



## Silt Curtain Deployment Plan

I	05/09/11	Full Set of Submission	Flora Ng	Garry Law
H	01/02/11	Full Set of Submission	Horace Yau	Garry Law
G	19/01/11	Full Set of Submission	Horace Yau	Garry Law
F	05/01/11	Submission for Approval	Horace Yau	Garry Law
E	29/09/10	Submission for Approval	Waffery Lau	P C Chan
D	24/09/10	Submission for Approval	Waffery Lau	P C Chan
C	08/06/10	Submission for Approval	Cecil Cheng	P C Chan
B	01/06/10	Submission for Approval	Cecil Cheng	P C Chan
A	22/03/10	Submission for Approval	Cecil Cheng	P C Chan
0	01/03/10	Submission for Approval	Cecil Cheng	P C Chan
Rev	Date	Status	Prepared By	Reviewed and Approved By Construction Manager

Ref.: AACWBIECEM00\_0\_2083L.11

15 November 2011

By Post and E-mail

Chun Wo – CRGL Joint Venture  
5C, Hong Kong Spinners Industrial Building Phase 1  
601-603 Tai Nan West Street  
Cheung Sha Wan  
Kowloon

Attention: Mr. Chan Sing Cho (Project Manager)

Dear Sir,

**Re: FEP-03/356/2009**  
**Contract No. HK/2009/02**  
**Wan Chai Development Phase II – Central-Wan Chai Bypass at Wan Chai East**  
**Silt Curtain Deployment Plan (Rev. I)**

Reference is made to Chun Wo – CRGL Joint Venture's submission of Silt Curtain Deployment Plan (Rev. I dated 5 September 2011) received through E-mail for our review and comment.

Please be informed that we have no adverse comments on the captioned submission. We write to verify the captioned submission in accordance with Condition 2.8 of FEP-03/356/2009.

Thank you for your kind attention.

Yours sincerely,



David Yeung  
Independent Environmental Checker

c.c.	CEDD	Mr. Patrick Keung	by fax: 2577 5040
	AECOM	Mr. Frankie Fan	by fax: 2587 1877
	AECOM	Mr. Kelvin Cheng	by fax: 2691 2649
	LAM	Mr. Raymond Dai	by fax: 2882 3331

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# Lam Geotechnics Limited

Ground Investigation & Instrumentation Professionals

華益  
土力  
有限  
公司

Ref : G1001/CS/L494/FEP-03/356/2009  
Date : 15 November 2011

## Chun Wo – CRGL Joint Centure

5C, Hong Kong Spinners Industrial Building, Phase I,  
602 – 603 Tai Nan Street,  
Cheung Sha Wan  
Kowloon

**Attn: Mr. Chan Sing Cho, Project Manager**

Dear Sir,

**Contract No. HK/2009/02**

**Wanchai Development Phase II – Central –Wan Chai Bypass at Wan Chai East  
Silt Curtain Deployment Plan (Rev. I)**

Referring to the captioned submission dated 5 September 2011, we have reviewed your submitted details and hereby certified this submission in accordance with Condition 2.8 of FEP-03/356/2009.

Should you have any enquiry, please feel free to contact the undersigned at 2839 5666.

Yours faithfully,

Raymond Dai  
Environmental Team Leader

c.c.

CEDD	- Mr. Patrick Keung	(By Fax: 2577 5040)
AECOM	- Mr. Frankie Fan	(By Fax: 2587 1877)
ENVIRON	- Mr. David Yeung	(By Fax: 3548 6988)



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## 1.0 Introduction

The purpose of this deployment plan is to illustrate the general layout, the construction programme, details on the design, operation and maintenance of the silt curtains to be installed for the dredging and filling works of “Wan Chai Reclamation” as recommended in the approved EIA report (Registration No.:AEIAR-125/2008).

## 2.0 List of documentation to be referenced

- 2.1 Particular Specification, the relevant clauses and our remarks for the marine ground investigations is listed as follows for ease of references.

PS Clause No.	Relevant Remarks
PS Appendix 25.4	EP No. EP-356/2009 Clause 2.8 refers. The silt curtain deployment plan shall be certified by the ET Leader and verified by the IEC as conforming to the relevant information and recommendation contained in the approved EIA Report

## 3.0 General Layout of Silt Curtain (SD-Hanging Type) by Stages

- 3.1 The deployment of Silt Curtain would be divided in to stages based on the locations of works and the working period, the details of the staging are as follow:

### Stage 1:

The silt curtain shall be deployed in 2 modes. This 1<sup>st</sup> mode is designed for general marine works from 0700 to 2200 and the 2<sup>nd</sup> mode is designed for the overnight dredging and rockfilling works from 2200 to 0600. The deployment of hanging type silt curtain in these 2 modes will be operated for 2 months from 17 September 2010 to 16 November 2010 as per CNP no. CW-RS0817-10. In the period of overnight dredging and rockfilling, the additional semi-circular geotextile will be deployed surrounding the silt screen frame installed at the intake ports of Wan Chai pumping station and Sun Hung Kai Centre. The detailed information regarding the hanging type silt curtain deployment refers to the attachment in Appendix A. The precautionary measurement to prevent the disturbance of the existing marine sediment is that the lower part of the hanging type silt curtain would be lifted up by using the preset nylon ropes or strings as shown in the sketch in Appendix E. The part of the bottom of silt curtain would be lifted up by using the nylon rope with diameter of 25mm connected to the lifting hook of the derrick lighter. Once the bottom part of the silt curtain to be lifted to the top part of the silt curtain, the nodes would be made to tie the lifted up part of the curtain resulting in the silt curtain in “bow tie shape” as shown in the sketch attached in Appendix E. After the completion of the action as aforesaid, the silt curtain in “bow tie shape” would be towed to the designated locations by using tug boat so that no disturbance of the ambient marine deposit happens in the course of towing. The procedures for the erection and removal of the additional hanging type silt curtain tied to the anchors are illustrated in Appendix E. For minimization of disturbance of seabed sediment in the course of overnight dredging works, this framed silt curtain will be deployed down to the seabed during





dredging operation and will be lifted in such manner that the disturbance of seabed marine deposit is minimized.

Stage 2:

Silt Curtain to be deployed for the reclamation works of WCR2 for approximate 6 months, anticipated from February 2012 to August 2012.

Stage 3:

Silt Curtain to be deployed for the reclamation works of WCR4 and TWCR4 for approximate 10 months, anticipated from April 2012 to January 2013.

Stage 4:

Silt Curtain to be deployed for the reclamation works of WCR3 for approximate 11 months, anticipated from February 2014 to January 2015.

Stage 5:

Silt Curtain to be deployed for the construction of permanent seawall blocks near reclamation works of WCR4, the removal of temporary reclamation TWCR4 and the reinstatement of original seabed. The silt curtains to be deployed for approximate 6 months, anticipated from March 2016 to August 2016.

- 3.2 The layout plans for deployment of silt curtains during different stages and its general arrangement should refer to Appendix A. To suit the site condition and with reference to the tidal range, the silt curtain would be extended to as close to the seabed level as practicable.
- 3.3 The working procedure for installation of silt curtain should refer to Appendix C.
- 3.4 Regarding the emergency plan for the stakeholders of the pumping station intake ports in the proximity of the overnight dredging area, JV's front line staff will closely communicate with the stakeholders immediately and the dredging works will be stopped in case the sediment spillage from the enclosed type framed silt curtain is happened during dredging works. At the same instant, the necessary action to cease jeopardising the pumps in the pumping station will be carried out.
- 3.5 Phase 1a is the stage for reclamation work after the installation of precise seawall block, caisson and pump station except for the marine access at the east end. Silt curtain is required to enclose the marine access as stated in EPD condition. Upon 80% completion of the reclamation work, the marine access will be closed and filled up with precast concrete block to high water level, anticipated from February 2011 to March 2011.
- 3.6 In order to prevent muddy water from going out of the precast concrete block / caisson, additional silt curtain is prepared on site at Pet Garden. If muddy water is found going out of the concrete block / caisson, silt curtain will be set up around the source to block the muddy water from spreading out. Silt curtain in T6 and T7 will not open for transportation so as to reduce the chance for muddy water for going out. Additional silt curtain shall also be deployed to prevent muddy water escape from the marine access.



3.7 The maintenance procedure for silt curtain is as follow:

1. Site supervisors should be responsible to inspect the condition of the silt curtain daily during the course of marine works. An inspection checklist will be prepared and filled in by site supervisors. All checklists should be kept on site for record purpose. A template of checklist is attached on Appendix D.
2. If silt curtain is found to be damaged and repairing works are identified if necessary, all marine works at within 50m from the location of silt curtain would be temporary suspended. The silt curtain would be lifted up from sea by chain block pulley system, the whole/part of (depends on damaged condition) silt curtain would be replaced. In case of repairing damaged floats, temporary suspension of marine works should not imply.
3. The suspended marine works as above-mentioned would only be resumed after satisfactorily repairing of the damaged silt curtain.
4. As a regular maintenance, refuse or debris around the silt curtain would be collected on daily basis to avoid adverse effect to marine plants as well as to the public.
5. Spare silt curtain sheets and the associated material would be stored on site to maintain for prompt replacement in case of any damages observed.
6. Prior to removal of the silt curtain, site supervisor should closely monitor with the marine plant's operators to ensure no marine works should be carried out at within 50m from the location of silt curtain maintenance.

#### 4.0 Deployment Schedule

- 4.1 The deployment schedule of the silt curtain could refer to the table below. It is prepared based on the Initial Works Programme and may subject to changes to reflect the actual site progress:





Staging	Anticipated Installation Works		Silt Curtain to be Maintained until	Anticipated Removal by	Total Duration, days = (b)- (a)
	From (a)	To			
Stage 1	1 May, 2010	15 May, 2010	15 November, 2010	22 November, 2010	205
Stage 1a	8 February, 2011	31 March, 2011	31 March, 2011	31 March, 2011	51
Stage 2	3 February, 2012	17 February, 2012	28 July, 2012	4 August, 2012	183
Stage 3	2 April, 2012	16 April, 2012	2 January, 2013	9 January, 2013	282
Stage 4	18 February, 2014	4 March, 2014	5 January, 2015	12 January, 2015	328
Stage 5	1 April, 2015	14 April, 2015	20 August, 2015	27 August, 2015	148

4.2 Silt Curtain would be installed at least 28 days prior to the commencement of dredging works, the silt curtain would only be removed upon completion of filling works at each stage.

## 5.0 Construction Programme.

5.1 The Initial Works Programme for the project is enclosed in Appendix B.

## 6.0 Technical Details

6.1 The technical details on the design, operation and maintenance of the silt curtains are enclosed in Appendix C: SD Type configuration with Impervious silt curtain (Brand: MakMax) and hanging type installation method would be adopted for our project.

## 7.0 Appendices

- 7.1 Appendix A – Layout Plan for Silt Curtain Deployment at Different Stages
- 7.2 Appendix B – Initial Works Program
- 7.3 Appendix C – Technical Details of the Silt Curtain
- 7.4 Appendix D – Daily Checklist Template & Significant information regarding the over Night Dredging
- 7.5 Appendix E – Sequence of Erection and Removal of the Hanging Type Silt Curtain & the Connection and Lifting Up Details of the Hanging Type Silt Curtain



俊和 - 中國中鐵聯營  
CHUN WO - CRGL JOINT VENTURE

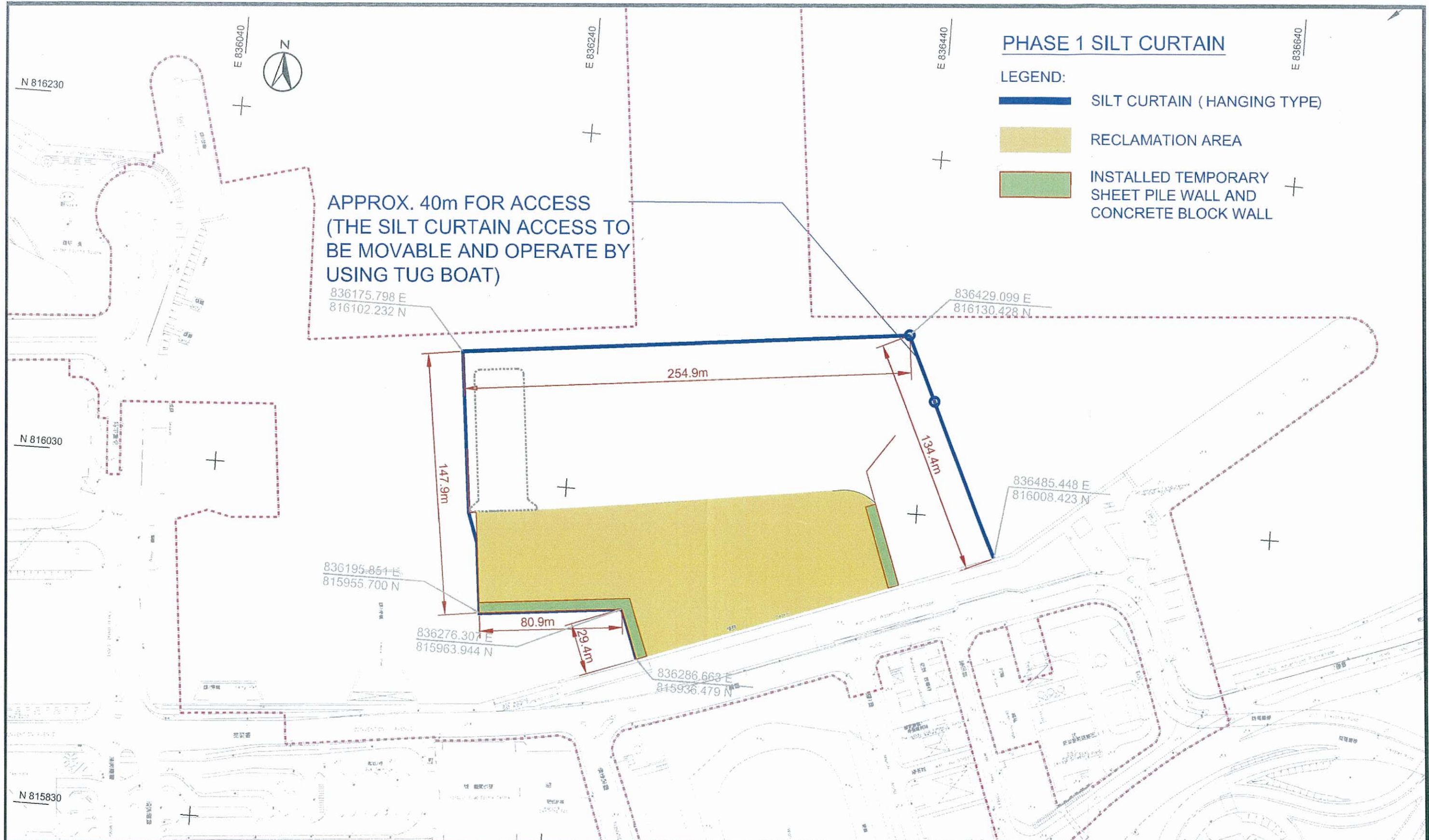
Contract No. HK/2009/02  
Wan Chai Development Phase II  
Central - Wan Chai Bypass at Wan Chai East  
Silt Curtain Deployment Plan

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## 7.1 Appendix A

# Layout Plan for Silt Curtain Deployment at Different Stages





CONTRACTOR 俊和 - 中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	REV.	DATE	DESCRIPTION	DRG. TITLE:  <b>SILT CURTAIN ARRANGEMENT - PHASE 1</b>	SCALE	1:2000	CAD REF.	
	PROJECT CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST				DATE	12 JUL 2011		
					DRAWN	MC PUN	DESIGNED	---
					CHECKED	WAFFERY LAU	APPROVED	---
							DRG. NO.	CWCRJV/HK200902/SK0017
							REV.	D






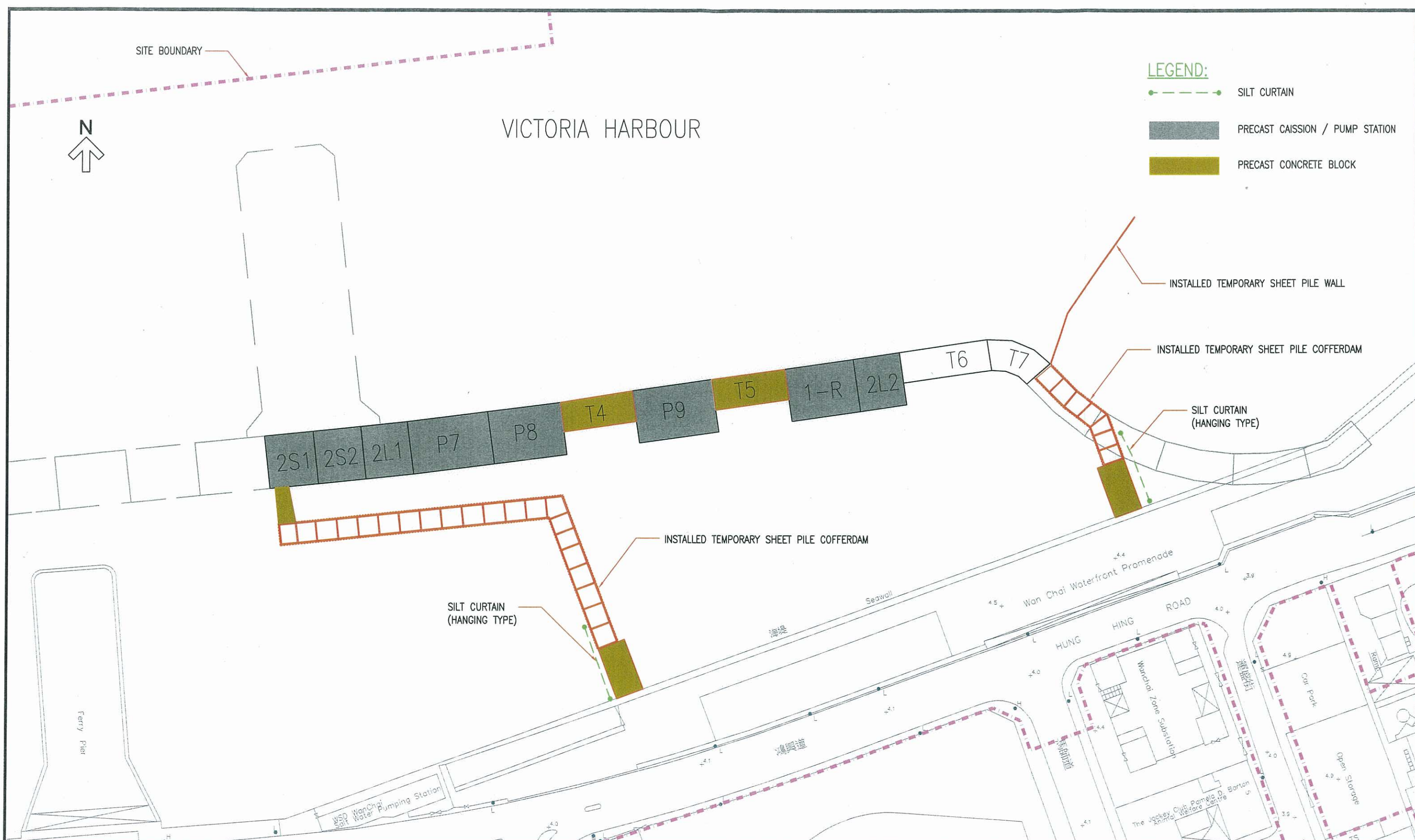
SITE BOUNDARY




VICTORIA HARBOUR

LEGEND:

-  SILT CURTAIN
-  PRECAST CAISSON / PUMP STATION
-  PRECAST CONCRETE BLOCK



CONTRACTOR  
 俊和-中國中鐵聯營  
 CHUN WO - CRGL JOINT VENTURE

PROJECT  
 CONTRACT NO. HK/2009/02  
 WAN CHAI DEVELOPMENT PHASE II -  
 CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST

REV.	DATE	DESCRIPTION
A	11 JAN 2011	MINOR REVISION
B	12 JAN 2011	MINOR REVISION
C	17 NOV 2011	MINOR REVISION

DRG. TITLE:

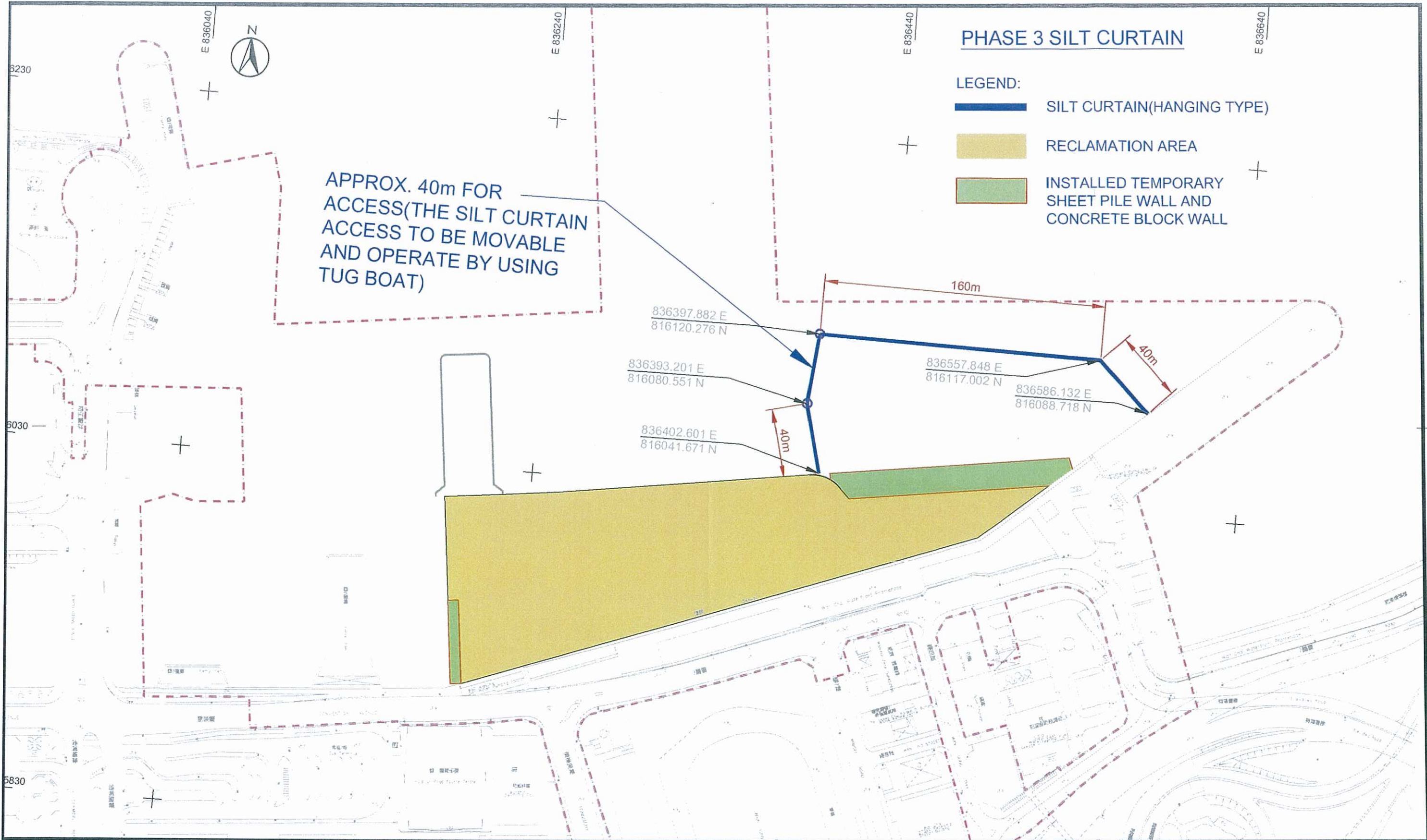
SILT CURTAIN ARRANGEMENT  
 PHASE Ia

SCALE	1:1000 (A3)	CAD REF.	CW-CR/ENG/ENG-0467
DATE	5 JAN 2011		
DRAWN	M.S. SIN	DESIGNED	V. TONG
CHECKED	V. TONG	APPROVED	---
		DRG. NO.	CWCRJV/HK200902/SK0363
		REV.	C









CONTRACTOR  
**俊和 - 中國中鐵聯營**  
 CHUN WO - CRGL JOINT VENTURE

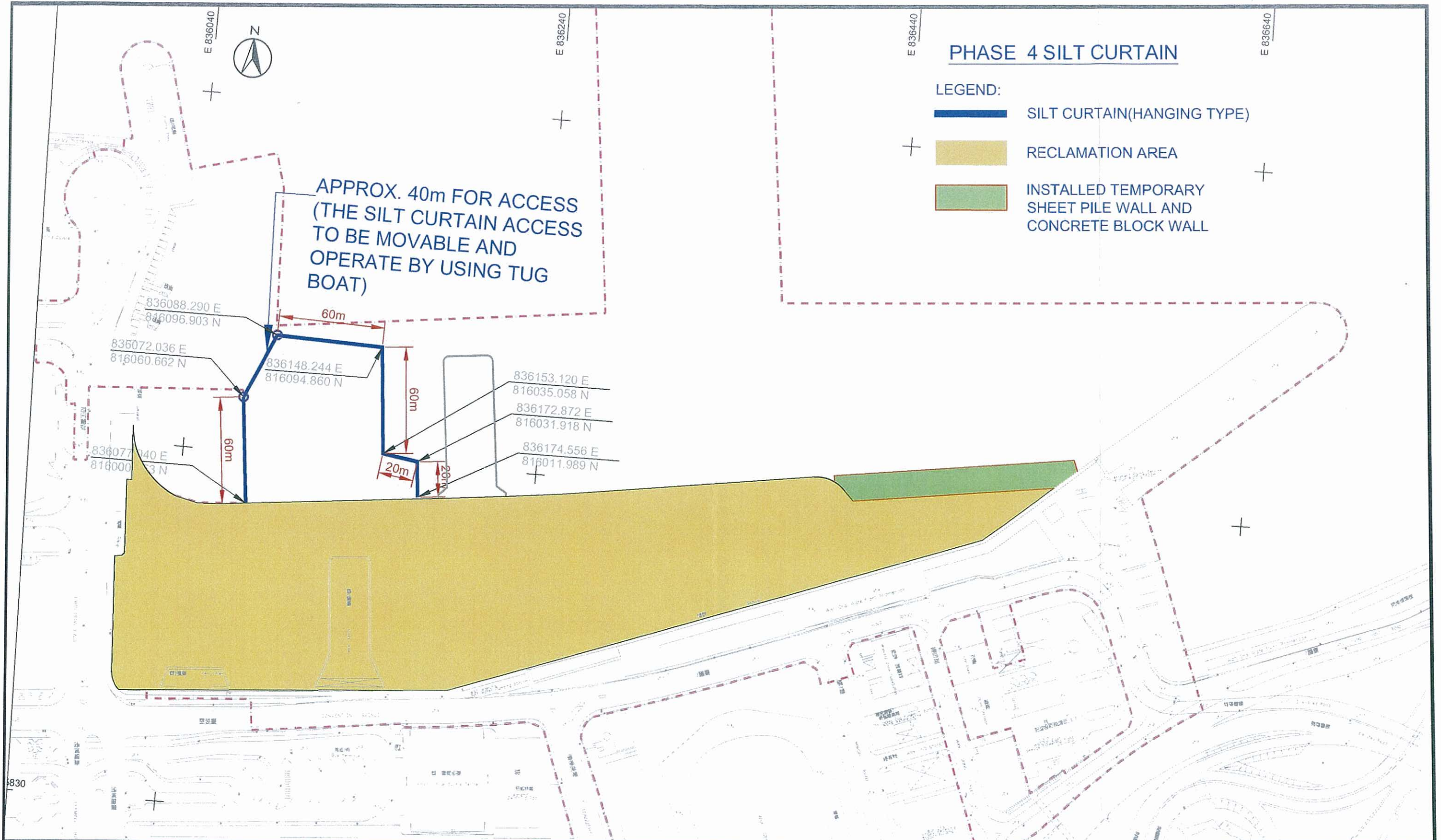
PROJECT  
 CONTRACT NO. HK/2009/02  
 WAN CHAI DEVELOPMENT PHASE II -  
 CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST

REV.	DATE	DESCRIPTION

DRG. TITLE:  
**SILT CURTAIN ARRANGEMENT - PHASE 3**

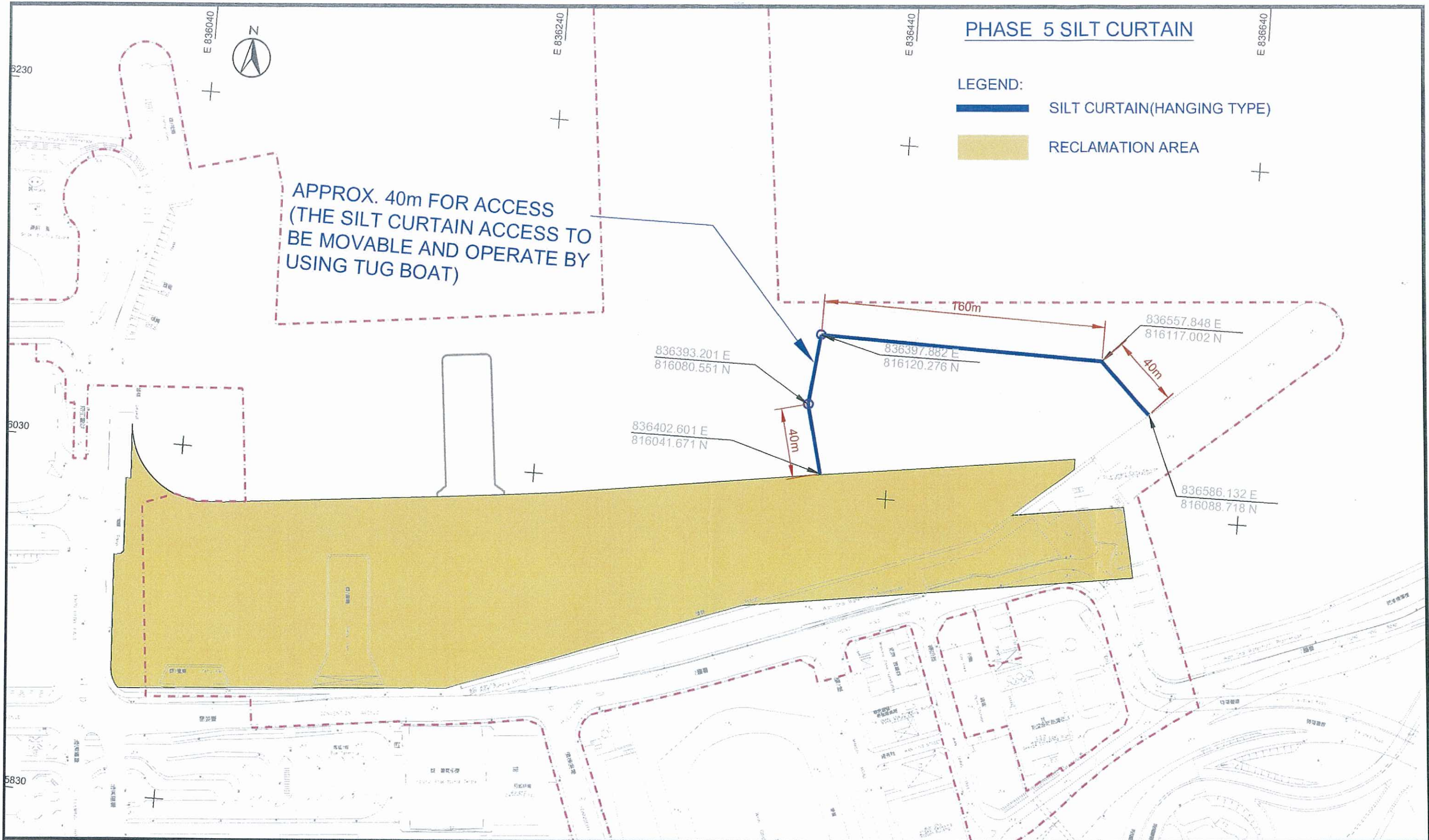
SCALE	1:2000	CAD REF.	
DATE	12 JUL 2011		
DRAWN	MC PUN	DESIGNED	---
CHECKED	WAFFERY LAU	APPROVED	---
		DRG. NO.	CWCRJV/HK200902/SK0019
		REV.	A





<b>CONTRACTOR</b> 俊和 - 中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	REV.	DATE	DESCRIPTION	<b>DRG. TITLE:</b>  SILT CURTAIN ARRANGEMENT - PHASE 4	SCALE	1:2000	CAD REF.	
	PROJECT					DATE	12 JUL 2011	
CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST					DRAWN	MC PUN	DESIGNED	---
					CHECKED	WAFFERY LAU	APPROVED	---
							DRG. NO.	CWCRJV/HK200902/SK0020
							REV.	A





CONTRACTOR  俊和-中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	REV.	DATE	DESCRIPTION	DRG. TITLE:  <b>SILT CURTAIN ARRANGEMENT – PHASE 5</b>	SCALE	1:2000	CAD REF.					
						DATE	12 JUL 2011					
PROJECT CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST					DRAWN	MC PUN	DESIGNED	---	DRG. NO.	CWCJRJV/HK200902/SK0021	REV.	A
					CHECKED	WAFFERY LAU	APPROVED	---				



