May 21, 1973. The combined building or structure may be used for more restrictive occupancy classifications as determined in Chapter 3 only when the structure as a whole meets the requirements in this code for such occupancy.

3404 ALTERATIONS

3404.1.1 Add this section as follows:

3404.1.1 Stairways. Stairways that replace existing stairways in occupancies and which complied with the code in effect at the time they were constructed, and which have been adequately maintained and increased in relation to any increase in occupant load, alteration or addition, or any change in occupancy, may be reconstructed in the same configuration and construction as the existing stairways.

3404.7 Add the following section:

3404.7 Substantial change.

3404.7.1 Non-structural alterations. Whenever alteration work in a building or structure involves substantial changes to elements such as walls, partitions or ceilings, on 2/3 or more of the number of stories excluding basements, the building or structure as a whole shall comply with Section 3401.8. The term "substantial change" includes the addition, removal, repair or modification of such elements. All such work included in alteration permits issued within two years of the date of a permit application shall be included in the determination of whether the application is proposing substantial change to the building or structure.

3404.7.2 Structural alterations. When more than 30 percent, cumulative since May 21, 1973, of the floor and roof areas of the building or structure have been or are proposed to be involved in substantial structural alteration, the building or structure shall comply with Section 3401.8. The areas to be counted towards the 30 percent shall be those areas tributary to the vertical load carrying components (joists, beams, columns, walls and other structural components) that have been or will be removed, added or altered, as well as areas such as mezzanines, penthouses, roof structures and infilled courts and shafts.

EXCEPTIONS:

1. When such alterations involve only the lowest story of a wood frame building or structure and Section 3408 does not apply, only the lateral force resisting components in and below that story need comply with Section 3401.8, or
2. When such alterations involve the lowest story of a Type V building or structure of Group R, Division 3 occupancy and that floor's proposed use is as a garage, that level is exempt from Section 3404.7.2. Such alterations need not be counted as part of the cumulative total of tributary area of structural alterations.

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SECTION 3405 REPAIRS

3405.1 Add the following section:

3405.1.3 Repairs. Unless otherwise approved by the Chief Harbor Engineer, all structural damage shall be repaired.

Repairs to buildings or structures which have sustained structural damage shall comply with the minimum lateral force design requirements of Section 3401.8 or with the code under which the building or structure was designed, whichever is more restrictive.

Damage may be caused by events or a combination of events including, but not limited to, fire, explosion, structural pest or wood-destroying organism attack, earthquake, wind storm, vehicular impact, ground subsidence or failure, or the collapse or dislodgement of any portion of any adjacent building or structure. The removal or alteration of structural elements as part of the work described in an approved building permit application shall not be considered to be "damage."

SECTION 3408 CHANGE OF OCCUPANCY

3408.4.1 Add the following section:

3408.4.1 Lateral force provisions. In addition to the other requirements of this code, the term "comply with the requirements of this code for such division or group of occupancy," as used in this section, shall also mean compliance with the lateral force provisions of Section 3401.8 when the change results in an increase of more than 10 percent in the occupant load of the entire building or structure, and which also increased the occupant load by more than 100 persons as compared to the occupant load of the existing legal use or the use for which the building was originally designed.

EXCEPTIONS:

1. When a change of occupancy or use involves only one story of a building or structure, only the lateral force resisting elements in that story and all lateral force resisting elements below need comply with Section 3401.8.
2. A change from a Group R, Division 3 to a Group R, Division 1 or Division 2 Occupancy caused by the construction of a third dwelling unit in the lowest story of a building or structure shall comply with Section 3401.8 as provided in exception 1 above.

SECTION 3410 MOVED STRUCTURES

3410.2 Add the following section:

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3410.2 Removal of debris. Immediately after the building is moved and before it is occupied at the new site, the owner must remove all debris and all walls and footings above grade at the site from which it has been moved, except where such walls provide support to adjacent buildings, structures or property. All excavated areas must be filled in or protected by substantial fences not less than 5 feet (1524 mm) in height.

SECTION 3414 EXISTING HIGH-RISE BUILDINGS [SFM]

3414.27 Replace this section with the following section and subsections.

3414.27 Automatic sprinkler system existing high-rise buildings.

3414.27.1 General. Regardless of any other provisions of this code, every existing high-rise building as defined in Section 403.11.1 shall be provided with an approved automatic fire sprinkler system conforming to NFPA 13.

Existing high-rise buildings that are also qualified historical buildings as defined in California Health and Safety Code Section 18950 shall be provided with an approved automatic fire sprinkler system when and as required by the State Historical Building Code.

EXCEPTIONS:

1. An apartment house, condominium or other building used as a Group R, Division 2 Occupancy as defined in this code.
2. A mixed-use occupancy building containing a Group R, Division 1 or Group R, Division 2 Occupancy.

3414.27.2 Additional requirements.

The following additional requirements shall also apply:

3414.27.2.1 Valves and devices. A sprinkler control valve and a waterflow detecting device shall be provided at the lateral connection to the riser for each floor.

3414.27.2.2 Signals. A separate and distinct supervisory signal shall be provided to indicate a condition that will impair the satisfactory operation of the sprinkler system. This shall include, but not be limited to, monitoring control valves, fire pump power supplies and pump running conditions. Such supervisory signals shall be annunciated at a constantly attended building security control center; when that location is not under constant supervision by qualified

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personnel, the signals shall be transmitted to a remote monitoring station in accordance with NFPA 72.

3414.27.2.3 Water supply. The minimum water supply requirement for the sprinkler shall be determined without regard to inside hose stream demand.

3414.27.2.4 Standpipe conversion. Existing standpipes may be converted to sprinkler risers, provided that they are hydrostatically tested for two hours at not less than 50 psi (345 kPa) in excess of the maximum pressure to be maintained in the system.

3414.27.2.5 Supports. Additional hangers, braces or other attachments for support of existing standpipes which have been converted in accordance with Section 3412.27.2.4 shall be provided if they are necessary to meet the requirements of NFPA 13. The installation of additional flexible fittings in such risers is not required.

3414.27.2.6 Pipe material. Any type pipe which has been listed by an approved testing agency for use in automatic sprinkler installations may be used when installed in accordance with its listing limitations.

3414.27.3 Permissible omissions. The following features required in new high-rise buildings are not required in systems installed under the provisions of this section:

1. Redundant fire pump;
2. Secondary on-site supply of water;
3. More than one fire department connection;
4. Connection of the system to two risers on each floor. Hydraulic calculations may consider all risers in service;
5. In a Group R, Division 1 or Group R Division 2 Occupancy building, sprinklers in bathrooms and closets.

See Section 903.3.1.1.1 for additional permissible sprinkler omissions.

3414.27.4 Reserved.

3414.27.5 Notification. Not later than 60 days following the effective date of this ordinance, the Chief Harbor Engineer shall notify in writing by certified mail the owner of each building within the scope of this section. The notice shall contain a copy of this section, a commentary on it and a notice of intent form. The notice of intent shall be designed to elicit information regarding proposed water supply connections, pumps, risers and existing partial sprinkler systems. The notice of intent shall include a tentative schedule for phasing the installation of the complete sprinkler system.

3414.27.5.1 Deferred notice. If a building within the scope of this section is not discovered by the Chief Harbor Engineer until after the deadline for notification, the building owner shall be notified with 30 days of such discovery.

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Failure to receive notification does not exempt a building owner from compliance with this section.

3414.27.6 Authority of Chief Harbor Engineer. The Chief Harbor Engineer, in consultation with the Port Fire Marshal, may approve modifications and alternate methods and materials when it is clearly evident that a reasonable degree of fire safety is provided. In such cases, the Chief Harbor Engineer may:

1. Consider alternative protection based on nationally recognized standards, principles and tests, and generally recognized and well-established methods of fire protection;
2. Waive specific individual requirements if it can be shown that such requirements are not physically possible, require disproportionate effort or pose an undue hardship with little increase in life safety and that a practical alternate cannot be provided; and
3. Grant necessary extensions of time when it can be shown that the specific time periods are not physically practical or pose an undue hardship. The granting of an extension of time for compliance may be approved by the Chief Harbor Engineer based on the showing of good cause and on approval of an acceptable, systematic, progressive plan of correction.

3414.27.7 Appeal of high-rise sprinkler requirements. Application may be made to the Port Building Code Review Board in accordance with Section 105A for appeals of Chief Harbor Engineer decisions for alternate methods, materials or types of construction for the provisions of this section.

3414.27.8 Implementation. The requirements stated in Section 3412.27.2 shall be accomplished by the following steps. Failure to complete any step within the required time frame is a violation of this code, and Chief Harbor Engineer shall have the power to abate the building in accordance with Section 102A.

3414.27.8.1 Step 1. Notice of intent. The owner shall submit a properly completed Chief Harbor Engineer-provided notice of intent to the Chief Harbor Engineer not later than three years after the effective date of this requirement.

EXCEPTION: No notice of intent is required if an approved sprinkler system is completed prior to the deadline above.

3414.27.8.2 Step 2. Water supply. The owner shall install the system riser, including floor-control valves, and shall connect it to the approved automatic water supply not later than five years after the effective date of this ordinance. For purposes of this section, an automatic water supply shall consist of a connection to the public water works system and, if required by hydraulic analysis, installation of a fire pump.

3414.27.8.3 Step 3. Piping and sprinklers. The owner shall complete the sprinkler system, including required electrical monitoring, not later than 12 years after the effective date of this ordinance.

3414.27.8.4 Installation. The installation of all fire alarm equipment shall be in accordance with the Electrical Code and the Fire Code.

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Add the following Section 3424:

SECTION 3424 WORK PRACTICES FOR LEAD-BASED PAINT ON PRE-1979 BUILDINGS AND STEEL STRUCTURES

3424.1 General. Any buildings, structures, and properties on which the original construction was completed on or before December 31, 1978, or any steel structures to which lead-based paint disturbance or removal, including surface preparation, additions, alterations, repairs, or demolitions are made, shall comply with the requirements of this section.

3424.1.1 Purpose, intent and scope.

3424.1.1.1 Purpose. The purpose of this section is to ensure that any person undertaking activities that result in the disturbance or removal of interior or exterior lead-based paint on pre-1979 buildings, structures and properties and on steel structures uses work practices that minimize or eliminate the risk of lead contamination of the environment.

3424.1.1.2 Intent. The intent of this section is to encourage safe work practices for activities resulting in the disturbance or removal of lead-based paint while providing a reasonable level of health and safety for the occupants and the public at large.

3424.1.1.3 Scope.

3424.1.1.3.1 Interior. The requirements of this section apply to any activity resulting in the disturbance or removal of lead-based paint in the interior of pre-1979 buildings, structures and properties or portions thereof for all occupancy classifications. The requirements of this section with regard to the interior of a facility shall include, but are not limited to, residential-based family child-care facilities licensed by the State of California.

3424.1.1.3.2 Exterior. The requirements of this section apply to any activity resulting in the disturbance or removal of lead-based paint on the exterior of any pre-1979 buildings, structures and properties and any steel structures.

3424.2 Definitions. Except as otherwise specified herein, the terms used in this section shall have the same meanings as those set forth in Chapter 2 of this code.

ACCREDITED LABORATORY. A laboratory that operates within the EPA National Lead Laboratory Accreditation Program.

ADJACENT PROPERTIES. Properties that adjoin the regulated area including, but not limited to, properties next to and at the corners of lot lines.

CERTIFIED LEAD INSPECTOR/ASSESSOR. Any person licensed or certified by the California Department of Public Health, as authorized by the United States Environmental Protection

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Agency (EPA), in accordance with 40 CFR Part 745, subparts L or Q, to perform risk assessment and/or lead-based paint inspection.

CLEARANCE INSPECTION. An on-site limited investigation using visual observation and sampling techniques performed by an independent certified lead inspector/assessor to verify the absence of lead-based paint hazards, as specified in Title 17, California Code of Regulations, Division 1, Chapter 8: Accreditation, Certification and Work Practices for Lead-Based Paint and Lead Hazards. Any analytical testing of sample(s) collected during such inspection shall be performed by an accredited laboratory.

COMMON AREA. Any interior part of a multi-unit residential building that is accessible to all occupants including, but not limited to: corridor, hallways, lobbies, laundry rooms, storage areas, stairways, porches and interior play areas.

CONTAINMENT AND BARRIER SYSTEMS. Refers to various measures that prevent the migration of work debris beyond the regulated area, and usually includes the use of disposable polyethylene plastic sheeting that is at least 6 mils thick (or two layers each 3 mils thick) to protect the ground, floor or other interior surfaces, and to seal off windows, doors and ventilation openings.

CONTRACTOR. Any person, whether or not in possession of a valid State contractor's license, who undertakes to or offers to undertake to or purports to have the capacity to undertake to or submits a bid to, or does, by himself or herself or by or through others, any action that may or will disturb or remove lead-based paint. For purposes of this section, "contractor" shall also include subcontractors.

DISTURB OR REMOVE LEAD-BASED PAINT. Any action that creates friction, pressure, heat or a chemical reaction upon any lead-based paint on an interior or exterior surface so as to abrade, loosen, penetrate, cut through or eliminate paint from that surface. This term shall include all demolition and surface preparation activities that are performed upon any surface containing lead-based paint.

EXTERIOR. The outside of a building or steel structure and the areas around it within the boundaries of the property, including without limitations the outside of any detached structures, including but not limited to outside and common walls, stairways, fences, light wells, breezeways, sheds, and garages.

HEPA . A high efficiency particulate air filter.

INTERIOR. The inside of a building including, but not limited to, the inside of any detached structures, interior common walls, common areas, and overhangs (projections).

LEAD. Metallic lead and all inorganic compounds of lead.

LEAD-BASED PAINT or LEAD PAINT. (1) any paint, varnish, shellac, or other coating on surfaces with lead in excess of 1.0 mg/cm² (milligram per square centimeter) as measured by x-ray fluorescence (XRF) detector or laboratory analysis or in excess of 0.5 percent by weight, also expressed as 5,000 ppm (parts per million), 5,000 ug/g (micrograms per gram), or 5,000 mg/kg (milligrams per kilogram) as measured by laboratory analysis; or (2) any paint, varnish,

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shellac, or other coating found in the interior or on the exterior of pre-1979 buildings, structures, or properties or on the exterior of any steel structures, unless such paint, varnish, shellac or other coating is shown, by a lead-based paint testing, that it does not have the characteristics specified in (1).

LEAD-BASED PAINT TESTING. Lead-based paint testing of surfaces, by laboratory analysis of bulk sample or measurement using x-ray fluorescence detector, to determine the presence of lead-based paint performed by an independent certified lead inspector/assessor. Where laboratory analysis is used as a method of testing bulk paint samples, the laboratory shall be an accredited laboratory.

PERSON. Person shall have the same meaning as that defined in Chapter 2 of this code and shall also include any department, agency, or commission of the City and County of San Francisco, and State or federal agencies and departments to the extent allowable by law.

PRE-1979 BUILDING. Any building whose original construction was completed on or before December 31, 1978.

PROHIBITED PRACTICES. Any work practice that disturbs or removes lead-based paint using any of the following methods: (1) open flame burning or torching; (2) heat guns without containment and barrier systems, or operating above 1,100 degrees Fahrenheit (593 degrees Celsius) or causing the charring of paint; (3) hydroblasting or high-pressure washing without containment and barrier systems; (4) abrasive blasting or sandblasting; (5) dry manual sanding or scraping, or machine sanding or grinding without containment and barrier systems or a HEPA vacuum local exhaust tool.

REGULATED AREA. The interior and exterior of any pre-1979 buildings, structures or properties in which work is being performed that disturbs or removes lead-based paint, and to which access is restricted in order to prevent migration of work debris. "Regulated area" shall also include any area contaminated with work debris as a result of a breach or lack of containment and barrier system, which constitutes a violation of the requirement set forth in Section 3423.4.2.

RESPONSIBLE PARTY. Either (1) the owner of the property where the owner or the owner's employees or persons otherwise under the control of the owner are performing the activities regulated under this section; or (2) the owner and the contractor where the owner has entered into a contract with another to carry out the activities regulated under this section.

STEEL STRUCTURE. Any structure that is not a building and which has exterior surfaces made of steel or other metal, such as bridges, billboards, walkways, water towers, steel tanks and roadway or railway overpasses.

WORK DEBRIS. Any debris, including without limitations paint chips and dust, resulting from any activity that disturbs or removes lead-based paint.

3424.3 General Prohibitions.

No person shall disturb or remove lead-based paint through the use of prohibited practices, or in any other way that generates work debris during demolition or work on the interior or

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exterior of any pre-1979 buildings or any steel structure except in accordance with the requirements of this section.

For purposes of this section, all paint on the exterior of any pre-1979 building or any steel structure shall be presumed to be lead-based paint. Any person seeking to rebut this presumption shall establish through lead-based paint testing, or other means satisfactory to the Chief Harbor Engineer, that the paint on the building or steel structure in question is not lead-based paint.

3424.4 Performance standards.

3424.4.1 Restrict access. Any person performing work subject to this section shall restrict access by third parties to the regulated area, except as authorized by this section or until the regulated area is cleaned in accordance with Section 3423.4.4. This subsection shall not apply to regulated areas that are required for access or egress during the course of the work, such as common areas, and where no alternative exists for access or egress, in which case dust generation and migration shall be controlled through the use of HEPA-attached tools or other feasible containment and barrier systems that allow for access or egress.

3424.4.2 Containment and barrier systems. Any person performing work subject to this section shall establish containment and barrier systems that contain the work debris within the regulated area.

3424.4.2.1 Protect ground. Any person performing exterior work subject to this section shall, to the maximum extent possible, protect the ground from contamination by work debris by laying 6 mil plastic (or two layers each 3 mil thick) on the ground extending at least 10 feet (3048 mm) from the work surface when possible.

3424.4.2.2 Protect floor and furnishings. Any person performing interior work subject to this section shall protect with the use of 6 mil plastic (or two layers each 3 mil thick) any floors and other interior horizontal surfaces, carpets, rugs, drapes, curtains, blinds, shades and furniture in the regulated areas from work debris when it is impracticable to remove such items from the regulated areas during the course of the work.

3424.4.3 Prevent migration. Any person performing work subject to this section shall make all reasonable efforts to prevent the migration of work debris beyond the established containment and barrier systems during the course of the work. Such efforts may include, but are not limited to, providing secure 6 mil plastic (or two layers each 3 mil thick) protective covering, bagging, shrouding, and/or other safe containment and barrier systems to prevent the migration of work debris; covering and sealing any windows, vent openings and doors in the regulated area to prevent migration; and instituting measures to prevent the tracking of dust from the regulated areas.

3424.4.4 Clean up standards. At the completion of any work that disturbs or removes lead-based paint or when access to the regulated areas are required by State law or local ordinance during the course of such work, the responsible party shall:

3424.4.4.1 For interior work. Make all efforts to remove all visible work debris from the regulated areas. Such efforts shall include, but are not limited to, wet clean with detergent any

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exposed interior horizontal hard surfaces in the regulated areas and HEPA vacuum the regulated areas.

3424.4.4.2 For exterior work. Make all efforts to remove all visible work debris from the regulated areas.

3424.5 Permitting requirements.

3424.5.1 Building permit application. Except as otherwise authorized by this section, prior to the commencement of exterior work subject to this section, the owner or contractor shall submit a completed Port Building Permit application to the Permit Desk at Pier 1, The Embarcadero. The application shall include the following information:

1. The address and location of the project;
2. The scope of work, including the specific location of the work to be performed;
3. The methods and tools for disturbance and/or removal of asbestos containing materials
4. The approximate age of the building or steel structure;
5. The anticipated job start and completion dates for work subject to this section;
6. The dates by which the responsible party has or will fulfill any residential occupant or adjacent property notification requirements as described in Sections 3423.5.4, 3423.5.5 and 3423.5.6; and
7. The name, address, telephone number and, if available, pager or cell phone number of the party who will perform the specified work.

3424.5.2 The Chief Harbor Engineer shall, upon request, make available to the public a form containing blank spaces for the information required by Sections 3423.5.1.

3424.5.3 In lieu of the submission of the form set forth in Section 3424.5.2, the owner or contractor may submit the Lead Work Pre-Job Notification form required by the California Division of Occupational Health and Safety pursuant to Section 1532.1 of Title 8 of the California Code of Regulations.

3424.5.4 Post sign. Not later than the commencement of work subject to this section, the owner or, where the owner has entered into a contract with a contractor to perform work subject to this section, the contractor shall post signs in a location or locations clearly visible at the access points to interior regulated areas, such as at the entrances of the affected residential unit(s) or common areas, and in the case of exterior work, shall post signs in a location or locations clearly visible to adjacent properties stating the following:

LEAD WORK IN PROGRESS
PUBLIC ACCESS TO REGULATED AREA
PROHIBITED
POSTED IN ACCORDANCE WITH
PORT BUILDING CODE SECTION 3423.5.4

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3424.5.5 Requirements for sign. The sign required by Section 3423.5.4 shall be not less than 24 inches (609.6 mm) square and shall be in large boldface capital letters no less than ½ inch (12.7 mm) in size. The Chief Harbor Engineer shall make available to the public a sign that complies with these requirements and states the required information in English, Chinese and Spanish. The sign required by this section shall remain in place until the work subject to this section has been completed. Where it is not possible to post signs in a conspicuous location or locations clearly visible at the access points to interior regulated areas, such as at the entrances of the affected residential unit(s) or common areas, and in the case of exterior work, in a location or locations clearly visible to the adjacent properties, the owner or, where the owner has entered into a contract with a contractor to perform work subject to this section, the contractor shall provide the notice in written form, such as a letter or memorandum, to the occupants of adjacent properties.

3424.5.6 Notice to residential occupants. Except as may be otherwise inconsistent with state law, where work subject to the requirements of this section is to be performed on a residential property or structure regulated by this section and occupied by one or more residential occupants, not less than three business days before work subject to this section is to commence, the owner shall provide the following information:

3424.5.6.1 The notice shall be in the form of a sign, letter or memorandum and shall prominently state the following:

Work is scheduled to be performed beginning [date] on this property that may disturb or remove lead-based paint. The persons performing this work are required to follow State and local laws regulating work with lead-based paint. You may obtain information regarding State laws by calling the California Department of Health Services. You may obtain information regarding local laws, or report any suspected violations of these requirements, by calling the Port of San Francisco Building Permit Desk. In addition, you may obtain information regarding your rights as a tenant under the San Francisco Administrative Code, by calling the San Francisco Rent Stabilization Board. Finally, the owner of this property is required to provide residential occupants with a copy of the U.S. Environmental Protection Agency pamphlet titled "Protect Your Family From Lead-Based Paint in Your Home," unless the owner has previously provided this pamphlet to residential occupants.

The Chief Harbor Engineer shall make available to the public a form that states the required information in English, Chinese and Spanish.

3424.5.7 Early commencement of work. An owner may commence, or may authorize a contractor to commence, work subject to this section less than three business days after providing notices required in Sections 3423.5.6 above when the owner determines that such work must be commenced immediately in order to correct life-safety hazards.

3424.5.8 Early commencement of work requested by residential occupant. Upon written request of a residential occupant, an owner may commence, or authorize a contractor to commence, work subject to this section less than three business days after providing notices required in Section 3423.5.6.

3424.6 Inspection and sampling.

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3424.6.1 Authority to inspect. The Chief Harbor Engineer or designee is authorized to inspect the interior or exterior of any building or steel structure upon which work subject to the requirements of this section is being performed for the purpose of determining whether the work is being carried out in accordance with the requirements of this section. This inspection authority shall be exercised in accordance with Section 104A.2.3 of this code.

3424.6.2 Response to complaint. Upon receiving a complaint, the Chief Harbor Engineer shall (1) review the complaint; (2) determine whether a valid notification form has been filed with the Chief Harbor Engineer for the property in compliance with the requirements of Section 3423.5.1; and (3) where deemed necessary by the Chief Harbor Engineer, conduct an inspection at the job site within two business days to determine the validity of the complaint.

3424.6.3 Evaluation of complaint. When determining the validity of a complaint, if the Chief Harbor Engineer is not able to observe the actual performance of any work practices constituting violations of Sections 3423.3, 3423.4 and/or 3423.5, the Chief Harbor Engineer shall investigate and consider the following:

3424.6.3.1 The containment and barrier systems. Work measures and work tools being used by the responsible party;

3424.6.3.2 The color(s) of paint being disturbed or removed by the responsible party;

3424.6.3.3 The color(s), quantities, nature and locations of work debris;

3424.6.3.4 The color(s), locations and conditions of paint on buildings or steel structures adjacent to the regulated area, including without limitations adjacent properties, to determine if such paint could be a source of the work debris;

3424.6.3.5 Any work being performed on adjacent properties which could be a source of the work debris;

3424.6.3.6 A record of clearance inspection of the regulated area performed after the completion of the work regulated under this section or records of any lead-based paint testing performed for the regulated area, if available; and

3424.6.3.7 Any other relevant evidence that the Chief Harbor Engineer determines in the exercise of his or her discretion would help to determine whether a violation of this section has occurred.

3424.6.4 Authority of Chief Harbor Engineer. The Chief Harbor Engineer or the Director of the Department of Public Health may also collect paint, dust and soil samples from the property where the work is being performed and from adjacent properties in order to determine the validity of a complaint. The Chief Harbor Engineer shall have the authority to order a clearance inspection of the regulated area if he or she determines that there has been a violation of the requirements of Section 3423.3 or 3423.4.

3424.7 Enforcement In addition to the enforcement authorities granted to the Chief Harbor Engineer by Chapter 1A of this code, whenever the Chief Harbor Engineer determines that a violation of the provisions of this section has occurred, the Chief Harbor Engineer may refer

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such non-compliance to the Port's Real Estate Division for enforcement under the applicable property agreement.

3424.8 Administrative enforcement procedures.

3424.8.1 Action by the Chief Harbor Engineer. If the responsible parties failed to comply with the notice of violation and/or Stop Work Order issued pursuant to this code, the Chief Harbor Engineer may:

1. Refer the matter for a hearing in accordance to the provision of this subsection; or
2. Issue another notice of violation, Stop Work Order if appropriate; or
3. In the case where the responsible party is a contractor, file a complaint with the State Contractor Licensing Board.

the responsible party is a contractor, file a complaint with the State Contractor Licensing Board.

3424.8.2 Notice of hearing. Notice of any hearing conducted under this section shall be given in accordance with Chapter 1A of this code.

3424.8.3 Hearing. Any hearing held pursuant to this section shall be conducted in accordance with Chapter 1A of this code.

3424.8.4 Decision. Except as otherwise provided for in this subsection, any decision issued pursuant to this subsection shall be issued in accordance with Chapter 1A of this code.

3424.8.4.1 (Reserved)

3424.8.5 Posting and service of order. The Chief Harbor Engineer's order shall be posted and served in accordance with Chapter 1A of this code.

3424.8.6 Appeal of order. Any person may appeal the Chief Harbor Engineer's order provided that such appeal is in writing and filed with the Port Building Code Review Board pursuant to Chapter 1A of this code.

3424.8.6.1 (Reserved)

3424.8.7 (Reserved)

3424.9 Miscellaneous.

3424.9.1 Method of service. Unless otherwise specified, any notices and orders issued pursuant to this section shall be served in accordance with Chapter 1A of this code.

3424.9.2 Proof of service. The person serving the notice or order as provided herein shall file an affidavit or declaration thereof under the penalty of perjury, certifying the time and manner in which such notice was given. Such person shall also file therewith any receipt card of such notice or order if service was performed by certified mail.

