

# Environmental Permits EP-093/2001 and EP-094/2001 Approval for Portable Noise Barrier

## 1. Introduction

Conditions of permits Clause 2.4 of EP-093/2001 and EP-094/2001 says:

*“The permit holder shall submit the details (length, height, material and type) of the portable noise barrier for the Castle Peak Road Improvement project to the Director for agreement no later than 1 month before commencement of construction of the Project. This portable noise barrier shall have a surface density not less than 7 kg.m<sup>2</sup>”.*

This submission is to provide details of the Portable Noise Barrier further to those provided by the Contractor in previous submissions. For ease of reference, the supporting documents from the previous submissions have been attached to this revised proposal.

## 2. Equipment to be Shielded

Under the above permits, it is anticipated that the equipment used for piling for footbridges and noise barrier will require shielding to keep noise levels at adjacent sensitive receivers within the required levels.

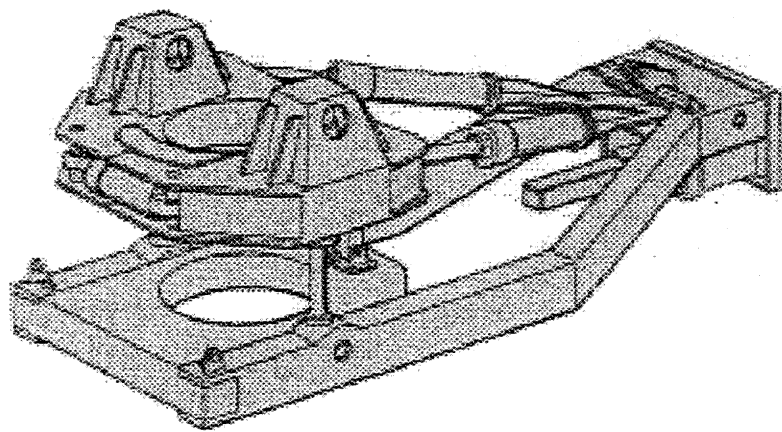
It is anticipated that a crawler crane and casing oscillator (see attached drawings) or a hydraulic oscillator/rotator (see the attached Japanese labeled diagram) would be used for bore piling works adjacent to Seawall B and C Reclamation. The oscillator/rotator will be located near the ground. The typical height of the vehicle would be from 2.5m to 3.5m. The frontage of the trailer would likely be about 3.2m wide.

## 3. Details of Proposed Barrier

Based on the details of the plant to be shielded, we now anticipate using 6m wide by 3.6m high portable noise barrier and/or 2.4m high by 2.4m wide cargo containers (see the attached “Portable Noise Barrier Coverage” chart). The barrier would be placed at 1.5m to 2m away from the operating portions of the plant, screening the Sensitive Noise Receivers (see attached marked-up drawings for approximate distances between the piling work and the closest SNR) from the piling activity.