俊和 - 中國中鐵聯營

CHUN WO - CRGL JOINT VENTURE

Contract No. HK/2009/02

Wan Chai Development Phase II

Central - Wan Chai Bypass at Wan Chai East

Silt Curtain Deployment Plan

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## **7.2 Appendix B**

### **Initial Works Program**



Activity ID	Activity Name	Duration	Start	Finish	Total Float	2010												2011												2012												2013												2014												2015												2016											
Wan Chai Development Phase II - Central - Wan Chai Bypass at Wan Chai East						J F M A M J J A S O N D												J F M A M J J A S O N D												J F M A M J J A S O N D												J F M A M J J A S O N D												J F M A M J J A S O N D												J F M A M J J A S O N D												J F M A M J J A S O N D											
<b>Initial Programme</b>																																																																																									
<b>Key Dates</b>																																																																																									
KD0010	Works Commencement Date	0d	28-Jan-10		0d	◆ Works Commencement Date																																																																																			
KD0020	Whole of Works Completion Date	0d		22-Sep-16	0d	◆ Completion of Section I Works (290 days) - Public Fill Sorting Facility at TKO																																																																																			
KD0030	Completion of Section I Works (290 days) - Public Fill Sorting Facility at TKO	0d		13-Nov-10	0d	◆ Completion of Section II Works (350 days) - Road Improvement at Fleming Road and Gloucester Road																																																																																			
KD0040	Completion of Section II Works (350 days) - Road Improvement at Fleming Road and Gloucester Road	0d		12-Jan-11	0d	◆ Completion of Section III Works (630 days) - Modification of Expo Drive East																																																																																			
KD0050	Completion of Section III Works (630 days) - Modification of Expo Drive East	0d		19-Oct-11	0d	◆ Completion of Section IV A Works (770 days) - Cooling Water Pumping Station for Sun Hung Kai Centre																																																																																			
KD0060	Completion of Section IV A Works (770 days) - Cooling Water Pumping Station for Sun Hung Kai Centre	0d		07-Mar-12	0d	◆ Completion of Section IV B Works (770 days) - Cooling Water Pumping Station for China Resources Building																																																																																			
KD0070	Completion of Section IV B Works (770 days) - Cooling Water Pumping Station for China Resources Building	0d		07-Mar-12	0d	◆ Completion of Section IV C Works (770 days) - Cooling Water Pumping Station for Great Eagle Centre/Harbour Centre																																																																																			
KD0080	Completion of Section IV C Works (770 days) - Cooling Water Pumping Station for Great Eagle Centre/Harbour Centre	0d		07-Mar-12	0d	◆ Completion of Section V Works (750 days) - WSD Salt Water Pumping Station in Area 5																																																																																			
KD0090	Completion of Section V Works (750 days) - WSD Salt Water Pumping Station in Area 5	0d		16-Feb-12	0d	◆ Completion of Section VI Works (820 days) - Submarine Sewage Outfall in Area 6																																																																																			
KD0100	Completion of Section VI Works (820 days) - Submarine Sewage Outfall in Area 6	0d		27-Apr-12	0d	◆ Completion of Section VII Works (830 days) - Box Culvert N1, Flood Relief System & Works in Area 7																																																																																			
KD0110	Completion of Section VII Works (830 days) - Box Culvert N1, Flood Relief System & Works in Area 7	0d		06-May-12	0d	◆ Completion of Section VIII A Works (1000 days) - Wan Chai Ferry Pier in Area 8																																																																																			
KD0120	Completion of Section VIII A Works (1000 days) - Wan Chai Ferry Pier in Area 8	0d		23-Oct-12	0d	◆ Completion of Section VIII B Works (1440 days) - Temporary Covered Walkway																																																																																			
KD0130	Completion of Section VIII B Works (1440 days) - Temporary Covered Walkway to Convention Avenue	0d		06-Jan-14	0d	◆ Completion of Section VIII C Works (1470 days) - Landscape Softworks in Area 8																																																																																			
KD0140	Completion of Section VIII C Works (1470 days) - Landscape Softworks in Area 8	0d		06-Feb-14	0d	◆ Completion of Section VIII D Works (1835 days) - Establishment Works in Area 8																																																																																			
KD0150	Completion of Section VIII D Works (1835 days) - Establishment Works in Area 8	0d		06-Feb-15	0d	◆ Completion of Section IX A Works (1340 days) - Bulkhead of Central - Wan Chai Bypass Tunnel & Demolition of Helipad Stru																																																																																			
KD0160	Completion of Section IX A Works (1340 days) - Bulkhead of Central - Wan Chai Bypass Tunnel & Demolition of Helipad Stru	0d		28-Sep-13	0d	◆ Completion of Section IX B Works (2100 days) - Central - Wan Chai Bypass Tunnel Structure from CH3400 to Eastern Tunnel																																																																																			
KD0170	Completion of Section IX B Works (2100 days) - Central - Wan Chai Bypass Tunnel Structure from CH3400 to Eastern Tunnel	0d		28-Oct-15	0d	◆ Completion of Section X Works (2190 days) - Central - Wan Chai Bypass Tunnel Structure from Western Tunnel to CH3400																																																																																			
KD0180	Completion of Section X Works (2190 days) - Central - Wan Chai Bypass Tunnel Structure from Western Tunnel to CH3400	0d		26-Jan-16	0d	◆ Completion of Section XI Works (2400 days) - Remainder of Works, except Landscape Softworks and Establishment Works																																																																																			
KD0190	Completion of Section XI Works (2400 days) - Remainder of Works, except Landscape Softworks and Establishment Works	0d		23-Aug-16	0d	◆ Completion of Section XI A Works (2430 days) - Remaining Landscape Softworks																																																																																			
KD0200	Completion of Section XI A Works (2430 days) - Remaining Landscape Softworks	0d		22-Sep-16	0d	◆ Commencement of Section XI B Works with 365 days duration (2795 days) - Remaining Establishment Works																																																																																			
KD0210	Commencement of Section XI B Works with 365 days duration (2795 days) - Remaining Establishment Works	0d	23-Sep-16		0d	◆ Completion of Section XII Works (2400 days) - Protection and Preservation of Existing Trees																																																																																			
KD0220	Completion of Section XII Works (2400 days) - Protection and Preservation of Existing Trees	0d		23-Aug-16	0d	◆ Completion of Section XIII Works (2330 days) - Remaining Works in Area 10																																																																																			
KD0230	Completion of Section XIII Works (2330 days) - Remaining Works in Area 10	0d		14-Jun-16	0d																																																																																				
<b>Possession of Site</b>																																																																																									
PS0010	Possession of Portion 1 - TKO Spritng	0d	28-Jan-10		3d	◆ Possession of Portion 1 - TKO Spritng																																																																																			
PS0020	Possession of Portion 2 - Existing Helipad	0d	27-Feb-12		221d	◆ Possession of Portion 2 - Existing Helipad																																																																																			
PS0030	Possession of Portion 3 - Existing Salt Water Pumping Station	0d	26-Jun-12		1260d	◆ Possession of Portion 3 - Existing Salt Water Pumping Station																																																																																			
PS0040	Possession of Portion 4 - SHK Pumping Station	0d	21-Jul-12		1235d	◆ Possession of Portion 4 - SHK Pumping Station																																																																																			
PS0050	Possession of Portion 5 - Existing Wan Chai Ferry Pier	0d	18-Mar-14		42d	◆ Possession of Portion 5 - Existing Wan Chai Ferry Pier																																																																																			
PS0060	Possession of Portion 6 - Part of WCR3	0d	18-Mar-14		42d	◆ Possession of Portion 6 - Part of WCR3																																																																																			
PS0070	Possession of Portion 7 - Eastern Bulkhead	0d	14-Sep-15		2d	◆ Possession of Portion 7 - Eastern Bulkhead																																																																																			
PS0080	Possession of Portion 8 - Submarine Pipelin, WCR1 to WCR4, New WSD, Wanchai Promenade	0d	28-Jan-10		1d	◆ Possession of Portion 8 - Submarine Pipelin, WCR1 to WCR4, New WSD, Wanchai Promenade																																																																																			
PS0090	Possession of Portion 9 - Western Bulkhead	0d	07-May-15		1d	◆ Possession of Portion 9 - Western Bulkhead																																																																																			
<b>Preliminaries</b>																																																																																									
PRE0010	General Site Clearance	60d	03-Feb-10	19-Apr-10	23d	General Site Clearance																																																																																			
PRE0020	24-hr telephone line cum information centre	2400d	28-Jan-10	23-Aug-16	30d	24-hr telephone line cum information centre																																																																																			
PRE0030	Site Management Plan for Trip Ticket System	2400d	28-Jan-10	23-Aug-16	30d	Site Management Plan for Trip Ticket System																																																																																			
PRE0040	Temporary Drainage Management Plan	2400d	28-Jan-10	23-Aug-16	30d	Temporary Drainage Management Plan																																																																																			
PRE0050	Security system for the Site	2400d	28-Jan-10	23-Aug-16	30d	Security system for the Site																																																																																			
PRE0060	Systematic Risk Management	2400d	28-Jan-10	23-Aug-16	30d	Systematic Risk Management																																																																																			
PRE0070	Interface Management Plan	2400d	28-Jan-10	23-Aug-16	30d	Interface Management Plan																																																																																			
PRE0080	Construction Design Management (Construction health & safety plan)	2400d	28-Jan-10	23-Aug-16	30d	Construction Design Management (Construction health & safety plan)																																																																																			
PRE0090	Set up Contractor site office	60d	26-Feb-10	11-May-10	19d	Set up Contractor site office																																																																																			
PRE0100	Submission & approval of proposed site staff	45d	04-Feb-10	10-Feb-10	38d	Submission & approval of proposed site staff																																																																																			
PRE0110	Submission & approval of proposed materials	2100d	04-Feb-10	04-Nov-15	104d	Submission & approval of proposed materials																																																																																			
PRE0120	Submission & approval of Initial Works Programme	28d	04-Feb-10	03-Mar-10	41d	Submission & approval of Initial Works Programme																																																																																			
PRE0130	Submission & approval of Method Statements	1200d	04-Feb-10	18-May-13	11d	Submission & approval of Method Statements																																																																																			
PRE0140	Submission & approval of Drainage Management Plan to DSD	1200d	11-Feb-10	25-May-13	17d	Submission & approval of Drainage Management Plan to DSD																																																																																			
PRE0150	Submission & approval of relevant permits	1200d	28-Jan-10	11-May-13	25d	Submission & approval of relevant permits																																																																																			
PRE0160	Submission & approval of TTA Scheme	120d	28-Jan-10	27-May-10	0d	Submission & approval of TTA Scheme																																																																																			
PRE0170	HyD Excavation Permt grant for Section II	0d		27-May-10	0d	◆ HyD Excavation Permt grant for Section II																																																																																			
PRE0180	HyD Excavation Permt grant for Section III	0d		27-May-10	0d	◆ HyD Excavation Permt grant for Section III																																																																																			
PRE0190	HyD Excavation Permt grant for Section IV	0d		27-May-10	0d	◆ HyD Excavation Permt grant for Section IV																																																																																			
PRE0200	HyD Excavation Permt grant for Section V	0d		27-May-10	0d	◆ HyD Excavation Permt grant for Section V																																																																																			
PRE0210	HyD Excavation Permt grant for Section VI	0d		27-May-10	0d	◆ HyD Excavation Permt grant for Section VI																																																																																			



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**INITIAL WORKS PROGRAMME**

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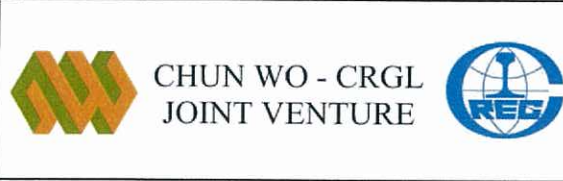








Activity ID	Activity Name	Duration	Start	Finish	Total Float	2010												2011												2012												2013												2014												2015												2016																									
						D	J	F	M	A	M	J	J	A	S	O	N	D	D	J	F	M	A	M	J	J	A	S	O	N	D	D	J	F	M	A	M	J	J	A	S	O	N	D	D	J	F	M	A	M	J	J	A	S	O	N	D	D	J	F	M	A	M	J	J	A	S	O	N	D	D	J	F	M	A	M	J	J	A	S	O	N	D	D	J	F	M	A	M	J	J	A	S	O	N	D	D	J	F	M	A	M	J
S11-S2-0030	Drainage diversion of existing Bowrington Box Culvert O to basin of ex-PCWA	180d	27-Mar-10	03-Nov-10	445d	Drainage diversion of existing Bowrington Box Culvert O to basin of ex-PCWA																																																																																																	
S11-S2-0040	WCR4 seabed dredging	30d	28-Apr-12	04-Jun-12	0d																									WCR4 seabed dredging																																																																									
S11-S2-0050	Commencement of TWCR4 temporary reclamation (with duration of 38 months)	0d	05-Jun-12		0d																									Commencement of TWCR4 temporary reclamation (with duration of 38 months)																																																																									
S11-S2-0060	TWCR4 seabed dredging & temporary seawall work	30d	04-Jun-12	11-Jul-12	0d																									TWCR4 seabed dredging & temporary seawall work																																																																									
S11-S2-0070	TWCR4 bulk and temporary reclamation work	20d	11-Jul-12	03-Aug-12	0d																									TWCR4 bulk and temporary reclamation work																																																																									
S11-S2-0080	WCR4 bulk and temporary reclamation work	20d	11-Jul-12	03-Aug-12	0d																									WCR4 bulk and temporary reclamation work																																																																									
S11-S2-0090	Prepare temporary at-grade road access	60d	03-Aug-12	13-Oct-12	10d																									Prepare temporary at-grade road access																																																																									
S11-S2-0100	Removal of portion 1 of box culvert O above tunnel portion 3 (area not at Hung Hing Road)	180d	03-Nov-10	09-Jun-11	457d	Removal of portion 1 of box culvert O above tunnel portion 3 (area not at Hung Hing Road)																																																																																																	
S11-S2-0110	Construct steel bridge no.1	30d	19-Sep-12	26-Oct-12	0d																									Construct steel bridge no.1																																																																									
S11-S2-0120	Implement diversion of Hung Hing Road at-grade traffic	2d	26-Oct-12	29-Oct-12	0d																									Implement diversion of Hung Hing Road at-grade traffic																																																																									
S11-S2-0130	Removal of portion 2 of box culvert O above tunnel portion 3 (area at Hung Hing Road)	40d	29-Oct-12	14-Dec-12	0d																									Removal of portion 2 of box culvert O above tunnel portion 3 (area at Hung Hing Road)																																																																									
S11-S2-0140	Provision of new landing step on existing seawall (for area 9A handover)	210d	07-Dec-12	21-Aug-13	897d	Provision of new landing step on existing seawall (for area 9A handover)																																																																																																	
<b>Stage 3</b>																																																																																																							
S11-S3-0010	Reinstate box culvert O above tunnel portion 3	60d	13-Jun-13	23-Aug-13	0d																									Reinstate box culvert O above tunnel portion 3																																																																									
S11-S3-0020	Reinstate temporary outfall of box culvert O and associated seawall etc. at ex-PCWA	30d	23-Aug-13	28-Sep-13	0d																									Reinstate temporary outfall of box culvert O and associated seawall etc. at ex-PCWA																																																																									
S11-S3-0030	Widen temporary road to area above tunnel portion 3 & box culvert "O"	30d	23-Aug-13	28-Sep-13	890d	Widen temporary road to area above tunnel portion 3 & box culvert "O"																																																																																																	
S11-S3-0040	Implement diversion of at-grade traffic via new road above tunnel portion 3 & box culvert "O"	2d	23-Aug-13	26-Aug-13	28d	Implement diversion of at-grade traffic via new road above tunnel portion 3 & box culvert "O"																																																																																																	
S11-S3-0050	Handover of Area 9 to adjacent contractor HY/2009/15 at 1340 days (Section IXA)	0d		28-Sep-13	0d																									Handover of Area 9 to adjacent contractor HY/2009/15 at 1340 days (Section IXA)																																																																									
S11-S3-0060	Construct temporary steel bridge no. 2 above tunnel portion 3 & box culvert "O"	40d	28-Sep-13	15-Nov-13	5d	Construct temporary steel bridge no. 2 above tunnel portion 3 & box culvert "O"																																																																																																	
S11-S3-0070	Diversion of existing Hung Hing Road flyover traffic via temporary road & steel bridge no. 2	2d	15-Nov-13	18-Nov-13	5d	Diversion of existing Hung Hing Road flyover traffic via temporary road & steel bridge no. 2																																																																																																	
S11-S3-0080	Removal of approach ramp of existing Hung Hing Road flyover	30d	18-Nov-13	23-Dec-13	5d	Removal of approach ramp of existing Hung Hing Road flyover																																																																																																	
<b>Stage 4</b>																																																																																																							
S11-S4-0010	Reinstate original approach ramp of flyover and the associated road work of Hung Hing Ro...	75d	07-Nov-14	06-Feb-15	5d																									Reinstate original approach ramp of flyover and																																																																									
S11-S4-0020	Diversion of Hung Hing Road flyover traffic back to original	2d	06-Feb-15	09-Feb-15	5d																									Diversion of Hung Hing Road flyover traffic back																																																																									
S11-S4-0030	Remove temporary steel bridge no.2 and reinstate Hung Hing Road	45d	27-Dec-14	23-Feb-15	5d																									Remove temporary steel bridge no.2 and reins																																																																									
S11-S4-0040	Diversion of Hung Hing Road at-grade traffic back to original	2d	23-Feb-15	25-Feb-15	5d																									Diversion of Hung Hing Road at-grade traffic b																																																																									
S11-S4-0050	Excavate and remove top portion of diaphragm wall for permanent seawall work at WCR4	40d	25-Feb-15	15-Apr-15	5d																									Excavate and remove top portion of diaphr																																																																									
S11-S4-0060	Remove temporary seawall & temporary reclamation at TWCR4	40d	15-Apr-15	03-Jun-15	5d																									Remove temporary seawall & tempora																																																																									
S11-S4-0070	WCR4 permanent seawall work	45d	03-Jun-15	28-Jul-15	5d																									WCR4 permanent seawall work																																																																									
S11-S4-0080	Completion of TWCR4 reinstatement (with duration of 38 months)	0d		28-Jul-15	345d																									Completion of TWCR4 reinstatement																																																																									
S11-S4-0090	Designated completion of TWCR4	0d		03-Aug-15	0d																									Designated completion of TWCR4																																																																									
S11-S4-0100	WCR4 backfilling behind permanent seawall	15d	28-Jul-15	14-Aug-15	305d																									WCR4 backfilling behind perman																																																																									
S11-S4-0110	WCR3 seabed dredging for permanent seawall	90d	18-Mar-14	07-Jul-14	34d																									WCR3 seabed dredging for permanent seawall																																																																									
S11-S4-0120	WCR3 backfilling and permanent seawall work	90d	08-Jul-14	23-Oct-14	34d																									WCR3 backfilling and permanent seawall work																																																																									
S11-S4-0130	WCR3 bulk reclamation work	60d	24-Oct-14	05-Jan-15	34d																									WCR3 bulk reclamation work																																																																									
S11-S4-0140	Carry out temporary drilling & grouting in sealing up the existing 2M pipe pile wall near Area 10	14d	07-May-15	22-May-15	32d																									Carry out temporary drilling & grouting in																																																																									
<b>Section XI A Works - Remaining Landscape Softworks</b>																																																																																																							
S11A-0010	Remaining Landscape Softworks	180d	18-Jan-16	25-Aug-16	23d																																																																																																		
S11A-0020	Completion of Section XI A Works (2430 days)	0d		22-Sep-16	0d																																																																																																		
<b>Section XI B Works - Remaining Establishment Works</b>																																																																																																							
S11B-0010	Commencement of Remaining Establishment Works (365 days)	0d	26-Aug-16		23d																																																																																																		
S11B-0020	Completion of Section XI B Works (2795 days)	0d		22-Sep-16	0d																																																																																																		
<b>Section XII Works - Protection and Preservation of Existing Trees</b>																																																																																																							
S12-0010	Protection and preservation of existing trees	1800d	20-Mar-10	24-Mar-16	123d	Protection and																																																																																																	
S12-0020	Completion of Section XII Works (2400 days)	0d		23-Aug-16	0d																																																																																																		
<b>Section XIII Works - Remaining Works in Area 10</b>																																																																																																							
S13-0010	Possession of Portion 9 (Area 10) from contract no. HK/2009/01 at 1925 days (Portion 9)	0d	07-May-15		1d																																																																																																		
S13-0020	Remaining Works in Area 10 above tunnel structure at formation level	150d	08-Dec-15	13-Jun-16	1d																																																																																																		
S13-0030	Handover of Section X (Area 10) to adjacent contractor (HK/2009/01) at 2190 days	0d		14-Jun-16	1d																																																																																																		
S13-0040	Completion of Section XIII Works (2190 days)	0d		14-Jun-16	0d																																																																																																		