3424.10 Remedies and enforcement by Port officials.

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3424.10.1 No obligation by Port. In undertaking the enforcement of this section, the Port of San Francisco is assuming an undertaking only to promote the general welfare. It is not assuming, nor is it imposing on its officers and employees, an obligation for breach of which it is liable in money damages to any person who claims that such breach proximately caused injury.

3424.10.2 Discretionary duty. Subject to the limitations of due process, notwithstanding any other provision of this section, whenever the words “shall” or “must” are used in establishing a responsibility or duty of the City or the Port, its elected or appointed officers, employees or agents, it is the legislative intent that such words establish a discretionary responsibility or duty requiring the exercise of judgment and discretion.

3424.12 Severability. If any section, paragraph, sentence, clause or phrase of this section is for any reason held to be unconstitutional, invalid or ineffective by any court of competent jurisdiction, such decision shall not affect the validity or effectiveness of the remaining portions of this section. The Port Commission declares that it would have passed each section, paragraph, sentence, clause or phrase of this section irrespective of the fact that any portion of this section could be declared unconstitutional, invalid or ineffective.

3424 *Add the following section:*

SECTION 3425 – WORK PRACTICES FOR ASBESTOS CONTAINING MATERIALS

3425.1 Definitions For the purpose of this section, the following definitions shall apply:

ASBESTOS. Means naturally occurring fibrous hydrated mineral silicates, chrysotile, crocidolite, amosite, fibrous tremolite, fibrous anthophyllite and fibrous actinolite.

ASBESTOS-CONTAINING CONSTRUCTION MATERIAL. Means any manufactured construction material, including structural, mechanical and building material, which contains more than one percent asbestos by weight.

ASBESTOS-RELATED WORK. Means any activity which by disturbing asbestos-containing construction materials may release asbestos fibers into the air and which is not related to its manufacture, the mining or excavation of asbestos-bearing ore or materials, or the installation or repair of automotive materials containing asbestos.

MISCELLANEOUS MATERIAL. Means interior building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation.

NONRESIDENTIAL BUILDING. Means any building as defined in this code except:

1. A building which is used exclusively as a single-dwelling unit or multiple-dwelling units and is not occupied as a mixed residential-commercial use;
2. A building owned or operated by the state or federal government and exempt from the building permit requirements under Section 106A.2;
3. A school building as defined in 15 U.S.C. 2642.

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SURFACING MATERIAL. Means material in a building that is sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing materials on structural members or other materials on surfaces for acoustical, fireproofing or other purposes.

THERMAL SYSTEM INSULATION. Means material in a building applied to pipes, fittings, boilers, breeching, tanks, ducts or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes.

3425 Add new section as follows

3425.2 Permitting requirements.

3425.2.1 Building permit application. Except as otherwise authorized by this section, prior to the commencement work subject to this section, the owner or contractor shall submit a Port Building Permit application to the Permit Desk at Pier 1, The Embarcadero. The application shall include the following information:

1. The address and location of the project;
2. The scope of work, including the specific location of the work to be performed;
3. An asbestos survey report prepared by a certified asbestos consultant (CAC) subject to applicable BAAQMD asbestos regulations;
4. The methods and tools for disturbance and/or removal of asbestos containing materials;
5. The anticipated job start and completion dates for work subject to this section;
6. The dates by which the responsible party has or will fulfill any occupant or adjacent property notification requirements as described in Sections 3424.3 below; and
7. The name, address, telephone number and, if available, pager or cell phone number of the party who will perform the specified work.

3425.3 Asbestos information notice.

3425.3.1 Asbestos-related work sign posting and affidavits. In addition to any other requirements for notice set forth in this code, any person filing an application for a building permit to perform work in any Port facility which includes asbestos-related work as defined in this code, shall comply with the following requirements:

3425.3.2 Sign posting. Prior to commencement and for the duration of any asbestos-related work, post a sign readable at 20 feet (6.096 m) at each noncontiguous location where any asbestos-related work is performed in the apartment house or residential hotel, or in any appurtenant buildings thereto and facilities supplied in connection with the use or occupancy thereof, including garage and parking facilities, stating "Danger - Asbestos. Cancer and Lung Hazard. Keep Out." Notwithstanding this requirement, if an owner or contractor of the owner subject to the requirements of California Labor Code Sections 6501.5 et seq., and regulations promulgated pursuant there-to, is in compliance with the requirements for posting locations of

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asbestos-related work, such owner or contractor shall be deemed to have complied with this requirement.

3425.3.3 Time of posting. Unless the requirement for plans and specifications is waived by the Chief Harbor Engineer pursuant to Section 106A.3.2, provide a notice at least 72 hours prior to commencement of any asbestos-related work to the residential tenants in the building. The notice shall advise the residential tenants of the nature of the asbestos-related work to be performed, the date and time the work is scheduled to commence, the specific location or locations in the building where the work will occur, the name and address of the person or firm performing the work and the name and telephone number of a person to contact on site if the residential tenant has questions or concerns. The notice shall be provided in one of the following ways:

1. At least 72 hours prior to commencement and for the duration of any asbestos-related work, post a notice containing the required information in a conspicuous common area of the apartment house or residential hotel measuring 15 inches by 15 inches (381 mm x 381 mm); or
2. Mail, by first-class registered mail, a notice containing the required information to each person who rents or leases residential space in the apartment house or residential hotel, postmarked at least five days plus 72 hours prior to commencement of any asbestos-related work; or
3. Personally deliver a notice containing the required information to each person who rents or leases residential space in the apartment house or residential hotel, at least 72 hours prior to commencement of the asbestos-related work.

3425.3.3.1 Affidavits. The applicant shall thereafter submit an affidavit signed under penalty of perjury stating that the notice has been posted in the building or mailed or personally delivered to each person who rents or leases residential space in the building. If there is reason to believe that the notice was not posted, mailed or personally delivered as required, the Chief Harbor Engineer shall investigate the matter, shall provide the applicant an opportunity to respond to any complaint of noncompliance, shall determine whether the requirements of this section have been substantially met and shall revoke the permit if it is determined they have not been substantially met.

3425.4 Inspection and sampling.

3425.4.1 Authority to inspect. The Chief Harbor Engineer or designee is authorized to inspect the interior or exterior of any building or structure upon which work subject to the requirements of this section is being performed for the purpose of determining whether the work is being carried out in accordance with the requirements of this section. This inspection authority shall be exercised in accordance with Section 104A.2.3 of this code.

3425.4.2 Response to complaint. Upon receiving a complaint, the Chief Harbor Engineer shall (1) review the complaint; (2) determine whether a valid notification form has been filed with the Chief Harbor Engineer for the property in compliance with the requirements of this Section and where deemed necessary by the Chief Harbor Engineer, conduct an inspection at the job site within two business days to determine the validity of the complaint.

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3425.4.3 Evaluation of complaint. When determining the validity of a complaint, if the Chief Harbor Engineer is not able to observe the actual performance of any work practices constituting violations of this Section, the Chief Harbor Engineer shall investigate and consider the following:

1. The containment and barrier systems, work measures and work tools being used by the responsible party;
2. The color(s), quantities, nature and locations of work debris;
3. Any work being performed on adjacent properties which could be a source of the work debris; and
4. A record of clearance inspection of the regulated area performed after the completion of the work regulated under this section or records of any asbestos testing performed for the regulated area, if available; and
5. Any other relevant evidence that the Chief Harbor Engineer determines in the exercise of his or her discretion would help to determine whether a violation of this section has occurred.

3425.4.4 Authority of Chief Harbor Engineer. The Chief Harbor Engineer or the Director of the Department of Public Health may also take samples from the property where the work is being performed and from adjacent properties in order to determine the validity of a complaint. The Chief Harbor Engineer shall have the authority to order a clearance inspection of the regulated area if he or she determines that there has been a violation of the requirements of this Section.

3425.5 Enforcement. In addition to the enforcement authorities granted to the Chief Harbor Engineer by Chapter 1A of this code, whenever the Chief Harbor Engineer determines that a violation of the provisions of this section has occurred, the Chief Harbor Engineer may refer such non-compliance to the Port's Real Estate Division for enforcement under the applicable property agreement.

3425.6 Administrative enforcement procedures.

3425.6.1 Action by the Chief Harbor Engineer. If the responsible parties failed to comply with the notice of violation and/or Stop Work Order issued pursuant to this code, the Chief Harbor Engineer may:

1. Refer the matter for a hearing in accordance to the provision of Chapter 1A of this code; or
2. Issue another notice of violation and/or Stop Work Order if appropriate; or
3. In the case where the responsible party is a contractor, file a complaint with the State Contractor Licensing Board.

3425.6.2 Notice of hearing. Notice of any hearing conducted under this section shall be given in accordance with Chapter 1A of this code.

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3425.6.3 Hearing. Any hearing held pursuant to this section shall be conducted in accordance with Chapter 1A of this code.

3425.6.4 Decision. Except as otherwise provided for in this subsection, any decision issued pursuant to this subsection shall be issued in accordance with Chapter 1A of this code.

3425.6.4.1 (Reserved)

3425.6.5 Posting and service of order. The Chief Harbor Engineer's order shall be posted and served in accordance with Chapter 1A of this code.

3425.6.6 Appeal of order. Any person may appeal Chief Harbor Engineer's order provided that such appeal is in writing and filed with the Port Building Code Review Board pursuant to Chapter 1A of this code.

3425.6.6.1 (Reserved)

3425.6.7 (Reserved)

3425.7 Miscellaneous

3425.7.1 Method of Service. Unless otherwise specified, any notices and orders issued pursuant to this section shall be served in accordance with Chapter 1A of this code.

3425.7.2 Proof of Service. The person serving the notice or order as provided herein shall file an affidavit or declaration thereof under the penalty of perjury, certifying the time and manner in which such notice was given. Such person shall also file therewith any receipt card of such notice or order if service was performed by certified mail.

3425.8 Remedies and enforcement by Port officials.

3425.8.1 No obligation by Port. In undertaking the enforcement of this section, the Port of San Francisco is assuming an undertaking only to promote the general welfare. It is not assuming, nor is it imposing on its officers and employees, an obligation for breach of which it is liable in money damages to any person who claims that such breach proximately caused injury.

3425.8.2 Discretionary duty. Subject to the limitations of due process, notwithstanding any other provision of this section, whenever the words "shall" or "must" are used in establishing a responsibility or duty of the City or the Port, its elected or appointed officers, employees or agents, it is the legislative intent that such words establish a discretionary responsibility or duty requiring the exercise of judgment and discretion.

3425.9 Severability. If any section, paragraph, sentence, clause or phrase of this section is for any reason held to be unconstitutional, invalid or ineffective by any court of competent jurisdiction, such decision shall not affect the validity or effectiveness of the remaining portions of this section. The Port Commission declares that it would have passed each section, paragraph, sentence, clause or phrase of this section irrespective of the fact that any portion of this section could be declared unconstitutional, invalid or ineffective.

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NOTE: Contact Bay Area Air Quality Management District for pre-permit requirements for demolition and alteration work and other requirements for asbestos related work.

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Appendix J

GRADING

The Port of San Francisco adopts the following Chapter Appendix J with amendments.

SECTION J103 PERMITS REQUIRED

J103.2 Exemptions.

J103.2 Add the following five exemptions:

8. Grading performed incidental to and in connection with the construction of a building or structure on a single lot, pursuant to a valid building permit issued therefor. The cost of such grading shall be included in the total valuation of the building for determining permit fees, and a separate grading permit will not be required.
9. Grading necessary for an incidental to and in connection with the construction of any parks, public streets or roadways, or the construction of sewers, or utilities under or within the boundaries of such roadways or streets when such work is under the direct supervision of the Recreation and Park Department, the Department of Public Works, the Public Utilities Commission or other governmental agencies.
10. Grading operations which in the opinion of the Chief Harbor Engineer are of such a minor nature that the proposed work will not affect the adjoining land, or any existing structures, either those on the same or adjoining land. For such grading operations, the requirements of this chapter may be waived in whole or in part.
11. An excavation that (1) is less than 2 feet (610 mm) in depth or (2) does not create a cut slope greater than 5 feet (1524 mm) in height and steeper than 1 unit vertical in 1½ units horizontal (66.7% slope).
12. A fill less than 1 foot (305 mm) in depth and placed on natural terrain with a slope flatter than 1 unit vertical in 5 units horizontal (20% slope) or less than 3 feet (914 mm) in depth not intended to support structures, that does not exceed 50 cubic yards (38.3 m³) on any one lot and does not obstruct a drainage course.

SECTION J104 PERMIT APPLICATION AND SUBMITTALS

J104.3 Soils Report Replace the Exception as follows:

Exception: Grading conforming to all of the following requirements:

1. No cut section is greater than 10 feet (3.048 m) in vertical height.
2. No cut slope is steeper than 2 horizontal to 1 vertical.
3. The tops of cut banks are separated from any structure or major improvement by a distance, measured horizontally, equal to not less than the height of the bank.

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4. Not more than 5,000 cubic yards (3825 m³) shall be involved in grading.
5. Grading performed at a site outside the limits of known slide areas.

All other grading shall require soils report and the grading plans shall include, but not be limited to, the following information:

1. The design of retaining walls or other structures used to support cuts or fills. Such retaining walls or structures, except when part of a building, may be constructed under this permit, provided the cost of same is included in the valuation shown on the application.
2. The sequencing of cut and fill operations in a manner that assures interim stability of the site.

SECTION J109 DRAINAGE AND TERRACING

J109.5 Add the following section:

J109.5 Surface drainage. All areas which are surfaced with asphalt, concrete or other paving of similar imperviousness, and which exceed a total area of 200 square feet (18.58 m²), shall have storm and casual water drained directly to a public sewer or storm drain.

Drainage shall not be directed to flow onto adjacent property or to drain onto public sidewalks. See Section 1503.4 for roof drainage.

J112 Add a new section as follows:

SECTION J112 FEES

J112.1 Grading fees. The permit and the plan review fees shall be per Section 110A, Table 1A-F – Specialty Permit Fees, and Table 1A-B – Building Permit Application and Plan Review Fees. The valuation shall be based on the volume of earthwork.

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PORT CODE PROCEDURES

<u>PCP #</u>	<u>TITLES</u>
PCP-001	Preparing Port Code Procedures
PCP-002	Port Building Code Area of Application
PCP-003	Accessibility Variances and Exceptions to the Code
PCP-004	Complaints on the Accessibility of Existing Building and Facilities
PCP-005	(Reserved)
PCP-006	(Reserved)
PCP-007	Pre-Application Plan Review Procedure
PCP-008	Port Accessibility Guidelines and Interpretations
PCP-009	Guidelines for Underpier Construction (Reserved)
PCP-010	Port Structural Engineering Quality Control
PCP-011	Tower Crane Site Safety Plan
PCP-012	(Reserved)
PCP-013	Special Inspection for Demolition Work
PCP-014	Special Inspection and Structural Observation Procedures
PCP-015	Over the Counter Permit Processing (Reserved)
PCP-016	Procedures for Processing Bi-Annual Permit - Port Maintenance Division (Reserved)
PCP-017	Port Variance Procedure for Flood Prone Areas
PCP-018	Solar Energy Application Package – Photovoltaic (SEA – PAC PV)

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PORT CODE PROCEDURE**NO. PCP-001**

DATE : January 1, 2008

SUBJECT : General Administrative Procedures

TITLE : Preparing Port Code Procedures

PURPOSE : The purpose of this Port Code Procedure (PCP) is to describe the procedures to be used in originating, writing, editing and distributing PCPs. PCPs document the procedures to be followed by the Port of San Francisco (Port) staff and, if necessary, other agencies which are involved with the regulatory functions of the Port. The PCPs elaborate, clarify, or interpret specified sections or articles of the Building, Mechanical, Electrical or Plumbing Codes. PCPs are the officially adopted interpretations of code sections or of the intent of the codes. PCPs are to be used by both Port and the public.

REFERENCE : 2010 Port of San Francisco Building Code Section 104A.2.1

DISCUSSION : The following steps are to be observed in the publishing of a Port Code Procedure. Refer to the flowchart in ATTACHMENT "A". Each Code Procedure shall be reviewed at least annually for concurrence with the current code and from time-to-time as necessitated by changes in policies or requirements.

1. IDENTIFY THE PROPOSED CODE PROCEDURE

- a. Any individual in the Port may identify the need for a Port Code Procedure and report this need to the supervisor, who will in turn discuss it with the Chief Harbor Engineer (CHE). The CHE will determine if a PCP is required and may give the authorization to proceed with the writing of the PCP. The CHE will determine if MOD or DBI-Access Appeals Board review and approval is required.
- b. The CHE assign a person as Preparer to write a draft procedure and a Review Panel with expertise in the matter to review the draft procedure. The review panel shall have a designated Chairperson, who will notify the preparer to proceed with the first draft.

2. REPORT THE PROPOSED CODE PROCEDURE TO PORT BUILDING CODE REVIEW BOARD (PBCRB)

Prior to the preparation of the first draft of the PCP, the review panel will prepare a brief synopsis of the proposed PCP and shall forward that to the CHE for inclusion in the CHE's Report or Communication Item to the Port Building Code Review Board (PBCRB). The PBCRB will review the proposed procedure and determine if it is to be considered as an agenda item once or twice (See Attachment A).

3. PREPARE THE DRAFT PORT CODE PROCEDURE

2010 Port of San Francisco Building Code

Following such report to the PBCRB, the Preparer shall prepare the first draft. The first draft is to be returned to the review panel Chairperson. Such first draft shall be reviewed by the panel for form and content, and revised as necessary. See ATTACHMENT "B" for the document format which is to be followed. The panel Chairperson shall forward the reviewed draft to the Chief Harbor Engineer for his/her review. Upon approval, the Chief Harbor Engineer shall forward the draft to the PBCRB.

4. REVIEW THE DRAFT PORT CODE PROCEDURE

- a. If so requested by the PBCRB, the first draft shall be provided to the PBCRB for public hearing prior to general distribution of the draft for review.
- b. If no public hearing on the first draft is requested by the PBCRB, that first draft shall be distributed. The Preparer is to include a list of persons or committees to whom the draft is recommended to be sent for review. The CHE and review panel may revise this list. (See ATTACHMENT "C" for a list of possible reviewers).
- c. The Panel Chairperson will distribute the first draft and, after a minimum 30 day review period, will forward any comments received to the CHE. The CHE will review the first draft and the review comments, and if necessary, discuss them with the Preparer. The CHE may refer the draft Code Procedure to other agencies or personnel for review as deemed appropriate.

5. PREPARE THE FINAL DRAFT FOR REVIEW BY THE CHIEF HARBOR ENGINEER

Based upon draft review comments a final draft bulletin will be prepared by the Preparer. The review panel will prepare the final draft and review for form and content and assign a PCP number to the procedure.

6. FORWARD THE CODE PROCEDURE TO THE PBCRB FOR REVIEW AND PUBLIC HEARING

Following review and recommendation by the review panel and CHE, the draft of the PCP will be forwarded to the PBCRB for review, public hearing and approval.

7. PREPARE THE APPROVED COPY FOR PRINTING AND DISTRIBUTION

- a. Following PBCRB approval, the Preparer write a final draft and present it to the Panel Chairperson to review for conformance to format. Upon approval, the Panel Chairperson shall prepare a final copy for signature by the CHE.
- b. The signed PCP will be duplicated and distributed as noted on a final distribution list. The Panel Chairperson shall sign and file the PCP and record of the completed PCP in separate indexes by:
 - 1). Port Code Procedure Number
 - 2). Title

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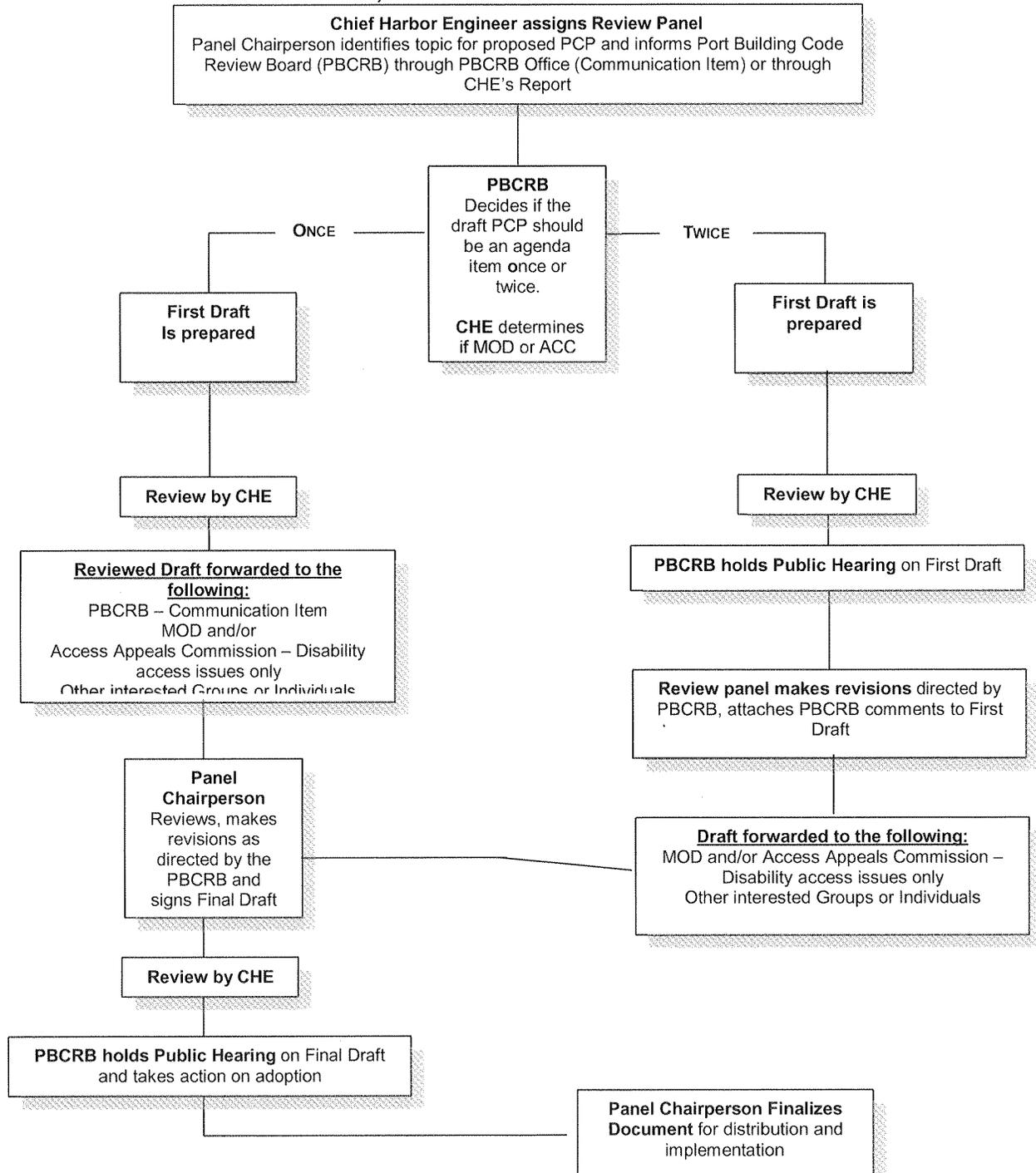
Panel Chairperson	Date		Date
		Edward F. Byrne Chief Harbor Engineer Port of San Francisco	

Originally Approved by the Port Commission on 01/01/2008
Update reviewed and approved by J. Aires, Senior Building Inspector 11-07-2010

2010 Port of San Francisco Building Code

ATTACHMENT "A"

**PORT CODE PROCEDURE (PCP)
PREPARATION, REVIEW AND APPROVAL PROCESS**



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ATTACHMENT "C"**Distribution List:**Port of San Francisco:

Port Executive Director
 Chief Harbor Engineer
 Director of Maintenance
 Director of Planning
 Director of Administration
 Building Permit
 Disability Access Coordination

Port of San FranciscoBoards and Commissions:

Port Building Code Review Board

City Agencies:

Mayor's Office
 Clerk of the Bd. Of Supervisors
 City Attorney, Office of
 City Planning Department
 Bureau of Fire Prevention
 And Public Safety

Department of Public Works
 Bureau of Architecture
 Bureau of Engineering
 Bureau of Construction Mgt.
 Bureau of Street Use &
 Mapping BERM

Bureau of Building Repair
 Department of Public Health
 Real Estate Department
 Redevelopment Agency
 Port of San Francisco
 Housing Authority

Professional Societies and Organizations:

American Institute of Architects (AIA), San Francisco Chapter
 American Society of Civil Engineers (ASCE)
 American Society of Fire Protection Engineers (ASFPE)
 American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc (ASHRAE)
 Consulting Engineers Association of California National Electrical Contractors Association (NECA)
 San Francisco Bay Area Chapter of the National Association of the Remodeling Industry (NARI)
 San Francisco Chapter of the Construction Specifications Institute (CSI)
 San Francisco District of the Associated General Contractors of California, Inc. (AGC)
 Sheet Metal and Air Conditioning National Association, Inc. (SMACNA)
 Structural Engineers Association of Northern California (SEAONC)

Public Organizations:

Building Owners and Managers Association (BOMA)
 Center for Independent Living
 Foundation for San Francisco's Architectural Heritage
 San Francisco Board of Realtors
 San Francisco Building Trades Council
 San Francisco Chamber of Commerce
 San Francisco Planning & Urban Research Association (SPUR)

Note: This is the current list on file. Any interested individual, agency or organization may be included on this list by sending a written request to: Chief Harbor Engineer, Port of San Francisco, Pier 1 - The Embarcadero, San Francisco, CA 94111.

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ATTACHMENT "B"

PORT CODE PROCEDURE

NO. PCP-001 : *The CODE PROCEDURE NO. is assigned by **Chief Harbor Engineer**.*

DATE : *The DATE is the effective date.*

SUBJECT : *The SUBJECT identifies the major topic or topics covered by the Code Procedure.*

TITLE : *The TITLE should be short and to the point (e.g.. Processing Demolition Applications and Permits).*

PURPOSE : *The PURPOSE serves as an abstract and clearly defines the scope and intent of the Code Procedure.*

REFERENCE : *The REFERENCE materials used in writing the Code Procedure may include to Municipal Codes, City Charter, State and Federal Laws, letters, directives, and other justifications for this Code Procedure. If there are none, leave this item out.*

DISCUSSION : *The DISCUSSION provides background information and a description of the intended action or procedure. It includes detailed explanations and additional examples, attachments, or diagrams.*

The SIGNATURE BLOCK contains the CHE's signature and title. Additional signatures and titles may be included if the Code Procedure is written as a joint document with other agencies.

Panel Chairperson

Date

Edward F. Byrne
Chief Harbor Engineer
Port of San Francisco

Date

Approved by the Port Commission on *current date*

2010 Port of San Francisco Building Code

PORT CODE PROCEDURE**NO. PCP-002**

DATE : January 1, 2008
SUBJECT : Area of Port Code Application
TITLE : Port Building Code Area of Application

PURPOSE : The purpose of this Procedure is to graphically describe the Port Building Code's area of application and the areas that will be subject to the San Francisco Building Code and the Department of Building Inspection within the Port's area of jurisdiction.

REFERENCE : Following maps delineating area of Port jurisdiction and Code enforcement.