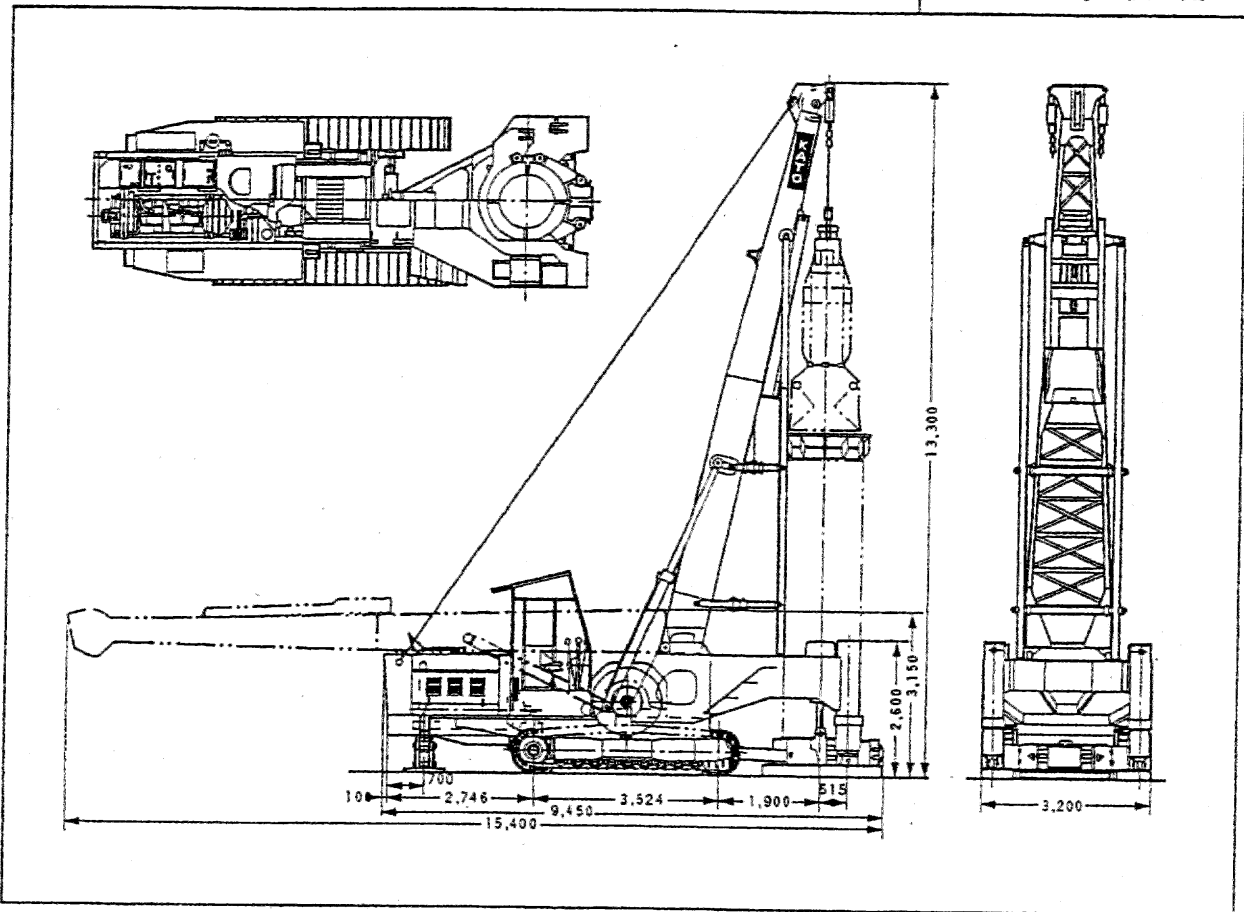
Drawings and charts attached herewith shows the coverage afforded by the proposed barriers, the locations of the relevant noise sensitive receivers and details of the general arrangement of the barriers to be provided. Also enclosed is a copy of an Acoustic Measurement Report carried out on a similar barrier employed by us previously on another site in Hong Kong.





