



## Silt Curtain Deployment Plan

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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



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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). Chun Wo - CRGL Joint Venture is responsible for the installation, operation, maintenance and removal of the silt curtain.

## 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 2a:

Dredging to be carried out to remove marine deposits from existing seabed to reach the proposed dredging level within Zone A area. (approximate 15 days)

Stage 2b:

Dredging to be carried out to remove marine deposits from existing seabed to reach the proposed dredging level within Zone B area. (approximate 14 days)

Stage 2c:

Rock fill placing would be carried out at the dredged area to form a level platform upto -6mPD for the installation of temporary concrete blocks seawall upto +3.6mPD. Infill of public fill material will be placed upto -1mPD within the temporary sheetpile wall. Reclamation fill are then placed from dredged level up to proposed formation level at approximate +3.5mPD inside the WCR2. (approximate 123 days)

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, additional silt curtain will be provided enclosing the pumping station intake in order to cease jeopardising the pumps in the pumping station.



- 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 (b)	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 2a	06 Mar 2012	21 Mar 2012	21 Mar 2012	21 Mar 2012	15
Stage 2b	22 Mar 2012	05 Apr 2012	05 Apr 2012	05 Apr 2012	14
Stage 2c	06 Apr 2012	07 Aug 2012	07 Aug 2012	07 Aug 2012	123
Stage 3	15 August, 2012	31 Jan, 2013	31 January, 2013	31 January, 2013	169
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 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 – 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