DISCUSSION : The Port of San Francisco's Engineering Division Building Permit Group (BPG) will provide all building plan check and inspection services for all areas within Port jurisdiction except for those specifically indicated otherwise on the following maps. The San Francisco Department of Building Inspection will provide plan checking and inspection services only for those areas shown on the following maps.

 Panel Chairperson

Date

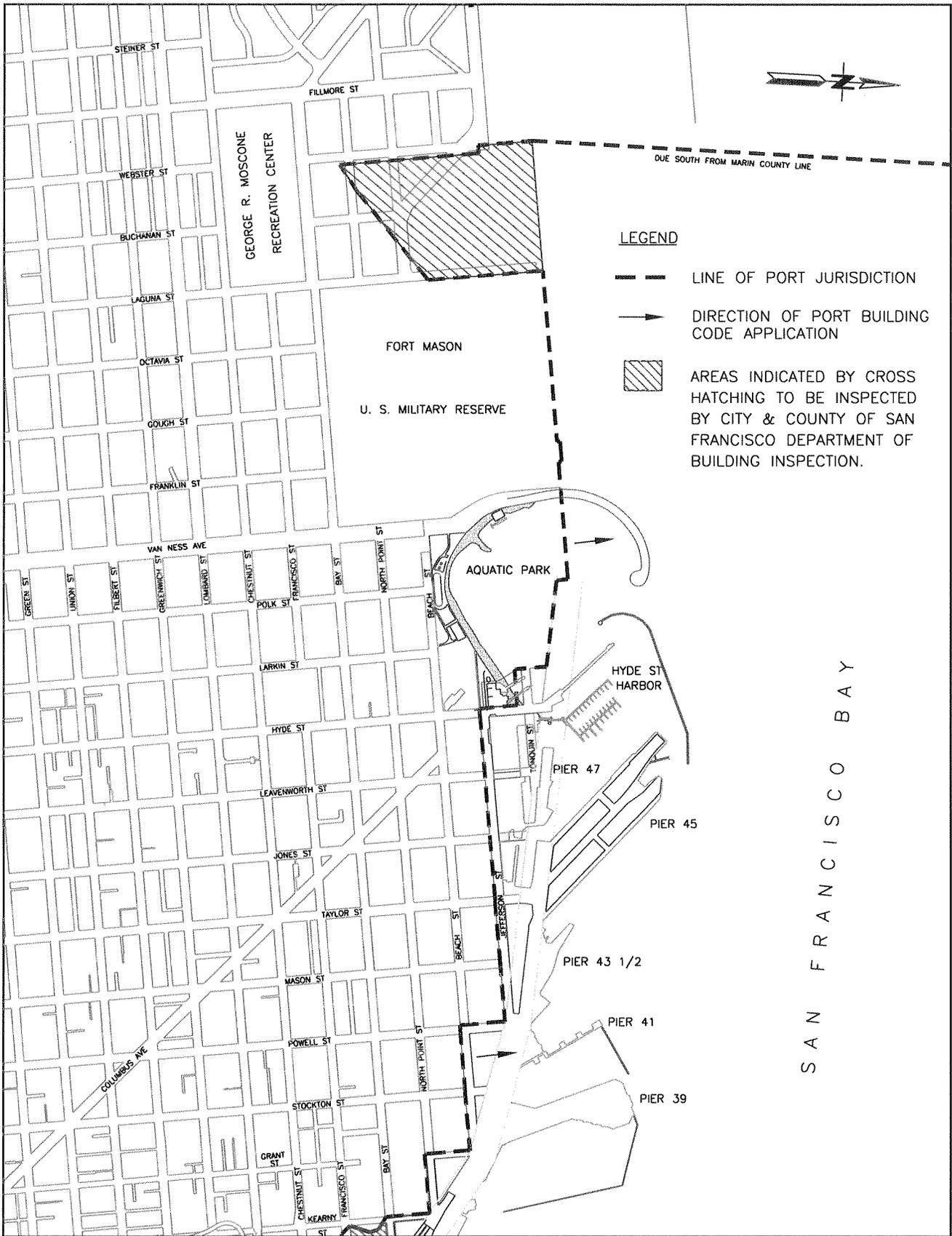
 Edward F. Byrne
 Chief Harbor Engineer
 Port of San Francisco

Date

Originally approved by the Port Commission on 01/01/2008
 Update reviewed and approved by J. Aires, Senior Building Inspector 11-06-2010

2010 Port of San Francisco Building Code

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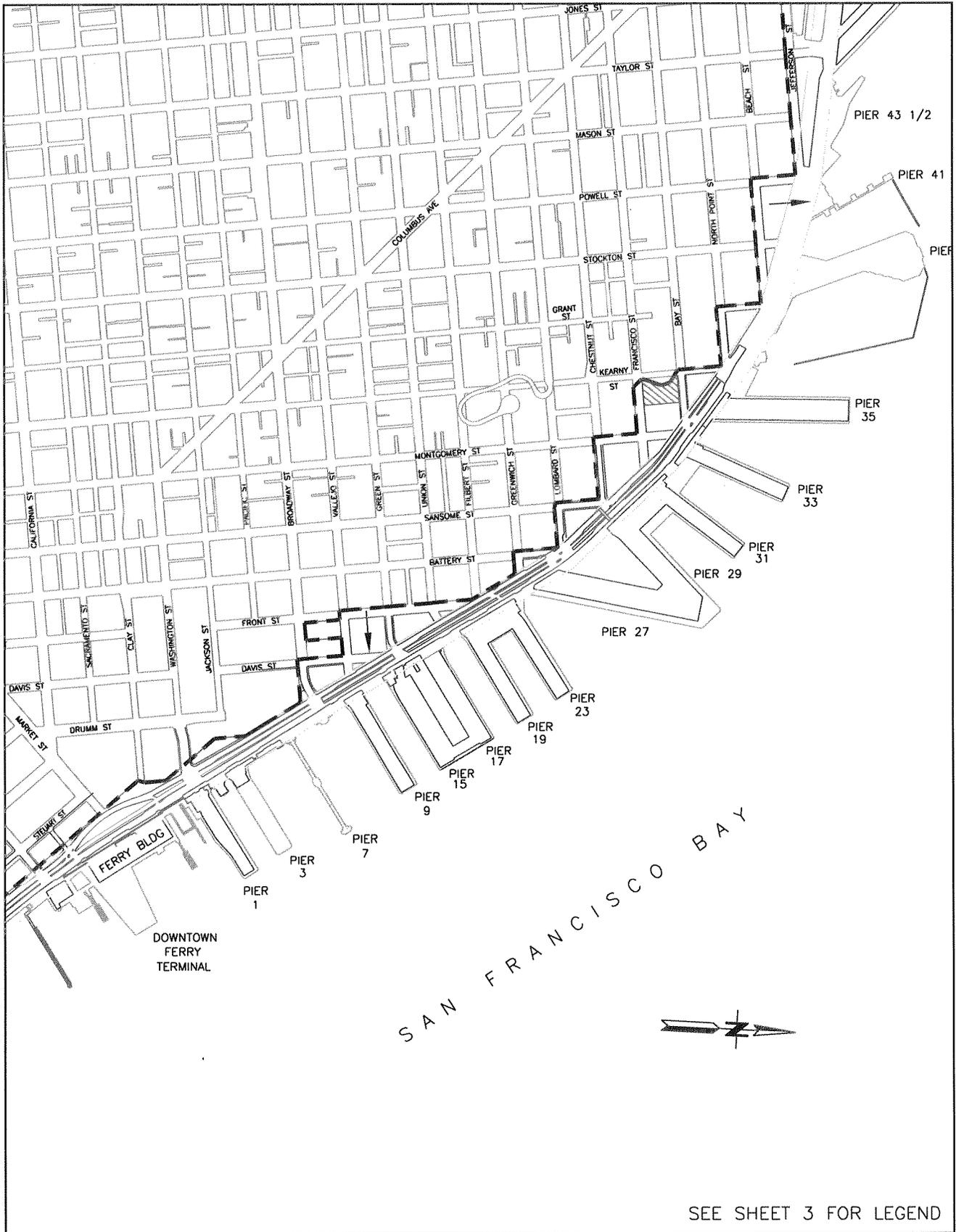


LEGEND

- LINE OF PORT JURISDICTION
- DIRECTION OF PORT BUILDING CODE APPLICATION
- ▨ AREAS INDICATED BY CROSS HATCHING TO BE INSPECTED BY CITY & COUNTY OF SAN FRANCISCO DEPARTMENT OF BUILDING INSPECTION.

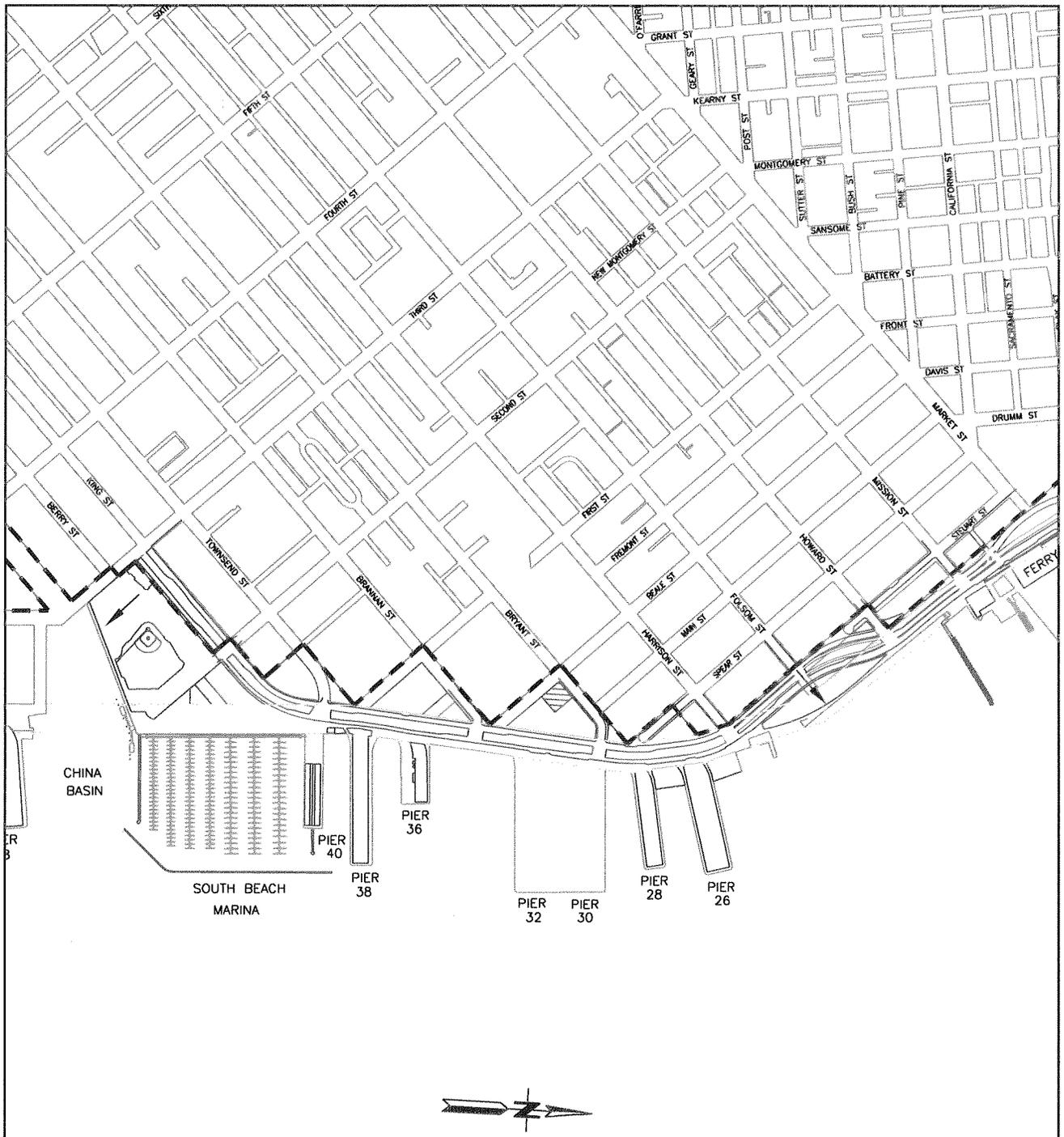
SAN FRANCISCO BAY

 SAN FRANCISCO PORT COMMISSION PORT OF SAN FRANCISCO DEPARTMENT OF ENGINEERING		MAP OF THE WATERFRONT SAN FRANCISCO 2007			APPROVED _____ DATE _____	
IN CHARGE OF	MADE BY ECC	TRACED BY	CHKD. BY EFB	DATE 6/12/07	SCALE 1" = 1000'	DRAWING NO. PCP-002
						SHEET NO. 3 OF 10



SEE SHEET 3 FOR LEGEND

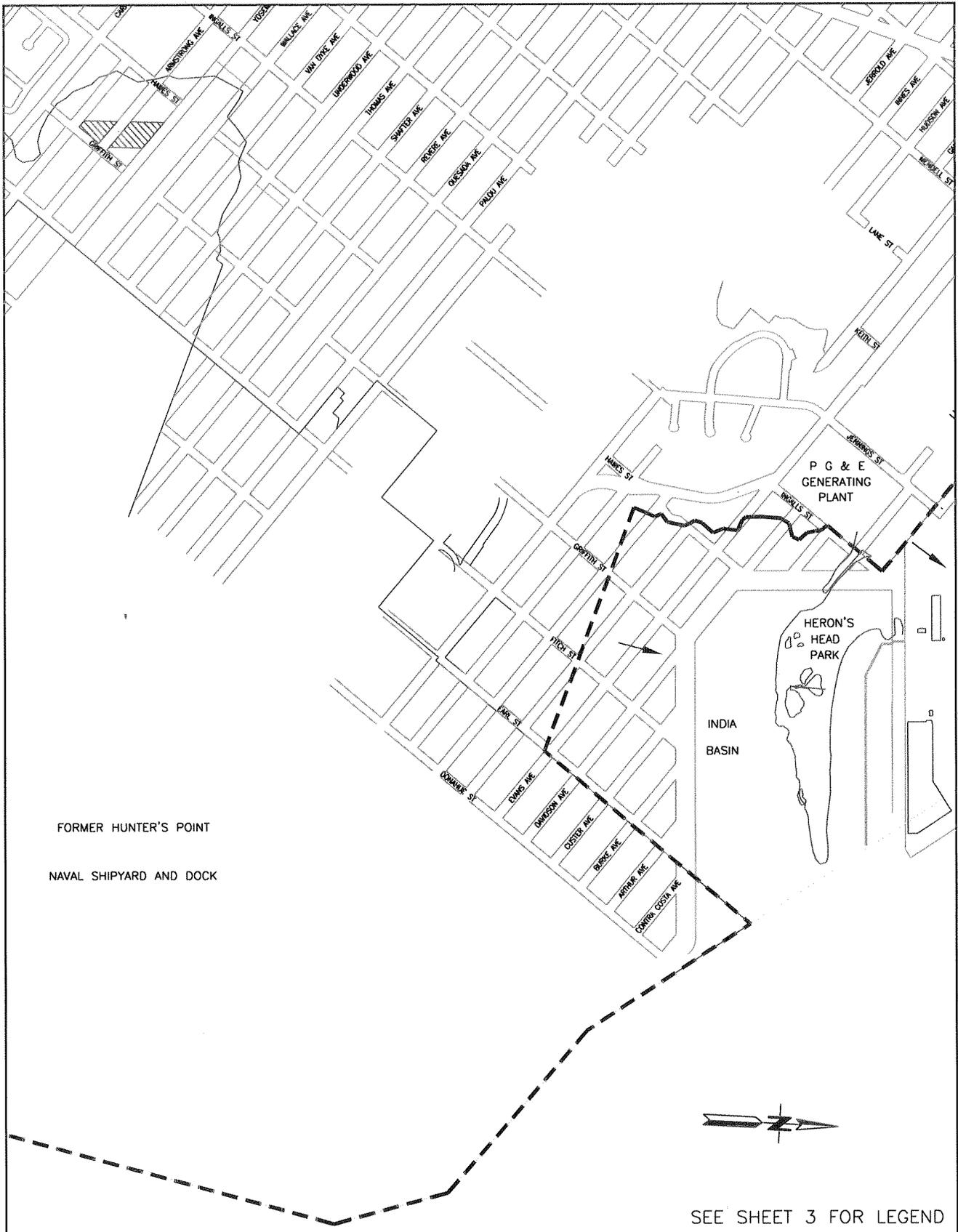
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IN CHARGE OF	MADE BY ECC	TRACED BY	CHKD. BY EFB	DATE 6/12/07	SCALE 1" = 1000'	DRAWING NO. PCP-002 SHEET NO. 4 OF 10



SAN FRANCISCO BAY

SEE SHEET 3 FOR LEGEND

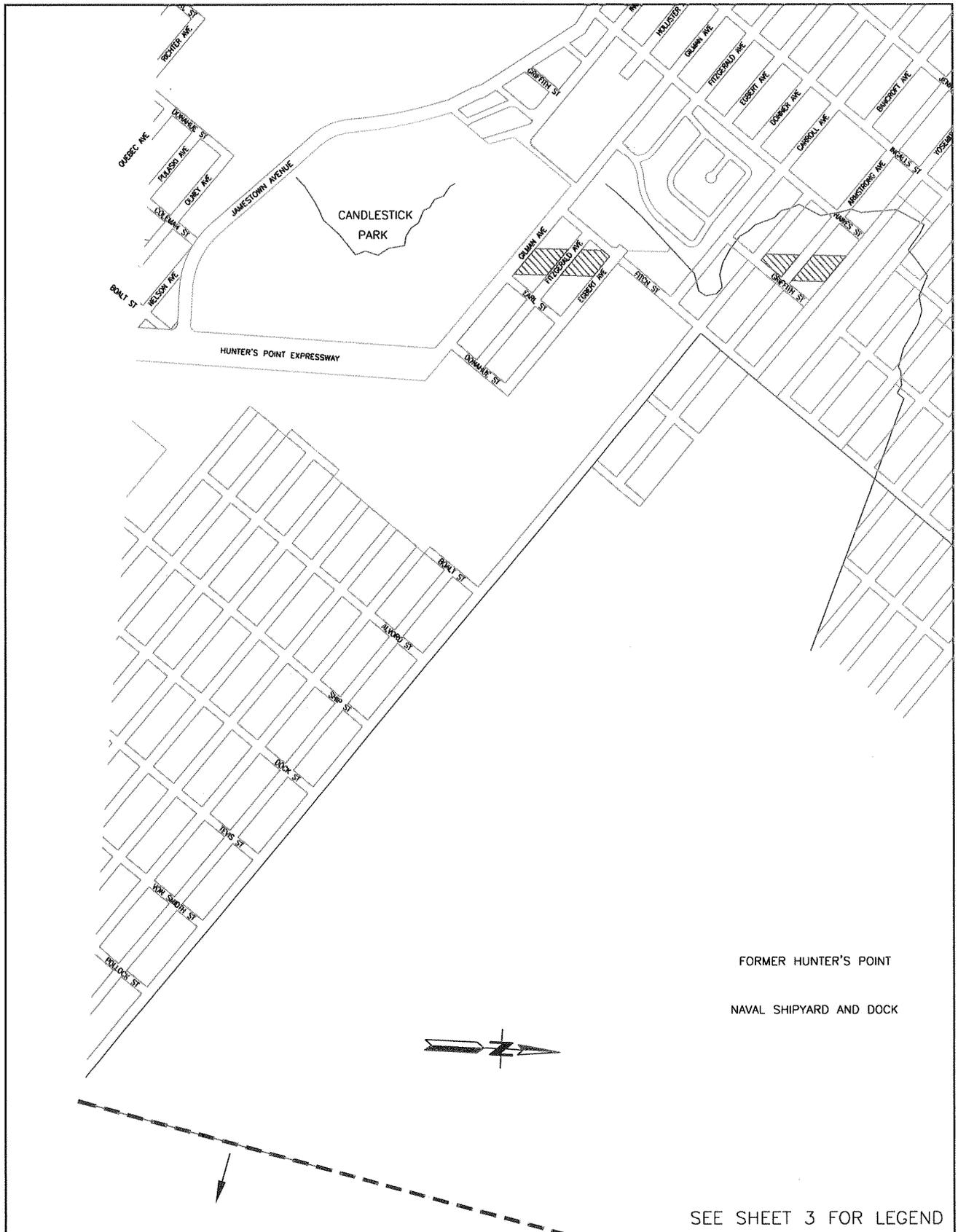
 SAN FRANCISCO PORT COMMISSION PORT OF SAN FRANCISCO DEPARTMENT OF ENGINEERING		MAP OF THE WATERFRONT SAN FRANCISCO 2007			APPROVED _____ DATE _____	
IN CHARGE OF	MADE BY ECC	TRACED BY	CHKD. BY EFB	DATE 1/01/10	SCALE 1"=1000'	DRAWING NO. PCP-002 SHEET NO. 5 OF 10



FORMER HUNTER'S POINT
 NAVAL SHIPYARD AND DOCK

SEE SHEET 3 FOR LEGEND

 SAN FRANCISCO PORT COMMISSION PORT OF SAN FRANCISCO DEPARTMENT OF ENGINEERING			MAP OF THE WATERFRONT SAN FRANCISCO 2007			APPROVED _____ DATE _____
IN CHARGE OF	MADE BY ECC	TRACED BY	CHKD. BY EFB	DATE 6/12/07	SCALE 1"=1000'	DRAWING NO. PCP-002 SHEET NO. 8 OF 10



FORMER HUNTER'S POINT
NAVAL SHIPYARD AND DOCK

SEE SHEET 3 FOR LEGEND

 <p>SAN FRANCISCO PORT COMMISSION PORT OF SAN FRANCISCO DEPARTMENT OF ENGINEERING</p>		<p>MAP OF THE WATERFRONT SAN FRANCISCO 2007</p>			<p>APPROVED _____ DATE _____</p>	
IN CHARGE OF	MADE BY ECC	TRACED BY	CHKD. BY EFB	DATE 6/12/07	SCALE 1"=1000'	DRAWING NO. PCP-002
						SHEET NO. 9 OF 10

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2010 Port of San Francisco Building Code

PORT CODE PROCEDURE**NO. PCP-003**

DATE : January 1, 2008

SUBJECT : Barrier Free Access

TITLE : Accessibility Variances and Exceptions to the Code

PURPOSE : To serve the Port of San Francisco (Port) and the general public by hearing written appeals brought by any person regarding actions taken by the Port's Engineering Division's Building Permit Group (BPG) in the enforcement of the requirements for access to public accommodations by persons with disabilities, as well as action taken by the Port of San Francisco in the enforcement of the Barrier Free Access and Access Appeals.

REFERENCE : Part 5.5, Sections 19955-59 of the Health and Safety Code of the State of California

DISCUSSION : **A. Application for Unreasonable Hardship (AUH).** The applicant may appeal a decision or action made by the BPG in their enforcement of the California Code of Regulations, Title 24. To make such an application, the applicant must first file an AUH (see Exhibit A) through the BPG. In the event, the AUH is denied; the applicant shall be informed as to the reason for that denial. Upon denial of the AUH request, the applicant may make an appeal in accordance with PBC Section 105A. All applications should be made in writing to the Chief Harbor Engineer (CHE) and shall include the following:

1. Date of the appeal application.
2. Address of the subject property
3. Port building permit or complaint number and date of decision or action of appeal.
4. Identify whether the applicant is a master lesser, tenant, temporary operator or Special Event sponsor of Port property.
5. Description of the area or condition for which the appeal is being made.
6. Identification and content of applicable Port of San Francisco Building Code sections on which the appeal is being based.
7. Identification and content of accessibility determinations from Port Code Procedure(s), or Division of the State Architect Policy(s) applicable to the appeal request. Or any other technical guideline that provides equal or greater accessibility.

AUH forms are also available at the Port Pier 1 Office Building Permit Desk. When requested, the BPG or the Mayor's Office On Disability (MOD) Coordinator can provide the applicant assistance in filling out this form.

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B. Application Fee. A BPG filing fee of \$350.00 is required for each appeal. Request for hearing fee is \$100.00.

C. Background Report. The MOD Coordinator or the CHE shall prepare a background report with a recommendation for action by the appeal reviewers.

Panel Chairperson

Date

Edward F. Byrne
Chief Harbor Engineer
Port of San Francisco

Date

Originally Approved by the Port Commission on 01/01/2008
Update reviewed and approved by J. Aires, Senior Building Inspector 11-07-2010

2010 Port of San Francisco Building Code

PORT CODE PROCEDURE**NO. PCP-004**

DATE : January 1, 2008

SUBJECT : Complaints

TITLE : Complaints on the Accessibility of Existing Building and Facilities

PURPOSE : The purpose of this Port Code Procedure (PCP) is to describe the procedures to be used in receiving and resolving complaints concerning existing buildings, structures and facilities operated to serve public accommodations within Port boundaries.

This PCP is the Port of San Francisco's accessibility grievance and compliant procedure and is part of the Port's policy to provide accessibility to persons with disabilities or organizations that represent persons with disabilities. Accessibility grievance and/or compliant procedures are required under:

- 1) Section §35.107 Americans with Disabilities Act, 28 CFR PART 35 Nondiscrimination on the Basis of Disability in State and Local Government Services, (Title II) with the ADA's Accessibility Guidelines (ADAAG) and
- 2) State of California Government Code section 4453, known as the Unruh Civil Rights Act (UCRA).

Accessibility grievances or complaints on Port programs, services and facilities may be directed to the Port of San Francisco's Mayor's Office on Disability (MOD) coordinator. These grievances or complaints will be administered per the policies established by the City and County of San Francisco, Mayor's Office on disability.

Additionally, complaints on the accessibility of a public accommodation's temporary or permanent buildings, structures and facilities may be directed to the Port of San Francisco Chief Harbor Engineer (CHE). This PCP addresses the procedure for investigation and, if required, abatement of the condition.

Where the complaint involves issues other than accessibility of real property, the complaint shall be directed to the Port's MOD Coordinator.

REFERENCE : 2010 Port of San Francisco Building Code (PBC) Section 104A.2.1

DISCUSSION : **A. Definitions**

Removal of Existing Architectural Barriers – means the Title II 35.150 (d), Title II §364.304 or State (UCRA) §51 requirement to removal barriers to access in existing facilities and buildings.

Path of Travel – means a requirement that when an alteration affects or could affect the usability of or access to an area containing a primary function, that

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an amount not to exceed 20% of the cost of construction shall be allocated so as to ensure that, to the maximum extent feasible, the path of travel to the altered area and the restrooms, telephones, and drinking fountains serving the altered area, are readily accessible to and usable by individuals with disabilities, unless such alterations are disproportionate to the overall alterations in terms of cost and scope as determined under criteria established by the Attorney General.

B. General Requirements. Where the complaint is made against Port of San Francisco tenants or temporary event operators that occur within the Port's boundaries, the complaint shall be investigated in the following manner.

1.0 Determination of Applicability of Standards. The CHE or designee shall review the facility complaint per PBC Section 102A and the applicable provisions of the building code. The Port's Building Inspector or the Port's MOD Coordinator may serve as the CHE's designee.

1.1 Determination of Standards. Where possible, a determination shall be made if the object of the complaint is a barrier removal obligation under the California Building Code (CBC) or a design compliance issue associated with construction that occurred after January 26, 1992. The object of the complaint shall be reviewed for its performance to the appropriate accessibility guideline standards.