# 30THC

## 外観寸法図

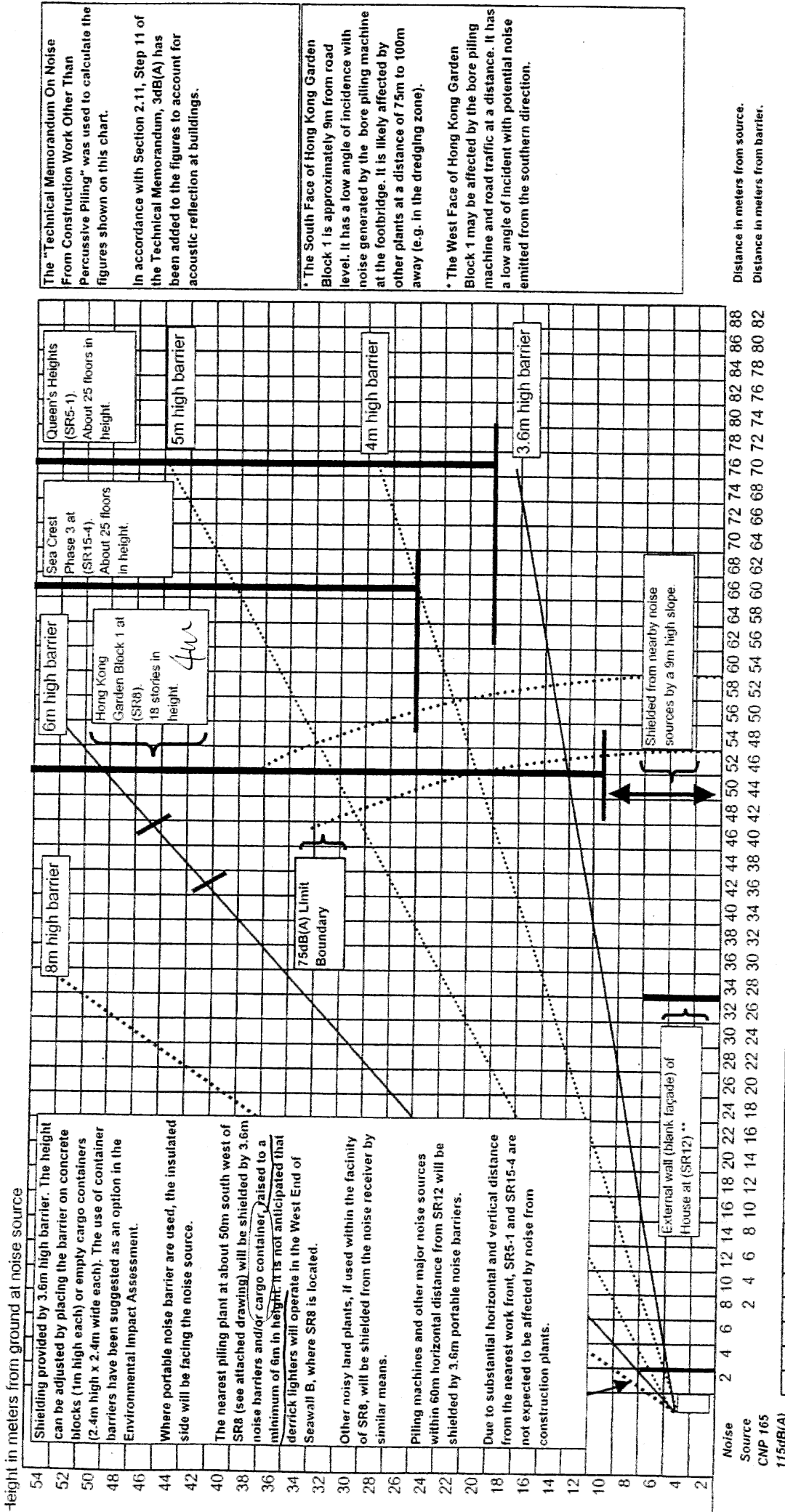


### ■主要諸元

名称および型式		30THC型 アースドリル		クレーン	型 式	単脚式(流体継手付)
全 機 荷 重 量		約 35,000kg			吊 上 げ 力	6,000kg
格納時寸法(全長×全巾×全高)		15,400×3,200×3,370 (mm)		クレーン 性能	吊 上 げ 速 度	90m/min
作業時寸法(全長×全巾×全高)		9,450×3,200×13,300 (mm)			最大ケーシング外径	1,480φ mm
クローラ 軸間距離×シュー巾		3,524×600 (mm)			揺 動 ト ル ク	135,000kg-m
					揺 動 角 度	13°
エンジン	名称および型式	小松カミンス NTC-6		掘削能力	最大引抜力	92,400kg
	定 格 出 力	220ps/1,800r.p.m.			ケーシング押込力	26,000kg (シリンダー能力 135,400kg)
	最 大 ト ル ク	98kg-m/1,500r.p.m.			工 法	オールケーシング工法
液压油	型 式	デュアルギヤポンプ	分流型ギヤポンプ	走行能力	掘 削 口 径	100~150cm
	吐 出 圧 力	210kg/cm <sup>2</sup>	140kg/cm <sup>2</sup> 25kg/cm <sup>2</sup>		掘 削 深 度	約 40m
	吐 出 量	113×23ℓ/min	62ℓ/min 50ℓ/min		走 行 速 度	1.47km/hr
					接 地 圧 力	0.97kg/cm <sup>2</sup>

# Portable Noise Barrier Vertical Coverage

EP-093/2001 and EP-094/2001



The "Technical Memorandum On Noise From Construction Work Other Than Percussive Piling" was used to calculate the figures shown on this chart.

In accordance with Section 2.11, Step 11 of the Technical Memorandum, 3dB(A) has been added to the figures to account for acoustic reflection at buildings.

