

International Recovery Forum 2020 in Kobe, Japan

Build Back from The Great Hanshin Earthquake

- Build Back of The International Port of Kobe by General Contractor -

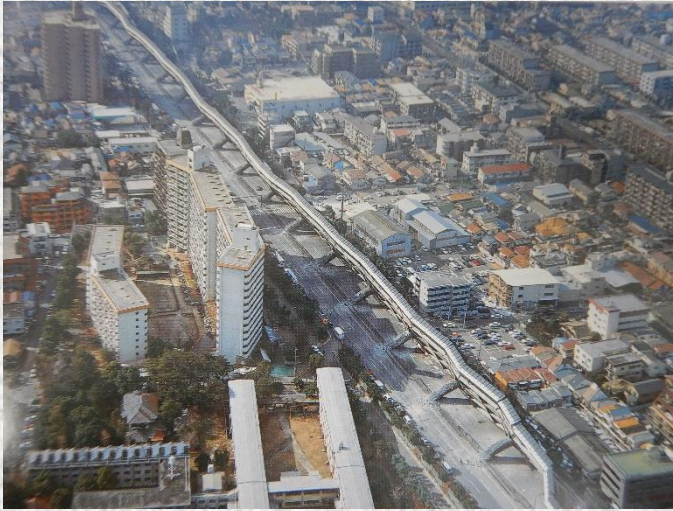
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<http://www.toyo-const.co.jp/>

Damaged Hanshin Expressway in Kobe City



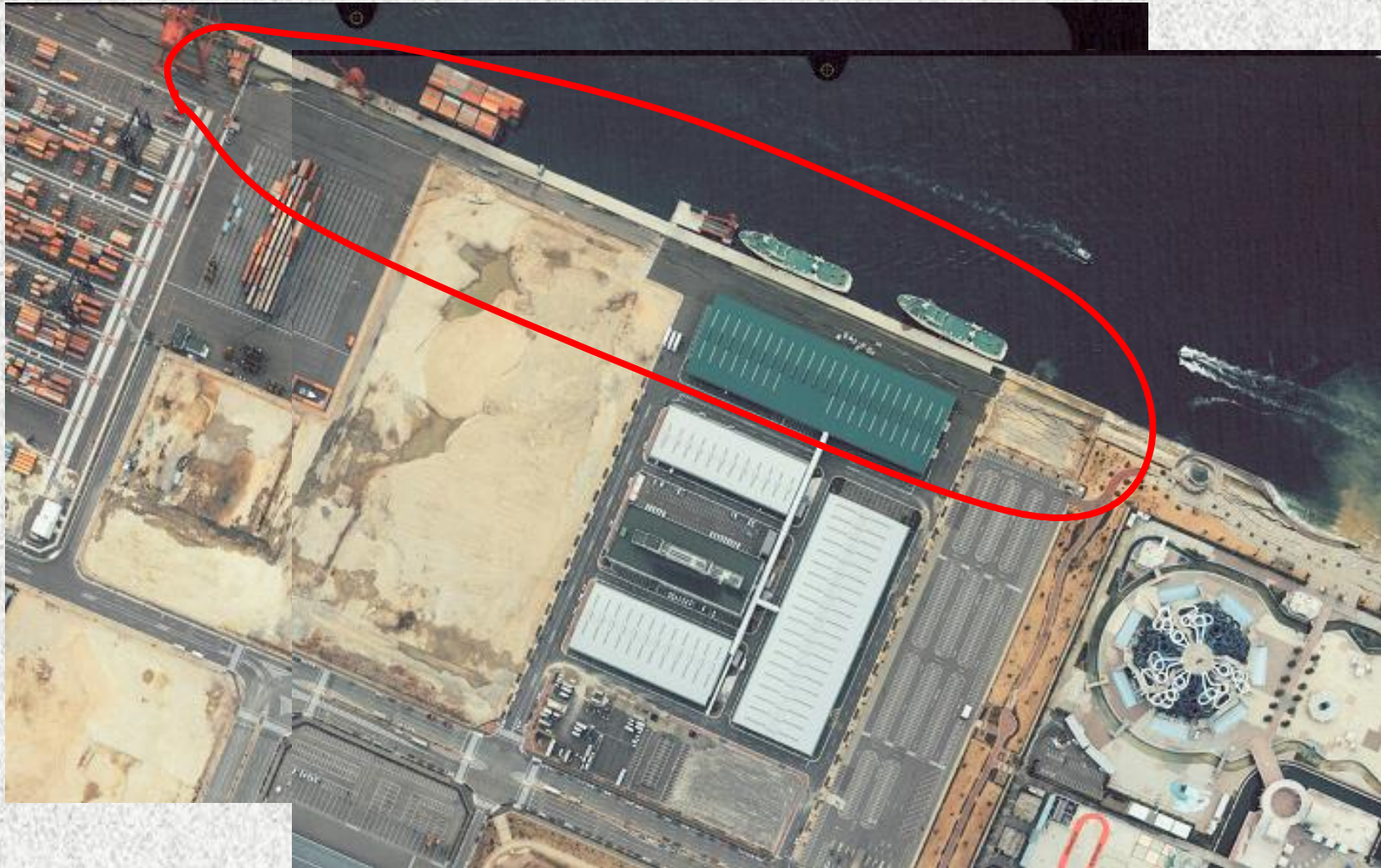
Damaged Piers of Viaduct



Damaged Girders of Viaduct

Photographing Date: Jan. 1995

Damaged Quay Wall, Kobe Port (1)