1.2 Architectural Barriers in Existing Buildings. Complaints on the removal of existing architectural barriers in buildings or facilities existing prior to July 26, 1992 shall be investigated for compliance to the alteration standard of ADAAG and/or CBC Chapter 11B of the code.

1.3 Barriers in New Construction or Alterations. Complaints on buildings or facilities constructed after July 26, 1992 shall comply with the new construction standard of this code or ADAAG.

1.4 Equivalencies. In determining equivalencies for the compliance of buildings and facilities, the CHE is permitted to utilize:

- 1) The most current edition of the US Access Board's ADA Accessibility Guidelines,
- 2) The most current edition of the PBC and/or
- 3) ICC/ANSI A117.1-2003 Accessible and Usable Buildings and Facilities standard.
- 4) Port of San Francisco Code Procedures

2.0 Acknowledgment and Time for review.

2.1 Acknowledgement. The CHE or his designee shall acknowledge the receipt of the complaint in writing within 5 working days.

2.2 Investigation. The investigation of the complaint shall be completed within 10 working days after acknowledgement of the complaint, to determine whether the complaint has identified an architectural barrier(s) for persons with

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disabilities.

2.3 Response to Complainant. The CHE or his designee shall respond in writing to the complaint on the results of the investigation within 20 working days after acknowledgement of complaint receipt.

2.4 Abatement. Where a building, facility or improvement is determined to be in non-compliance with the PBC due to architectural barriers to access for people with disabilities, it shall be declared a public nuisance and the CHE shall direct that it be abated, by repair, rehabilitation, demolition or removal per Section 102A and as provided herein.

3.0 Appeals. Appeal of the CHE's decisions may be made to the Port Building Code Review Board in accordance with Section 105A.

Panel Chairperson

Date

Edward F. Byrne
Chief Harbor Engineer
Port of San Francisco

Date

Originally Approved by the Port Commission on 01/01/2008
Update reviewed and approved by J. Aires, Senior Building Inspector 11-07-2010

2010 Port of San Francisco Building Code

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PORT CODE PROCEDURE**NO. PCP-007**

DATE : January 1, 2008

SUBJECT : General Administrative Procedures

TITLE : Pre-Application Plan Review Procedure

PURPOSE : To establish policies and procedures allowing for review and comment of specific design issues by the Port of San Francisco prior to application for a permit.

REFERENCE : Port of San Francisco Building Code (PBC)
 Section 106A.4.8 Pre-application Plan Review
 Section 110A, Table 1A -B Building Permit Application and Plan Review Fees

DISCUSSION : A preliminary verbal interpretation of a code requirement or alternative method of construction is considered informal information and may not always be accepted by the Plan Reviewer or Inspector who has been assigned to check the submittal documents for a project. Rather than wait for the plan review to reveal requirements of specific design issues, it may be advantageous to project sponsors to verify code requirements with a formal PBC interpretation prior to completion of project drawings and before submitting an application for a building permit.

This bulletin sets out the procedure for requesting, conducting and concluding such a Pre-application Plan Review.

NOTE: It is not intended that a general, non-directed plan review of a project will be made during this review, the intention of the Pre-Application Plan Review is to address and resolve specific code issues.

Formal written confirmation of interpretations will be issued to the project sponsor following the review.

**REQUEST FOR
 PRE-APPLICATION
 PLAN REVIEW:**

Submit requests for a Pre-Application Plan Review in writing as follows:

List the items to be reviewed in the form of a yes or no format with specific questions. The applicant shall propose a solution or provide a statement of position regarding each question asked, and shall include pertinent code references. Items should be sequentially numbered. This list of questions or items will then form the agenda for a written response.

Include applicable drawings, documents, and other information as necessary to describe the conditions under question,

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On the submitted drawings, highlight or "cloud" the areas to be reviewed, and provide cross-references to the questions. Where questions pertain to means of egress, indicate the path of egress on the drawings with arrows.

To cover fees, include a check made payable to the Port of San Francisco (See FEES below).

Note; a separate payment is required for Fire Department representation. (See FEES below).

Address requests to:

Senior Building Inspector, Engineering Division
Port of San Francisco
Pier 1, San Francisco, CA 94111

Indicate on the outside of the envelope: PCP-007 Pre-Application Plan Review Request

RESPONSE:

The Senior Building Inspector will assign your Pre-Application Plan Review request to one of the following:

Building Permit Group,
Plan Review Engineer Structural/Civil,
Plan Review Engineer Electrical
Plan Review Engineer Mechanical
Port Architect
Other divisional staff as determined by the Senior Building Inspector

The request for a Pre-Application Plan Review may result in a meeting only if it is determined to be appropriate by the reviewer.

The plan review will be conducted by the Plan Review Engineer or by other staff as assigned. One or more plan reviewers from Engineering Division staff may be assigned to participate in the Pre-Application Plan Review depending on the complexity of the project and the issues in question. Interpretations by representatives from other agencies, such as; San Francisco Fire Department, Department of Public Works, Health Department, Planning Department, or the Redevelopment Agency may be necessary for a building code interpretation to be made.

The Port representative will have final authority to determine which questions are addressed. Questions that are determined to be too broad in scope may be deleted from the request. Discussion will be limited only to written items of request in a question and answer format.

The Port may request additional information from the project sponsor in preparation for, or during, a Pre-Application Plan Review.

The Port reviewer shall prepare a letter of response within 30 days following the conclusion of the Pre-Application Plan Review. Such letter of response shall address each specific question and shall state the reasons for all conclusions. The letter shall be signed by the reviewer and issued to the

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applicant within 10 days of completion. Port of San Francisco will track the time of issuance and approval of such letters to confirm that the above time limits are met.

For clarity, each item number of the written response shall correspond to the item number on the written request.

Notes, annotated drawings and other documents may be attached to the notes or letter of response for reference at the time of a building permit application.

The project sponsor shall attach a copy of the signed conclusions of the Pre-Application Plan Review letter of response as a lead sheet to the building permit application drawings. The responsible plan reviewer during the plan review process will honor these decisions.

The project sponsor may request a review of the Port staff determination by the Chief Harbor Engineer (CHE). Determinations of the CHE may be appealed to the Port of San Francisco Building Code Review Board (PBCRB) in accordance with Section 105A. Certain issues related to alternate methods and materials and technical equivalencies may be appealed to the Port Building Code Review Board (PBCRB) in accordance with Section 105A.

FEES:

Pre-Application Plan Review fees are payable upon request according to the Section 107A, Table 1A -B, Item 6.

The San Francisco Fire Department charges plan review fees in addition to the above fees when Fire Department personnel are included in a review. See San Francisco Fire Code Section 106.11 for appropriate fee. A separate payment for such fees made to Port of San Francisco is required for Fire Department representation.

Fees, in addition to the advance Pre-Application Plan Review payment, will be calculated at the conclusion of the review. The Port of San Francisco will not release notes or letters of written interpretation until all Pre-Application Plan Review fees are paid.

If the initial Pre-Application Plan review fee is paid but no such review is subsequently performed and no preparatory work has been done, the fee may be refunded in accordance with Section 107A.6.1.1.

Panel Chairperson	Date	Edward F. Byrne Chief Harbor Engineer Port of San Francisco	Date

Originally Approved by the Port Commission on 01/01/2008
Update reviewed and approved by J. Aires, Senior Building Inspector 11-09-2010

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2010 Port of San Francisco Building Code

PORT CODE PROCEDURE**NO. PCP-008**

DATE : January, 12 2008

SUBJECT : Accessibility

TITLE : Port Accessibility Guidelines

PURPOSE : The purpose of this Port Code Procedure (PCP) is to amend accessibility requirements of the code and provide interpretation and guidance on areas where the code lacks the minimum requirements or is potentially in conflict of the 28 CFR Part 36 Americans with Disabilities Act accessibility guidelines (ADAAG). The information in Accessibility guidelines is to be used by both Port and the public.

REFERENCE : 2010 California Building Code Section 11B

DISCUSSION : The California Building Code has not been certified by the Department of Justice as meeting the requirements of the ADA's Subpart F- Certification of State Laws or Local Building Codes. The Division of the State Architect acknowledges that the California Building Code does not comply with ADAAG and has made application to the Department of Justice for review of the revisions to the code.

In the interim the DSA has issued Polices to provide guidance and interpretation of Chapter 11B accessibility requirements. In addition, the City and County of San Francisco Building Department has issued Administrative Bulletins to provide guidance and interpretation of Chapter 11B accessibility requirements.

REQUIREMENTS: 1. With specific amendments, the Port adopts the following DSA Polices and Port Code Procedures to be a part of the Port Building Code.

DSA POLICIES

94-05 Accessible Requirements For Exit-Only Doors

94-10 Resurfacing, Restriping And Alterations Of Parking Lots

94-22 Reconstruction After Fire Damage

95-09 Revised 3/15/2000 Accessible Seating At Service Counters, except that the minimum length of counter at wheelchair seating shall be a minimum of 60 inches (1525 mm).

96-01 DSA Seismic Upgrade Projects

96-10 Handrails at Steps

97-01 Unisex Toilet Rooms

97-02 Permit Extensions

97-03 Interim Disabled Access guidelines for Electrical Vehicle Charging Stations

97-06 Parking Ticket Dispensers

98-05 Revised 3/16/2000 Folding Bleachers Accessible Seats, except that

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wheelchair seating in bleachers, folding and portable seating systems complying with ICC/ANSI A117.1-2003 is permitted for equivalent facilitation to this code.

98-07 Assembly Seating, except that wheelchair disbursement complying with ICC/ANSI A117.1-2003 is permitted for equivalent facilitation to this code.

99-02 Playgrounds

99-08 Door Stops and Other Floor-Mounted Obstructions

00-01 Self Evaluations and Transition Plans

DSA INTERPRETATIONS OF REGULATIONS

	ACCESS
11B-1	Visual Alarms in Classrooms
11B-2	Beveled Lip at Curb Ramps
11B-3	Detectable Warnings at Curb Ramps
11B-4	Detectable Warnings
11B-5	Effort to Operate Exterior Doors

Port of San Francisco Building Code Port Code Procedures

PCP-002	Port Building Code Area of Application
PCP-003	Accessibility Variances and Exceptions to the Code
PCP-008	Port Accessibility Guidelines and Interpretations

Port Chairperson

Date

Edward F. Byrne
Chief Harbor Engineer
Port of San Francisco

Date

Originally Approved by the Port Commission on 01/01/2008
Update reviewed and approved by J. Aires, Senior Building Inspector 11-08-2010

2010 Port of San Francisco Building Code

PORT CODE PROCEDURE

NO. PCP-009

DATE : January 1, 2008

SUBJECT : Underpier Construction

TITLE : Guidelines for Underpier Construction (reserved)

PURPOSE :

REFERENCE :

DISCUSSION :

Panel Chairperson

Date

Edward F. Byrne
Chief Harbor Engineer
Port of San Francisco

Date

Original approved by the Port Commission on 01/01/2008

Update reviewed and approved by J. Aires, Senior Building Inspector 11-08-2010

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PORT CODE PROCEDURE

NO. PCP-010 :
DATE : January 1, 2008
SUBJECT : Structural Plan Checking of Port Projects
TITLE : Port Structural Engineering Quality Control

PURPOSE : The purpose of this Port Code Procedure (PCP) is to describe the quality assurance procedures to be used for structural engineering performed for Port Projects. Port projects are projects developed by Port Staff and its consultants.

REFERENCE : SEAONC Structural Plan Check Position Statement, March 2004

DISCUSSION : The Port is an organization responsible for both project development and plan checking. This PCP delineates the protocol to be followed for structural plan check review as applied to internally developed designs and is intended to provide the necessary level of professional review to assure compliance with all applicable codes during the plan check process. Structural plans and calculations shall be completely developed by the originating licensed engineer and checked by another licensed engineer.

1. DEVELOP STRUCTURAL PLANS AND CALCULATIONS

- a. A licensed engineer from Port Staff or consultant shall prepare the necessary design drawings and calculations to describe the improvement.
- b. The calculations and computer analysis shall be sufficiently developed and documented to describe the gravity and lateral load resisting systems to permit the plan checker to fully review the improvement without making assumptions or generating separate calculations.
- c. Develop a list of any special inspections that are required during the construction.
- d. The completed design documents and required special inspections shall be submitted to the CHE for plan check.

2. PLAN CHECKING

- a. The CHE shall assign the plan checking to another licensed engineer.
- b. The plan checking process shall include complete review of the structure's vertical and lateral load systems.
- c. The plan checker shall review the design documents until he or she is fully satisfied with the capacity of the structure to withstand the required loads.
- d. The plan checker shall forward all comments to the CHE for return to the originator to review and incorporate into the design, as applicable.

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- e. Any unresolved professional design disagreement between the originator and the plan checker shall be resolved by the CHE.

3. DOCUMENTATION

- a. The plan check review documents shall be retained in the Port's archives according to the Port's Document Retention Procedure, for not less than 5 years.
- b. The originator and the plan checker shall sign all structural design documents. When requested by the CHE, the originator and the plan checker shall stamp the design documents indicating their professional review and concurrence with the design.
- b. The final design drawings shall be approved by the CHE.

Panel Chairperson

Date

Edward F. Byrne
Chief Harbor Engineer
Port of San Francisco

Date

Original approved by the Port Commission on 01/01/2008
Update reviewed and approved by J. Aires, Senior Building Inspector 11-08-2010

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PORT CODE PROCEDURE**NO. PCP-0011**

DATE : January 1, 2007

SUBJECT : Construction Site Safety

TITLE : Tower Crane Site Safety Plan

PURPOSE : The purpose of this Port Code Procedure is to detail procedures regarding tower crane safety which comply with the intent of Port Building Code Section 1704.19.

Implementation of the intent of the code requires that a contractor identify the location of proposed crane operations on a Crane Site Safety Plan and agree to comply with tower crane safety regulations; to require the presence of a safety representative during tower crane erection, jumping, and dismantling and to prohibit these operations during typical rush hours; and to require employment of a flag-person to redirect traffic when loads are lifted over public streets and walkways during typical rush hours.

REFERENCE : 2010 Port of San Francisco Building Code Section 1704.19.
Title 8, Occupational Safety and Health Regulations (CAL/OSHA), Tower Cranes re: Requirements for erection, dismantling, operation, tests/examination of equipment and accessory gear.

DISCUSSION : Following a tower crane collapse in November 1989, the State of California passed legislation regulating certain tower crane operations. The San Francisco Board of Supervisors approved an ordinance based on that state legislation, adding a section regarding tower crane safety requirements to the San Francisco Building Code (SFBC).

Crane safety remains under the jurisdiction of Cal/OSHA, which requires an inspection certification prior to and following erection of a tower crane. While the PSF has no authority over, and its employees have no expertise in, the regulation of cranes; the following forms and procedures are developed to administer a level of safety within the Port of San Francisco equal to that of the City's Department of Building Inspection requirements.

DEFINITIONS : For the purposes of this Port Code Procedure, the following definitions apply:

1. Contractor is the building contractor licensed by the State of California responsible for tower crane site safety for the project.
2. Tower crane is a crane in which a boom, swinging jib, or other structural member is mounted on a vertical mast or tower, and includes the following subcategories as defined by Cal/OSHA General Industry Safety Orders, Article 91, 4885(U)(1-4):

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- a. Tower crane (climber) is a crane erected upon and supported by a building or other structure which may be raised or lowered to different floors or levels of the building or structure.
 - b. Tower crane (free standing) is a crane with a horizontally swinging boom which may be on a fixed base or mounted on rails.
 - c. Tower crane (mobile) is a tower crane which is mounted on a crawler, truck or similar carrier for travel or transit.
 - d. Tower crane (self-erector) is a mobile tower crane that is truck-carrier mounted and capable of self-erection.
3. Jumping a crane is the process of increasing the height of a tower crane by raising the cab and inserting a modular section beneath it.

GENERAL REQUIREMENTS:

A Crane Site Safety Plan is to be submitted the Port of San Francisco Engineering Division's Building Permit Group (BPG) prior to issuance of a building permit for the superstructure for any high-rise building site on which a tower crane will be used.

PROCEDURE :

Any new construction permit application submitted for a high-rise construction project shall have a notation made by the plan reviewer regarding the requirements for submittal of a Crane Site Safety Plan. When the contractor confirms that a tower crane will be used, the following procedure is to be followed:

1. The contractor shall provide to the BPG a completed *Crane Site Safety Plan Submittal Form and Crane Safety Compliance Agreement* (Attachment A).
2. The contractor shall indicate on a plan attached to the submittal form the use and location of tower cranes by circling the applicable areas on the plan and by numbering the circled areas according to the corresponding location listed on the form.

Note: A site plan showing what streets will be impacted by the moving, erection, and operation of the tower crane is required by PSF Engineering Encroachment Division in order to obtain a street use permit for crane erection. That site plan can be used as the crane site safety plan by adding the necessary additional information.

3. The contractor shall submit to the BPG two copies of the Crane Site Safety Plan with a Submittal Form and Safety Compliance Agreement attached to each plan.
4. The PSF plan reviewer will review the submittals to determine if all documents comprising the Crane Site Safety Plan are complete and if the Submittal Forms and Safety Compliance Agreements are signed by a California licensed contractor. Incomplete or unsigned documents shall be not be accepted.

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- 5. The PSF shall stamp as "approved" both copies of a properly submitted Crane Site Safety Plan and shall provide one copy to the contractor, which shall be posted by the contractor at the job site.
- 6. The plan reviewer shall attach these documents to the approved construction documents for inclusion in the permanent project record.
- 7. The contractor shall submit to the BPG a copy of a tower crane inspection certificate issued by a Cal/OSHA approved inspection agency following erection of the tower crane and prior to its use. This may be done by mail or in person. This submittal must indicate the permit application or permit number for the project.
- 8. BPG shall include the Cal/OSHA Crane Inspection Certificate as part of the approved construction documents.
- 9. All documents submitted to BPG related to Crane Site Safety shall be included and retained as part of the approved permit documents.

Panel Chairperson	Date	Edward F. Byrne Chief Harbor Engineer Port of San Francisco	Date
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Originally approved by the Port Commission on 01/01/2008
Update reviewed and approved by J. Aires, Senior Building Inspector 11-08-2010

Attachment: Crane Site Safety Plan Submittal Form and Crane Safety Compliance Agreement.

2010 Port of San Francisco Building Code

**CRANE SITE SAFETY PLAN SUBMITTAL FORM
& CRANE SAFETY COMPLIANCE AGREEMENT**

[Attach form to each copy of plans submitted]

Date _____

Site: _____ Permit Application No: _____

Name of Applicant _____ Phone _____

- A. Attached are two (2) copies of a Crane Site Safety Plan which includes the required information, circled and marked with applicable numbers on the Plan:
1. Location of tower crane on the construction site
 2. Location of tower crane in adjoining streets
 3. Location of crane-related designated loading areas
 4. Location of crane-related designated storage areas
 5. Tower crane foundation design and details (may be submitted on separate sheet)
- B. Copy of Cal/OSHA permit for the erection and operation of a crane is attached, and if required, a copy of California crane operator(s) license(s).
- C. Crane is to be used for: Steel erection Concrete placement
 Other: _____
- D. I will comply with all of the following requirements:
1. Applicable CAL/OSHA safety requirements.
 2. Crane manufacturer safety requirements.
 3. Safety representative: I will not allow installing, increasing the height ("jumping"), or dismantling of a crane without a safety representative of the crane manufacturer, distributor, or a representative of a licensed crane certifier being present on site for consultation during all such procedures.
 4. Prohibited hours: I will not allow installing, increasing the height ("jumping"), or dismantling of a crane during the weekday hours (excluding holidays) of 7:00 a.m. to 9:00 a.m. or between the hours of 4:00 p.m. and 6:00 p.m.
 5. Flag person: I will assure that no crane will lift a load over roadways or pedestrian walkways during the hours of 7:00 a.m. through 9:00 a.m. and during the hours of 4:30 p.m. through 7:00 p.m. without a flag person directing the flow of pedestrian and automobile traffic away from the area where the load is being lifted.
- E. I will submit a copy of the crane inspection certificate to PSF - BPG after erection of the crane and prior to its use.

Contractor responsible for Crane Site Safety_____
CA Contractor License No.Received by: _____ Date _____
BPG Plan Reviewer

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PORT CODE PROCEDURE

NO. PCP-013 :

DATE : January 1, 2008

SUBJECT : Inspection

TITLE : Special Inspection for Demolition Work

PURPOSE : For demolition of buildings of Types I, II, III and IV construction, and which are over 2 stories or 25 feet in height, a special inspector shall be on the site to observe and/or supervise the work to assure it is proceeding in a safe manner.

REFERENCE : 2010 Port of San Francisco Building Code

- 1701.1-1701.3; Special Inspection
- 1704.15; Demolition
- 3303.7; Special Inspection for Demolition

DISCUSSION : Demolition work creates ongoing, and often sudden, life hazards. The general requirements for special inspection in PBC Sec. 1704 are made more specific in this ruling to reflect the need for extra supervision of such work.

REQUIREMENT :

The Demolition Contractor or permit applicant shall identify the Special Inspector for demolition work before a demolition permit is issued. For buildings over 6 stories high, the Contractor and/or Special Inspector shall schedule a meeting with the Port of San Francisco Building Inspector to review the demolition work and arrive at a clear understanding on what is expected of all parties prior to the start of work. The Applicant or Demolition Contractor shall notify the Special Inspector and the Port Building Inspector at least two days prior to the start of the demolition operations. By obtaining the permit, the applicant acknowledges the authority of the Special Inspector over the demolition work as described below.

The Special Inspector:

1. Shall be a California registered Civil Engineer or licensed Architect, and preferably, the individual who prepared the approved demolition sequence. Shall be at the site at all times when dismantling or demolition work is proceeding on any component which, when removed, reduces the stability of the building. These include, but are not limited to, the following:
 - a. Exterior walls
 - b. Bearing walls
 - c. Beams, girders and columns
 - d. Diaphragms (roof and floors which contribute stability to building)

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2. Shall observe and/or direct that the work conforms to the sequence of operations which was approved by PSF. In the event a potentially hazardous situation develops as a result of conditions uncovered or unintentionally created by the demolition work, the Special Inspector shall notify PSF by telephone as soon as possible, and at that point shall require and allow only corrective work to take place to substantially reduce the hazards present. The Special Inspector shall then not allow any more work to be done until a revised demolition sequence has been submitted to PSF and approved.

In the event an unexpected development occurs which jeopardizes the public, such as materials falling onto the street or partial collapse of a wall, the Special Inspector may allow the demolition work to continue only if all the following conditions are complied with:

- a. No continuing hazards to the public exist after the incident.
- b. No significant deviations from the approved sequence are necessary as a result of the incident.
- c. The Contractor provides/establishes measures and assurances that such incidents will not occur again, to the satisfaction of the Inspector.
- d. The Special Inspector reports the incident to PSF in writing as soon as possible. The report shall explicitly address the issues in conditions a through c above.

If the above conditions are not met, the Special Inspector shall stop the job and notify PSF. The Special Inspector shall not allow the work to resume until PSF gives permission.

In the event deviations from the approved sequence are necessary due to unexpected field conditions, and potentially hazardous conditions are not present or would not be created, the Special Inspector may allow or direct such deviations be made without stopping the work. Such deviations shall be reported in the Special Inspectors next report to PSF.

3. Shall make written reports to PSF on a weekly basis or as required by PSF. Such reports shall include information on the progress of the demolition, any deviations which were not reported previously, and a statement that the demolition work is adhering to the approved sequence.
4. May be an employee of the Special Inspector only when the following conditions are complied with:
 - a. The employee is a California registered Civil Engineer or licensed Architect.
 - b. The employee shall be under the immediate supervision of the Special Inspector. The Special Inspector shall provide to PSF a written statement in which he acknowledges complete responsibility for the inspection work, actions and decisions of the employee.
 - c. All reports shall be signed by the Engineer or Architect.

Panel Chairperson	Date	Edward F. Byrne Chief Harbor Engineer Port of San Francisco	Date
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Approved by the Port Commission on 01/01/2008
Update reviewed and approved by J. Aires, Senior Building Inspector 11-8-2010

2010 Port of San Francisco Building Code

PORT CODE PROCEDURE

NO. PCP-014 :

DATE : January 1, 2008 (Revised Jan 1, 2011)

SUBJECT : Permit Process; Inspection

TITLE : Special Inspection and Structural Observation Procedures

PURPOSE : The purpose of this Port Code Procedure is to describe the procedures to be used in the administration and enforcement of special inspection and structural observation requirements of the Port of San Francisco Building Code (PBC). It is intended as an aid for design professionals in their preparation of inspection and observation programs. It provides information for building owners, architects and engineers, contractors, and special inspection agencies about their responsibilities regarding special inspection and structural observation and includes standardized forms and formats applicable to these functions.

REFERENCE : - 2010 Port of San Francisco Building Code
 - Section 108A Inspections
 - Chapter 17 Structural Tests and Inspections

I DEFINITION AND PURPOSE:

Special Inspection

Special Inspection is the monitoring of the materials and workmanship that are critical to the integrity of the building structure or public safety. Special inspection is the review of the work of the contractors and their employees to assure that the approved plans and specifications are being followed and that relevant codes and ordinances are being observed. The special inspection process is in addition to the regular inspections conducted by Port of San Francisco building inspectors and by the engineer or architect of record as part of periodic structural observation. The special inspectors furnish continuous or periodic inspection as required by the Port of San Francisco Building Code.

Good communication between the special inspector and the designers, contractor, and building department is essential to project quality assurance.

Structural Observation

Structural Observation means the visual observation of the structural system, for general conformance to the approved plans and specifications, at significant construction stages and at completion of the structural system. Structural observation does not include or waive the responsibility for the inspections required by Section 108A, Sections 1704 through 1708, and other sections of this code.

II DUTIES AND RESPONSIBILITIES OF THE PARTIES RESPONSIBLE FOR SPECIAL INSPECTION PROGRAM AND STRUCTURAL OBSERVATION PROGRAM

A. Duties and Responsibilities of the Project Owner

The project owner, or the registered design professional in responsible acting as the owner's agent, is responsible for funding special inspection services.

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B. Duties and Responsibilities of the registered design professional in responsible charge

The registered design professional in responsible charge must be a California registered civil or structural engineer and has many duties and responsibilities related to special inspection and structural observation activities. These include the following:

1. Identify the need for special inspection and structural observation services.

The registered design professional in responsible charge prepares *Statement of Special Inspections* (See Exhibit No. 1, minimum size 11" x 17) in accordance with section 1704.1.1 of the PBC. The Statement of Special Inspection shall be attached to each set of project plans and specifications which are submitted to the Chief Harbor Engineer as part of building permit application.

2. Review reports from special inspection agencies/special inspectors/structural observer and respond to field discrepancies

The registered design professional reviews all structural observation and special inspection reports. Material and design discrepancies which are not resolved in a timely manner or are about to be incorporated in the work must be brought to the attention of the registered design professional in responsible charge and the Chief Harbor Engineer. Uncorrected field deficiencies observed by the special inspector and structural observer must be brought to their attention. The registered design professional in responsible charge is instrumental in effecting the remedial process of deficiency correction. The registered design professional in responsible charge is responsible for any design changes in addition to acknowledgment and approval of shop drawings which may detail structural information, and for submission of such changes to the Chief Harbor Engineer for approval.