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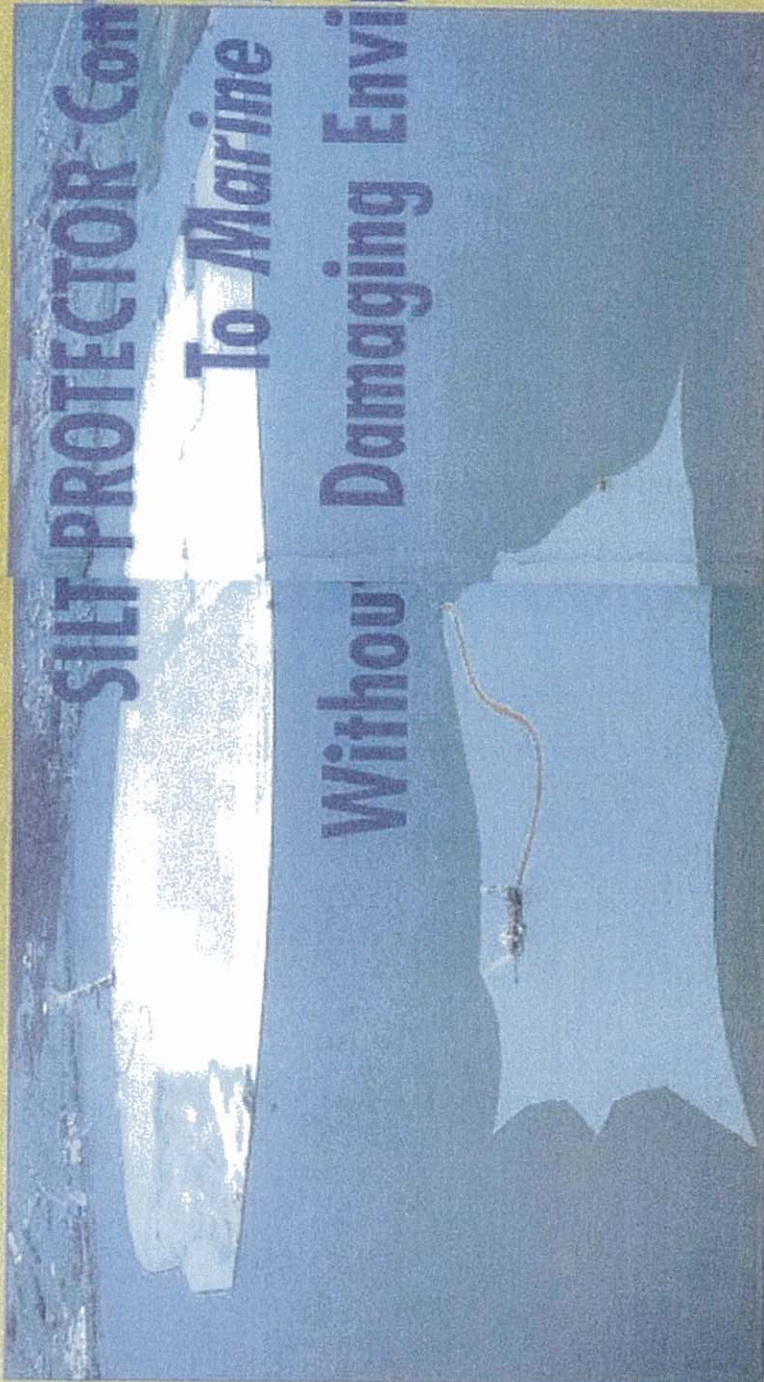


## 7.3 Appendix C

### Technical Details of the Silt Curtain



# SILT PROTECTOR Contributes To Marine Projects Without Damaging Environment



## ● Function of Silt Protector

Silt Protector is a flexible membrane product that has been designed to physically prevent diffusion of pollution generated in dredging or reclamation works on the seas or rivers.

The pollution (fine particles) is said to be bound at the bottom of the body of water, thereby preventing the food loss in the bottom, including making the breathing of fish difficult and reducing underwater abundance. The Silt Protector prevents diffusion of pollution safely because it uses a physical means, without using chemicals that will be the cause of the secondary pollution.

The Silt Protector basically consists of the curtain section that is made of synthetic waste (mainly polyethylene), the float that keeps the curtain in the water, and the mooring section for fixing the end of a specified location.





# Models and Features

The Silt Protector consists of several types that are individually subdivided into some units so that the user is able to select units best suited to specific site conditions and work items. The Silt Protector can be used individually or separately, or by combining the units.

## Fixed Hanging Type Silt Protector

This type is used the most frequently. It basically consists of floats on the surface and curtain and weight chain below the surface. One span of this product is 20m long. It is moored to the bottom through anchor ropes and anchors at every 10.5m point.

The anchor ropes are steel wire type or synthetic fiber type, and anchors are concrete blocks, usually.

When this product is used under high wave conditions, the curtain with the vertical length of 1.0m or less is used and standing type is used together in many cases. When waves are low the curtain of 2.0m long or more may be used.

The fixed hanging type Silt Protector is classified into four types, A, B, C and D so that a type best suited to a specific application can be identified.



## General site condition for hanging fixed type

Silt	Applicable site conditions	Standard specifications		
		Float size (mm)	Float type	Curtain material
A	Area outside of breakwater <ul style="list-style-type: none"> <li>Wave height: 1.5m or less</li> <li>Velocity of current: 0.5m/s or less</li> </ul>	400	Unipanel	SPO-1000 or S100
B	Wide area inside of breakwater, or inside of pier for it <ul style="list-style-type: none"> <li>Wave height: 1.0m or less</li> <li>Velocity of current: 0.5m/s or less</li> </ul>	400	Unipanel	SPO-1000 or S100
C	Area with rough water inside of breakwater <ul style="list-style-type: none"> <li>Wave height: 0.8m or less</li> <li>Velocity of current: 0.1m/s or less</li> </ul>	300	Unipanel	SPO-1000 or S100
D	Lake, or well sheltered area in coasts or bays <ul style="list-style-type: none"> <li>Wave height: 0.5m or less</li> <li>Velocity of current: 0.2m/s or less</li> </ul>	300	Speed	SPO-1000

Remarks  
 \*Standard unit length is 20m  
 \*Anchor is not included in the unit

## EFFECT

Silt Protector generally provides the following effects on prevention of diffusion of pollution in the sea.

### Acceleration of settlement of silt by interference of particles

Installation of the Silt Protector suppresses diffusion of the pollution and makes the soil particles interfere with each other to accelerate their settlement.

### Reduction of distance required to settle the silt

Installation of the Silt Protector as shown narrows the settlement range, resulting in minimizing the diffusion of pollution other the unit.

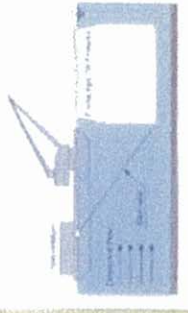




# More Types

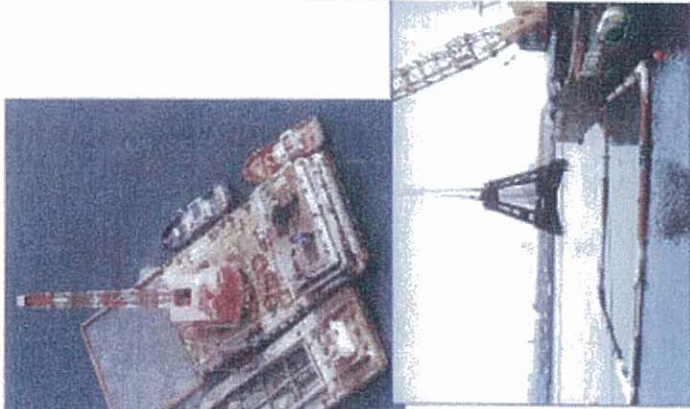
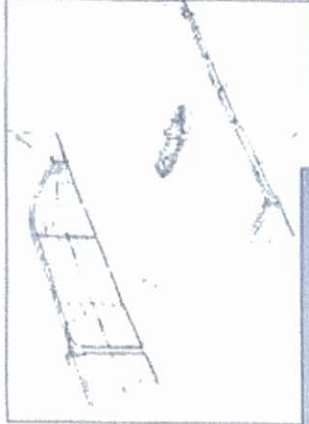
## ● Frame type Silt Protector

This type has been designed to enclose local pollution caused by the grab dredging. It consists of boats (usually discharge pipes are fixed), curtain and bulkhead of the bottom. Mid-bottom may be added as necessary. Many of this type is made so that the length of the curtain can be changed according to the depth by using an winch and wire rope. The length of the curtain is made less than 15m for easier used on the grab dredger.



## ● Combined installation

Frame type Silt Protector is, in many cases, installed together with hanging type to avoid turbid water when weight increases, sucking up curtain. For deep sea like 20m water depth, combined installation of hanging type and standing type is sometimes used. In case, local panning is necessary, sinkable hanging type is used for open part.



## ● Standing Type Silt Protector

The standing type Silt Protector has been developed to prevent diffusion of pollution that may occur near the bottom in dredging or dumping of soil. This type consists of an anchor (normally steel H beam), steel, curtain and float that pulls up the curtain with its buoyancy. The diameter of generally used float is 300mm (space type), and one span of this type is 20m long. In many cases, this type is used together with the hanging type product.

## ● Sinkable Hanging Type Silt Protector

The sinkable hanging type Silt Protector is used when it is necessary to make an entrance/exit for the passage of vessels that enter into or exit from the reclamation zone. The fundamental construction of the sinkable hanging type Silt Protector is similar to the fixed hanging type Silt Protector, except that the float is inflatable. The float is hollow and is made of synthetic rubber.

When making this unit closed on the water, the float is inflated by charging it with air, that can be completed in a very short time. The unit can be sunk immediately by deflating the float. The typical case of application of the Silt Protector is the reclamation of artificial land.





# Installation

## Installation works for Fixed Hanging Type Silt Protector

### Preparation

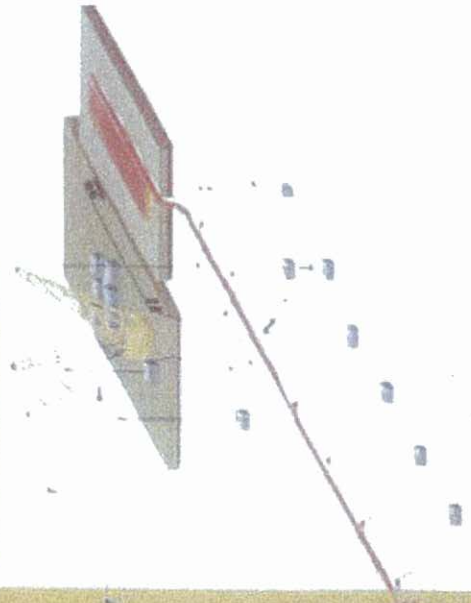
- Preparation of working yard
- Making anchor blocks
- Bring materials to the site

### Assembling on the land

- Inspection
- Series connection of spans
- Temporary latching up of corners

### Installation works on the sea

- Loading on the barge
- Towing barge
- Floating anchor blocks
- Installing Silt Protector

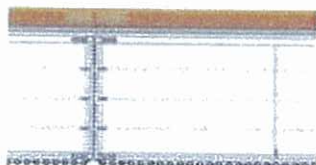




- + Membrane Structures
- + TM (Taiyo Multipurpose) Truss Space Frame Systems
- + Civil Engineering Products
- + Tent Warehouses
- + Container Systems
- + Engineering, Fabrication&Construction

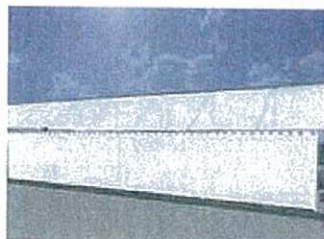


top | [about us](#) | [design](#) | [products](#) | [effect](#) | [installations](#)  
[A type](#) | [B type](#) | [C type](#) | [D type](#) | [SD type](#)



**STANDARD PRODUCT**

- A type for open sea
  - B type for semi-open sea
  - C type for sheltered sea
  - D type for calm sea
  - SD type for calm sea for short period
- ← specifications are linked from above navigation bar



**STANDING TYPE FOR DEEP SEA**

For deep sea more than 10m, in many cases, it is effective to use 2 separate curtain systems. One curtain is hung down from sea surface and another curtain stand on sea bottom. By this combination of 2 curtains very deep sea like 20m depth can be covered and protected effectively.



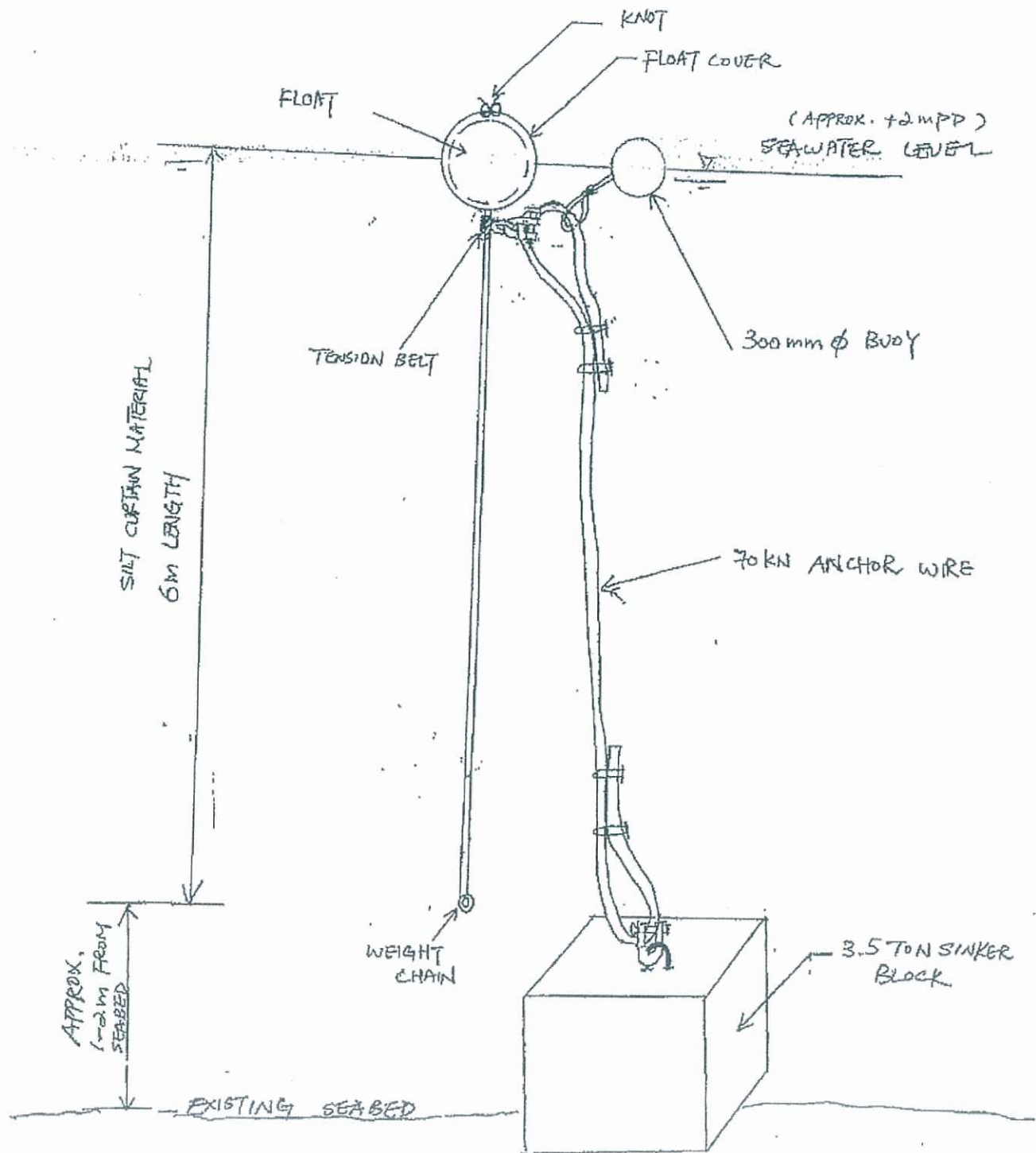
**FRAME TYPE FOR GRAB DREDGER**

For local protection during grab dredging, silt curtains are hung down from square shape steel pipe frame in which grab works. When grab dredger moves, curtains are usually lucked up by winch.