\* The South Face of Hong Kong Garden Block 1 is approximately 9m from road level. It has a low angle of incidence with noise generated by the bore piling machine at the footbridge. It is likely affected by other plants at a distance of 75m to 100m away (e.g. in the dredging zone).

\* The West Face of Hong Kong Garden Block 1 may be affected by the bore piling machine and road traffic at a distance. It has a low angle of incident with potential noise emitted from the southern direction.

Distance in meters from source.  
Distance in meters from barrier.

Single source. Not attenuated.  
Adjusted for acoustic reflection.

Attenuated with 50mm 6kg/m<sup>3</sup> insulated noise barrier based on testing done on another project.  
Adjusted for acoustic reflection.

101dB(A)	99dB(A)	98dB(A)	94dB(A)	92dB(A)	90dB(A)	88dB(A)	87dB(A)	86dB(A)	85dB(A)	84dB(A)	83dB(A)	82dB(A)	81dB(A)	80dB(A)	80dB(A)	79dB(A)	79dB(A)	78dB(A)	78dB(A)	77dB(A)	77dB(A)	76dB(A)	76dB(A)	75dB(A)	75dB(A)	75dB(A)	74dB(A)	74dB(A)	74dB(A)	74dB(A)	73dB(A)	73dB(A)	73dB(A)	73dB(A)	72dB(A)	72dB(A)	72dB(A)	71dB(A)	71dB(A)	70dB(A)	70dB(A)	69dB(A)	69dB(A)	68dB(A)	68dB(A)	67dB(A)	67dB(A)	66dB(A)	66dB(A)	65dB(A)	65dB(A)	64dB(A)	64dB(A)	63dB(A)	63dB(A)	62dB(A)	62dB(A)	61dB(A)	61dB(A)	60dB(A)	60dB(A)	59dB(A)	59dB(A)	58dB(A)	58dB(A)	57dB(A)	57dB(A)	56dB(A)	56dB(A)	55dB(A)	55dB(A)	54dB(A)	54dB(A)	53dB(A)	53dB(A)	52dB(A)	52dB(A)	51dB(A)	51dB(A)	50dB(A)	50dB(A)	49dB(A)	49dB(A)	48dB(A)	48dB(A)	47dB(A)	47dB(A)	46dB(A)	46dB(A)	45dB(A)	45dB(A)	44dB(A)	44dB(A)	43dB(A)	43dB(A)	42dB(A)	42dB(A)	41dB(A)	41dB(A)	40dB(A)	