3. Submit final compliance report

The registered design professional in responsible charge shall submit an overall final compliance report to plan review engineer stating that all items requiring special inspection and structural observation were performed in accordance with the approved plans, specifications, and applicable workmanship provisions of the PBC. See Exhibit No. 1A, *Special Inspection Review and Conformance Certification*,

C. Duties and responsibilities of the registered design professional responsible for the structural observation program

The owner shall employ a California registered design professional (Civil or Structural) to perform structural observation as defined in PBC Section 1702 and as required by PBC Section 1710. The registered design professional assigned to perform structural observation shall submit to the plan review engineer and the registered design professional in responsible charge, a written statement declaring that the site visits have been made and identifying any reported deficiencies that, to the best of the his/her knowledge, have not been resolved. See Exhibit No. 3 - *Special Observation Final Compliance Report*. A copy of this report shall be maintained at the job site.

D. Duties and Responsibilities of the Special Inspection Agencies/Special Inspectors

The special inspectors are individuals with highly developed, specialized skills who observe those critical building or structural features which they are qualified to inspect. Duties of the special inspectors and/or inspection agencies include the following:

1. Observe all work for which they are responsible

Special inspectors shall inspect all work for conformance with the Port of San Francisco approved set of plans and specifications and applicable provisions of the PBC.

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2. Provide timely reports

The special inspector should complete written inspection reports for each inspection visit and provide the reports in a timely manner. The special inspector or inspection agency shall furnish these reports directly to the plan review engineer and the registered design professional in responsible charge. A copy of these reports shall also be kept at job site. Special inspectors shall bring all non-conforming items to the immediate attention of the contractor. If any such item is not resolved in a timely manner or is about to be incorporated in the work, the registered design professional in responsible charge and the plan review engineer shall be notified immediately. See Exhibit Nos. 5 to 8.

3. Submit a final signed report

Special inspectors or special inspection agencies shall submit a final report signed by a California registered design professional (civil or structural), who is responsible for the special inspection, to the plan review engineer and the registered design professional in responsible charge stating that all items requiring special inspection and testing were constructed, to the best of their knowledge, in conformance with the approved design drawings, specifications, approved change orders and the applicable provisions of the code. See Exhibit No. 2 - *Special Inspection Final Compliance Report*.

E. Duties and Responsibilities of the Chief Harbor Engineer

1. Review and examine plans, specifications and contract documents for compliance with special inspection and structural observation requirements

The Chief Harbor Engineer is charged with the legal authority to review the plans and specifications for compliance with the code requirements.

2. Monitor the special inspection and structural observation activities

The Chief Harbor Engineer shall monitor the job site to see that special inspection and structural observation is being performed and that an adequate number of special inspection staff is present depending upon the extent and complexity of the project.

3. Review inspection reports

The Chief Harbor Engineer receives, reviews and makes the inspection reports part of the inspection records.

4. Review the final report

The Certificate of Occupancy shall not be issued until the final report has been received and approved by the Chief Harbor Engineer.

F. Duties and Responsibilities of the Contractor

The contractor's duties include the following:

1. Notify the special inspector

The contractor is responsible for notifying the special inspector or special inspection agency regarding special inspections required by the Port of San Francisco. Adequate notice shall be provided so that the special inspector has time to become familiar with the project.

2. Provide access to approved plans

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The contractor is responsible for providing the special inspector with access to approved plans at the job site.

3. Retain special inspection records

The contractor is responsible for retaining at the job site all special inspection records submitted by the special inspector, and providing these records for review by the Port of San Francisco building inspector upon request.

III SPECIAL INSPECTOR QUALIFICATIONS: [SFBC Sec. 1704.1]

Special Inspectors shall be one of the following:

- A. A qualified person employed by the City and County of San Francisco or an approved inspection and testing agency conforming in so far as applicable to the requirements of ASTM E329.

Except for testing of materials and reporting of numerical results, the inspector shall work under the general supervision of a registered design professional, and all reports and certification of compliance must be signed by the engineer.

- B. A California registered design professional (civil or structural) or California licensed architect who can demonstrate to the satisfaction of the Chief Harbor Engineer that he or she has the experience and expertise to qualify as a special inspector for the specific type of inspection work, and has appropriate equipment to conduct such inspections and tests.

Note: The above applies to any engineer or architect who is not the registered design professional or architect responsible for the project. Qualifications must be approved by the Chief Harbor Engineer.

- C. The licensed architect or registered design professionals (civil or structural) who are responsible for work.

Note: The registered design professional who is responsible for geotechnical investigation work or who prepared the soil report may perform the special inspection of foundation or geotechnical work requiring special inspection.

- D. For plant fabrication of precast concrete elements, a registered civil engineer who supervises all phases of quality control work. The registered civil engineer shall be subject to the approval of the Chief Harbor Engineer.
- E. For welding, the welding inspector shall be qualified as per/AWS D1.1. The minimum requirements for a qualified welding inspector shall be AWS- certified welding inspector (CWI), as defined in the provisions of the AWS QCI.

IV SPECIAL INSPECTION AND STRUCTURAL OBSERVATION OPERATIONAL PROCEDURE WITHIN ENGINEERING DIVISION'S BUILDING PERMIT GROUP (BPG)

- A. BPG - Plan Review Engineers and Building Inspectors

1. Review the special inspection and structural observation requirements in *Statement of Special*

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Inspection (Exhibit no. 1) prepared by the registered design professional in responsible charge.

2. During construction, the plan review engineer reviews and files special inspection progress reports. If reports indicate problems which need to be brought to the attention of the building inspector, the plan review engineer forwards a copy of the report to the appropriate building inspector. The building inspector will notify the contractor who in turn shall notify the registered design professional in responsible charge to resolve the field problems. Resolution reports shall be submitted to plan review engineer for review and file. See Exhibit No. 4, *Special Inspection/Structural Observation Transmittal Letter*.

3. Before final building inspection approval, the owner submits to the plan review engineer final compliance reports covering each item requiring special inspection and structural observation. Final reports shall be wet signed and stamped by the responsible engineer of the special inspection agency, geotechnical firm, engineer or architect of record - as appropriate to the type(s) of special inspection. See Exhibit No. 2, *Special Inspection Final Compliance Report* and Exhibit No. 3, *Structural Observation Final Compliance Report*. The final compliance reports shall be accompanied by an overall final compliance report prepared by the registered design professional in responsible charge. See Exhibit No. 1A, *Special Inspection Review and Conformance Certification*.

4. When final reports are submitted, the plan review engineer will review the documents for compliance and completeness. If documentation is not sufficient, plan review engineer informs the registered design professional in responsible charge regarding what items are missing. If compliance has been verified, plan review engineer signs and dates Special Inspection and Structural Observation Program form.

5. Plan review engineer files the final compliance approval in the Special Inspection file.

6. Plan review engineer routes a copy of the signed Special Inspection and Structural Observation Program form to the building inspector. Building inspector records receipt of the form on the permit Job Card and routes the form to the permit file.

7. For permits issued over the counter when special inspection is required, staff makes copy of the Special Inspection and Structural Observation Form and distributes as follows:

- a. One copy to applicant,
- b. One copy to the plan review engineer.

B. Building Inspection

1. For projects requiring special inspection, at the first site inspection, building inspectors inform the applicant or applicant's agent of the Special Inspection procedures and discuss the requirements with the person in charge of the work. The Special Inspector shall be identified to building inspector prior to start of the work for which special inspection is required. See Exhibit No. 10, Notice - *Special Inspection Requirements and Structural Observation Requirements*.

2. Building inspectors monitor the special inspection activities at the project site for compliance with this procedure. In the event that building inspectors discover that required special inspection is not being performed, or not in compliance with the approved plans, they are authorized to suspend or stop the progress of the work.

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ATTACHMENTS:

- 1. Exhibit No. 1-Statement of Special Inspections
- 1A-Exhibit No. 1A-Special Inspection Review and Conformance Certification
- 2. Special Inspection Final Compliance Report
- 3. Structural Observation Final Compliance Report
- 4. Special Inspection/Structural Observation Transmittal Letter
- 5. Special Inspection Record
- 6. Special Inspection Daily Report
- 7. Special Inspection Weekly Report
- 8. Special Inspection Discrepancy Notice

Panel Chairperson

Date

Edward F. Byrne
Chief Harbor Engineer
Port of San Francisco

Date

Originally Approved by the Port Commission on 01/01/2008
Update reviewed and approved by J. Aires, Senior Building Inspector 11-29-2010

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**Exhibit No. 1
Statement of Special Inspections**

ADDRESS _____

PERMIT NO. _____

This Statement of Special Inspections is submitted in fulfillment of the requirements of CBC Sections 1704 and 1705. Included are:

- Schedule of Special Inspections and tests applicable to this project:
 - Special Inspections per Sections 1704 and 1705
 - Special inspections for Seismic Resistance
 - Special inspections for Wind Resistance
- List of the Testing Agencies and other special inspectors that will be retained to conduct the tests and inspections.

Special Inspections and Testing will be performed in accordance with the approved plans and specifications, this statement and PBC (CBC) Sections 1704, 1705, 1707, and 1708.

The Schedule of Special Inspections summarizes the Special Inspections and tests required. Special Inspectors will refer to the approved plans and specifications for detailed special inspection requirements. Any additional tests and inspections required by the approved plans and specifications will also be performed.

Interim reports will be submitted to the Chief Harbor Engineer and the Registered Design Professional in Responsible Charge in accordance with PBC (CBC) Section 1704.1.2.

A Final Report of Special Inspections documenting required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Final Completion and Occupancy (Section 109A.1, 109A.3, 1704.1.2). A Certificate of Temporary Occupancy (Section 109A.4) may be issued with written approval of the Chief Harbor Engineer. The Final Report will document:

- Required special inspections.
- Correction of discrepancies noted in inspections.

The Owner recognizes his or her obligation to ensure that the construction complies with the approved permit documents and to implement this program of special inspections. In partial fulfillment of these obligations, the Owner will retain and directly pay for the Special Inspections as required in CBC Section 1704.1.

This plan has been developed with the understanding that the Chief Harbor Engineer will:

- Review and approve the qualifications of the Special Inspectors who will perform the inspections.
- Monitor special inspection activities on the job site to assure that the Special Inspectors are qualified and are performing their duties as called for in this Statement of Special Inspection.
- Review submitted inspection reports.
- Perform inspections as required by the local building code.

Prepared by:		<u>Owner's Authorization</u>	
Registered Design Professional in Responsible Charge (Print Name):		Owner (print name)	
Signature	Date	Signature	Date
<u>Plan Review Engineer Acceptance</u>			
(print name)		Signature	Date

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Exhibit no. 1 continued

Schedule of Inspection, Testing Agencies, and Inspectors

The following are the testing agencies and special inspectors that will be retained to conduct tests and inspection on this project.

Responsibility	Firm (or Registered Professional)	Address, Telephone, e-mail
1. Special Inspection (except for geotechnical)		
2. Material Testing		
3. Geotechnical Inspections		
4.		
5. Structural Observation	<i>To Be Determined</i>	

Seismic Requirements (Section 1705.3.1)

Description of seismic-force-resisting system and designated seismic systems subject to special inspections as per Section 1705.3:

The extent of the seismic-force-resisting system is defined in more detail in the construction documents.

Wind Requirements (Section 1705.4.1)

Description of main wind-force-resisting system and designated wind resisting components subject to special inspections in accordance with Section 1705.4.2:

The extent of the main wind-force-resisting system and wind resisting components is defined in more detail in the construction documents.

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Exhibit No. 1 continued:

SCHEDULE OF SPECIAL INSPECTION

Notation Used in Table:

Column headers:

- C Indicates continuous inspection is required.
- P Indicates periodic inspections are required. The notes and or contract documents should clarify.

Box entries:

- X Is placed in the appropriate column to denote either “C” continuous or “P” periodic inspections.
- Denotes an activity that is either a one-time activity or one whose frequency is defined in some other manner.
- * **√ Required**

Additional detail regarding inspections and tests are provided in the project specifications or notes on the drawings.
This table is a guide only. It can be modified or edited as allowed in Port of San Francisco Building Code.

VERIFICATION AND INSPECTION	C	P	NOTES	*
1704.2.1 - Inspect fabricator’s fabrication and quality control procedures.	---	---		
Table 1704.3 - Steel				
1. Material verification of high-strength bolts, nuts, and washers.				
a. Identification markings to conform to ASTM standards specified in the approved construction documents.		X		
b. Manufacturer’s certificate of compliance required.		X		
2. Inspection of high-strength bolting:				
a. Snug-tight joints		X		
b. Pretensioned and slip-critical joints using turn-of-nut with matchmarking, twist-off bolt or direct tension indicator methods of installation.		X		
c. Pretensioned and slip-critical joints using turn-of-nut without matchmarking or calibrated wrench methods of installation.	X			
3. Material verification of structural steel and cold-formed steel deck:				
a. For structural steel, identification markings to conform to AISC 360.		X		
b. For other steel, identification markings to conform to ASTM standards specified in the approved construction documents.		X		
c. Manufacturer’s certified test reports.		X		
4. Material verification of weld filler materials:				
a. Identification markings to conform to AWS specification in the approved construction documents.		X		

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VERIFICATION AND INSPECTION	C	P	NOTES	*
b. Manufacturer's certificate of compliance required.		X		
5. Inspection of welding: A) Structural steel and cold-formed steel deck				
1) Complete and partial penetration groove welds.	X			
2) Multipass fillet welds.	X			
3) Single-pass fillet welds > 5/16".	X			
4) Plug and slot welds.	X			
4) Single-pass fillet welds ≤ 5/16".		X		
5) Floor and roof deck welds.		X		
Inspection of welding: B) Reinforcing steel				
1) Verification of weldability of reinforcing steel other than ASTM A706.		X		
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special reinforced concrete shear walls, and shear reinforcement.	X			
3) Shear reinforcement.	X			
4) Other reinforcing steel		X		
6. Inspection of steel frame joint details for compliance:				
a. Details such as bracing and stiffening.		X		
b. Member locations.				
c. Application of joint details at each connection.				
1704.3.4 – Cold-formed steel trusses spanning 60 feet or greater.	---			
Table 1704.4 – Concrete				
1. Inspection of reinforcing steel, including prestressing tendons and placement.		X		
2. Inspection of reinforcing steel welding in accordance with Table 1704.3 Item 5b.	---	---		
3. Inspection of bolts to be installed in concrete prior to and during placement of concrete where strength design is used.	X			
4. Inspection of anchors installed in hardened concrete.		X		
5. Verifying use of required design mix.		X		
6. At time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests and determine the temperature of the concrete.	X			
7. Inspection of concrete and shotcrete placement for proper application techniques.	X			
8. Inspection for maintenance of specified curing temperature and techniques.		X		

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VERIFICATION AND INSPECTION	C	P	NOTES	*
9. Inspection of prestressed concrete.				
a. Application of prestressing forces.	X			
b. Grouting of bonded prestressing tendons in the seismic force-resisting system.	X			
10. Erection of precast concrete members.		X		
11. Verification of in-situ concrete strength, prior to stressing of tendons in posttensioned concrete and prior to removal of shores and forms from beams and structural slabs.		X		
12. Inspect formwork for shape, location, and dimensions of the concrete member being formed.		X		
Table 1704.5.1 - Level 1 Masonry Inspections.				
1. Compliance with required inspection provisions of the construction documents and the approved submittals shall be verified.		X		
2. Verification of f'_m and f'_{AAC} prior to construction except where specifically exempted by this code.		X		
3. Verification of slump flow and VSI as delivered to the site for self-consolidating grout.	X			
4. At the start of masonry construction verify the following to ensure compliance:				
a. Proportions of site-prepared mortar.		X		
b. Construction of mortar joints.		X		
c. Location of reinforcement, connectors, prestressing tendons, and anchorages.		X		
d. Prestressing technique.		X		
e. Grade and size of prestressing tendons and anchorages.		X		
5. During construction the inspection program shall verify:				
a. Size and location of structural elements.		X		
b. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames or other construction.		X		
c. Specified size, grade, and type of reinforcement, anchor bolts, prestressing tendons and anchorage.		X		
d. Welding of reinforcing bars.	X			
e. Preparation, construction, and protection of masonry during cold weather (temperature below 40 degrees F) or hot weather (temperature above 90 degrees F)		X		
f. Application and measurement of prestressing force.	X			
6. Prior to grouting verify the following to verify compliance.				
a. Grout space is clean.		X		
b. Placement of reinforcement and connectors and prestressing tendons and anchorages.		X		

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VERIFICATION AND INSPECTION	C	P	NOTES	*
c. Proportions of site-prepared grout and prestressing grout for bonded tendons.		X		
d. Construction of mortar joints.		X		
7. Grout placement shall be verified to ensure compliance:	X			
a. Grouting of prestressing bonded tendons.	X			
8. Preparation of any required grout specimens, mortar specimens and/ or prisms shall be observed.		X		
Table 1704.5.3 - Level 2 Masonry Inspections				
1. Compliance with required inspection provisions of the construction documents and the approved submittals.		X		
2. Verification of f'_m and f'_{AAC} prior to construction and for every 5,000 square feet during construction.		X		
3. Verification of proportions of materials in premixed or preblended mortar and grout as delivered to the site.		X		
4. Verification of slump flow and VSI as delivered to the site for self-consolidating grout.	X			
5. The following shall be verified to ensure compliance:				
a. Proportions of site-prepared mortar, grout, and prestressing grout for bonded tendons.		X		
b. Placement of masonry units and construction of mortar joints.		X		
c. Placement of reinforcement, connectors and prestressing tendons and anchorages.		X		
d. Grout space prior to grout.	X			
e. Placement of grout.	X			
f. Placement of prestressing grout.	X			
g. Size and location of structural elements.		X		
h. Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames and other construction.	X			
i. Specified size, grade, and type of reinforcement, anchor bolts, prestressing tendons, and anchorages.		X		
j. Welding of reinforcing bars.	X			
k. Protection of masonry during cold weather (temperature below 40 degrees F) or hot weather (temperature above 90 degrees F).		X		
l. Application and measurement of prestressing force.	X			
6. Preparation of any required grout specimens, mortar specimens, and/or prisms shall be observed.	X			

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VERIFICATION AND INSPECTION	C	P	NOTES	*
1704.6 - Inspect prefabricated wood structural elements and assemblies in accordance with Section 1704.2	---	---		
1704.6 - Inspect site built assemblies.	---	---		
1704.6.1 - Inspect high-load diaphragms:				
1. Verify grade and thickness of sheathing.	---	---		
2. Verify nominal size of framing members at adjoining panel edges.	---	---		
3. Verify: a. Nail or staple diameter and length, b. Number of fastener lines, c. Spacing between fasteners in each line and at edge margins.	---	---		
Table 1704.7 - Inspection of Soils				
1. Verify materials below shallow foundations are adequate to achieve the desired bearing capacity.		X		
2. Verify excavations are extended to proper depth and have reached proper material.		X		
3. Perform classification and testing of compacted fill materials.		X		
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X			
5. Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly.		X		
Table 1704.8 - Driven Deep Foundations				
1. Verify element materials, sizes and lengths comply with the requirements.	X			
2. Determine capacities of test elements and conduct additional load tests, as required.	X			
3. Observe driving operations and maintain complete and accurate records for each element.	X			
4. Verify placement locations of piles and their plumbness. a. Confirm type and size of hammer. b. Record number of blows per foot of penetration. c. Determine required penetrations to achieve design capacity. d. Record tip and butt elevations and document any damage to foundation element.	X			
5. For steel elements, perform additional inspections in accordance with Section 1704.3.	---	---		
6. For concrete elements and concrete-filled elements, perform additional inspections in accordance with Section 1704.4.	---	---		
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge.	---	---		

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VERIFICATION AND INSPECTION	C	P	NOTES	*
Table 1704.9 - Cast-In-Place Deep Foundations				
1. Observe drilling operations and maintain complete and accurate records for each element.	X			
2. Verify locations of piers and their plumbness. Confirm: a. Element diameters, b. Bell diameters (if applicable), c. Lengths, embedment into bedrock (if applicable), d. Adequate end strata bearing capacity. Record concrete or grout volumes.	X			
1704.12 - Sprayed Fire-Resistant Materials				
1. Inspect surface for accordance with the approved fire-resistance design and the approved manufacturer's written instructions.	---	---		
2. Verify minimum ambient temperature before and after application.	---	---		
3. Verify ventilation of area during and after application.		X		
4. Measure thickness per ASTM E605 and Section 1704.12.4.2 and 1704.12.4.3..	---	---		
5. Verify density of material for conformance with the approved fire-resistant design and ASTM E605.	---	---		
6. Test cohesive/adhesive bond strength per Section 1704.12.6.	---	---		
1704.13 - Mastic and Intumescent Fire-Resistant Coating	---	---		
1704.14 - Exterior Insulation and Finish Systems (EIFS)	---	---		
1704.15 - Alternate Materials and Systems	---	---		
1704.16 - Smoke Control System	---	---		
1705.3 - Seismic Resistance				
1705.3.4 - Suspended ceiling systems and their anchorage.	---	---		
1705.4.1 Wind Requirements				
1705.4.2	---	---		
1. Roof cladding and roof framing connections.	---	---		
2. Wall connections to roof and floor diaphragms and framing.	---	---		
3. Roof and floor diaphragm systems, including collectors, drag struts and boundary elements	---	---		
4. Vertical wind-force-resisting systems, including braced frames, moment frames, and shear walls.	---	---		
5. Wind-force-resisting system connections to the foundation.	---	---		

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VERIFICATION AND INSPECTION	C	P	NOTES	*
6. Fabrication and installation of systems or components required to meet the impact resistance requirements of Section 1609.1.2.	---	---		
Special Inspections for Seismic Resistance				
1707.2 - Special inspection for welding in accordance with AISC 341.	X			
1707.3 - Structural Wood				
1. Inspect field gluing operations of elements of the seismic-force-resisting system.	X			
2. Inspect nailing, bolting, anchoring, and other fastening of components within the seismic-force-resisting system, including: <ol style="list-style-type: none"> wood shear walls, wood diaphragms, drag struts, braces, shear panels, hold-downs. 		X		
1707.4 - Cold-Formed Steel Framing				
1. Welding of elements of the seismic-force-resisting system.		X		
2. Inspection of screw attachments, bolting, anchoring, and other fastening of components within the seismic-force-resisting system including shear walls, braces, diaphragms, collectors (drag struts) and hold-downs.		X		
1707.5 - Anchorage of storage racks and access floors 8 feet or greater in height.		X		
1707.6 - Architectural Components				
1. Inspect erection and fastening of exterior cladding weighing more than 5 psf.		X		
2. Inspect erection and fastening of interior and exterior non-bearing walls weighing more than 15 psf.		X		
3. Inspect erection and fastening of interior and exterior veneer weighing more than 5 psf.		X		
1707.7 - Mechanical and Electrical Components				
1. Inspect anchorage of electrical equipment for emergency or stand-by power systems in structures assigned to Seismic Design Category C, D, E, or F.		X		
2. Inspect anchorage of non-emergency electrical equipment in structures assigned to Seismic Design Category E or F.		X		
3. Inspect installation of piping systems and associated mechanical units carrying flammable, combustible, or highly toxic contents and their associated mechanical units in structures assigned to Seismic Design Category C, D, E or F.		X		
4. Inspect installation of HVAC ductwork that contains hazardous materials in structures assigned to Seismic Design Category C, D, E or F.		X		

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VERIFICATION AND INSPECTION	C	P	NOTES	*
5. Inspect installation of vibration isolation systems where required by Section 1707.7.		X		
1707.8 - Verify that the equipment label and anchorage or mounting conforms to the certificate of compliance when mechanical and electrical equipment must be seismically qualified.	---	---		
1707.9 - Seismic isolation system: Inspection of isolation system per ASCE 7 – Section 17.2.4.8		X		
1708.2 - Obtain mill certificates for reinforcing steel, verify compliance with approved construction documents, and verify steel supplied corresponds to certificate. Testing and qualification for seismic resistance of concrete reinforcement per Section 1708.1.	---	---		
1708.3 - Structural Steel: Invoke the QAP Quality Assurance requirements in AISC 341. Testing and qualification for seismic resistance of structural steel per Section 1708.1.	---	---		
1708.4 - Obtain certificate that equipment has been tested per Section 1708.5. Testing and qualification for seismic resistance of nonstructural components per Section 1708.1.	---	---		
1708.6 - Obtain system tests as required by ASCE 7 Section 17.8. Testing and qualification for seismic resistance of seismically isolated structures per Section 1708.1.	---	---		
<i>Please list any additional requirements below</i>				

Schedule of Structural Observation (Section 1710):

Item	By	Comments	*
Seismic resistance			
Wind requirements			
<i>Please list any additional requirements</i>			
<i>Please list any additional requirements</i>			

Exhibit No. 1A
(Required Format)
SPECIAL INSPECTION REVIEW AND CONFORMANCE CERTIFICATION

[Date]

Plan Review Engineer
Port of San Francisco Engineering Division
Building Permit Group
Pier 1, The Embarcadero
San Francisco, CA 94111

Building Permit No. _____

Re: Project Address: _____

All items requiring special inspection and structural observation were performed in accordance with Exhibit No. 1 and the approved plans, specifications, and applicable workmanship provisions of the PBC. Substantiating reports are attached in Exhibits 2, 3, 5, 6, 7 and 8.

By Registered Design Professional In Responsible Charge

Signed: _____ Date: _____

Print full name: _____

cc: Client/Project Owner

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Exhibit No. 2
(Required Format)
SPECIAL INSPECTION FINAL COMPLIANCE REPORT

[Date]

Plan Review Engineer
Port of San Francisco Engineering Division
Building Permit Group
Pier 1, The Embarcadero
San Francisco, CA 94111

Building Permit No. _____

Re: Project Address: _____

In accordance with Section 1704 of the 2010 Port of San Francisco Building Code, Special Inspection has been provided for items as specified in the Statement of Special Inspections (Exhibit No. 1):

Based upon inspections performed and my substantiating reports, it is my professional judgment that, to the best of my knowledge, the inspected work was performed in accordance with the approved plans, specifications, and applicable workmanship provisions of the Port of San Francisco Building Code.

Signed: _____ Agency: _____
[Agency Responsible Engineer's stamp]

Print full name: _____

cc: Client/Project Owner

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Exhibit No. 3
(Required Format)
STRUCTURAL OBSERVATION FINAL COMPLIANCE REPORT

[Date]

Plan Review Engineer
Port of San Francisco Engineering Division
Building Permit Group
Pier 1, The Embarcadero
San Francisco, CA 94111

Building Permit No. _____

Re: Project Address: _____

In accordance with Section 1710 of the 2010 Port of San Francisco Building Code, I have provided structural observation for the following items:

Based upon inspections performed and my substantiating reports, it is my professional judgment that, to the best of my knowledge, the observed structural work was performed in accordance with the approved plans, specifications, and applicable workmanship provisions of the Port of San Francisco Building Code.

By Registered Design Professional:

Signed: _____ Date: _____

Print full name: _____

cc: Client/Project Owner

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Exhibit No. 4
(Required Format)

Special Inspection/Structural Observation
Transmittal Letter

From: _____
Plan Review Engineer

Phone: 415 - 274- _____

To: _____
PSF Building Inspector

Building Permit No. _____

Re: Project Address: _____

The attached special inspection/structural observation report(s) show(s) discrepancies:

- Contact plan checker for discussion on proposed action
- Issue correction notice to resolve discrepancy(s)
- Stop work in the area(s) of discrepancy(s)
- Stop all work. Conference with Chief Harbor Engineer or Senior Building Inspector Required
- Other: _____

All final reports were received and are acceptable. Final inspection may be scheduled.