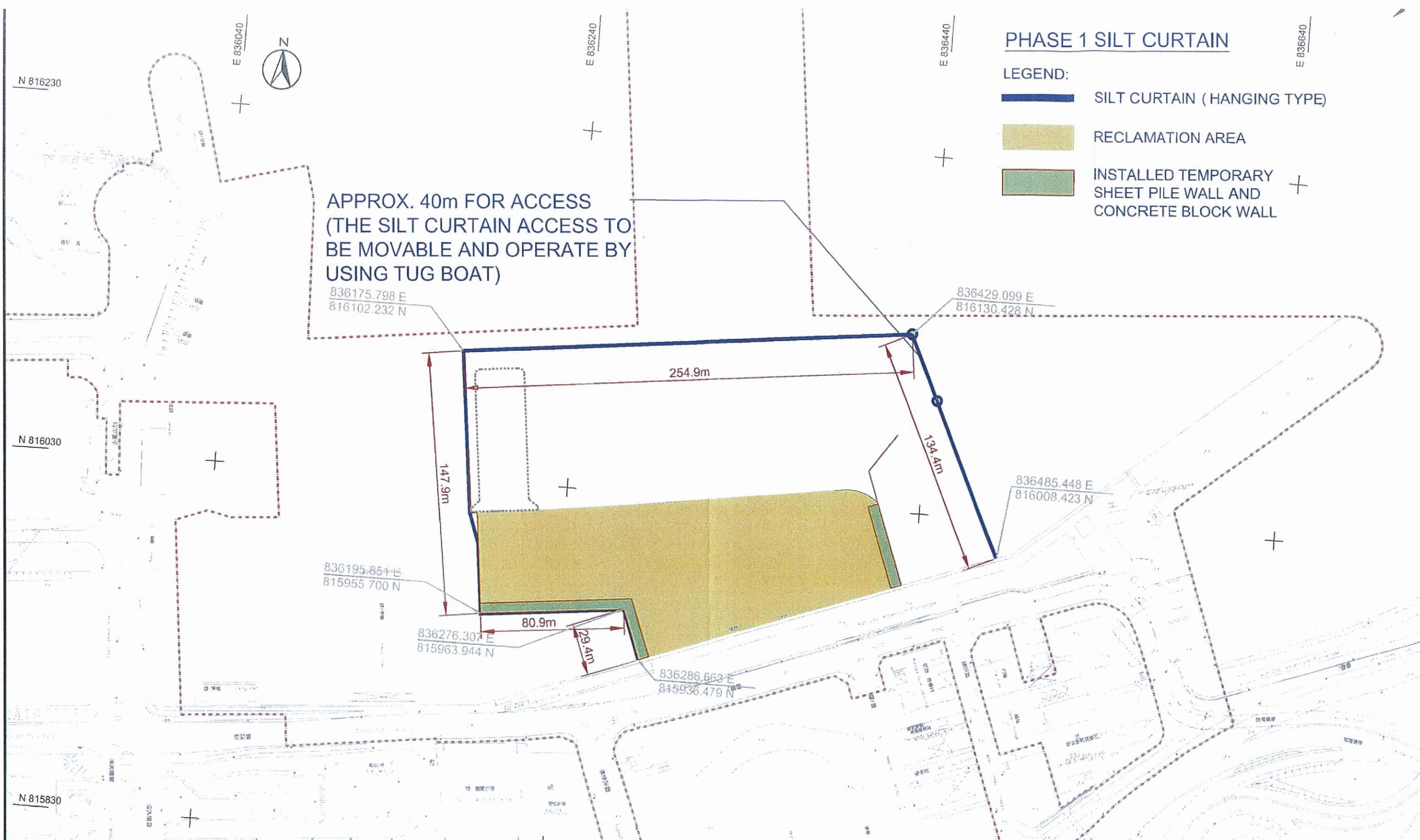
Silt Curtain Deployment Plan

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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.	
					DATE	12 JUL 2011		
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					CHECKED	WAFFERY LAU	APPROVED	---
					DRG. NO.	CWCRJV/HK200902/SK0017		REV. D