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Typical Drawing



SECTION VIEW OF SILT CURTAIN INSTALLATION DETAILS

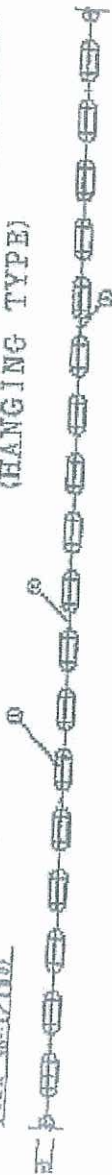
01.06.2010



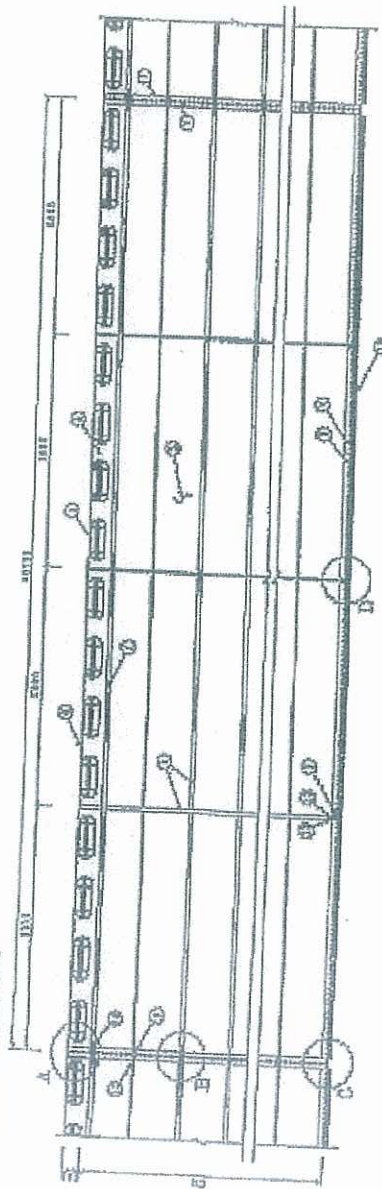
UNIT

# Silt Protector Specification (HANGING TYPE)

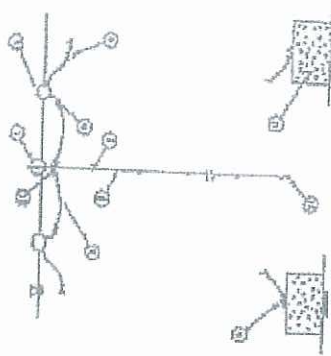
Plan (See 1/10)



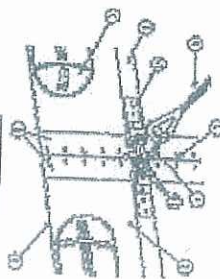
Side (See 1/10)



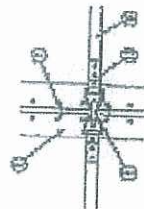
SECTION (See 1/10)



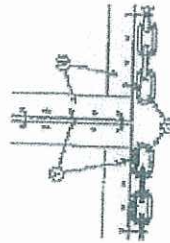
A Detail



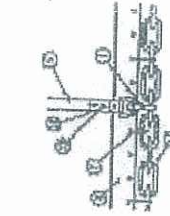
B Detail



C Detail



D Detail



Part-1

No.	Description
01	PLATE
02	FLAT BAR
03	WASHER
04	WASHER
05	WASHER
06	WASHER
07	WASHER
08	WASHER
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No.	Description
01	PLATE
02	FLAT BAR
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10	WASHER
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100	WASHER

Part-2 (Installation)

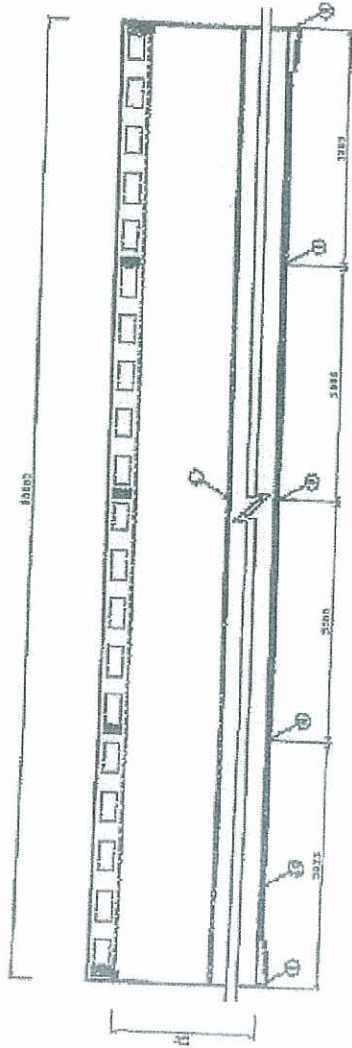
No.	Description
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02	WASHER
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07	WASHER
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99	WASHER
100	WASHER

ALL DIMENSIONS IN METERS UNLESS OTHERWISE SPECIFIED.  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 DATE: [Date]

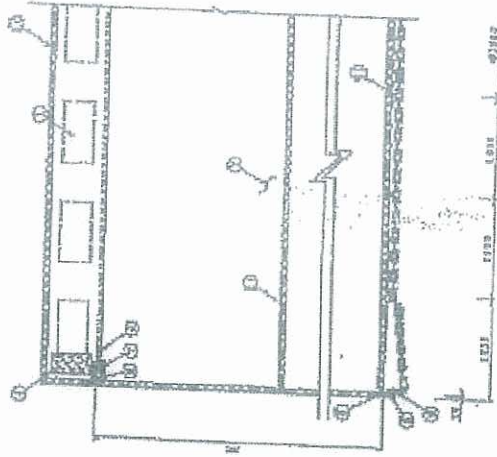
3 UNITS

SILT PROTECTOR (SD TYPE)

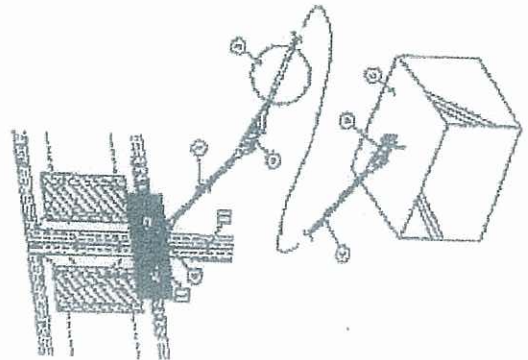
Side view



Detail section



Spun joint detail embree



Parts - I

No.	Description
1	Pin
2	Cap
3	Base
4	Spun Joint
5	Spun Joint
6	Spun Joint
7	Spun Joint
8	Spun Joint
9	Spun Joint
10	Spun Joint

Parts - II (Installation)

No.	Description
1	Pin
2	Cap
3	Base
4	Spun Joint
5	Spun Joint
6	Spun Joint
7	Spun Joint
8	Spun Joint
9	Spun Joint
10	Spun Joint

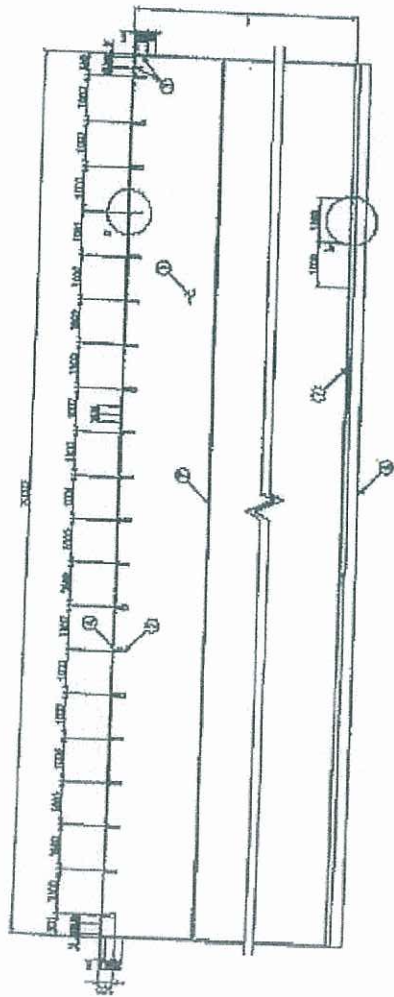
U.S. GOVERNMENT PRINTING OFFICE  
 WASHINGTON, D. C. 20540  
 1964 O - 348-908



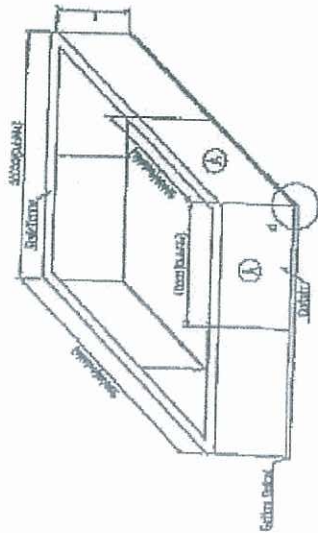
# Frame Type Silt Protector SD (Grab Frame (2.0 m x 2.0 m))

Curtain (A) Side s=1/5D  
14 Sheet / Grab Frame (2.0m x 2.0m)

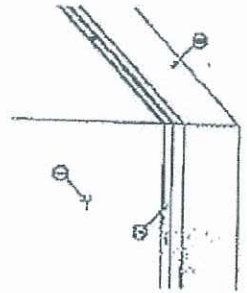
Curtain (A) Section s=1/5D  
(4 Sheet / Grab Frame (2.0m x 2.0m))



General Construction of Frame Type Silt Curtains  
Hanging Down From Grab Frame s-Free



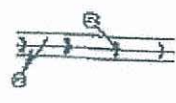
d detail



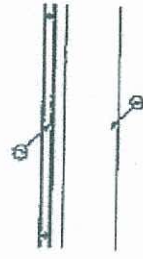
c detail



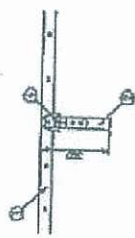
Curtain Joint detail



b detail



a detail



No.	Description
1	Curtain
2	Rectangular Box
3	GRIP
4	Rectangular Plate
5	Joint Seps
6	Bottom U-bolt
7	FRP Rod

Frame Type Silt Protector SD	No.	1/1
Grab Frame (2.0m x 2.0m)	Rev.	001
Project	Page No.	01/01
Scale	Figure	01/01
PROJECT - D10 - 001		
TAIYEE ENGINEERING CONSULTANTS		



## 7.4 Appendix D

### **Daily Checklist Template & Significant information regarding the over night dredging and rockfilling works in the interface area of WCR-1 & WCR-3**





俊和 - 中國中鐵聯營

CHUN WO - CRGL JOINT VENTURE

Contract No. HK/2009/02

Contract Title Wan Chai Development Phase II - Central - Wan Chai By Pass at Wan Chai East

Silt Curtain每日檢查表

- 說明：
- ✓ = 滿意
  - ✗ = 不滿意，須改善
  - = 不適用

位置：\_\_\_\_\_

日期：\_\_\_\_\_

檢查員：\_\_\_\_\_

	星 期 一	星 期 二	星 期 三	星 期 四	星 期 五	星 期 六	星 期 日
<b>整潔</b>							
1. 沒有垃圾在架內 <i>吊架</i>							
2. 沒有泥水在架內							
3. 已清理架內垃圾 <i>已清理垃圾</i>							
其他問題(請註明)：							
<b>鐵架狀況</b>							
1. 鐵架沒有損壞							
2. 鐵網沒有損壞							
3. 繫緊螺絲沒有鬆脫							
其他問題(請註明)：							
<b>隔泥布狀況</b>							
1. 隔泥布沒有損壞							
2. 沒有隔泥布在業主的隔泥網上							
3. 隔泥布沒有鬆脫							
其他問題(請註明)：							
簽署：							

RSS: \_\_\_\_\_

**Significant information regarding the over night dredging and rockfilling works in the interface area of WCR-1 & WCR-3**

**Contact List for General Event and Contingency**

CWCRGLJV (Main-Contractor):

Name of Person-in-charge	Position	Contact No.
Tony Sin (Full Time)	Senior Foreman	9738 9311
Ben Wong (Emergency on Call)	Section Agent	9738 9313
Cecil Cheng (Emergency on Call)	Assistance Construction Manager	9225 7150
PC Chan (Emergency on Call)	Construction Manager	9738 7390
Cheung Wa Shing (Emergency on Call)	Sub-Agent	9493 3965

Kwan Sing Contractor Ltd. (Sub-Contractor):

Name of Person-in-charge	Position	Contact No.
Wong Kam Fok	Foreman	9653 6245
Kwan Cheun Kow	Foreman	9166 5297
Fok	Coxswain of Sampan	9497 4739
勝嫂	Coxswain of Sampan	9701 2577

Star Ferry Pier at Wan Chai East:

Name of Person-in-charge	Position	Contact No.
Duty inspector in control room	Duty inspector	9869 5828

**Tentative number of vessels to be implemented for the over night dredging works and rockfilling in the interface area of WCR-1 & WCR-3**

Dredger with 6m <sup>3</sup> Grab	× 1no. (for dredging only)
Split type hopper barge	× 1no. (for dredging only)
Tug Boat (850Hp)	× 1no. (for dredging only)
Derrick Lighter	× 1no. (for rockfilling only)
Sampan	× 2 nos. (for dredging/rockfilling)



**Significant information regarding the over night dredging and rockfilling works in the interface area of WCR-1 & WCR-3**  
**Tentative operation schedule for the over night dredging works in the interface area of WCR-1 & WCR-3**

Time		Description of Works
From	To	
22:00	00:00	Relocate and deploy the silt curtain & mooring of vessels for over night dredging & rockfilling works.
00:00	04:00	Carry out the overnight dredging & rockfilling works in the interface area of WCR-1 & WCR-3.
04:00	05:45	Reinstate the silt curtain to the original position and tow the working vessels off the interface area of WCR-1 & WCR-3 for the provision of 40m navigation channel for Daily Star Ferry Operation in east berth point.

**Tentative working period**

2 month (from 17<sup>th</sup> September 2010 to 16<sup>th</sup> November 2010) as allowed under CNP no. CW-RS0817-10.



俊和 - 中國中鐵聯營

CHUN WO - CRGL JOINT VENTURE

Contract No. HK/2009/02

Wan Chai Development Phase II

Central - Wan Chai Bypass at Wan Chai East

Silt Curtain Deployment Plan

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## **7.5 Appendix E**

### **Sequence of Erection and Removal of the Hanging Type Silt Curtain & the Connection and Lifting Up Details of the Hanging Type Silt Curtain**

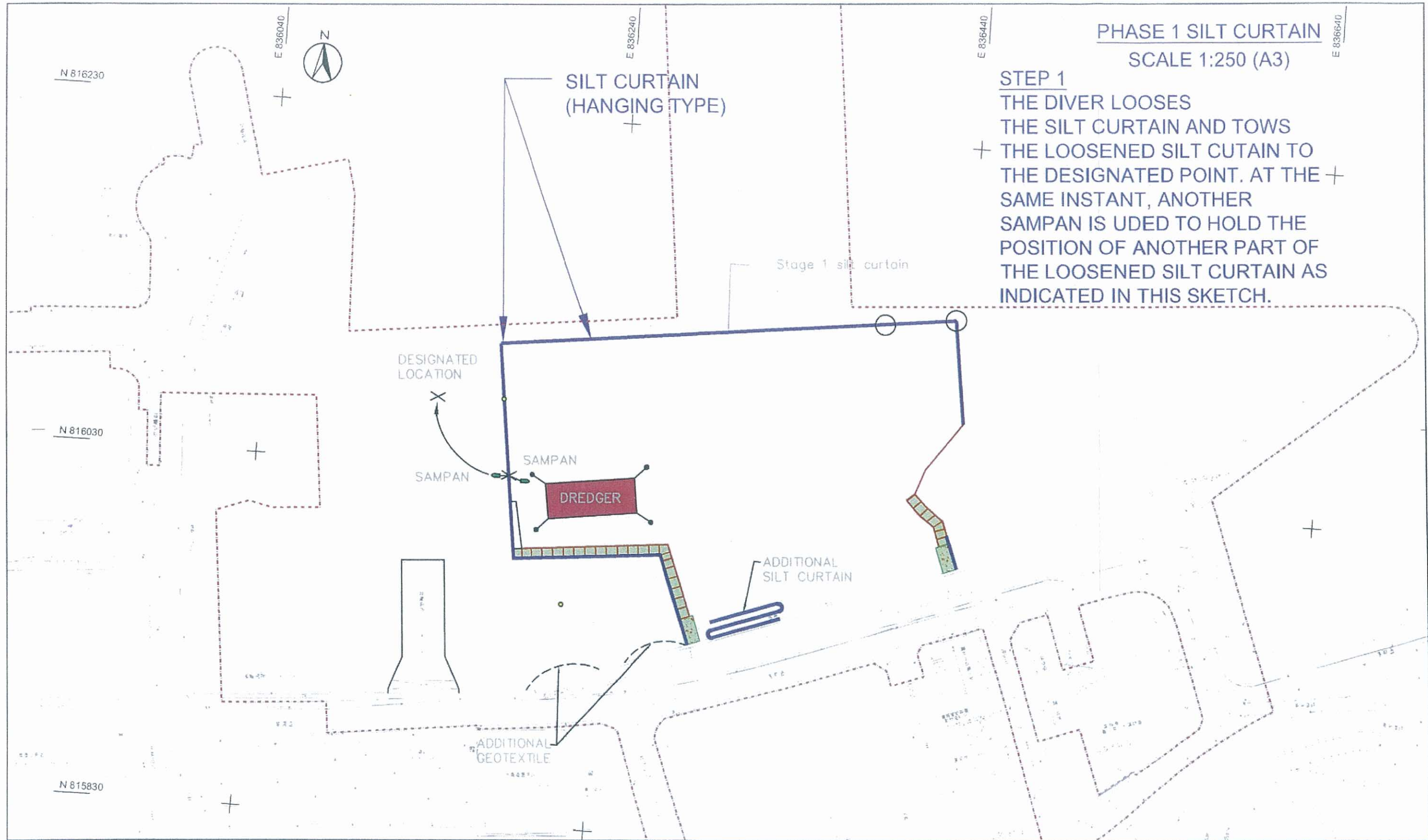


PHASE 1 SILT CURTAIN

SCALE 1:250 (A3)