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Exhibit No. 6
(Recommended for Format Purpose only)
SPECIAL INSPECTION DAILY REPORT

Building Permit No. _____ Date _____

Project Name/Address: _____

Inspection Type(s)/Coverage: _____

Continuous Periodic; frequency: _____

Inspections made, including locations: _____

Tests performed: _____

Items requiring 1) Correction, 2) Correction of previously listed items, and 3) Previously listed uncorrected items: _____

Changes to approved plans authorized by engineer or architect of record: _____

Comments: _____

To the best of my knowledge, work inspected was in accordance with the Port of San Francisco approved plans, specifications, and applicable workmanship provisions of the PBC except as noted above.

Special Inspector: _____

Inspection Agency: _____

Exhibit No. 7
(Recommended for Format Purpose only)

SPECIAL INSPECTION WEEKLY REPORT

Building Permit No. _____

Project Name/Address: _____

Inspection Type(s)/Coverage: _____

Continuous Periodic; frequency: _____

Total Inspection Time Each Day

Date:						
Hours:						
Inspector:						

Inspections made, including locations: _____

Tests performed: _____

Items requiring 1) Correction, 2) Correction of previously listed items, and 3) Previously listed uncorrected items:

Changes to approved plans authorized by engineer or architect of record: _____

Comments: _____

To the best of my knowledge, work inspected was in accordance with the Port of San Francisco approved plans, specifications, and applicable workmanship provisions of the PBC except as noted above.

cc: Port Plan Review Engineer
Engineer/Architect

2010 Port of San Francisco Building Code

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PORT CODE PROCEDURE

NO. PCP-016 :
DATE : January 1, 2008
SUBJECT : Bi-Annual Permit - Port Maintenance Division (Section 106A.1.3)
TITLE : Procedures for Processing Bi-Annual Port Maintenance Permits (Reserved)

PURPOSE :

REFERENCE :

DISCUSSION :

Panel Chairperson

Date

Edward F. Byrne
Chief Harbor Engineer
Port of San Francisco

Date

Originally Approved by the Port Commission on 01/01/2008
Update reviewed and approved by J. Aires, Senior Building Inspector 11-08-2010

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2010 Port of San Francisco Building Code

PORT CODE PROCEDURE

NO. PCP-17 :

DATE : **03/23/2010**

SUBJECT : **Permit Application Procedure for Flood Prone Areas**

TITLE : **Port Variance Procedure for Flood Prone Areas**

PURPOSE : To provide a procedure for processing building permit applications for proposed work in properties in designated flood prone areas.

REFERENCE : PBC Section 104A Organization and Enforcement
 PBC Section 104A.1 Enforcement Agency
 PBC Section 104A.2 General
 PBC Section 104A.2.1.1 Floodplain Management
 PBC Section 104A.2.1.2 Floodplain Variance
 PBC Section 105A Port Building Code Review Board
 PBC Section 109A.3 Certificate Issued
 PBC Section 1612.6 Alternate Flood Provisions

DISCUSSION :

The Port Building Code (PBC) incorporates the City and County of San Francisco Floodplain Management Ordinance at Section 104A.2.1.1 and provides for engineering standards in Chapter 16. PBC Section 104A.2.1.2 permits variances from requirements for new construction and substantial improvements of existing facilities in identified flood prone areas. The Chief Harbor Engineer, per/ PBC Section 104A.2.2, has the authority to hear, review and determine, on a case by case basis, if a specific variance is to be granted for property located within the jurisdiction of the Port.

The variance criteria in this procedure apply only to parcels, buildings and structures located in flood prone areas per 1612.3. The need to protect persons and property from flooding requires that variance standards are strictly interpreted and enforced. Variances will be considered only in exceptional cases. The variance criteria will provide the Chief Harbor Engineer with information to determine whether an alternative other than a variance may be appropriate. The Chief Harbor Engineer will approve a variance only after detailed requirements are identified and incorporated into the design. The Chief Harbor Engineer will not issue a building permit for a substantial improvement requiring a variance from PBC Section 104A.1.3 or 1612 until after the variance is approved.

CRITERIA :

In the request for a variance, the applicant shall submit to the Chief Harbor Engineer for review:

1. Applicant's written analysis and conclusions regarding all technical aspects, evaluations, relevant factors, standards, engineering and construction options, and PBC requirements applicable to the proposed improvement;
2. A California licensed engineer's written analysis of: (a) whether the improvement is likely to cause any imminent or substantial danger that materials may be swept onto other lands due to

2010 Port of San Francisco Building Code

3. flooding or erosion, whether the improvement causes any imminent or substantial danger to life and/or property due to flooding or erosion damage; and (c) the expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site and the expected effects of such forces or loads to the proposed improvement or facility;
4. The significance of the proposed improvement or facility in providing important services or public benefits to the community;
5. The necessity of a waterfront location to the structure;
6. The ability of the proposed improvement or facility to ensure continuous safe access to the site for vehicles (emergency and non-emergency) in time of flood; and
7. A detailed cost analysis of providing governmental services to the site during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas electrical, and water systems, and streets and bridges.

ISSUANCE :

- A. Variances shall only be issued if the Chief Harbor Engineer's determines, based upon required submittals, that:
 1. The applicant has demonstrated good and sufficient reason for the requested variance;
 2. Failure to grant the variance would result in exceptional hardship to the applicant; and
 3. Granting the requested variance would not result in increased flood heights, additional threats to public safety, or extraordinary public expense, create a nuisance, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.

In furtherance of the purpose of PBC Section 104A.2.1.1, Section 104A.2.1.2, Chapter 16 and this Port Code Procedure, the Chief Harbor Engineer may attach additional conditions when granting variances.

CONSIDERATIONS :

- A. Generally, variances may be issued for structures in flood prone areas, including facilities located seaward of the reach of mean high tide, providing that the structure is adequately connected to the pier deck, the pier deck is above the Base (100-year) Flood Elevation noted in the PBC, if denial would cause other hardships, such as re-use of existing pier-supported facilities located over the water where structural elements may protrude below FEMA/ASCE 24-05 prescribed elevations but are determined sound and compliant with PBC Flood Load provisions through engineering analysis reviewed and approved through the Port Plan Check review process.
- B. Variances shall only be issued upon the Chief Harbor Engineer's determination that the variance is the minimum necessary to afford relief. "Minimum necessary" means a minimum of deviation from the PBC requirements.
- C. Any variance granted under this procedure will be evidenced by a written document signed by the Chief Harbor Engineer.

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APPEALS :

Appeals from the Chief Harbor Engineer's determination concerning any variance shall be heard and decided by the Port Building Code Review Board in accordance with Port Building Code Section 105A.

_____	_____	_____	_____
Panel Chairperson	Date	Edward F. Byrne Chief Harbor Engineer Port of San Francisco	Date

Originally approved by the Port Commission on 5/25/2010
Update reviewed and approved by J. Aires, Senior Building Inspector 11-8-2010

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2010 Port of San Francisco Building Code

PORT CODE PROCEDURE

NO. PCP-018	:	
DATE	:	January 1, 2011
SUBJECT	:	Solar Energy Permitting Procedures for Solar Photovoltaic Systems
TITLE	:	Solar Energy Application Package – Photovoltaic (SEA-PAC PV)

PURPOSE	:	In an effort to promote consistent standards to achieve a timely, cost-effective process for reviewing solar energy building permit application submittals; this standardized Solar Energy Application Package for Photovoltaic Systems (SEA-PAC PV) procedure has been developed for roof mounted PV systems within the jurisdiction of the Port of San Francisco. Through this procedure, the Chief Harbor Engineer directs Engineering staff to route and review building permit applications that meet the detailed requirements of a SEA-PAC PV submittal in front of all other applications for an immediate review at minimum costs and requests all Port divisions to expedite the applications in the same manner.
REFERENCE	:	California Government Code Section 6580.5
DISCUSSION	:	California Legislature has determined through CA Section 6580.5 that energy conservation and the promotion of solar energy systems is a state wide concern. Photovoltaic (PV) systems have emerged as one of the leading solar energy systems in use today. Generally, the procedure for building permit applications for solar systems involves a two step process. First is the plan review stage where information presented by an applicant is reviewed for accuracy, completeness and compliance with the health and safety requirements of the building codes. Second is the field inspection stage where the installation is reviewed for compliance with approved plans and documents. In keeping with CA Section 6580.5, these reviews are limited to those standards and regulations necessary to ensure that solar energy systems will not have a specific, adverse impact upon the public health or safety. Section 6580.5 states local jurisdictions are not allowed to create unreasonable barriers to solar system installations, including, but not limited to, design review for aesthetic purposes. The intent of SEA-PAC PV is to guarantee nondiscretionary issuance of solar energy permits, encourage the installation of such systems by removing obstacles and minimize permit costs for such systems, while ensuring public and property safety.
PERMIT FEES	:	A building permit is required which includes electrical permit and inspection fees. Fees shall be based at the rates established below:
		Building Permit: PBC Table 1A-A Alteration permit fee (using a \$1.00 valuation)
		Building Plan Review: PBC Table 1A-B Plan review fees for alteration (80% of Building Permit Fee)
		Electrical Permit: PBC Table 1A-E Standard permit issuance fee
		Electrical Plan Review: PBC Table 1A-B Electrical Plan Review (1 hr. max.)
		Electrical Inspection: PBC Table 1A-E Standard Inspection Fee (1 insp. min.)

2010 Port of San Francisco Building Code

NOTE: Fees are based on installations to an existing roof system that is structurally sound. Additional valuation, plan review and/or inspection fees may be required for work that, in the opinion of the Chief Harbor Engineer, includes structural repair and/or extensive electrical systems.

DESIGN REVIEW : Permit submittals using SEA-PAC PV may be accepted at the Permit Desk without a review for completeness, other than verification that a PV Solar Worksheet (See Attachment A) has been completed and signed by the applicant. The applicant (or agent) will have the responsibility of providing all information necessary. Applications submitted that do not meet the requirements detailed in this procedure may be put on hold status and required to submit additional information or documentation in order to assure code compliance.

- Planning Review is not required for installations of solar equipment on an existing building except where the installation of the solar photovoltaic system creates or is part of a vertical or horizontal addition to a building, such as a new roof structure or overhang. Applications for installations on existing buildings will be copied and sent to Planning for informational purposes only.
- Accounting Review and approval is required.
- Real Estate Review and approval is required.
- Maritime Maritime review and approval is not required.
- HazMat Review and approval required if scope of work includes removal of roofing materials or is determined to include a potential adverse affect to the bay waters or wildlife.
- Utilities Review and approval required.

STRUCTURAL : Structural Structural plan review and inspection is required in order to ensure public safety.

Exception:

In lieu of the structural review by Port plan review engineers, structural safety may be solely ensured through a California licensed engineer. For these PV assemblies, the submittal must include an engineer's structural analysis of the PV and roof framing, including all connections, demonstrating code compliance for vertical and horizontal loads and an official written statement by the licensed engineer verifying that, to the best of the engineer's knowledge, no structural deficiencies exist.

At the conclusion of the work, an inspection and report by the certifying engineer indicating that inspections were made, that the installation was performed in compliance with the design, and that there are no structural deficiencies may be accepted in lieu of structural inspections by building inspection staff.

- FIRE ACCESS** : Fire Review Port Fire Marshall review and approval required.
- INSPECTIONS** : Building Building inspection of wiring methods, panel installation and final approval is required for all permits.
- Fire Fire inspection requirements shall be determined by the Port Fire Marshall.
- HazMat HazMat inspection requirements shall be determined by a Port Environmentalist.

2010 Port of San Francisco Building Code

WORK SHEET : A PV Solar Work Sheet (See Attachment A) is required for all SEA-PAC PV submittals. The Work Sheet must include an Informational Check List completed and signed by the applicant and 11"x17" minimum sized diagram(s) providing the following information:

- ✓ General information: Name of applicant, site address, licensed contractor, size of system proposed
- ✓ Electrical drawing(s) signed by California Licensed Electrical Engineer or C10 Licensed contractor who is going to perform the installation work.
- ✓ Fully dimensioned site plan, single line diagram of electrical equipment clearly indicating the size of main panel, sub panels, PV system equipment, including make model, size of units, and disconnects.
- ✓ Conductor wiring methods and insulation rating, system and solar panel grounding methods as per inverter and solar panel manufacturer's listings, and PV system DC and AC disconnects
- ✓ Signage (on panel(s), disconnects and transmission line conductors)
- ✓ Placement of equipment and modules with associated access and pathways
- ✓ Equipment type, listing, testing agency approvals including maximum weight of modules and racks, wire type, method of grounding of PV modules and cut sheets for mounting details.
- ✓ Access to and location of roof mounted apparatus such as mechanical equipment, antennas, cameras, etc.
- ✓ Fire access pathways for emergency response, smoke ventilation, standpipes and other emergency equipment located on the roof.
- ✓ Roof framing plan and structural details (or engineers structural analysis)

GENERAL

REQUIREMENTS : Solar photovoltaic panels must be supported on the roof or surface of the building that they serve

Solar photovoltaic panels may be installed over only one roof covering of a flat/built up roof or two coverings of a shingled roof, unless otherwise approved by the Chief Harbor Engineer

Storage batteries are not part of the system

PV disconnect shall be installed in a readily accessible location and means of disconnect shall be located together when possible

All electrical panel disconnecting means shall be designed to shut off all power (solar and domestic)

All sharp edges and fastener tips shall be covered or crimped over in order to minimize risk of injury to emergency responders or other individuals requiring access to the roof top

All roof surface mounted conduits, pipes, braces, etc. crossing access pathways are to be clearly identified by a red/white reflective tape, or other approved identifying material

Provide permanent tag near main disconnect indicating that the facility is served by PV.

2010 Port of San Francisco Building Code

Panel Chairperson Date

Edward F. Byrne Date
Chief Harbor Engineer
Port of San Francisco

SEA-PAC-PV

SOLAR – ENERGY
APPLICATION PACKAGE

PHOTOVOLTAIC

SUBMITTED FOR

RAPID REVIEW

<p>Diagram Information (Unchecked boxes may delay the review process)</p> <p><input type="checkbox"/> Yes Is a site diagram or plan provided showing the site location?</p> <p><input type="checkbox"/> Yes Is a single line wiring diagram or plan provided?</p> <p><input type="checkbox"/> Yes Is Array configuration shown?</p> <p><input type="checkbox"/> Yes Is Array wiring identified?</p> <p><input type="checkbox"/> Yes Is Combiner/junction box defined?</p> <p><input type="checkbox"/> Yes Is AC/DC disconnect box identified?</p> <p><input type="checkbox"/> Yes Is Equipment grounding specified?</p> <p><input type="checkbox"/> Yes Is Conduit from array to power source identified?</p> <p><input type="checkbox"/> Yes Is Conduit from disconnect to inverter identified?</p> <p><input type="checkbox"/> Yes Is System grounding identified?</p> <p><input type="checkbox"/> Yes Are cut sheets provided for the mounting hardware?</p> <p><input type="checkbox"/> Yes Is diagram/plan noted to crimp sharp edges and fastener tips?</p> <p><input type="checkbox"/> Yes Are surface mounted conduits, pipes, braces, etc. noted as being identified with red/white reflective tape or other approved means?</p> <p><input type="checkbox"/> Yes Do plans note marking for warning signage with permanently affixed labels having a red background with red lettering at the Main Service Disconnect, DC Current Conduit, Raceways, Enclosures, Cable Assemblies, and J Boxes?</p> <p>General Information (Unchecked boxes may delay the review process)</p> <p><input type="checkbox"/> Yes Are panels solely supported on the structure they serve?</p> <p><input type="checkbox"/> Yes Is this application for a flat roof with no more than one roof covering?</p> <p><input type="checkbox"/> Yes Is this application for a pitched roof with no more than two roof coverings?</p> <p><input type="checkbox"/> Yes Is the PV disconnect located in a readily accessible location?</p>	<p>Roof Design (Check appropriate boxes)</p> <p><input type="checkbox"/> A roof framing plans and attachment details are provided.</p> <p><input type="checkbox"/> A California licensed engineer's structural analysis is provided.</p> <p><input type="checkbox"/> An official written statement from a California licensed engineer verifying that site visits have been made; including a report that, to the best of the engineers knowledge, no structural deficiencies exist at the conclusion of the work performed under the permit will be submitted at the conclusion of the work.</p> <p>PV System Components</p> <p>Per Module _____ Manufacturer and Model _____</p> <p>Photovoltaic Panel _____</p> <p>Rated Power (Max) _____ Watts</p> <p>Open Circuit Voltage (Voc) _____ VDC</p> <p>Short Circuit (Isc) _____ Amps DC</p> <p>Maximum Voltage (Vmax) _____ VDC</p> <p>Maximum Current (Imax) _____ Amps DC</p> <p>Inverter Model _____</p>	<p>Module Configuration</p> <p>No. of Modules in Series _____</p> <p>No. of Strings in Parallel _____</p> <p>DC Grounding Conductor _____ AWG _____ CEC Sec 690.47 (c)(7)</p> <p>AC Grounding Conductor _____ AWG _____ CEC Sec 690.47 (c)(7)</p> <p>Site Address/Tenant Name: _____</p> <p>Installer Name/Address/Contact Number(s): _____</p> <p>Prepared by: _____</p> <p>Sign: _____</p> <p>Date: _____</p>
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2010 Port of San Francisco Building Code

PORT CODE PROCEDURE

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<u>Accounting</u>	Review and approval is required.
<u>Real Estate</u>	Review and approval is required.
<u>Maritime</u>	Maritime review and approval is not required.
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2010 Port of San Francisco Building Code

Panel Chairperson	Date	Edward F. Byrne Chief Harbor Engineer Port of San Francisco	Date
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SEA-PAC-PV

SOLAR – ENERGY
APPLICATION PACKAGE

PHOTOVOLTAIC

SUBMITTED FOR

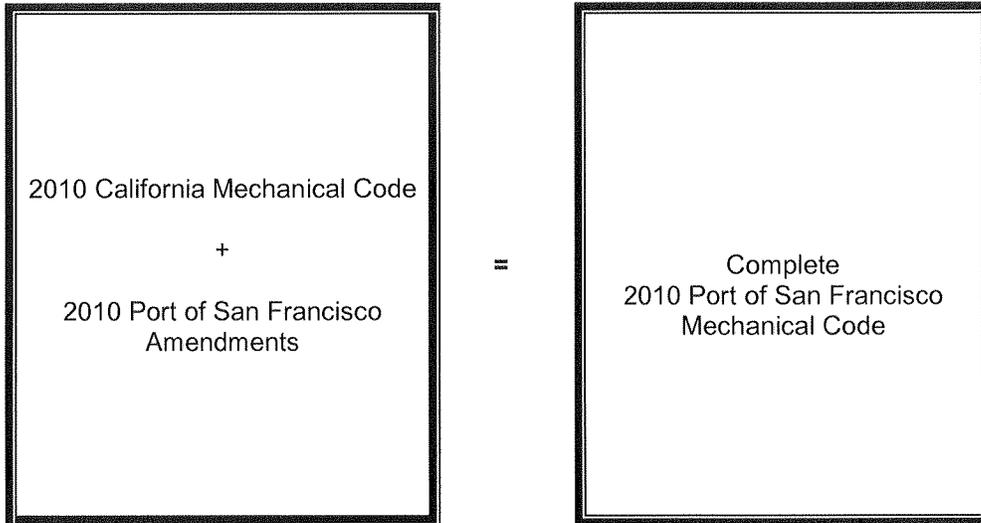
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Inverter Model _____	_____																	

2010 Port of San Francisco Mechanical Code

The complete 2010 Port of San Francisco Mechanical Code adopts and amends the 2010 edition of the California Mechanical Code

Effective Date: January 1, 2011



PUBLISHERS NOTE

To simplify the use of the Port of San Francisco amendments with corresponding sections of the 2010 California Codes, explanatory remarks appearing in italics are provided at the beginning of each amendment indicating whether the Port of San Francisco Amendments to the 2010 California Codes are adding, revising, or replacing a section or portion of a section.

Should you find publication (e.g. typographical) errors or inconsistencies in this code or wish to offer comments toward improving its format, please address your comments to:

Port of San Francisco
Engineering Division - Building Permit Group
Pier 1, The Embarcadero
San Francisco, CA 94111

Phone: (414) 274-0564
Fax: (415) 732-0420

2010 Port of San Francisco Mechanical Code

TABLE OF CONTENTS

2010 Port of San Francisco Mechanical Code

CHAPTER 1
ADMINISTRATION
DIVISION I
CALIFORNIA ADMINISTRATION

See Division II Administration for Port of San Francisco Mechanical Code administrative provisions.

No Port of San Francisco Amendments

DIVISION II
ADMINISTRATION

PART I – General.

101.0 Revise this section as follows:

101.1 Title. These regulations shall be known as the 2010 Port of San Francisco Mechanical Code, may be cited as such, and will be referred to herein as “this code.”

103.0 Revise the first paragraph of this section as follows:

103.0 – Scope.

103.1 Add the following paragraph to this section:

103.1 General. Wherever in this code reference is made to the appendix, the provisions of the appendix shall not apply unless specifically adopted.

105.0 Add the following sentence at the end of the section:

105.0 Alternate Materials and Methods of Construction Equivalency.

See building code Section 104A.2.8

105.1 Add the following:

105.1 Modifications. See building code Section 104A.2.7

PART II – Organization and Enforcement.

108.0 Powers and Duties of the Authority Having Jurisdiction.

108.1 Revise the first paragraph of this section as follows:

2010 Port of San Francisco Mechanical Code

108.1 General. The Chief Harbor Engineer is hereby authorized and directed to enforce all provisions of this code. For such purposes the Chief Harbor Engineer shall have the powers of a law enforcement officer.

108.10 Add the following new section:

108.10 The Chief Harbor Engineer May Adopt Rules and Regulations. See building code Section 104A.2.1.

110.0 Replace this section as follows:

110.0 Appeals.

For appeals see Building Code Section 105A Appeals.

PART III – Permits and Inspections.

113.0 Application for Permit.

113.1 Replace this section as follows:

113.1 Application. Applications for permits to perform regulated mechanical work shall conform to the applicable requirements as set forth in Chapter 1A of the Building Code and Chapter 1, Division II of the Plumbing Code.

114.0 Permit Issuance.

114.1 Replace this section as follows:

114.1 General. Permit processing and issuance for regulated mechanical work shall conform to the applicable requirements as set forth in Chapter 1A of the Building Code and Chapter 1, Division II of the Plumbing Code.

115.0 Fees.

115.1 Replace this entire section with the following section:

115.1 General. Permit, inspection and investigation fees, as set forth in the building code, Chapter 1A and Tables 1A-A Building Permit Fees, 1A-B Building Application and Plan Review Fees, 1A-D Mechanical Permit and Inspection Fees and 1A-K Investigation Fees, Hearings and Code Enforcement Fees of the Building Code shall be paid prior to permit issuance.

116.0 Inspections.

116.1 Revise the first sentence of the second paragraph of this section as follows:

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It shall be the duty of the permit holder, or the person doing the work, to notify the Port Building Inspector orally or in writing when the permitted installation will be ready for inspection and to cause the mechanical systems to remain accessible and exposed for inspection purposes.

**CHAPTER 2
DEFINITIONS**

204.0 –B–

Building Code. *Add a sentence at the end of the paragraph as follows:*

For the purpose of the Port of San Francisco Mechanical Code, “Building Code” shall be the most recent edition of the Port of San Francisco Building Code.

207.0 –E–

Electrical Code. *Add a sentence at the end of the paragraph as follows:*

For the purpose of the Port of San Francisco Mechanical Code, “Electrical Code” shall be the most recent edition of the Port of San Francisco Electrical Code.

208.0 –F–

Fire Code. *Add a sentence at the end of the paragraph as follows:*

For the purpose of the Port of San Francisco Mechanical Code, “Fire Code” shall be the Fire Code currently adopted by the State Fire Marshal and amended as San Francisco Fire Code.

218.0 –P–

Plumbing Code. *Add a sentence at the end of the paragraph as follows:*

For the purpose of the Port of San Francisco Mechanical Code, “Plumbing Code” shall be the most recent edition of the Port of San Francisco Plumbing Code.

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**CHAPTER 3
GENERAL REQUIREMENTS**

No Port of San Francisco Building Code Amendments.

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**CHAPTER 4
VENTILATION AIR SUPPLY**

No Port of San Francisco Building Code Amendments.

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**CHAPTER 5
EXHAUST SYSTEMS**

No Port of San Francisco Building Code Amendments.

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**CHAPTER 6
DUCT SYSTEMS**

No Port of San Francisco Building Code Amendments.

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**CHAPTER 7
COMBUSTION AIR**

No Port of San Francisco Building Code Amendments.

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**CHAPTER 8
CHIMNEYS AND VENTS**

No Port of San Francisco Building Code Amendments.

**CHAPTER 9
INSTALLATION OF SPECIFIC APPLIANCES**

918.0 Add the following sentence as the second paragraph of this section:

918.0 Incinerators, Commercial – Industrial.

The operation and installation of incinerators shall also comply with the regulations of the Bay Area Quality Management District.

**CHAPTER 10
STEAM AND HOT WATER BOILERS**

1021.0 Revise this section as follows:

1021.0 Inspections and Tests.

An installation for which a permit is required shall not be put into service until it has been certified by a licensed boiler contractor or inspected by an approved insuring company inspector and an operating permit has been issued.

It shall be the duty of the owner or his authorized representative to notify the Chief Harbor Engineer that the installation has been certified or inspected. It also shall be the duty of the owner or his authorized representative to post in a conspicuous position on the installation a notice in substantially the following form: "Warning! This installation has not been inspected and approved by the Authority Having Jurisdiction and shall not be covered or concealed until so inspected and approved," and it shall be a violation of this code for anyone other than the Authority Having Jurisdiction to remove such notice. The Authority Having Jurisdiction shall require such tests as it deems necessary to determine that the installation complies with the provision of this section. Such test shall be made by the owner or his authorized representative in the presence of the Authority Having Jurisdiction.

EXCEPTION: On installations designed and supervised by a registered professional engineer, the Chief Harbor Engineer shall have the authority to permit inspection and testing by such engineer.

1022.0 Revise this section as follows:

1022.0 Operating Permit.

It shall be a violation of this code to operate a boiler or pressure vessel without first obtaining a valid operating permit to do so from the Authority Having Jurisdiction. Such permit shall be displayed in a conspicuous place adjacent to the boiler or vessel. The operating permit shall not be issued until the equipment has been certified as complying with State of California Building Safety Orders by a licensed boiler contractor, by employees of an approved insuring company holding commissions from the National Board of Boiler and Pressure Vessel Inspectors or by a registered professional engineer.

EXCEPTION: The operation only of steam-heating boilers, low-pressure hot-water-heating boilers, hot-water supply boilers and pressure vessels in Group R Occupancies of less than six dwelling units and in Group U Occupancies.

1023.0 Revise the first paragraph of this section as follows:

1023.0 Maintenance Inspection.

The Chief Harbor Engineer shall require an inspection of boilers and pressure vessels operated under permit at such intervals as deemed necessary, but not less frequently than noted below:

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1023.4 Revise the second paragraph of this section as follows:

1023.4 Maintenance Inspection.

Inspection of boilers and pressure vessels may be made by licensed C-4 Boiler Contractors and, when covered by insurance, may be made by employees of the insuring company holding commissions from the National Board of Boiler and Pressure Vessel Inspectors, subject to approval of the Authority Having Jurisdiction. Approved inspectors shall make reports on prescribed forms on inspections authorized by the Authority Having Jurisdiction. The reports shall be filed in the Authority Having Jurisdiction office. Inspectors shall notify the Authority Having Jurisdiction of suspension of insurance because of dangerous conditions, new insurance in effect, discontinuance of insurance coverage, or any unsafe conditions requiring correction.