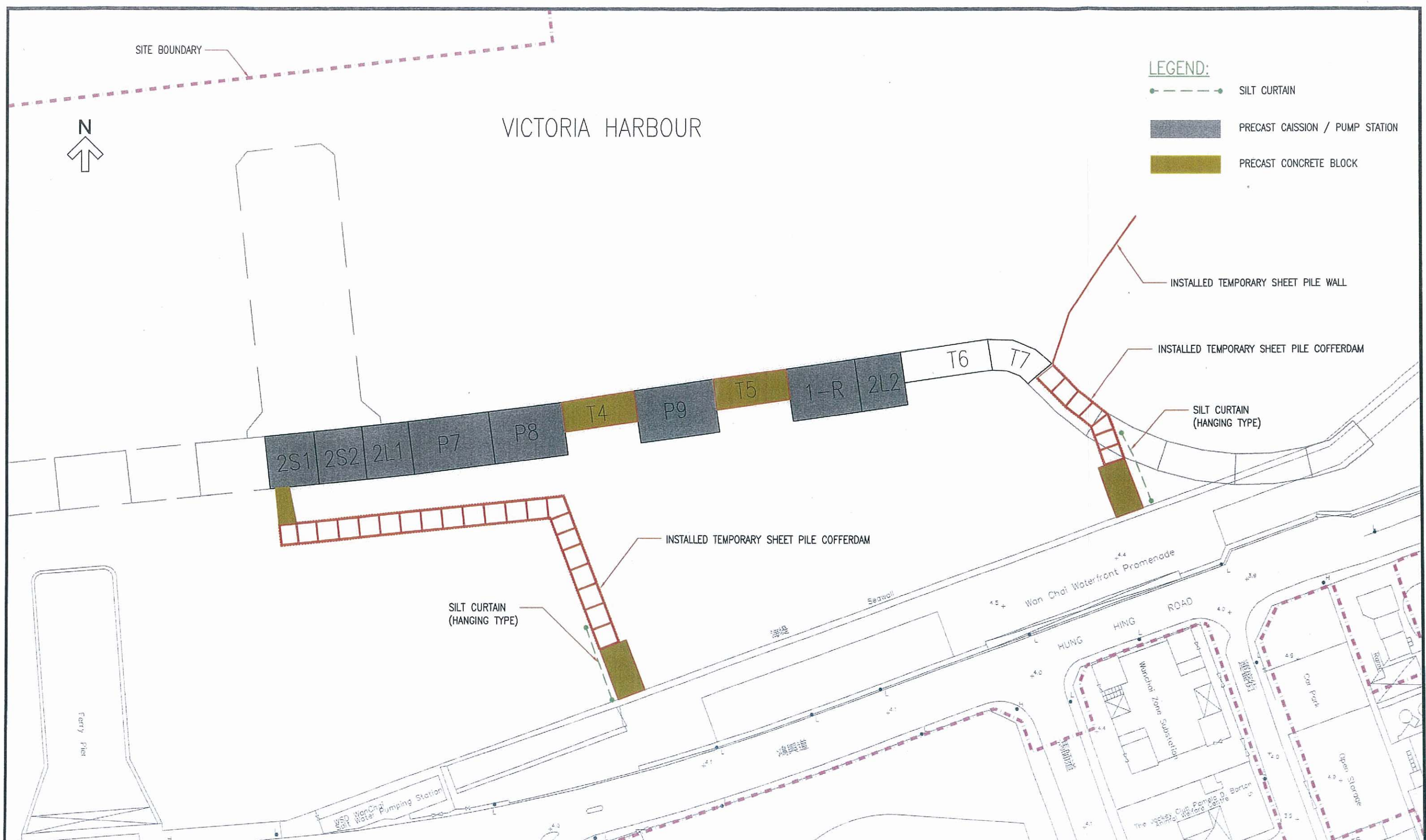
SITE BOUNDARY



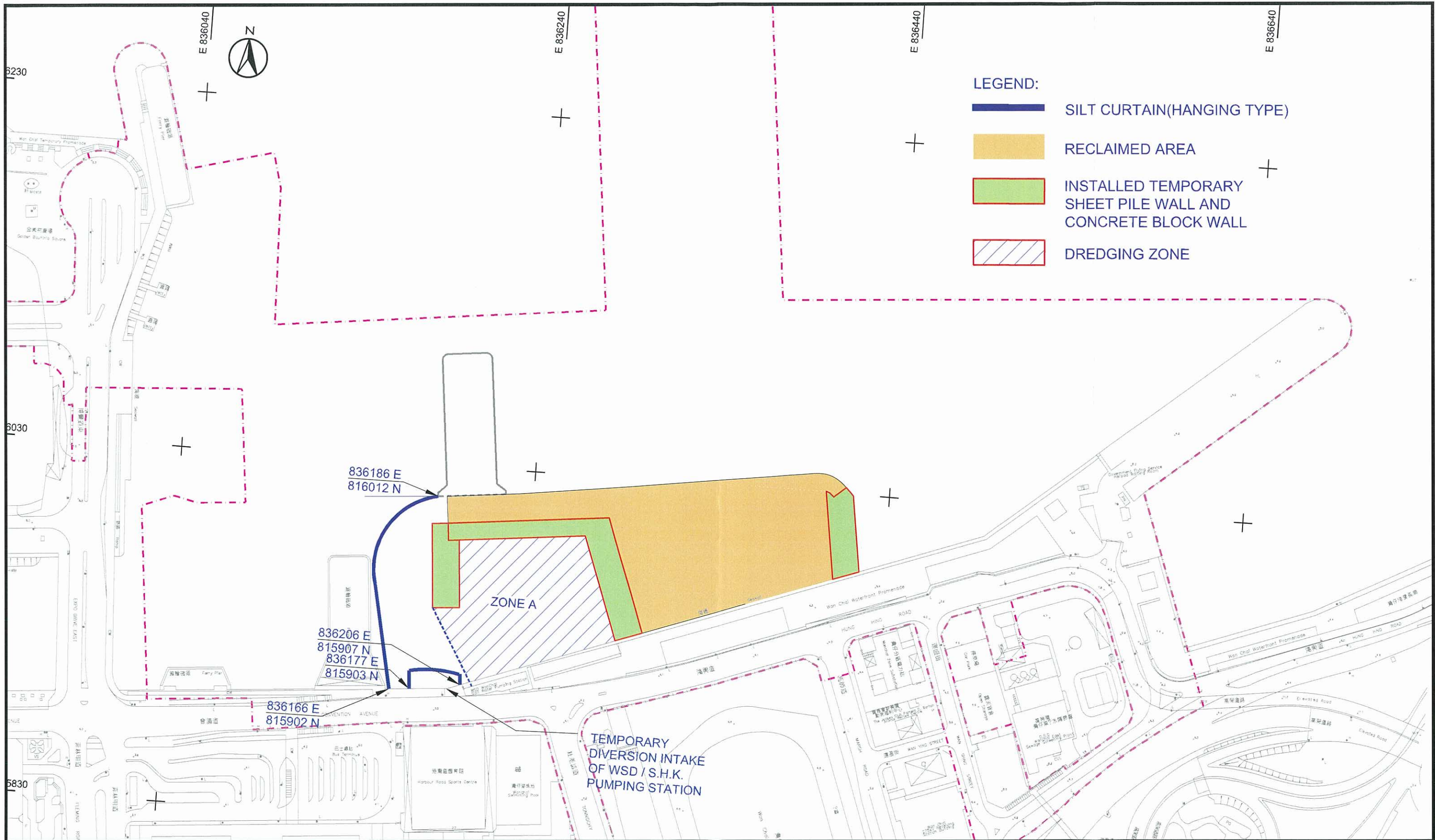
# VICTORIA HARBOUR

**LEGEND:**

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



<b>CONTRACTOR</b> 俊和 - 中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	REV.	DATE	DESCRIPTION	DRG. TITLE: <h2 style="text-align: center;">SILT CURTAIN ARRANGEMENT PHASE Ia</h2>	SCALE	1:1000 (A3)	CAD REF.	CW-CR/ENG/ENG-0467					
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	B	12 JAN 2011	MINOR REVISION		CHECKED	V. TONG	APPROVED	---					
<b>PROJECT</b> CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST	C	17 NOV 2011	MINOR REVISION										