Photographing Date: Jan. 1995

Damaged Quay Wall, Kobe Port (2)



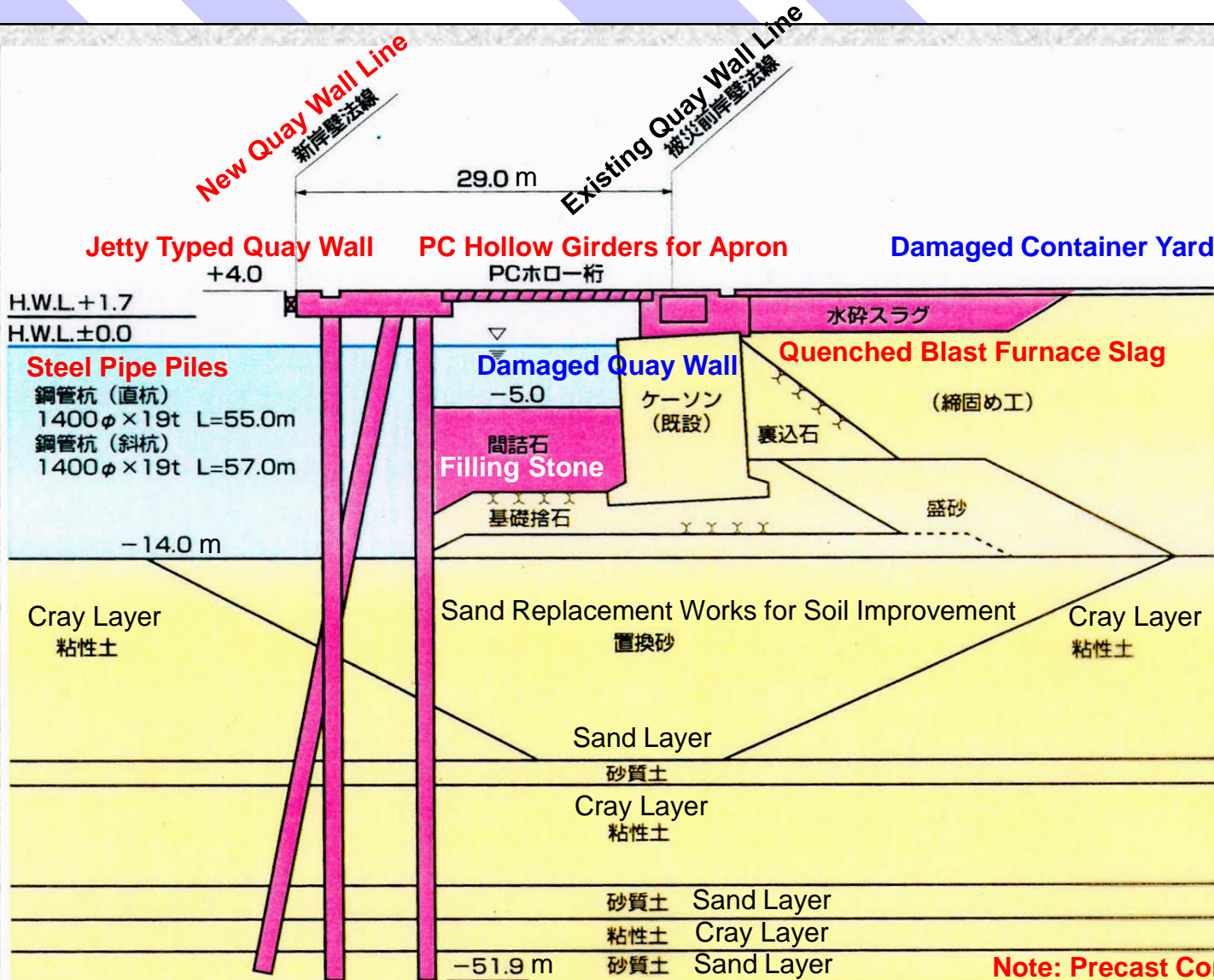
Damaged Container Yard



Damaged Quay Wall

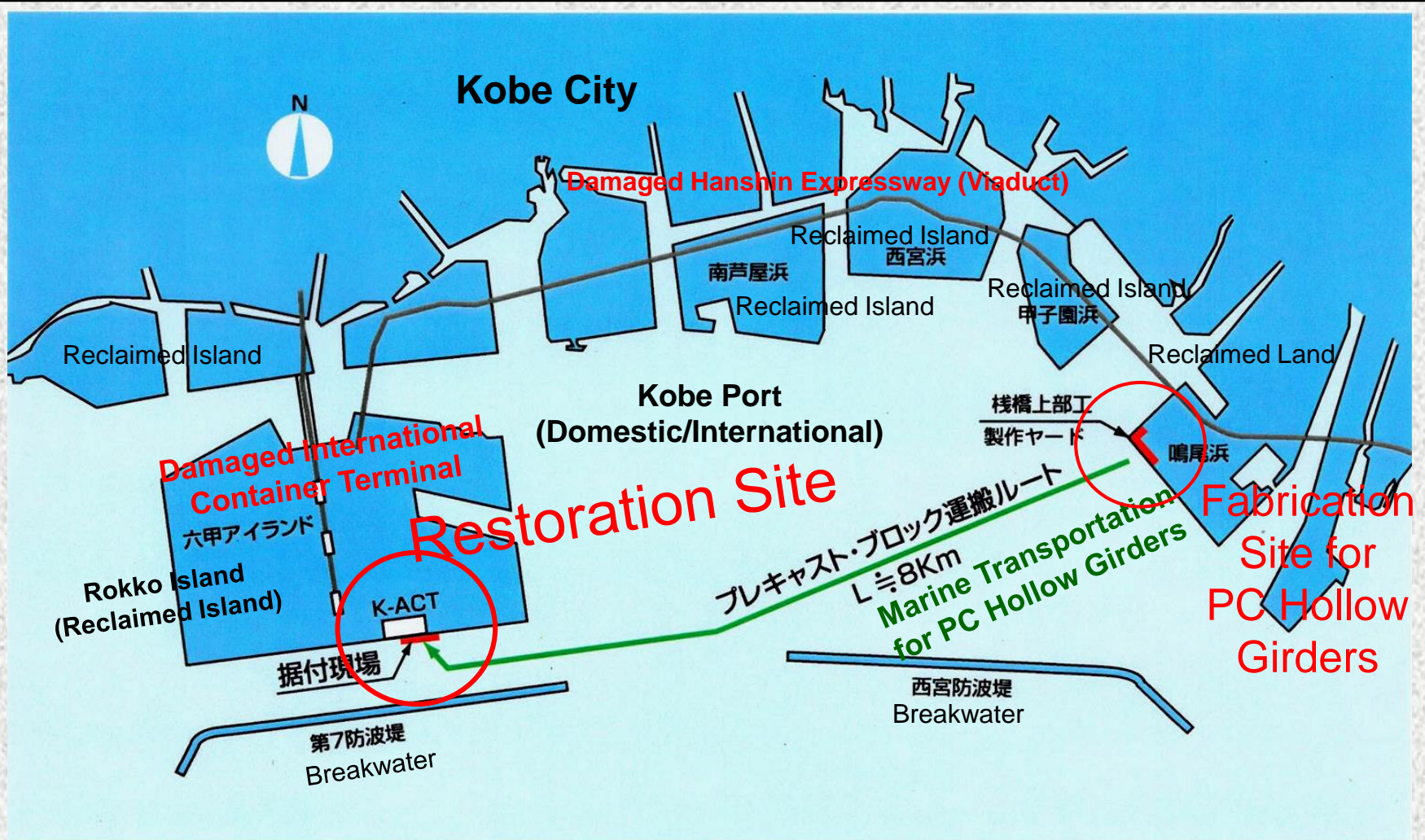
Photographing Date: Jan. 1995

Urgent Restoration Works (1)



Standard Cross Section (indicate Pink Color on Damaged Quay Wall)

Urgent Restoration Works (2)



Marine Transportation Plan for PC Hollow Girders (indicate Green Line)

Urgent Restoration Works (3)

Restoration Works Schedule 実施工程表

Sche.: Apr. 21, 1995 to Oct. 30, 1995
工期 平成7年4月21日～平成7年10月30日

Works Items	Unit	Q'ty	Apr.		May		Jun.		Jul.		Aug.		Spt.		Oct.		Remarks	
			10	20	10	20	10	20	10	20	10	20	10	20	10	20		
Preparation	LS	1																
Removal	m	350																
SPP Driven	no	355																
Filling Stone	m	350																
Jetty	m	350																据付 7/24~28.8/10~15
Crane Rail	m	350																据付 7/10~14.7/29~8/2.8/26~30
PC Hollow G	m	350																据付 8/16~20.9/6~9
Soil Improvement	m	350																Sand Compaction Pile Method
Yard Pavement	m	350																
Fender, Bollard etc	LS	1																
Site Inspection	LS	1																

Reference: Great Hanshin Earthquake occur at 5am on Jan. 17, 1995

Urgent Restoration Works (4)



Placement Works of
PC Hollow Girders



Completion of Placement Works

Urgent Restoration Works (5)



Completion of
Urgent Restoration Works

Urgent Restoration Works (Conclusion)

◇ Diversification of Structure with Earthquake Resistant

- Before Great Hanshin Earthquake, the Gravity-Typed Structures were mainly used on 90% of the Quay Wall -

① Priority of Build Back Plan

(Container Terminal, Ferry Terminal,
Access Bridge between Reclaimed Island to City Area)

② Stock Yards for Debris of Structures

③ Aseismic Frame Structure and

its Designing Method of Restoration Works

④ Reduced Construction Period

(Jacket Method, Piles & Blocks Structure Method, Adoption of Precast Members)

Thank you for your attention

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