STEP 1

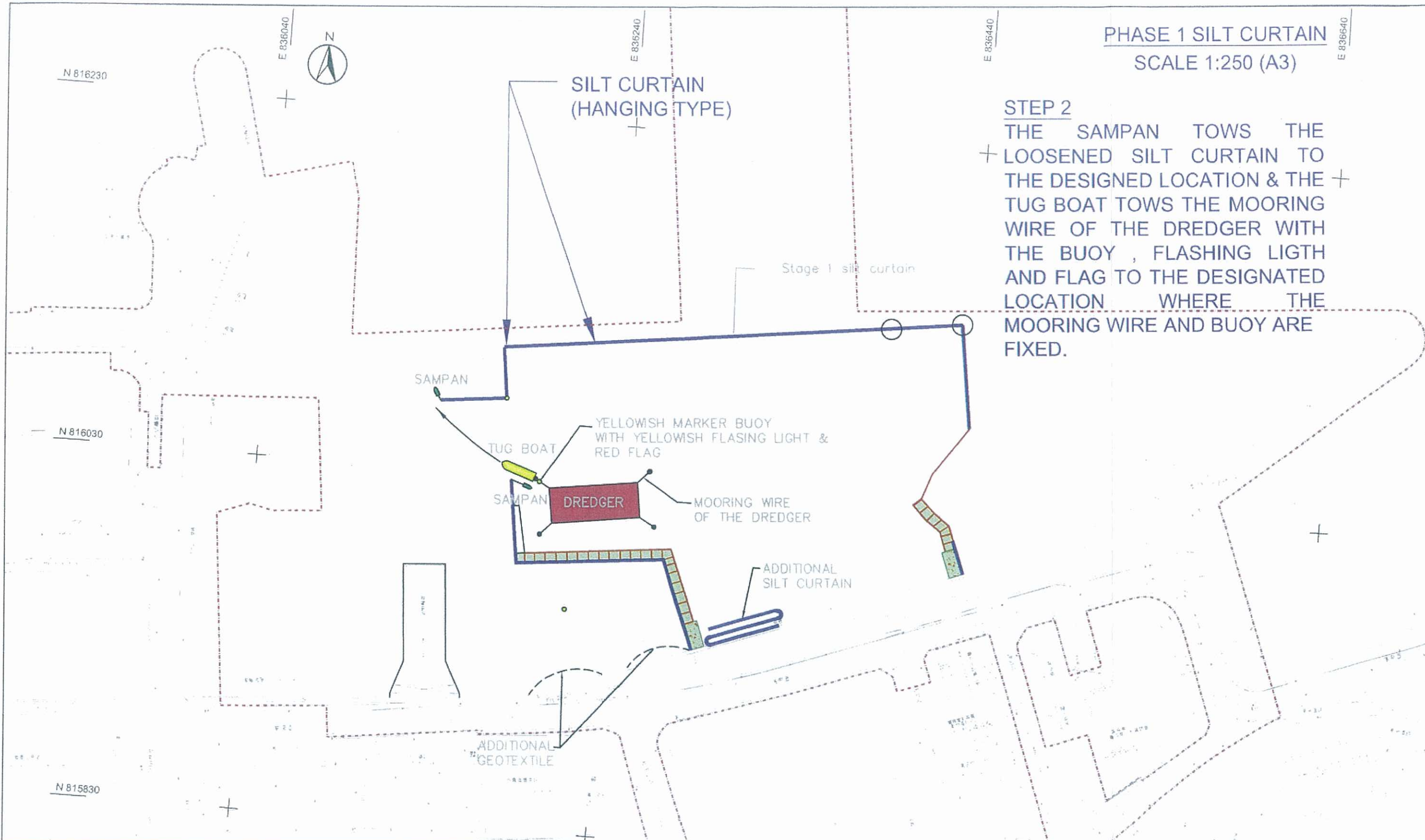
THE DIVER LOOSES THE SILT CURTAIN AND TOWS THE LOOSENED SILT CURTAIN TO THE DESIGNATED POINT. AT THE SAME INSTANT, ANOTHER SAMPAN IS USED TO HOLD THE POSITION OF ANOTHER PART OF THE LOOSENED SILT CURTAIN AS INDICATED IN THIS SKETCH.




CLIENT	CONTRACTOR 俊和 - 中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	JOB TITLE: SEQUENCE OF RELOCATION OF SILT CURTAIN (STEP 1)	SCALE 1:2000	REF. TO DWG NO.	
ENGINEER'S REPRESENTATIVE	PROJECT: CONTRACT NO. HK/2009/G2 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST		DATE 22 SEPTEMBER 2010		Sheet 1 of 9
			DRAWN WAFFERY	DESIGNED	SKETCH NO
			CHECKED ---	APPROVED ---	CWCRJV/HK200902/SK/RS/0001
					REV -

PHASE 1 SILT CURTAIN  
SCALE 1:250 (A3)

**STEP 2**  
 THE SAMPAN TOWS THE LOOSENED SILT CURTAIN TO THE DESIGNED LOCATION & THE TUG BOAT TOWS THE MOORING WIRE OF THE DREDGER WITH THE BUOY, FLASHING LIGHT AND FLAG TO THE DESIGNATED LOCATION WHERE THE MOORING WIRE AND BUOY ARE FIXED.

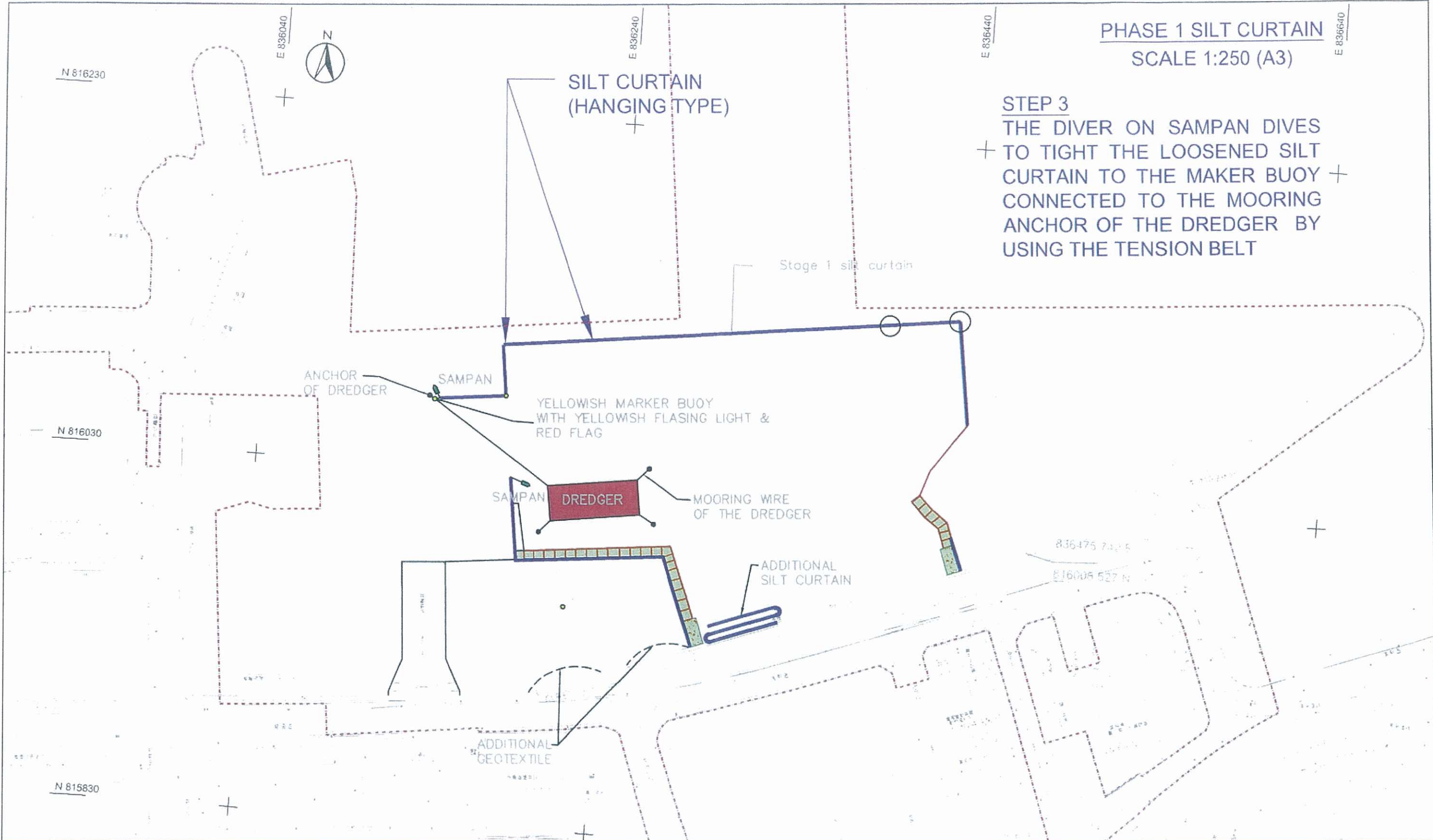



CLIENT	CONTRACTOR  俊和 - 中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	JOB TITLE: <b>SEQUENCE OF RELOCATION OF SILT CURTAIN          (STEP 2)</b>	SCALE <b>1:2000</b>	REF. TO DWG NO.
ENGINEER'S REPRESENTATIVE	PROJECT: CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST		DATE <b>22 SEPTEMBER 2010</b>	Sheet 2 of 9
			DRAWN WAFFERY	DESIGNED
			CHECKED ---	APPROVED ---
				SKETCH NO CWCJRJV/HK200902/SK/RS/0001
				REV ---



**PHASE 1 SILT CURTAIN**  
SCALE 1:250 (A3)

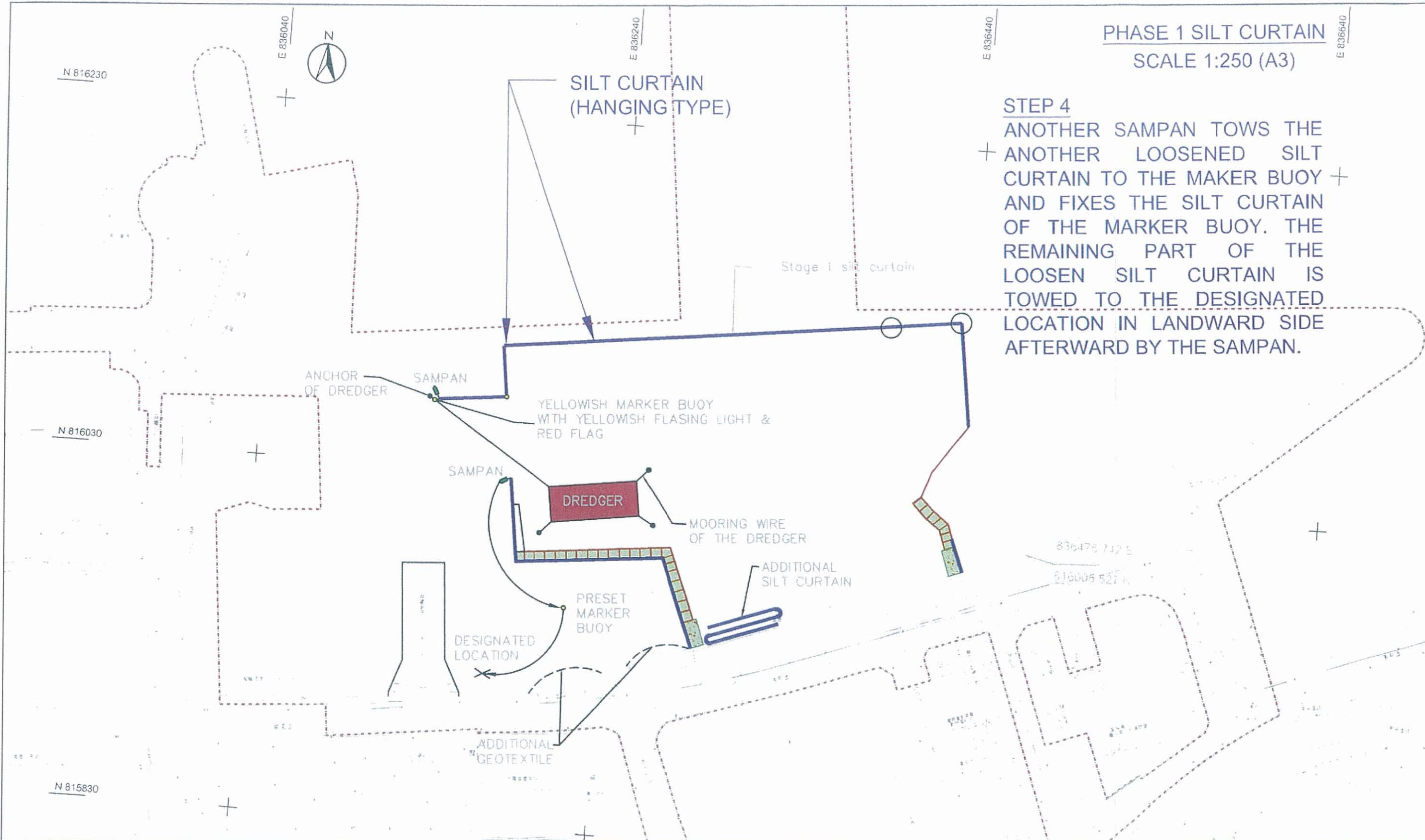
**STEP 3**  
THE DIVER ON SAMPAN DIVES TO TIGHT THE LOOSENED SILT CURTAIN TO THE MAKER BUOY CONNECTED TO THE MOORING ANCHOR OF THE DREDGER BY USING THE TENSION BELT




CLIENT	CONTRACTOR  俊和 - 中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	JOB TITLE:	SCALE	1:2000	REF. TO DWG. NO.	
ENGINEER'S REPRESENTATIVE	PROJECT: CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST	<b>SEQUENCE OF RELOCATION OF SILT CURTAIN (STEP 3)</b>	DATE	22 SEPTEMBER 2010	Sheet 3 of 9	
			DRAWN	WAFERY	DESIGNED	SKETCH NO
			CHECKED	---	APPROVED	---
						REV
						CWCRJV/HK200902/SK/RS/0001
						---

PHASE 1 SILT CURTAIN  
SCALE 1:250 (A3)

**STEP 4**  
 + ANOTHER SAMPAN TOWS THE  
 + ANOTHER LOOSENED SILT  
 + CURTAIN TO THE MAKER BUOY +  
 AND FIXES THE SILT CURTAIN  
 OF THE MARKER BUOY. THE  
 REMAINING PART OF THE  
 LOOSEN SILT CURTAIN IS  
 TOWED TO THE DESIGNATED  
 LOCATION IN LANDWARD SIDE  
 AFTERWARD BY THE SAMPAN.

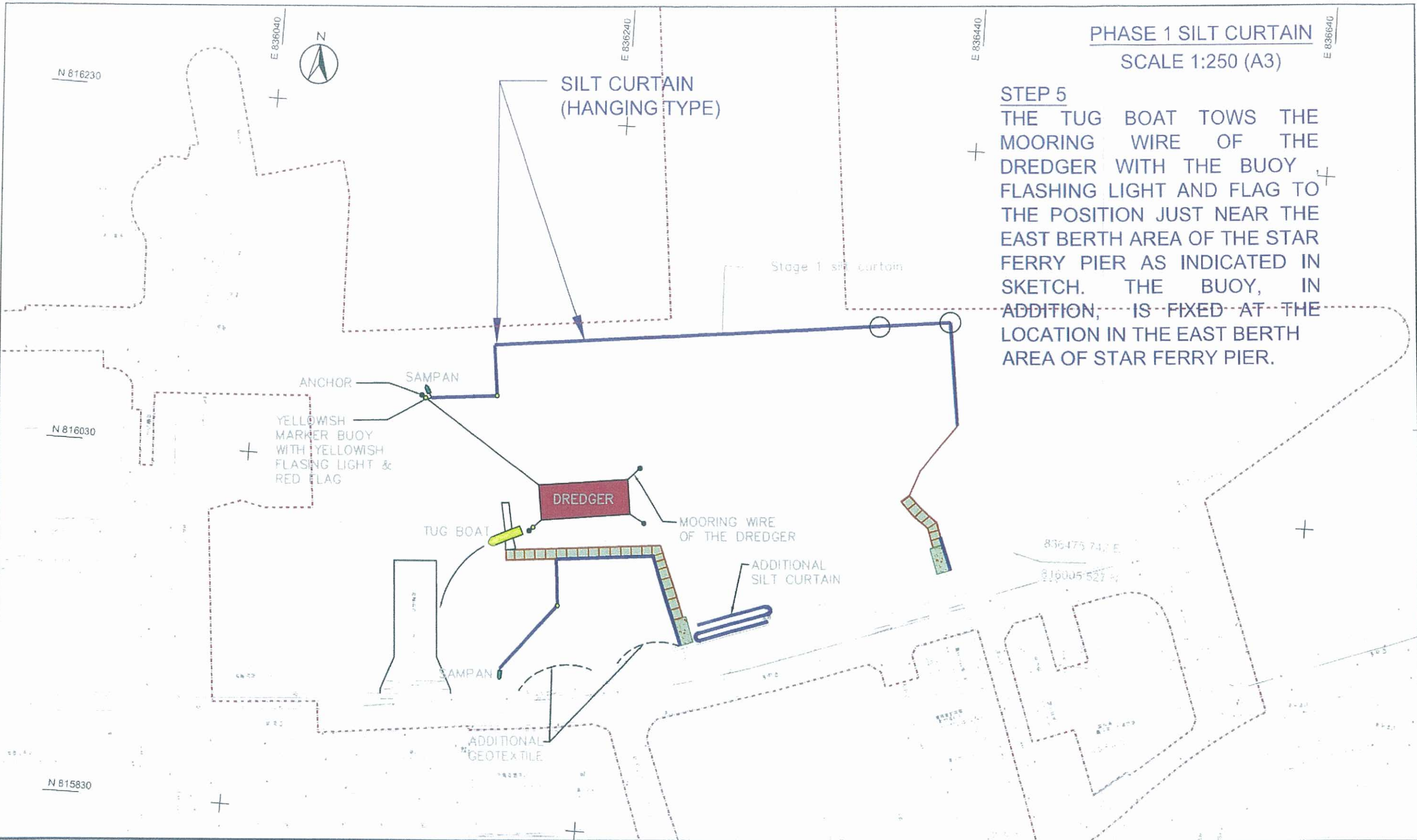


CLIENT	CONTRACTOR  俊和 - 中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	JOB TITLE: <b>SEQUENCE OF RELOCATION OF SILT CURTAIN          (STEP 4)</b>	SCALE 1:2000	REF. TO DWG NO.
ENGINEER'S REPRESENTATIVE	PROJECT: CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST		DATE 22 SEPTEMBER 2010	Sheet 4 of 9
			DRAWN WAFFERY	DESIGNED
			CHECKED ---	APPROVED ---
				SKETCH NO CWCRJV/HK200902/SK/RS/0001
				REV -



PHASE 1 SILT CURTAIN  
SCALE 1:250 (A3)

**STEP 5**  
THE TUG BOAT TOWS THE MOORING WIRE OF THE DREDGER WITH THE BUOY FLASHING LIGHT AND FLAG TO THE POSITION JUST NEAR THE EAST BERTH AREA OF THE STAR FERRY PIER AS INDICATED IN SKETCH. THE BUOY, IN ADDITION, IS FIXED AT THE LOCATION IN THE EAST BERTH AREA OF STAR FERRY PIER.