40dB(A)	39dB(A)	39dB(A)	38dB(A)	38dB(A)	37dB(A)	37dB(A)	36dB(A)	36dB(A)	35dB(A)	35dB(A)	34dB(A)	34dB(A)	33dB(A)	33dB(A)	32dB(A)	32dB(A)	31dB(A)	31dB(A)	30dB(A)	30dB(A)	29dB(A)	29dB(A)	28dB(A)	28dB(A)	27dB(A)	27dB(A)	26dB(A)	26dB(A)	25dB(A)	25dB(A)	24dB(A)	24dB(A)	23dB(A)	23dB(A)	22dB(A)	22dB(A)	21dB(A)	21dB(A)	20dB(A)	20dB(A)	19dB(A)	19dB(A)	18dB(A)	18dB(A)	17dB(A)	17dB(A)	16dB(A)	16dB(A)	15dB(A)	15dB(A)	14dB(A)	14dB(A)	13dB(A)	13dB(A)	12dB(A)	12dB(A)	11dB(A)	11dB(A)	10dB(A)	10dB(A)	9dB(A)	9dB(A)	8dB(A)	8dB(A)	7dB(A)	7dB(A)	6dB(A)	6dB(A)	5dB(A)	5dB(A)	4dB(A)	4dB(A)	3dB(A)	3dB(A)	2dB(A)	2dB(A)	1dB(A)	1dB(A)	0dB(A)	0dB(A)	-1dB(A)	-1dB(A)	-2dB(A)	-2dB(A)	-3dB(A)	-3dB(A)	-4dB(A)	-4dB(A)	-5dB(A)	-5dB(A)	-6dB(A)	-6dB(A)	-7dB(A)	-7dB(A)	-8dB(A)	-8dB(A)	-9dB(A)	-9dB(A)	-10dB(A)	-10dB(A)	-11dB(A)	-11dB(A)	-12dB(A)	-12dB(A)	-13dB(A)	-13dB(A)	-14dB(A)	-14dB(A)	-15dB(A)	-15dB(A)	-16dB(A)	-16dB(A)	-17dB(A)	-17dB(A)	-18dB(A)	-18dB(A)	-19dB(A)	-19dB(A)	-20dB(A)	-20dB(A)	-21dB(A)	-21dB(A)	-22dB(A)	-22dB(A)	-23dB(A)	-23dB(A)	-24dB(A)	-24dB(A)	-25dB(A)	-25dB(A)	-26dB(A)	-26dB(A)	-27dB(A)	-27dB(A)	-28dB(A)	-28dB(A)	-29dB(A)	-29dB(A)	-30dB(A)	-30dB(A)	-31dB(A)	-31dB(A)	-32dB(A)	-32dB(A)	-33dB(A)	-33dB(A)	-34dB(A)	-34dB(A)	-35dB(A)	-35dB(A)	-36dB(A)	-36dB(A)	-37dB(A)	-37dB(A)	-38dB(A)	-38dB(A)	-39dB(A)	-39dB(A)	-40dB(A)	-40dB(A)	-41dB(A)	-41dB(A)	-42dB(A)	-42dB(A)	-43dB(A)	-43dB(A)	-44dB(A)	-44dB(A)	-45dB(A)	-45dB(A)	-46dB(A)	-46dB(A)	-47dB(A)	-47dB(A)	-48dB(A)	-48dB(A)	-49dB(A)	-49dB(A)	-50dB(A)	-50dB(A)	-51dB(A)	-51dB(A)	-52dB(A)	-52dB(A)	-53dB(A)	-53dB(A)	-54dB(A)	-54dB(A)	