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**CHAPTER 11
REFRIGERATION**

No Port of San Francisco Building Code Amendments.

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**CHAPTER 12
HYDRONICS**

No Port of San Francisco Building Code Amendments.

CHAPTER 13
FUEL GAS PIPING

1309.5 Acceptable Piping Materials and Joining Methods.

1309.5.1.1 Materials.

1309.5.1.1.1 Add the following section:

1309.5.1.1.1 Exterior or Similar Locations. Ferrous gas piping in exterior or similar locations shall be protected from corrosion by approved machine applied protective coatings or wrapping materials that conform to recognized standards. Field wrapping, providing equivalent protection may be used and is restricted to those fittings and short sections where factory wrap has been damaged or necessarily stripped for threading or welding. Zinc coatings shall not be deemed adequate for exterior or similar use. Protectively coated pipe shall be inspected and tested and any visible void, damage or imperfection to the pipe coating shall be repaired to comply with Section 313 of the plumbing code.

1309.5.1.1.2 Add the following section:

1309.5.1.1.2 Fish Processing Facilities. In portions of fish processing facilities, canneries and other indoor wet locations, and in locations where walls are frequently washed or subject to sea air, ferrous gas piping shall be protected as required for exterior locations.

1309.5.1.1.3 Add the following section:

1309.5.1.1.3 Installations under Piers, Docks or Wharfs. Unless specifically approved by the Chief Harbor Engineer, gas piping shall be prohibited underneath piers, docks or wharfs.

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**CHAPTER 14
PROCESS PIPING**

No Port of San Francisco Building Code Amendments.

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**CHAPTER 15
SOLAR SYSTEMS**

No Port of San Francisco Building Code Amendments.

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**CHAPTER 16
STATIONARY POWER PLANTS**

No Port of San Francisco Building Code Amendments.

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**CHAPTER 17
STANDARDS**

No Port of San Francisco Building Code Amendments.

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**APPENDIX A
UNIFORM MECHANICAL CODE STANDARD NO. 6-2 STANDARD FOR METAL DUCTS**

No Port of San Francisco Building Code Amendments.

**APPENDIX B
PROCEDURES TO BE FOLLOWED TO PLACE GAS EQUIPMENT IN OPERATION**

No Port of San Francisco Building Code Amendments.

**APPENDIX C
INSTALLATION AND TESTING OF OIL (LIQUID) FUEL-FIRED EQUIPMENT**

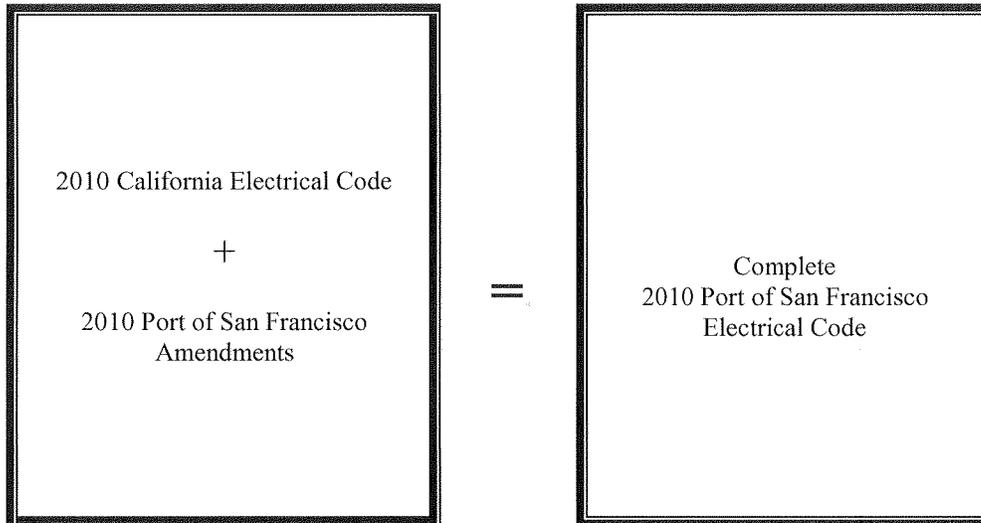
No Port of San Francisco Building Code Amendments.

**APPENDIX D
UNIT CONVERSION TABLES**
No Port of San Francisco Building Code Amendments.

2010 Port of San Francisco Electrical Code

The complete 2010 Port of San Francisco Electrical Code adopts and amends the 2010 edition of the California Electrical Code.

Effective Date: January 1, 2010



PUBLISHERS NOTE

To simplify the use of the Port of San Francisco amendments with corresponding sections of the 2010 California Codes, explanatory remarks appearing in italics are provided at the beginning of each amendment indicating whether the Port of San Francisco Amendments to the 2010 California Codes are adding, revising, or replacing a section or portion of a section.

Should you find publication (e.g. typographical) errors or inconsistencies in this code or wish to offer comments toward improving its format, please address your comments to:

Port of San Francisco
Engineering Division - Building Permit Group
Pier 1, The Embarcadero
San Francisco, CA 94111

Phone: (415) 274-0564
Fax: (415) 732-0420

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ARTICLE 89
GENERAL CODE PROVISIONS

89.101.1 Replace the first sentence of this section with the following:

89.101.1 Title. The provisions contained in this Code shall be known as the “2010 Port of San Francisco Electrical Code” and may be cited as such and will be referred to as “this code”.

89.115 Add the following new section:

89.115 Suppression: This code shall supersede all previous Electrical Codes and ordinances in the Port of San Francisco. Nothing herein shall require the revision of electrical installation plans submitted prior to the adoption date of this code. Electrical permits obtained prior to the effective date of this code shall comply with the provisions of the Electrical Code, regulations and rulings in effect when the permit was granted.

89.116 Add the following new section:

89.116 Maintenance. All electrical equipment, wiring and systems and installations shall be maintained in a safe operating and code-complying condition. The owner or the owner’s designated agent, or both, shall be legally responsible for the maintenance of all electrical wiring systems and installations.

Nothing contained in this code shall be construed to require any existing electrical equipment, wiring or systems regulated by this code to be altered, reconstructed, removed or demolished, providing such existing electrical equipment, wiring or system was installed and maintained in accordance with the adopted code in effect at the time of installation or subsequent alteration.

Unused conductors and cables shall be either removed or suitably identified and terminated in an approved manner.

89.117 Add the following new section:

89.117 Alternative Materials, Design and Methods of Construction. See Building Code Section 104A.2.8

89.118 Add the following new section:

89.118 Change in Occupancy. Electrical equipment, wiring and systems which are part of any building or structure, or portion thereof, undergoing a change in occupancy or use, as defined in the Building Code, shall comply with all requirements of this code which may be applicable to the new occupancy or use.

EXCEPTION: The provisions of this section shall not require the change of existing electrical equipment, wiring and systems where such electrical equipment, wiring and systems are deemed adequate for the new occupancy involved.

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89.119 Add the following new section:

89.119 Modifications. See Building Code Section 104A.2.7

89.120 Add the following new section:

89.120 Permits Required.

(A) General. It shall be a violation of this code for any person to install, construct, alter, move, add to or replace any electrical installation regulated by this code, except as permitted in Section 89.121, without first obtaining a building permit which included fees for an electrical permit from the Port of San Francisco.

(B) Non liability of Port of San Francisco and City and County of San Francisco. Permits issued under the provisions of this code shall contain or be construed to contain an agreement by the owner of the building, structure or premises, or the owner's authorized agent, to save Port of San Francisco and City and County of San Francisco officials and employees harmless from all costs, liability and damages resulting, whether directly or indirectly, from anything in connection with the work included in the permit, including equipment, methods of construction, inspections and approvals.

(C) Application for Permit. Permit applicants shall file with the Port of San Francisco an application form furnished by the Chief Harbor Engineer for that purpose. The permit application shall show a complete itemization of the proposed electrical installation and the correct address of the job site. Electrical permits may be issued to duly licensed contractors. A separate permit shall be obtained for each separate building or structure.

See Section 110A, Table 1A-A-Building Permit Fees and Table 1A-E-Electrical Permit Fees – of the Building Code for the applicable fees.

(D) Illegal Use of Permit. No person, firm, corporation, or state licensed contractor shall file an application for a permit to install any electrical wiring system unless such person, firm, corporation, or state licensed contractor shall perform such work. The Chief Harbor Engineer or the Chief Harbor Engineer's authorized representative shall have the authority to cancel any permit upon finding that it is contrary to this section. The owner shall be responsible for all work performed.

(E) Emergency Work. Emergency electrical work for the protection of persons or property shall have a permit obtained within one business day of commencing such work.

89.121 Add the following new section:

89.121 Work Exempt from Permits. Electrical permits and fees shall not be required for the following:

(A) Repair or replacement of luminaire(s) where:

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- (1) the luminaire(s) are not installed to provide emergency illumination required by Port of San Francisco Building Code, and
 - (2) no change in existing wiring is involved, and
 - (3) luminaries weigh 22.68 Kg (50 pounds) or less
- (B) Repair or replacement of a domestic appliance where no change in existing wiring is involved.
- (C) Replacement of fuses, controls, motors of less than 2 horsepower, and switches and receptacles of not more than 20 amperes rating, where no change in existing wiring is involved.
- (D) Replacement of circuit breakers, externally operated switches and fuse holders of the same type and rating as the defective unit or component, if not rated in excess of 100 amperes.
- EXCEPTION: Replacement of main service disconnecting means are subject to permit and inspection regardless of rating.
- (E) Wiring for temporary theater stages and platforms, motion picture and television studio sets supplied from approved electrical outlets installed for the purpose.
- (F) Replacement of component parts for electric signs or gas-tube lighting systems of the same size and rating.

89.122 Add the following section:

89.122 Permit Issuance.

- (A) General. An issued permit entitles the owner to proceed with the installation described therein. Work done in excess of that shown on the application will be subject to extra permit fees as set forth in Section 110A, Table 1A-F – Specialty Permit Fees – of the Building Code. The issuance of a permit does not constitute an approval or an authorization of the work specified therein. Neither the issuance of a permit, nor the approval by the Chief Harbor Engineer of any document, shall constitute an approval of a violation of any provision of this code or any law or ordinance. A permit or other document purporting to give authority to violate any code, law or ordinance shall not be valid with respect thereto. Permits shall not be transferable. Proposed electrical installations delineated on a permit application shall be performed only by the owner or bona fide employee thereof in accordance with the California Code of Regulations, Title 8, Chapter 2, Part IV. The permit shall be posted on the job site where the work is to be done.

89.123 Add the following new section:

89.123 Fees.

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89.123.1 General. Permit, inspection and investigation fees, as set forth in the Building Code, Chapter 1A and Tables 1A-A Building Permit Fees, 1A-B Building Application and Plan Review Fees, 1A-E Electrical Permit and Inspection Fees and 1A-K Investigation Fees, Hearings and Code Enforcement Fees of the Building Code shall be paid prior to permit issuance.

89.124 Add the following new section:

89.124 Powers and Duties of the Chief Harbor Engineer.

(A) General. The Chief Harbor Engineer hereby authorized and directed to enforce all the provisions of this code. For such purposes and subject to other provisions and limitations of law, the Chief Harbor Engineer shall have the powers of a law enforcement officer. The Chief Harbor Engineer, when necessary, may call upon other city agencies for aid or assistance in carrying out or enforcing any of the provisions of this code.

(B) Right of Entry. See 104A.2.2 of the Building Code.

(C) Stop orders. See 104A.2.4 of the Building Code.

(D) Temporary Use of Electrical Energy. The Chief Harbor Engineer may permit the temporary use of electrical energy by any person, firm or corporation in cases where it does not create a hazard to life or property.

(E) Chief Harbor Engineer may adopt rules and regulations. See 104A.2.1 of the Building Code.

(F) Disconnection of Electric Service due to Serious and Imminent Hazards. The Chief Harbor Engineer shall have the authority to disconnect electric service to a building, structure, property or equipment regulated by this code when it is necessary to abate a serious and imminent hazard to the life, health or safety of the occupant or other persons, or such building, structure or property. See Section 102A of the Building Code. Persons shall not reconnect such electrical supply until authorized in writing by the Chief Harbor Engineer.

89.125 Add the following new section:

89.125 Unsafe Buildings or Structures. Any buildings, structures, or parts thereof, shall be considered unsafe when any of the following conditions are present:

(A) Electrical equipment, wiring and systems deemed hazardous to human life or structure safety;

(B) Electrical equipment, wiring and systems that are in violation of the code that was in effect at the time of construction or installation or such work was performed without permit or approval;

(C) Change in occupancy without complying with the provision of Section 089-118 of this code.

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Such unsafe building, structure, property or portion shall be vacated, repaired, altered or demolished in accordance with Section 102A of the Building Code.

89.126 Add the following new section:

89.126 Inspection.

(A) General. All electrical equipment, wiring and systems, regulated by this code and for which a permit is required shall be subject to inspection to insure compliance with this code.

(B) Unlawful Use of Electrical Energy. It shall be unlawful to energize and electrical installation in, on or about any building, structure or property in the Port of San Francisco unless a Certificate to Connect Current (Green Tag) has been issued. The Certificate to Connect Current authorizes the owner of the structure to energize the permitted installation.

(C) Inspection Requests. It shall be the responsibility of the permit holder, or the person doing the work, to notify the Port Building Inspector orally or in writing when the permitted installation will be ready for inspection and to cause the electrical systems to remain open and exposed for inspection purposes. Such notification shall be given at least 24 hours before any inspection is desired. Inspections may be performed outside of normal inspection hours by prior arrangement and prepayment. See Section 110A, Table 1A-G – Off hours Inspections – of the Building Code for the applicable fees.

(D) Required Inspections. Required inspections shall include:

- (1) Pre-Cover Inspection. Electrical equipment, wiring and systems authorized by permit shall be inspected for code compliance prior to covering or concealing.
- (2) Final Inspection. Final inspection and demonstration of satisfactory operation shall be made after the installation authorized by permit has been completed.
- (3) Other Inspection. As required to insure compliance with the provisions of this code.

(E) Electrical Wiring or Installation Unlawful to Conceal. It shall be a violation of this code to conceal, cover, or put into use electrical wiring, installations, or parts thereof, until such has been inspected and accepted as prescribed in this code. Whenever such work is concealed or covered before first having been inspected and approved, or whenever electrical wiring or systems are installed and concealed or covered without a permit, the Chief Harbor Engineer may require, by written notice to the responsible person(s) that such wiring or installation be exposed for inspection. The work of exposing and reconstructing portions of a structure for such work shall not entail expense to the Port of San Francisco and City and County of San Francisco or any of its officials or employees.

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(F) Re-inspections. Re-inspections shall be required when any of the following conditions occurs:

- (1) When the portion of the work for which inspection is requested is incomplete or not code complying.
- (2) When previously identified deficiencies in the work are not properly corrected.
- (3) When the approved construction documents are not available to the inspector.
- (4) When access is not provided on the date and time of the inspection appointment.
- (5) When there are deviations from the approved construction documents.

The first re-inspection for failure to comply with code requirements shall not be assessed a re-inspection fee. All subsequent re-inspections on a job for the same or subsequent errors or omissions shall be charged with a re-inspection fee. A Certificate of Final Completion and Occupancy or final approval shall not be granted until the required fees are paid. See Section 110A, Table 1A-G – Inspections, Surveys and Reports – of the Building Code for applicable re-inspection fees.

89.127 Add the following new section:

89.127 Survey. See Section 107A.9 of the Building Code.

89.128 Add the following new section:

89.128 Appeals. For appeals see Building Code Section 105A Appeals.

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**ARTICLE 90
Introduction**

No Port of San Francisco Building Code Amendments.

Chapter 1 General

ARTICLE 100
Definitions

Scope.

Add a third paragraph at the end of this section:

Where terms, phrases and words are not defined, they shall have the same meaning as provided in the Building Code or shall have their ordinary accepted meanings within the context with which they are used.

I. General

Add the following new definitions:

Different System: A system which derives its supply from a different source, such as from different sets of service entrance conductors, separate utility metered conductors, individual transformers or banks of transformers which do not have their secondary windings interconnected.

Opening: An opening is:

- (1) An electrical outlet supplying current to switches, controllers, convenience receptacles, lighting fixtures, fixed appliances, motors or other utilization equipment;
- (2) A power source including utility company service entrances, a generator or battery system; or
- (3) An item of distribution equipment including a switchboard, panelboard, motor control center, or transformer.

Subject to Physical Damage: The Chief Harbor Engineer may consider that any exposed wiring installed above a walking surface, grade or finished floor may be subject to physical damage.

ARTICLE 110
Requirements for Electrical Installations

110.15 Revise this section as follows:

110.15 High-Leg Marking. On a 4-wire, delta-connected system where the midpoint of one phase winding is grounded, only the conductor or busbar having the higher phase voltage to ground shall be durably and permanently marked by an outer finish that is

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purple in color or by other effective means. Such identification shall be placed at each point on the system where a connection is made if the grounded conductor is also present. Identification of ungrounded feeder conductors shall comply with Section 210-5C.

110.26 Spaces About Electrical Equipment

Revise Item (A) of this section as follows:

(A) Working Space.

Working space for equipment operation at 600 volts, nominal, or less to ground and likely to require examination, adjustment, servicing, or maintenance while energized shall be level and comply with the dimensions of 110.26(A)(1), (A)(2), and (A)(3) or as required or permitted elsewhere in this Code.

Revise item (B) of this section as follows:

(B) Clear Spaces. Working space required by this section shall not be used for storage. When normally enclosed live parts are exposed for inspection or servicing, the working space, if in a passageway or general open space, shall be suitably guarded. The standing area of the workspace shall be level.

110.26 (E) Delete the Exception at item (E) as follows:

(E) Headroom. The minimum headroom of working spaces about service equipment, switchboards, panelboards or motor control centers shall be 2.0 m (6-1/2 ft). Where the electrical equipment exceeds 2.0 m (6-1/2 ft) in height, the minimum headroom shall not be less than the height of the equipment.

Chapter 2 Wiring and Protection

ARTICLE 210
Branch Circuits

210.5 Identification for Branch Circuits.

Revise item (C) of this section as follows:

(C) Ungrounded Conductors. Each ungrounded conductor of a branch circuit, where accessible, shall be identified by system. The means of identification shall be permitted to be by separate color coding, marking tape, tagging, or other approved means, and shall be permanently posted at each branch-circuit panelboard or similar branch-circuit distribution equipment.

Conductor insulation shall contain continuous color pigment for circuit wire #14 AWG through #10 AWG. Ungrounded conductors #8 AWG and larger and ungrounded conductors of any size in cable assemblies may be suitably identified at pull junction and outlet boxes.

Conductor insulation shall be:

- (1) 120/240 volt 3-wire circuits – “A” phase black, “B” phase red; 120/208 volt 4-wire 3-phase wye circuits – “A” phase black, “B” phase red, “C” phase blue; 120/240 volt 3-phase delta circuits – “A” phase black, “B” (high leg) phase purple, “C” phase red; 277/480 volt 4-wire 3-phase wye circuits – “A” phase brown, “B” phase orange, “C” phase yellow. Ungrounded conductors for other voltages shall be identified by difference color coding, marking tape, tagging, or other approved means.

See Section 200.7 for limitations on re-identification of white or grey conductors

- (2) Conductors for switch legs may be of a different color than the ungrounded circuit conductor when suitably identified at pull, junction and outlet boxes with marking tape, tagging or other equally effective means. The color green, white or grey shall not be used for identification.

EXCEPTION: Extensions of existing non-color coded wiring systems need not be color coded.

ARTICLE 230
Services

230.43 Revise this section as follows:

230.43 Wiring Methods for 600 Volts, Nominal, or Less.

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(A) General. Service-entrance conductors shall be installed in accordance with the applicable requirements of this Code covering the type of wiring method used and shall be limited to the following methods:

- (1) Reserved
- (2) Reserved
- (3) Rigid metal conduit;
- (4) Intermediate metal conduit;
- (5) Reserved
- (6) Reserved
- (7) Reserved
- (8) Reserved
- (9) Busways
- (10) Auxiliary gutters;
- (11) Rigid non-metallic conduit
- (12) Reserved
- (13) Reserved
- (14) Mineral-insulated, metal sheathed cable;
- (15) Reserved
- (16) Reserved

(B) Raceway Size. Minimum raceway size shall comply with the following:

- (1) Except as provided in Section 230.43(B)(2) and (3) the minimum size raceway installed for service entrance conductor shall be 1 1/4 inch (31.8 mm).
- (2) Raceways for service entrance conductors for sign or billboard lighting shall not be smaller than 3/4 inch (19.1 mm) conduit.
- (3) Installations consisting of not more than two 2-wire branch circuits may be supplied by No. 8 conductors in 3/4 inch (19.1 mm) conduit.

EXCEPTION: New service entrance conductors may be re-pulled in previously approved service raceways, provided the installation complies with the requirements of Section 89.116 and Chapters 1, 2 and 3.

(FPN): Refer to electric utility server requirements for raceway sizes.

230.56 Revise this section as follows:

230.56 Service Conductor with the Higher Voltage to Ground. On a four-wire delta-connected service where the midpoint of one phase winding is grounded, the service conductor having the higher phase voltage to ground shall be durably and permanently marked by an outer finish that is purple in color, or by other effective means, at each termination or junction point.

230.71 Maximum Number of Disconnects.

230.71 Revise item (A) of this section and add an exception as follows:

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(A) General. The service disconnecting means for each service permitted by 230.2, or for each set of service-entrance conductors permitted by 230.40, Exception Nos. 1, 3, 4, or 5, shall consist of a single circuit breaker or switch and set of fuses. For the purpose of this section, disconnecting means installed as part of listed equipment and used solely for the following shall not be considered a service disconnecting means:

1. Power monitoring equipment
2. Surge protective devise(s)
3. Control circuit of the ground-fault protection system
4. Power-operable service disconnecting means

EXCEPTION: In buildings with only residential occupancies not more than six switches or sets of circuit-breakers, or a combination of not more than six switches and sets of circuit breakers, mounted in a single enclosure, in a group of separate enclosures, or in or on a switchboard shall be allowed. There shall be not more than six sets of disconnects per service grouped in any one location. A single circuit breaker or set of fuses shall be provided for each dwelling unit.

ARTICLE 250 Grounding and Bonding

250.50 Revise the first paragraph of this section as follows:

250.50 Grounding Electrode System. All grounding electrodes as described in 250.52(A)(1) through (A)(6) that are present each building or structure served shall be bonded together to form the grounding electrode system. A concrete encased electrode as defined by Section 250.52(A)(3) shall be installed at each new building or structure, and for existing buildings or structures when a new or replacement foundation or footing with a perimeter length of 6.0 m (20 ft) or more is installed. Where none of these electrodes exist, one or more of the grounding electrodes specified in 250.52(A)(4) through (A)(7) shall be installed and used.

EXCEPTION: Concrete-encased electrodes of existing buildings or structures shall not be required to be part of the grounding electrode system where the steel reinforcing bars or rods are not accessible for use without disturbing the concrete.

250.64 Grounding Electrode Conductor Installation.

Revise item (A) of this section as follows:

(A) Aluminum or Copper-Clad Aluminum Conductors. Bare aluminum or copper-clad aluminum grounding conductors shall not be used where in direct contact with masonry or the earth or where subject to corrosive conditions. Aluminum or copper-clad aluminum grounding conductors shall not be installed on the outside of a building or structure.

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Revise item (B) of this section as follows:

(B) Securing and Protection Against Physical Damage. Where exposed, a grounding electrode conductor or its enclosure shall be securely fastened to the surface on which it is carried. A 4 AWG or larger copper or aluminum grounding electrode conductor shall be protected where exposed to physical damage. A 6 AWG grounding electrode conductor that is free from exposure to physical damage shall be permitted to be run along the surface of the building construction without metal covering or protection where it is securely fastened to the construction; otherwise, it shall be in rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, electrical metallic tubing, or cable armor. Grounding electrode conductors smaller than 6 AWG shall be in rigid metal conduit, intermediate metal conduit, rigid non metallic conduit, electrical metallic tubing, or cable armor. Exposed grounding electrode conductors or cable armor shall not be installed on the outside of a building or structure. 6 AWG or smaller grounding electrode conductors shall not be installed exposed below 5'.

Chapter 3 Wiring Methods and Materials

ARTICLE 300
Wiring Methods

300.3 Conductors

(C) Conductors from Different Systems.

Revise item (1) of this section as follows:

(1) 600 Volts, Nominal or Less. Conductors of circuits from separately derived systems, from separate services, or from separate utility meters shall not be permitted to occupy the same equipment wiring enclosure, cable or raceway with conductors from other systems, services, or meters. All conductors shall have an insulation rating equal to at least the maximum circuit voltage applied to any conductor within the enclosure, cable, or raceway.

EXCEPTION No. 1: For solar photovoltaic systems in accordance with Section 690.4(B).

EXCEPTION No. 2: Conductors installed in accordance with Section 700.9.

Exception No. 3: Class 1,2 or 3 conductors installed in accordance with Article 725.

EXCEPTION No. 4: Conductors in auxiliary gutters connected to the separately derived systems, service equipment, or meter bank.

(FPN): See Section 725.55(A) for Class 2 and Class 3 circuit conductors

300.4 Protection Against Physical Damage.

Add a new section (H) as follows:

(H) Under Pier Wiring. Under pier conduit subject to wave action shall be PVC coated rigid steel with a minimum 40 mil PVC.

300.6 Add the following sentence to the paragraph:

300.6 Protection Against Corrosion and Deterioration.

Under pier raceways shall be supported by stainless steel hardware.

ARTICLE 312
Cabinets, Cutout Boxes, and Meter Socket Enclosures

312.2 Add a reference Note to this section as follows:

312.2 Damp and Wet Locations.

Note: See Article 300.6(C) for additional requirements.

ARTICLE 320
Armored Cable: Type AC

320.108 Revise this section as follows:

320.108 Equipment Grounding Conductor. Type AC cable shall provide an adequate path for equipment grounding as required by Section 250.4(A)(5) and 250.4(B)(4). An equipment grounding conductor, sized as required by Table 250.122, shall be provided within the cable assembly.

ARTICLE 330
Metal-Clad Cable: Type MC

330.12 Uses Not Permitted.

Revise item (2) as follows:

(2) Where exposed to any of the destructive corrosive conditions in (a) through (c), unless the metallic sheath or armor is resistant to the conditions or is protected by material resistant to the conditions:

- a. Directly buried in the earth or embedded in concrete unless identified for direct burial.
- b. Exposed to cinder fills, strong chlorides, caustic alkalis, or vapors of chlorine or of hydrochloric acids.
- c. Wet locations

330.40 Revise this section as follows:

330.40 Boxes and Fittings. Fittings used for connecting Type MC cable to boxes, cabinets, or other equipment shall be listed and identified for such use. An approved insulating bushing shall be installed between the conductors and the sheath of MC Cable where the manufacturer recommends their use.