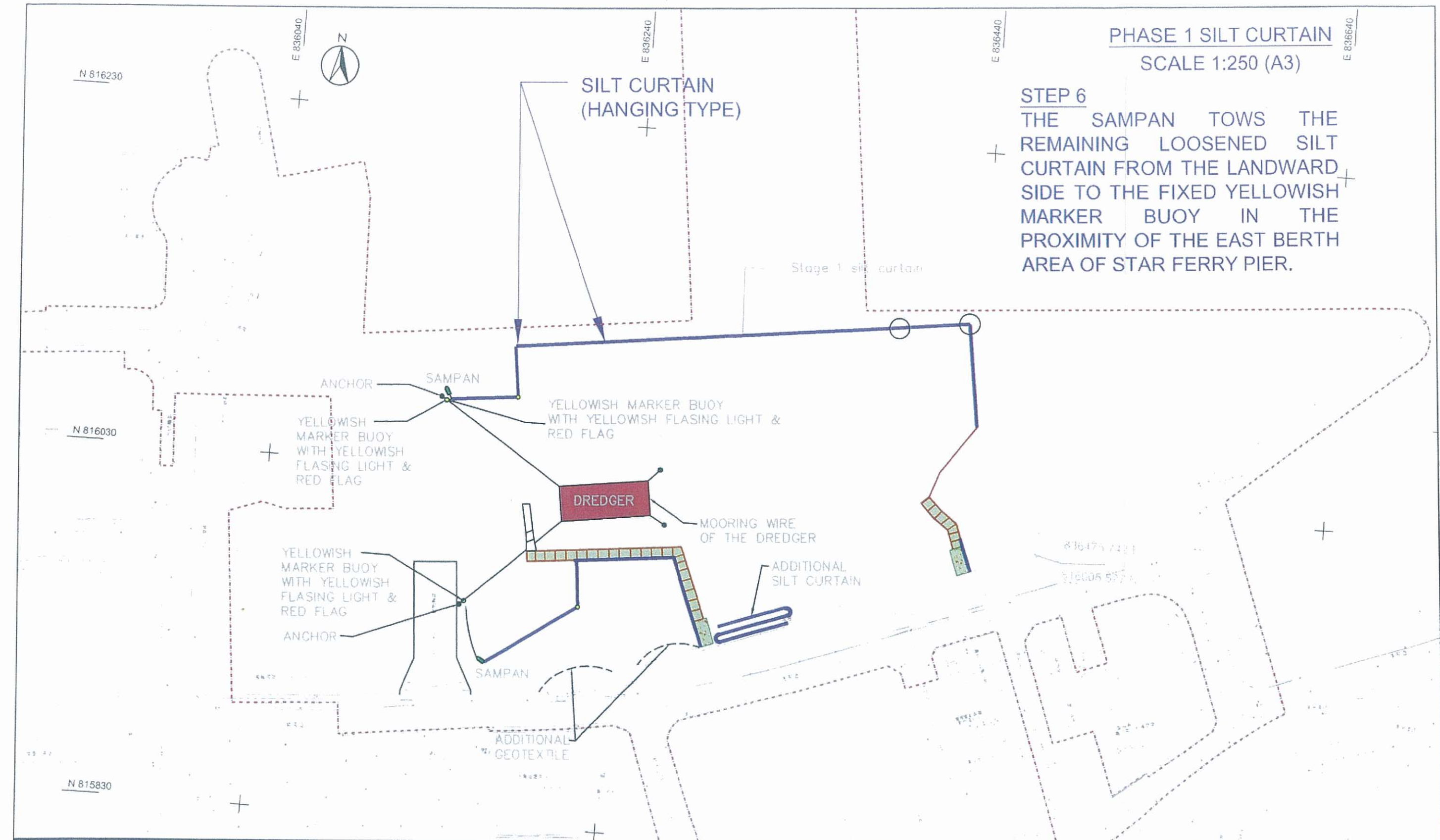


CLIENT	CONTRACTOR 俊和-中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	JOB TITLE: <b>SEQUENCE OF RELOCATION OF SILT CURTAIN (STEP 5)</b>	SCALE 1:2000	REF. TO DWG. NO.
ENGINEER'S REPRESENTATIVE	PROJECT: CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST		DATE 22 SEPTEMBER 2010	Sheet 5 of 9
			DRAWN WAFERY	DESIGNED
			CHECKED ---	APPROVED ---
				SKETCH NO CWCJRJV/HK200902/SK/RS/0001
				REV -



PHASE 1 SILT CURTAIN  
SCALE 1:250 (A3)

**STEP 6**  
THE SAMPAN TOWS THE REMAINING LOOSENED SILT CURTAIN FROM THE LANDWARD SIDE TO THE FIXED YELLOWISH MARKER BUOY IN THE PROXIMITY OF THE EAST BERTH AREA OF STAR FERRY PIER.



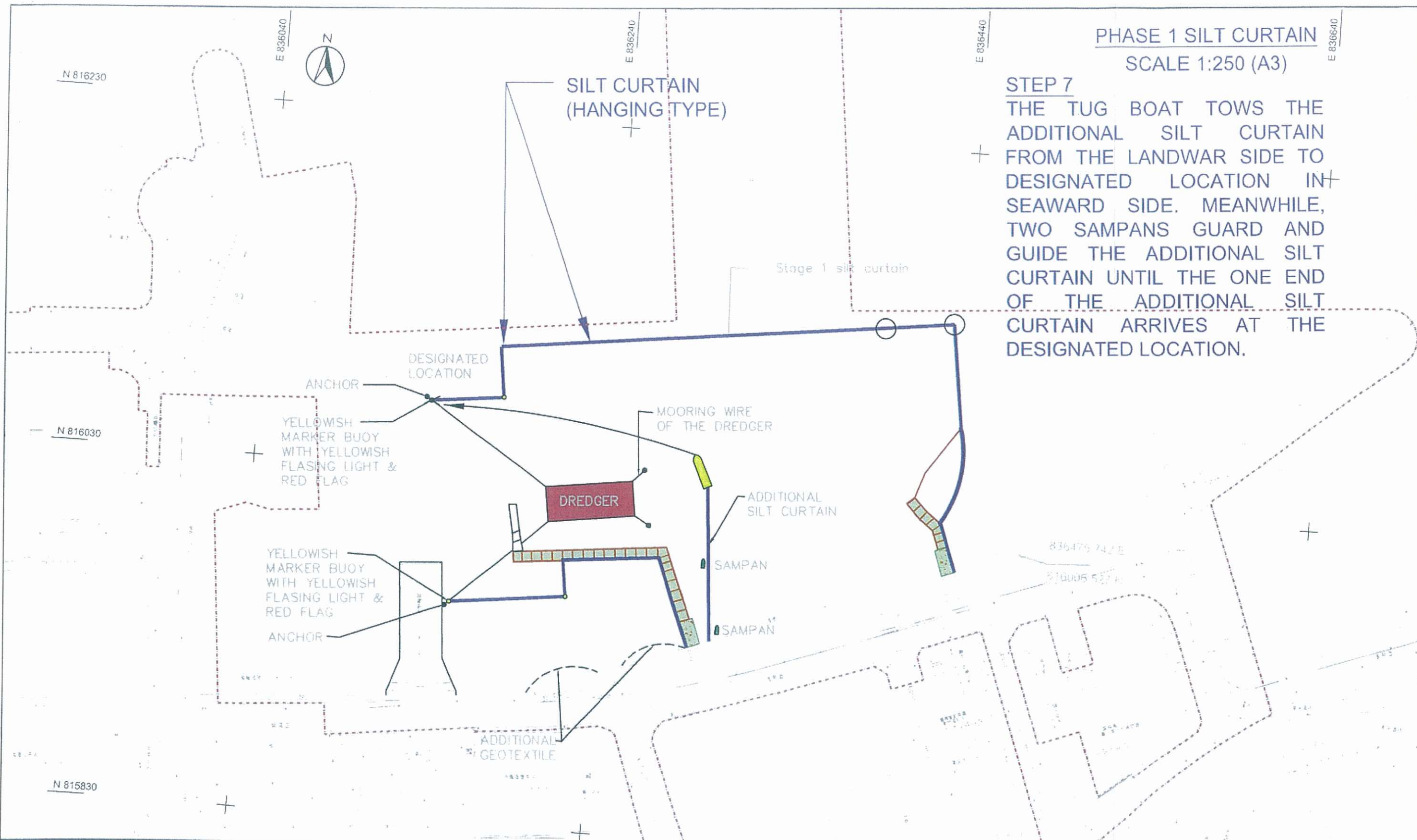
CLIENT	CONTRACTOR 俊和-中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	JOB TITLE:	SCALE	1:2000	REF. TO DWG NO.
ENGINEER'S REPRESENTATIVE	PROJECT: CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST	SEQUENCE OF RELOCATION OF SILT CURTAIN (STEP 6)	DATE	22 SEPTEMBER 2010	Sheet 6 of 9
			DRAWN	WAFERY	DESIGNED
			CHECKED	---	APPROVED
					SKETCH NO
					REV
					CWCRJV/HK200902/SK/RS/0001



PHASE 1 SILT CURTAIN  
SCALE 1:250 (A3)

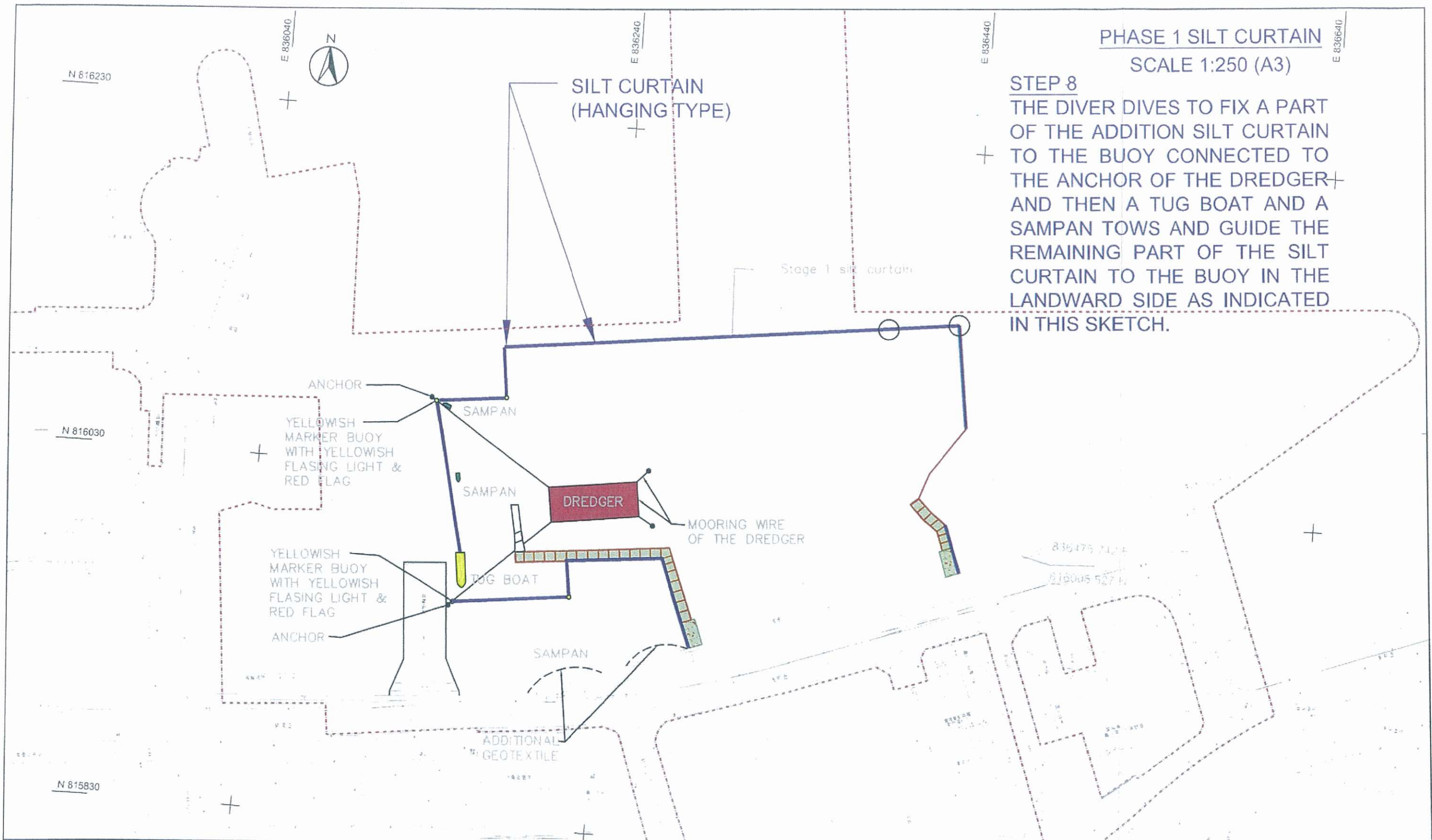
STEP 7

THE TUG BOAT TOWS THE ADDITIONAL SILT CURTAIN FROM THE LANDWARD SIDE TO DESIGNATED LOCATION IN SEAWARD SIDE. MEANWHILE, TWO SAMPANS GUARD AND GUIDE THE ADDITIONAL SILT CURTAIN UNTIL THE ONE END OF THE ADDITIONAL SILT CURTAIN ARRIVES AT THE DESIGNATED LOCATION.



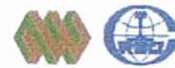
CLIENT	CONTRACTOR 俊和-中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	JOB TITLE: SEQUENCE OF RELOCATION OF SILT CURTAIN (STEP 7)	SCALE 1:2000	REF. TO DWG NO.	
ENGINEER'S REPRESENTATIVE	PROJECT: CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST		DATE 22 SEPTEMBER 2010		Sheet 7 of 9
			DRAWN MAFFERY	DESIGNED	SKETCH NO
			CHECKED ---	APPROVED ---	CWCRJV/HK200902/SK/RS/0001
					REV -



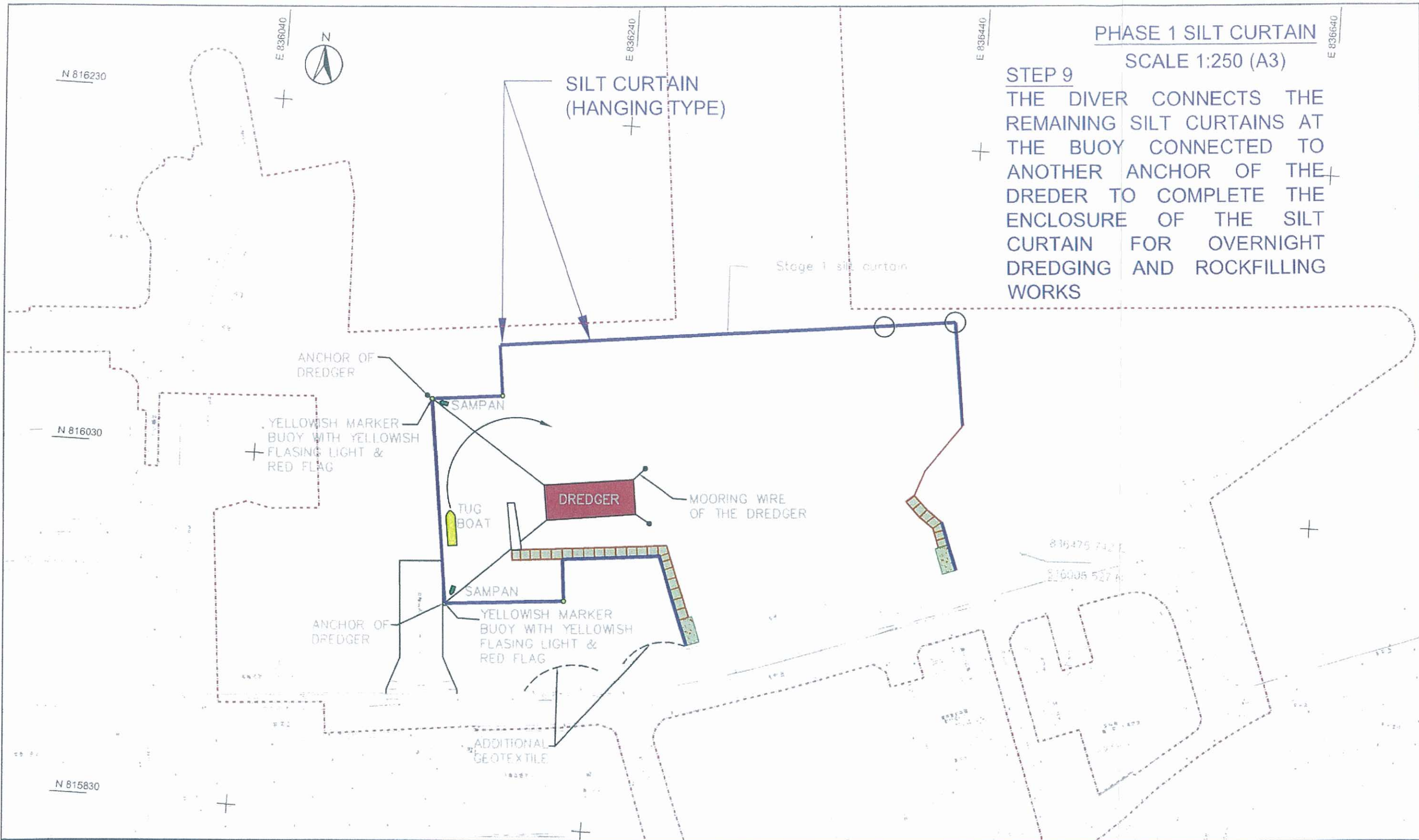


**PHASE 1 SILT CURTAIN**  
SCALE 1:250 (A3)

**STEP 8**  
THE DIVER DIVES TO FIX A PART OF THE ADDITIONAL SILT CURTAIN TO THE BUOY CONNECTED TO THE ANCHOR OF THE DREDGER AND THEN A TUG BOAT AND A SAMPAN TOWS AND GUIDE THE REMAINING PART OF THE SILT CURTAIN TO THE BUOY IN THE LANDWARD SIDE AS INDICATED IN THIS SKETCH.