-55dB(A)	-55dB(A)	-56dB(A)	-56dB(A)	-57dB(A)	-57dB(A)	-58dB(A)	-58dB(A)	-59dB(A)	-59dB(A)	-60dB(A)	-60dB(A)	-61dB(A)	-61dB(A)	-62dB(A)	-62dB(A)	-63dB(A)	-63dB(A)	-64dB(A)	-64dB(A)	-65dB(A)	-65dB(A)	-66dB(A)	-66dB(A)	-67dB(A)	-67dB(A)	-68dB(A)	-68dB(A)	-69dB(A)	-69dB(A)	-70dB(A)	-70dB(A)	-71dB(A)	-71dB(A)	-72dB(A)	-72dB(A)	-73dB(A)	-73dB(A)	-74dB(A)	-74dB(A)	-75dB(A)	-75dB(A)	-76dB(A)	-76dB(A)	-77dB(A)	-77dB(A)	-78dB(A)	-78dB(A)	-79dB(A)	-79dB(A)	-80dB(A)	-80dB(A)	-81dB(A)	-81dB(A)	-82dB(A)	-82dB(A)	-83dB(A)	-83dB(A)	-84dB(A)	-84dB(A)	-85dB(A)	-85dB(A)	-86dB(A)	-86dB(A)	-87dB(A)	-87dB(A)	-88dB(A)	-88dB(A)	-89dB(A)	-89dB(A)	-90dB(A)	-90dB(A)	-91dB(A)	-91dB(A)	-92dB(A)	-92dB(A)	-93dB(A)	-93dB(A)	-94dB(A)	-94dB(A)	-95dB(A)	-95dB(A)	-96dB(A)	-96dB(A)	-97dB(A)	-97dB(A)	-98dB(A)	-98dB(A)	-99dB(A)	-99dB(A)	-100dB(A)	-100dB(A)
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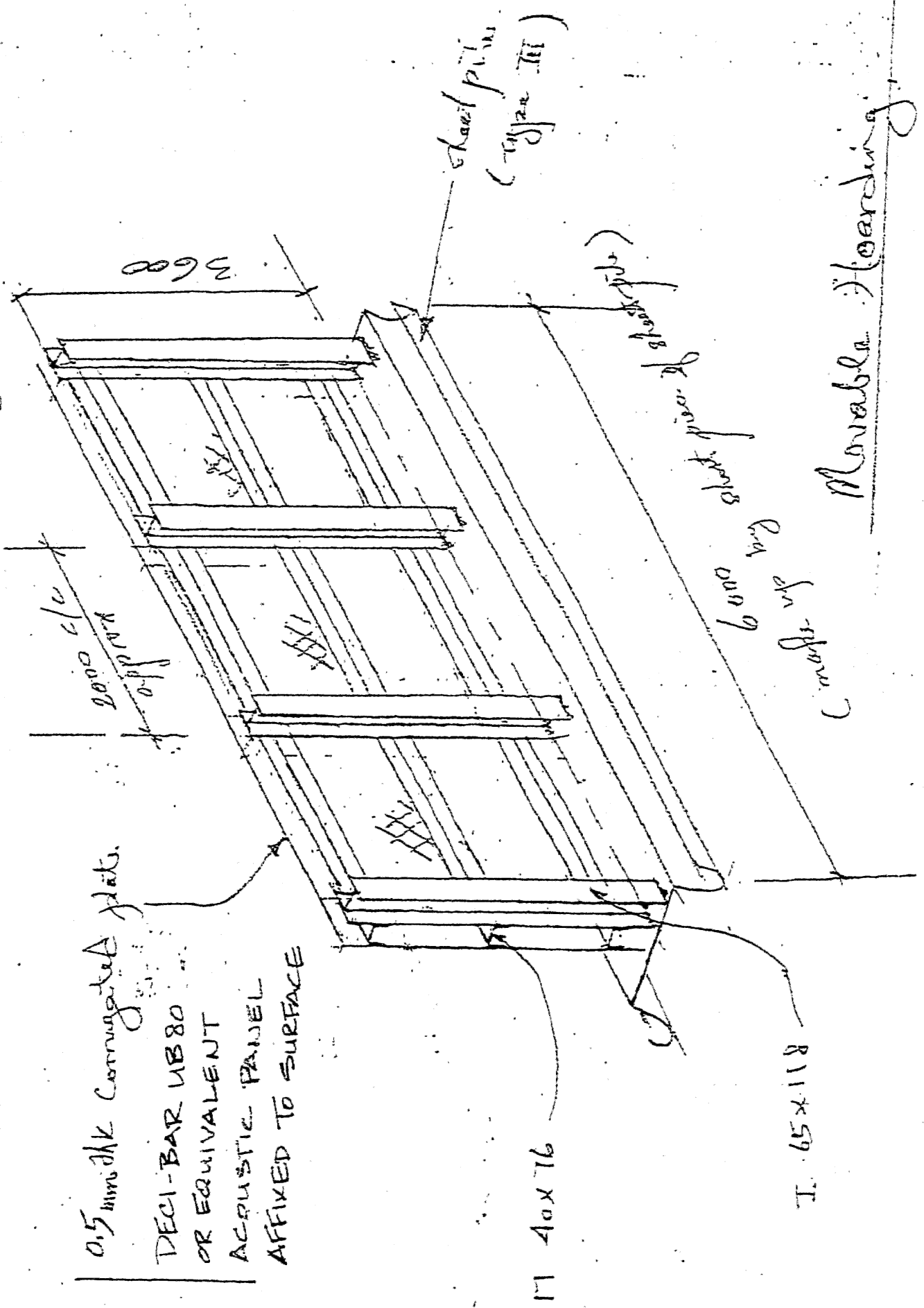
No contribution to noise impact after use of 50mm thick 6kg/m<sup>3</sup> noise barrier

Decrease over distance

Attenuated SPL determined by testing.

\*\* No impact due to blank façade (Section 2.9.1 of the Technical Memorandum On Noise From Construction Work Other Than Percussive Piling).

0.5 mm thick Corrugated plate.  
 DECI-BAR UB80  
 OR EQUIVALENT  
 ACOUSTIC PANEL  
 AFFIXED TO SURFACE



I 40x76

I. 65x118

Movable Hoarding

DECI-BAR UBSO  
OR EQUIVALENT  
ACOUSTIC PANEL  
AFFIXED TO SURFACE

WIND  
MUSH

2000 c/c  
approx

3600

L 50x50x5

Sheet piles  
(Type III)

Sheet piles

6000 sheet piles  
per 1000 m

Marable Chain Link Fence