330.108 Revise this section as follows:

330.108 Equipment Grounding Conductor. Where Type MC cable is used for equipment grounding, it shall comply with 250.118(10) and 250.122. An equipment grounding conductor, sized as required by Table 250.122, shall be provided within the cable assembly.

ARTICLE 334
Nonmetallic-Sheathed Cable: Types NM, NMC, and NMS

334.10 Uses permitted.

334.10 Revise Item (2) as follows:

- (2) Multi-family dwellings permitted to be of Types III, IV, and V construction not exceeding 4 stories as defined by the Building Code except as prohibited in 334.12.

334.12 Uses Not Permitted.

Add Item (11) to this section as follows:

(A) Types NM, NMC, and NMS.

(11) In any nonresidential structure or occupancy.

**ARTICLE 348
Flexible Metal Conduit: Type FMC**

348.10 Revise this section as follows:

348.10 Uses Permitted. FMC shall be permitted to be used in concealed locations and where necessary for flexibility in lengths not to exceed 1.829 m (6 feet).

**ARTICLE 352
Rigid Polyvinyl Chloride Conduit: Type PVC**

352.10 Uses Permitted.

Revise item (A) of this section as follows:

(A) Concealed. PVC shall be permitted embedded in concrete walls, floors, and ceilings. The conduit may emerge not more than 3" from the concrete within wiring enclosures, otherwise metal raceways shall be provided where emerging from the concrete.

**ARTICLE 358
Electrical Metallic Tubing: Type EMT**

358.10 Uses Permitted.

Add a second paragraph to item (B) of this section as follows:

(B) Corrosion Protection.

Where EMT emerges from concrete in a damp or wet location, it shall be protected against corrosion at the point of emergence by wrapping of PVC tape, or by other approved means.

358.12 Uses Not Permitted.

Add item (7) to this section as follows:

(7) In concrete slabs on grade.

ARTICLE 362
Electrical Nonmetallic Tubing: Type ENT

362.10 Uses Permitted.

Reserve items 1, 2,4,5,7, and 8 and revise item 6 of this section as follows:

(1) Reserved

(2) Reserved

(4) Reserved

(5) Reserved

(6) Encased in poured concrete, or embedded in a concrete slab on grade where ENT is placed on sand or approved screenings, provided fittings identified for this purpose are used for connections. Metal raceways shall be provided where emerging from the concrete.

(7) Reserved

(8) Reserved

ARTICLE 378
Nonmetallic Wireways

378.12 Uses Not Permitted.

Add item (6) of this section as follows:

(6) Where the voltage of the contained conductors is in excess of 50 volts.

ARTICLE 388
Surface Nonmetallic Raceways

388.12 Uses Not Permitted.

Revise item (3) of this section as follows:

(3) Where the voltage is 50 volts or more between conductors.

Chapter 4 Equipment for General Use

ARTICLE 410
Luminaires (Lighting Fixtures), Lampholders, and Lamps

410.36 Means of Support.

Revise item (B) of this section as follows:

(B) Suspended Ceilings. Framing members of suspended ceiling systems used to support luminaires (fixtures) shall be securely fastened to each other and shall be securely attached to the building structure at appropriate intervals. Luminaires (fixtures) shall be securely fastened to the ceiling framing member by mechanical means, such as bolts, screws, or rivets. Listed clips identified for use with the type of ceiling framing member(s) and luminaires [fixture(s)] shall also be permitted. All luminaires (fixtures) or luminaire outlets supported by suspended ceiling systems shall have supplemental support wires (minimum #12 gauge) connected from the fixture housing or fixture support bracket to the structure above. Recessed lighting fixtures measuring 610 mm (2 feet) nominal or larger in any dimension shall have two (minimum #12 gauge) support wires. See IBC Section 809.9.1.1 and ASTM standards C635 and C636.

EXCEPTION: Supplemental support wires shall not be required when listed clips identified to be used without supplemental ceiling wires in compliance with IBC Section 808.1.1 are installed.

ARTICLE 411
Lighting Systems Operating at 30 Volts or Less

411.4 Specific Location Requirements.

411.4 Revise item (A) of this section as follows:

(A) Walls, Floors, and Ceilings. Conductors concealed or extended through a wall, floor, ceiling, or suspended ceiling, shall be in accordance with (1) or (2):

- (1) Installed using any of the wiring methods specified in Chapter 3.
- (2) Installed using wiring supplied by a listed Class 2 power source and installed in accordance with 725.52.

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Chapter 5 Special Occupancies

No Port of San Francisco Building Code Amendments.

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Chapter 6 Special Equipment

**ARTICLE 645
Information Technology Equipment**

645.5 Supply Circuits and Interconnecting Cables.

(D) Under Raised Floors.

Revise item (2) of this section as follows:

- (1) The branch-circuit supply conductors to receptacles or field-wired equipment are in rigid metal conduit, intermediate metal conduit, electrical metallic tubing, metal wireway, nonmetallic wireway, surface metal raceway with metal cover, nonmetallic surface raceway, flexible metal conduit, liquidtight flexible metal conduit, or liquidtight flexible nonmetallic conduit, Type MI cable, Type MC cable, or Type AC cable. These supply conductors shall be installed in accordance with the requirements of Section 300.11.

**ARTICLE 690
Solar Photovoltaic Systems**

690.43. Add the following sentence to the end of paragraph 2 as follows:

690.43 Equipment Grounding.

Conductors used to bond metallic frames of PV modules shall be solid copper type.

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Chapter 7 Special Conditions

ARTICLE 700
Emergency Systems

700.12 General Requirements.

(F) Unit Equipment.

Revise the last paragraph of this section as follows:

Unit equipment shall be permanently fixed in place (i.e., not portable) and shall have all wiring to each unit installed in accordance with the requirements of any of the wiring methods in Chapter 3. Flexible cord-and-plug connection and shall not be permitted,. The branch circuit feeding the unit equipment shall be the same branch circuit as that serving the normal lighting in the area and connected ahead of any local switches. The branch circuit that feeds unit equipment shall be clearly identified at the distribution panel. Emergency luminaries (illumination fixtures) that obtain power from a unit equipment and are not part of the unit equipment shall be wired to the unit equipment as required by Section 700.9 and by one the wiring methods of Chapter 3.

700.16 Revise the first paragraph of this section as follows:

700.16 Emergency Illumination. Emergency illumination shall include all required means of egress lighting, illuminated exit signs, and all other lights specified as necessary to provide required illumination. Emergency illumination shall be provided at the location of transfer switches, switchboards and panelboards that supply emergency and legally required stand-by loads.

ARTICLE 760
Fire Alarm Systems

760.46 Revise the first paragraph of this section as follows:

760.46 NPLFA Circuit Wiring. Installations of non-power-limited fire alarm circuits shall be in accordance with 110.3(B), 300.7, 300.11, 300.15, 300.17, and other appropriate articles of Chapter 3. Conductors shall be installed in metallic raceways or concrete-encased nonmetallic raceways.

EXCEPTION No. 1: As provided in Sections 760.48 through 760.53.

760.130 Wiring Methods and Materials on Load Side of the PLFA.

Revise item (A) of this section as follows:

(A) NPLFA Wiring Methods and Materials.

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Installation shall be in accordance with 760.46, and conductors shall be solid or stranded copper.

EXCEPTION No. 1: The derating factors given in 310.15(B)(2)(a) shall not apply.

EXCEPTION No. 2: Conductors and multiconductor cables described in and installed in accordance with 760.49 shall be permitted.

EXCEPTION No. 3: Power-limited circuits shall be permitted to be reclassified and installed as nonpower-limited circuits if the power-limited fire alarm circuit markings required by 760.124 are eliminated and the entire circuit is installed using the wiring methods and materials in accordance with Part II, Non-Power-Limited Fire Alarm Circuits.

FPN: Power-limited circuits reclassified and installed as nonpower-limited circuits are no longer power-limited circuits, regardless of the continued connection to a power-limited source.

Revise item (B) of this section as follows:

(B) PLFA Wiring Methods and Materials. Power-limited fire alarm conductors and cables described in 760.179 shall be installed in metallic raceway in accordance with 760.46. Devices shall be installed in accordance with 110.3(B), 300.11(A), and 300.15.

760.180 Add the following new section:

760.180 System Requirements.

(A) Supervising Station Fire Alarm Systems. Supervising station fire alarm system wiring installed within or on buildings shall be installed in metallic raceways.

EXCEPTION: Communication conductors installed entirely within a dedicated telephone equipment room, switchboard area or fire control room.

(B) Source of Power. The circuit supplying the fire warning system may be connected to either the line or load side of the service disconnect. Circuits shall be protected by means of an externally operated fused safety switch or a circuit breaker either in a separate enclosure or within a switchboard entirely separate from other circuit breakers. The switch and/or circuit breaker shall be clearly labeled and locked in the on position.

EXCEPTION: When connected to circuit supplied by an emergency generator, or when monitored by a required 24-hour agency, a fire warning system equipped with a standby battery may be provided.

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Chapter 8 Communication Systems

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Chapter 9 Tables and Examples

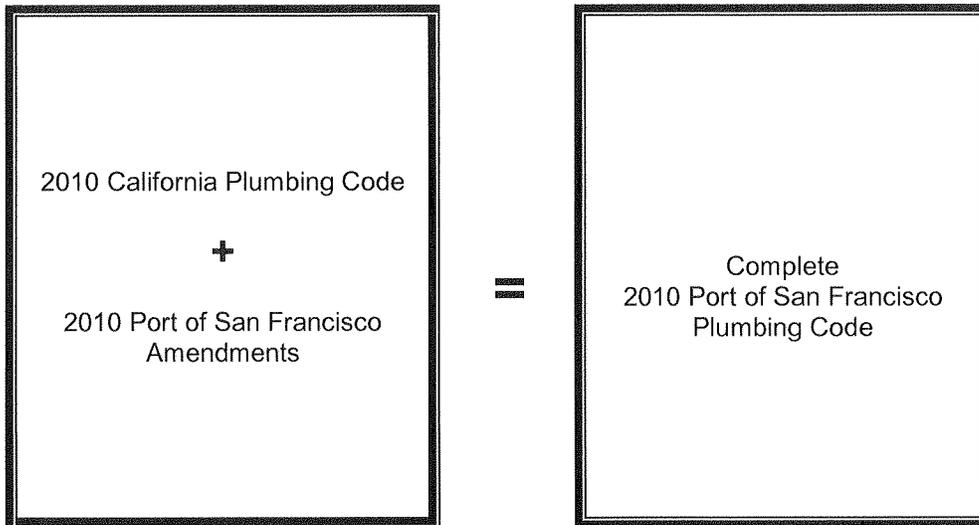
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The complete 2010 Port of San Francisco Plumbing Code adopts and amends the 2010 edition of the California Plumbing Code.

Effective Date: January 1, 2011



PUBLISHERS NOTE

To simplify the use of the Port of San Francisco amendments with corresponding sections of the 2010 California Codes, explanatory remarks appearing in italics are provided at the beginning of each amendment indicating whether the Port of San Francisco Amendments to the 2010 California Codes are adding, revising, or replacing a section or portion of a section.

Should you find publication (e.g. typographical) errors or inconsistencies in this code or wish to offer comments toward improving its format, please address your comments to:

Port of San Francisco
Engineering Division - Building Permit Group
Pier 1, The Embarcadero
San Francisco, CA 94111

Phone: (414) 274-0564
Fax: (415) 732-0420

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CHAPTER 1

ADMINISTRATION
DIVISION 1
CALIFORNIA ADMINISTRATION

See Division II for Port of San Francisco Plumbing Code administrative provisions.

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DIVISION II
ADMINISTRATION

101.0 Title, Scope and General

101.1 Revise this section as follows:

101.1 Title. This document shall be known as the 2010 Port of San Francisco Plumbing Code, may be cited as such and will be referred to herein as “this code.”

101.2 Revise this section as follows:

101.2 Purpose. This code shall provide health, safety and welfare.

101.5 Add a second paragraph to this section as follows:

101.5 Health and Safety.

In order to abate a nuisance as defined in Section 216.0 of this code, the inspection and abatement procedures as set forth in Section 102A of the Building Code shall apply.

102.0 Organization and Enforcement

102.1 Revise this section as follows:

102.1 Authority Having Jurisdiction. The Port of San Francisco Commission, through the Chief Harbor Engineer, shall be the authority having jurisdiction.

102.1.1 Add the following section:

102.1.1 Administrative Authority. The Chief Harbor Engineer of the Port of San Francisco is hereby authorized to enforce all the provisions of this code as set forth in the Port of San Francisco Building Code Section 104.A.2.

102.2.4 Revise this section as follows:

102.2.4 Authority to Disconnect Utilities in Emergencies. The Chief Harbor Engineer shall have the authority to disconnect a plumbing system to a building, structure or equipment

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regulated by this code in case of emergency where necessary to eliminate an immediate hazard to life or property. For notification procedures, see Section 102A of the Building Code.

102.2.7 Add the following new section:

102.2.7 Rules and Regulations. See Building Code Section 104A.2.1.

102.2.8 Add the following new sections:

102.2.8 Modifications. See Section 104A.2.7 of the Building Code.

102.3 Replace this section as follows:

102.3 Violations and Penalties.

102.3.1 Violations. It shall be a violation of this code for any person, firm, or corporation to erect, construct, enlarge, alter, repair, move, improve, remove, convert, demolish, equip, use, or maintain any plumbing or permit the same to be done in violation of this code.

102.3.2 Penalties (Reserved)

103.0 PERMITS and INSPECTIONS

103.1.1 Add the following as the second paragraph of this section:

103.1.1 Permits Required.

Emergency work for the protection of life or limb, health, property and public welfare shall have a permit obtained within one day of commencing such work, excluding Saturdays, Sundays and legal holidays.

103.1.2. Replace this section as follows:

103.1.2 Exempt Work. A permit shall not be required for the following:

- (1) Repair of leaks not requiring cutting into or removing piping.
- (2) Unstopping of traps, sewers, vents or waste pipes not requiring cutting into or removal of traps or piping.
- (3) Replacement, repair or maintenance of faucets, valves, hose bibbs or roof drain not requiring cutting into or removal of piping.
- (4) Replacement of toilets with 1.6 gallon (6.06 liter) per flush toilet fixtures.
- (5) Replacement of furnace filters.
- (6) Removal of drainage, water or gas piping from a building when the water supply, gas and drainage lines have been disconnected in an approved manner under a permit.

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- (7) Work involved in setting up for display of plumbing fixtures or appliances, when not connected to any supply or drainage lines, in a sales establishment.
- (8) Installation of plumbing systems installed by a utility in the operation of their utility business.
- (9) Replacement of water conservation devices not requiring cutting into or removal of piping.
- (10) Work performed in buildings or structures owned and occupied by the State and Federal governments.

Exemption from the permit requirements of this code shall not be deemed to grant authorization for any work to be done in violation of the provisions of the code or any other laws or regulations of this jurisdiction.

103.1.4 Add the following new section:

103.1.4 Additional Work. After an approved permit has been issued a separate alteration permit shall be required for any changes in work or for any additional work as set forth in Section 106A.4.6 of the Building Code.

103.2.1. Replace this section as follows:

103.2.1 Application. Permit applicants shall file with the Port Engineering Division's Building Permit Group an application on a form furnished for that purpose.

103.3.1. Replace this section as follows:

103.3.1 Issuance. An issued permit entitles the permittee to proceed with the work described therein. The issuance of a permit does not constitute approval of any work done under that permit. Permits shall not be transferable.

103.3.4 Replace this section as follows:

103.3.4. Expiration See Section 106A.4.4 of the Building Code.

103.4 Fees.

103.4.1 Replace this section as follows:

103.4.1 General. Permit, inspection and investigation fees, as set forth in the Building Code, Chapter 1A and Tables 1A-A Building Permit Fees, 1A-B Building Application and Plan Review Fees, 1A-C Mechanical Permit and Inspection Fees and 1A-K Investigation Fees, Hearings and Code Enforcement Fees of the Building Code shall be paid prior to permit issuance.

Final inspection will not be made unless all outstanding fees related to the permit work have been paid.

103.4.5 Replace this section as follows:

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103.4.5 Fee Refunds. For fee refunds, see Section 107A.6 of the Building Code.

103.5.6 Revise the fourth paragraph of this section as follows:

To obtain re-inspection, the applicant shall pay the re-inspection fee in accordance with Section 110A, Table 1A-G-Inspections, Surveys and Reports – of the Building Code.

104.0 Add the following new section:

104.0 Appeals.

For appeals see Building Code Section 105A Appeals.

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CHAPTER 2

DEFINITIONS

201.0 General

201.0 Add the following to the end of the first sentence:

Where words, terms and phrases are not defined, they shall have their ordinary accepted meaning within the context with which they are used.

204.0 – B –

Add the following new definition:

Boiler. A closed vessel used for heating water or liquid, or for generating steam or vapor by direct application of heat from combustible fuels or electricity.

208.0 – F –

Add the following new definition:

Foot Vent. See “Relief Vent” Section 220.0.

216.0 – N –

Add the following items after Item (3) under definition of “Nuisance”:

- (4) Open, unsecured, leaking, plugged or otherwise defective sewer, gas or water lines.
- (5) Inadequate plumbing system maintenance, dilapidation, obsolescence, or damage.
- (6) Plumbing or plumbing fixtures, gas appliances or piping installed in violation of this code or without permit.
- (7) Where a change in occupancy classification is made without complying with the applicable provisions of this code and the Building Code.

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CHAPTER 3

GENERAL REGULATIONS

301 Materials – Standards and Alternates.

301.2 Replace this section as follows:

301.2 Alternative Materials, Design, and Methods of Construction Equivalency. See Building Code Section 104A.2.8.

306.0 Damage to Drainage System or Public Sewer.

306.2 Revise this section as follows:

306.2 Roofs, inner courts, vent shafts, light wells, or similar areas having rainwater drain, shall directly into a building drain or building sewer, storm drain, or to an approved alternate location based on approved geotechnical and engineering designs approved by the Chief Harbor Engineer.

314.0 Hangers and Supports.

314.1 Add a sentence to this section as follows:

All sanitary piping installed under piers, wharfs or docks shall be braced at not more than 20 foot (6,096 mm) intervals with rigid stainless steel hardware to prevent horizontal movement from wave action.

314.2 Add a sentence to this section as follows:

Piping suspended under piers, wharfs or docks shall be provide with lateral support in such a manner to as to prevent horizontal movement from wave action.

314.8 Add the following new section:

314.8 Materials.

314.8.1 Plumber's tape hanger iron may be used to secure pipe not greater than 2 inches (50.8 mm) in diameter.

314.8.2 Hanger iron shall be galvanized and not thinner than 22 gauge, 1/32-inch thick (0.8 mm) and 3/4-inch (19.05 mm) wide, securely nailed or screwed to the structure. When the strap-iron is formed around the pipe, it shall be secured with a 1/4-inch (6.35 mm) stove bolt.

314.8.3 All plumbing systems installed under piers or wharfs shall be supported by stainless steel hangers and 4-band no-hub couplings.

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CHAPTER 4

PLUMBING FIXTURES AND FIXTURE FITTINGS

No Port of San Francisco Building Code Amendments.

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CHAPTER 5

WATER HEATERS

No Port of San Francisco Building Code Amendments.

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CHAPTER 6

WATER SUPPLY AND DISTRIBUTION

603.0 Cross-Connection Control.

603.4.6.5 Add the following new section:

603.4.6.5 All such installations shall be approved in writing by the San Francisco Water Department prior to installation.

604.0 Materials.

604.1 Add the following sentence to the end of the first paragraph of this section:

Connections between copper water piping and ferrous materials shall be made with dielectric or insulated fittings or brass fittings or nipples.

605.0 Valves.

605.9 Add the following new section:

605.9 All buildings four stories or more in height shall have an approved backflow assembly installed as near as possible to the water meter and before the first fitting or branch line. The backflow assembly installed shall be in accordance to the degree of hazard within the building, but in no case less than an approved double check assembly. See Table 6-2.

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CHAPTER 7

SANITARY DRAINAGE

701.0 Materials.

701.1.3. Revise this section as follows:

701.1.3 No vitrified clay pipe or fittings shall be used above ground or where pressurized by a pump or ejector or underground within the foundation line of the building. They shall be kept at least twelve (12) inches (305mm) below ground.

701.1.7 Add the following new section:

701.1.7 Copper tubing shall not be used for urinal drainage or applications which are detrimental to the integrity of copper tubing.

707.0 Cleanouts.

707.9 Revise the first sentence as follows:

707.9 All required clean outs shall be to grade or readily accessible from the pier surface, and so located as to serve the purpose for which it is intended.

710.0 Drainage of Fixtures Located Below the Next Upstream Manhole or Below the Main Sewer Level.

710.1.1 Add the following new section:

710.1.1 Drainage of Fixtures Located Below the Fresh Air Inlet. Where a fixture is installed with the flood rim level equal to or lower than the elevation of the fresh air inlet serving the house trap, the piping serving the fixture shall be protected by installing an approved type of backwater valve. Where a fixture is installed with the flood rim level higher than the elevation of the fresh air inlet serving the house trap, the fixture shall not discharge through such backwater valve.

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CHAPTER 8

INDIRECT WASTES

No Port of San Francisco Building Code Amendments.

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CHAPTER 9

VENTS

907.0 Vent Stacks and Relief Vents.

907.1 Revise this section as follows:

907.1 Each drainage stack that extends six (6) or more stories above the building drain or other horizontal drain shall be served by a parallel vent stack, which shall extend undiminished in size from its upper terminal and connect to the drainage stack at or immediately below the lowest fixture drain. Each such vent stack shall also be connected to the drainage stack at each fifth floor, counting down from the uppermost fixture drain, by means of a yoke vent, the size of which shall be not less in diameter than either the drainage or the vent stack, whichever is smaller.

907.3 Add the following new section:

907.3 Vent Stacks and Relief Vents. Every building in which plumbing is installed shall have at least one main stack which shall run undiminished in size and as directly as possible from each building drain serving said building through to the open air above the roof.

A vent stack shall be installed with a soil or waste stack whenever relief vents or other branch vents are required in two or more branch intervals. A vent stack shall be installed in accordance with Section 706.1.

The size of the soil stack shall be determined by the total fixture units on that stack as per Table 7-5.

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CHAPTER 10

TRAPS AND INTERCEPTORS

1016.0 Sand Interceptors.

1016.2 Construction and Size.

1016.2.1 Add the following new section:

1016.2.1 Drains for Planter Boxes. When drains are provided for planter boxes, such drains shall enter into the sanitary or storm drainage plumbing system by discharging into an approved sump, receiving tank or sand settling tank. No trap shall be installed between the planter box and any approved receptor. Sizes of drains shall conform to Table 7-5.

Catch basins or sumps to drain surface water or collect subsoil drainage shall meet the following requirements:

- (1) The catch basin or sump shall be poured in place, and all sides and bottom shall be watertight.
- (2) A removable metal grill approved for applied design loads shall be placed on top.
- (3) Each catch basin shall be served with its own trap and cleanout, and shall connect to the storm or sanitary system independently.
- (4) If inlet is located below the building sewer or drain, a sump pump minimum of 1½" (38.1 mm) outlet may be used. The bottom of sump shall maintain a 1'- 0" (25.4 mm) distance from the inlet, creating a 1'- 0" (25.4 mm) sand trap.
- (5) If the depth of the sump is over 5'- 0" (1.52 m) a larger catch basin shall be required with a permanent ladder securely bolted to the interior to provide access for maintenance. A minimum clear space of 30" x 30" (762 mm x 762 mm) shall be provided.
- (6) A listed and approved plastic catch basin may be installed in areas of residential buildings that are not subjected to any vehicular traffic and shall be installed on a concrete base to prevent settling, provided all other code requirements of this section and the listing and installation requirements of such catch basin are met.

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CHAPTER 11

STORM DRAINAGE

1101.0 General.

1101.1.1 Add the following new section:

1101.1.1 Leaders, Connection to Drain. All storm water or casual water from roof areas, balconies, light wells, courtyards or similar areas which total more than 200 square feet (18.4 square meters) aggregate shall drain or be conveyed directly to the building drain, or building sewer, or to an approved alternate location based on approved geotechnical and engineering design approved by Port of San Francisco Engineering Divisions Environmental Specialist. Such drainage shall not be directed to flow onto adjacent property or over public way, including sidewalks. The opening of the leader shall meet the same requirements as Section 906.0 of the Plumbing Code.

1101.1.2 Add the following new section:

1101.1.2 Temporary Provisions. When the storm water sewer is not yet installed, the building storm water drainage system may discharge into the sewer on the street side of the main trap as near to the curb line as possible.

1101.1.3 Add the following new section:

1101.1.3 Temporary Provisions Drain Trap. When, under the provisions of Section 1101.1.2 the building storm water drainage system discharges to the sewer, a trap shall be placed in that drain at a point near where it branches into the sewer. The trap shall be supplied with clean water by an approved means such as a hose bibb or trap primer.

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CHAPTER 12

FUEL PIPING

1209.5 Acceptable Piping Materials and Joining Methods.

1209.5.1.1 Acceptable Materials.

1209.5.1.1.2 Add a new section as follows:

1209.5.1.1.2 Exterior or Similar Locations. Ferrous gas piping in exterior or similar locations shall be protected from corrosion by approved machine applied protective coatings or wrapping materials that conform to recognized standards. Field wrapping, providing equivalent protection may be used and is restricted to those fittings and short sections where factory wrap has been damaged or necessarily stripped for threading or welding. Zinc coatings shall not be deemed adequate for exterior or similar use. Protectively coated pipe shall be inspected and tested and any visible void, damage or imperfection to the pipe coating shall be repaired to comply with Section 313.

1209.5.1.1.3 Add the following new section:

1209.5.1.1.3 Fish Processing Facilities. In portions of fish processing facilities, canneries and other indoor wet locations, and in locations where walls are frequently washed or subject to sea air, ferrous gas piping shall be protected as required for exterior locations.

1209.5.1.1.4 Add the following new section:

1209.5.1.1.4 Installations under Piers, Docks or Wharfs. Unless specifically approved by the Chief Harbor Engineer, gas piping shall be prohibited underneath piers, docks or wharfs.

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Chapter 13

HEALTH CARE FACILITIES AND MEDICAL GAS AND VACUUM SYSTEMS

No Port of San Francisco Building Code Amendments.

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CHAPTER 14

REFERENCED STANDARDS

No Port of San Francisco Building Code Amendments.

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CHAPTER 15

FIRESTOP PROTECTION

No Port of San Francisco Building Code Amendments.

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CHAPTER 16A

NON-POTABLE WATER REUSE SYSTEMS

No Port of San Francisco Building Code Amendments.

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APPENDIX A

RECOMMENDED RULES FOR SIZING THE WATER SUPPLY SYSTEM

No Port of San Francisco Building Code Amendments.

APPENDIX B

EXPLANATORY NOTE ON COMBINATION WASTE AND VENT SYSTEMS

No Port of San Francisco Building Code Amendments.

APPENDIX D

SIZING STORMWATER DRAINAGE SYSTEMS

No Port of San Francisco Building Code Amendments.

APPENDIX G

GRAYWATER SYSTEMS

No Port of San Francisco Building Code Amendments.

APPENDIX I

INSTALLATION STANDARDS

No Port of San Francisco Building Code Amendments.

APPENDIX K

PRIVATE SEWAGE DISPOSAL SYSTEMS

No Port of San Francisco Building Code Amendments.

APPENDIX L

ALTERNATE PLUMBING SYSTEMS

No Port of San Francisco Building Code Amendments.

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