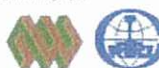
CLIENT	CONTRACTOR  俊和-中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	JOB TITLE: <b>SEQUENCE OF RELOCATION OF SILT CURTAIN (STEP 8)</b>	SCALE 1:2000	REF. TO DWG. NO.	
ENGINEER'S REPRESENTATIVE	PROJECT: CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST		DATE 22 SEPTEMBER 2010		Sheet 8 of 9
			DRAWN WAFERY	DESIGNED	SKETCH NO
			CHECKED ---	APPROVED ---	CWCRJV/HK200902/SK/RS/0001
					REV -





**PHASE 1 SILT CURTAIN**  
SCALE 1:250 (A3)

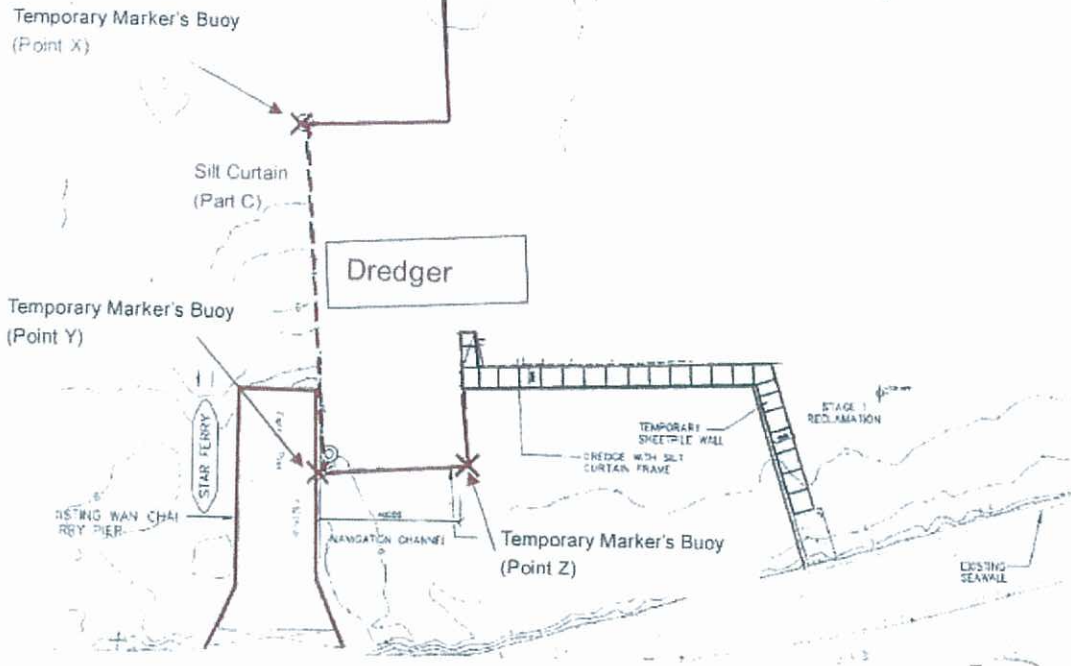
**STEP 9**  
THE DIVER CONNECTS THE REMAINING SILT CURTAINS AT THE BUOY CONNECTED TO ANOTHER ANCHOR OF THE DREDGER TO COMPLETE THE ENCLOSURE OF THE SILT CURTAIN FOR OVERNIGHT DREDGING AND ROCKFILLING WORKS

CLIENT	CONTRACTOR	JOB TITLE:	SCALE	1:2000	REF. TO DWG NO.		
	 俊和 - 中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE		SEQUENCE OF RELOCATION OF SILT CURTAIN (STEP 9)	DATE	22 SEPTEMBER 2010	Sheet 9 of 9	
ENGINEER'S REPRESENTATIVE	PROJECT		DRAWN	WAFERY	DESIGNED	SKETCH NO	
	CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST		CHECKED	---	APPROVED	---	REV
						CWCRJV/HK200902/SK/RS/0001	---

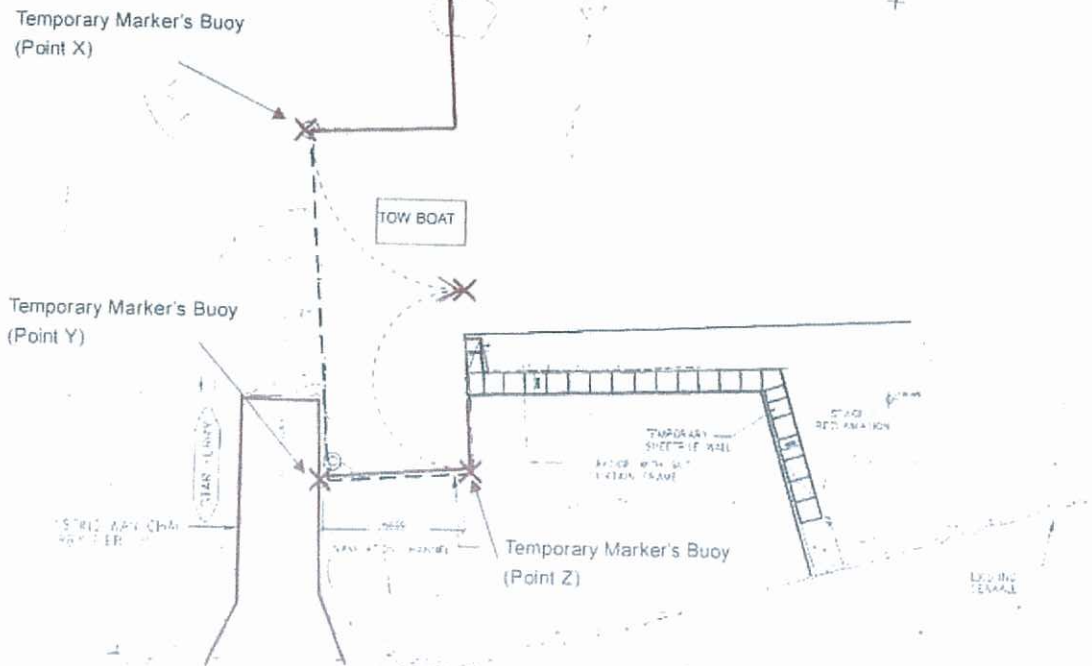


## Working Sequence of Removal of Temporary Silt Curtain and Reinstatement of Existing Silt Curtain

STEP 1. Dismount Silt Curtain (Part C) which is towed to the Dredger, Temporary Marker Buoy will be Picked Up by Dredger.

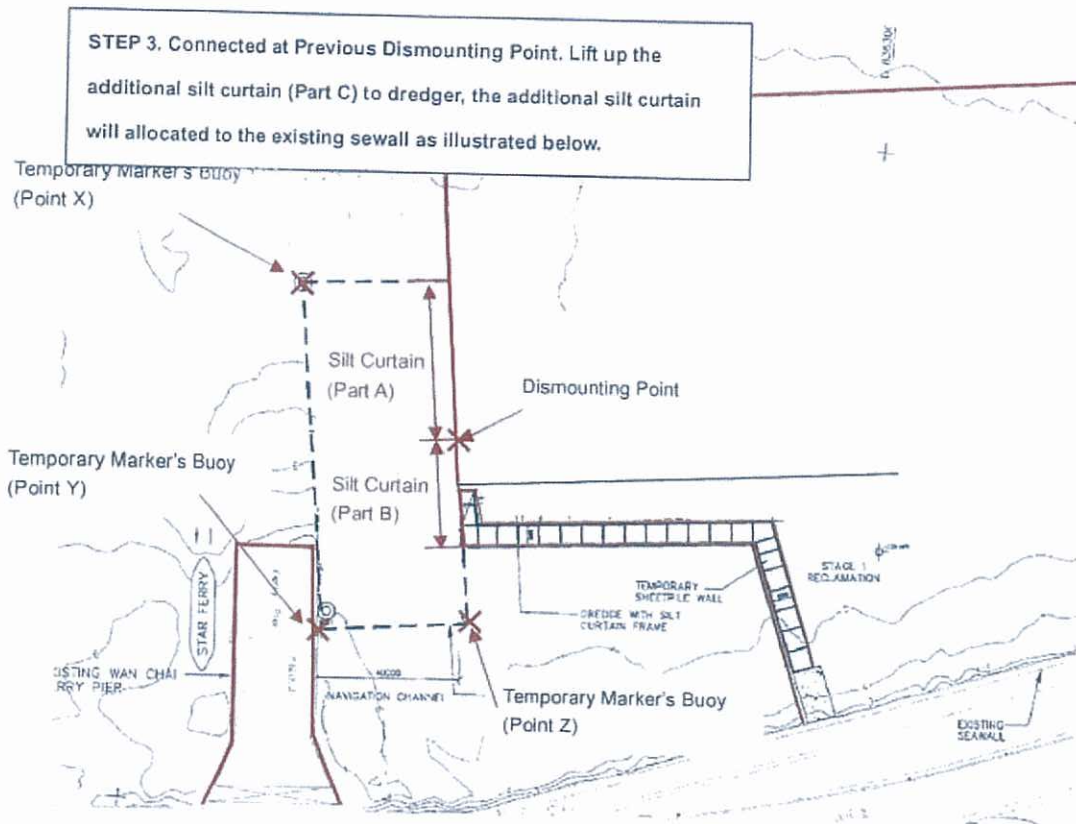


STEP 2. Tow and Fix the Silt Curtain (Part A and Part B) back to Original Alignment of Existing Silt Curtain.

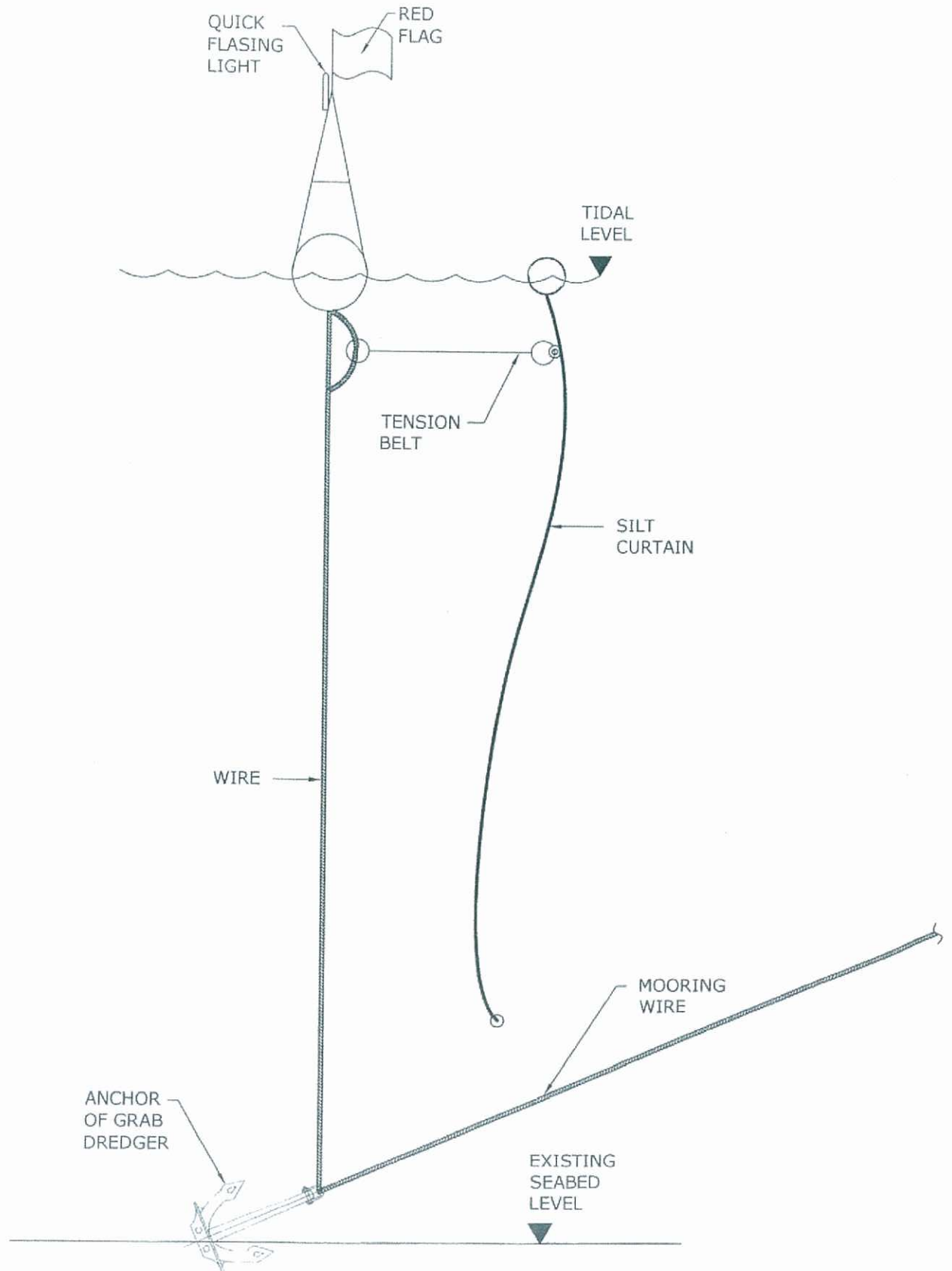




## Working Sequence of Removal of Temporary Silt Curtain and Reinstatement of Existing Silt Curtain

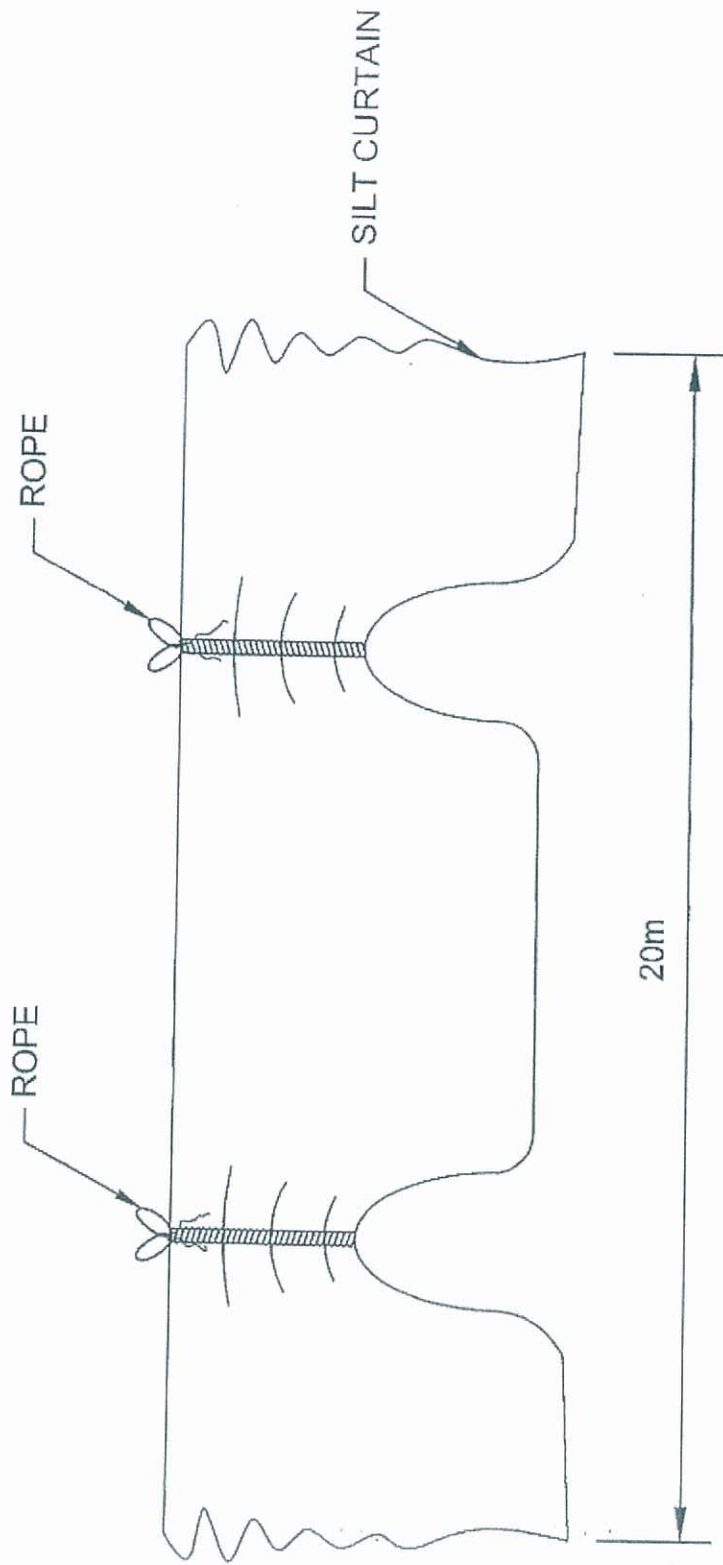






TYPICAL CONNECTION DETAIL  
BETWEEN THE ANCHOR, FLOATING  
MARKER BUOY AND SILT CURTAIN





LIFTING UP DETAILS OF SILT CURTAIN IN THE COURSE  
OF SILT CURTAIN INSTALLATION