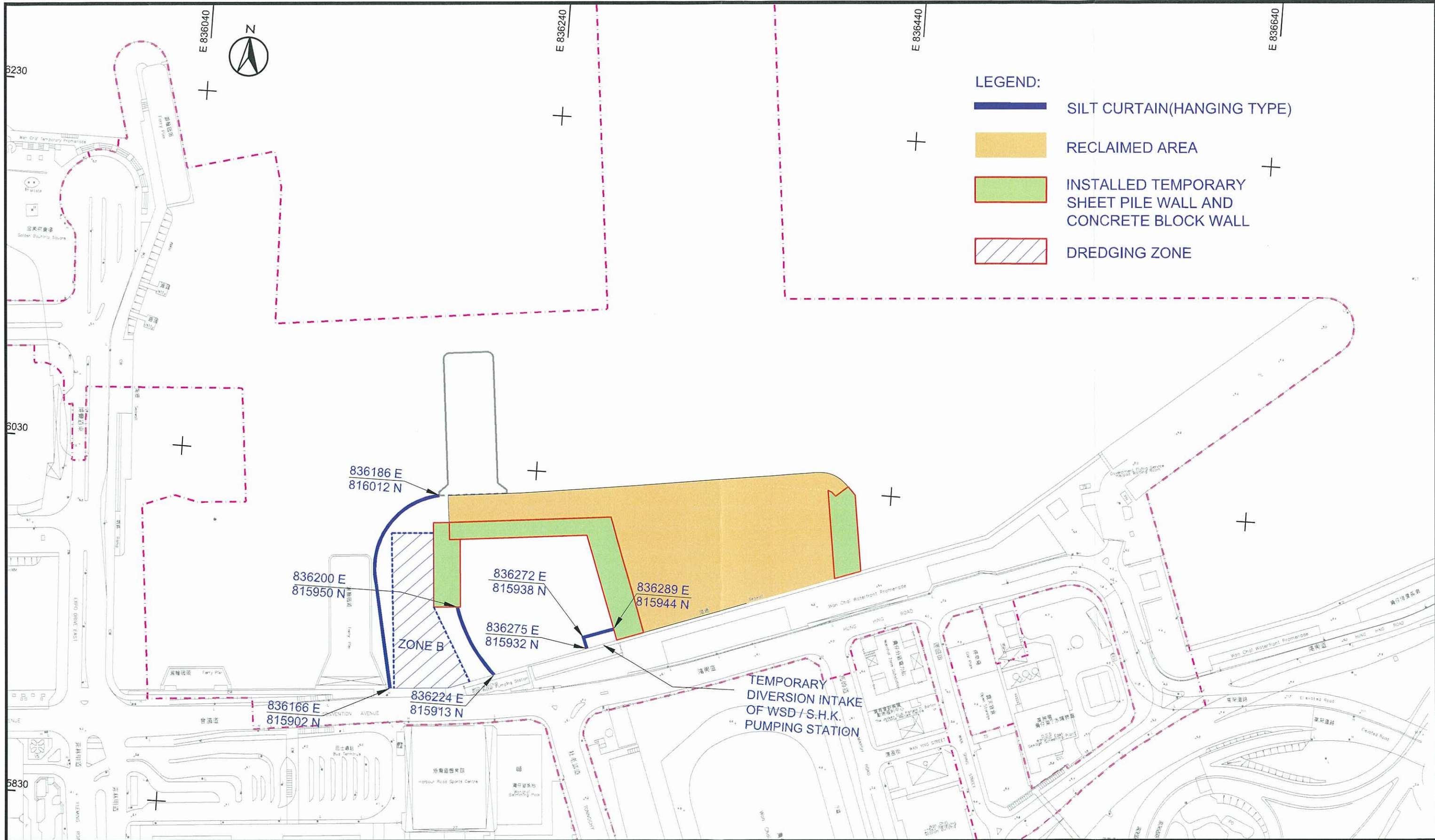
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 俊和 - 中國中鐵聯營  
 CHUN WO - CRGL JOINT VENTURE

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

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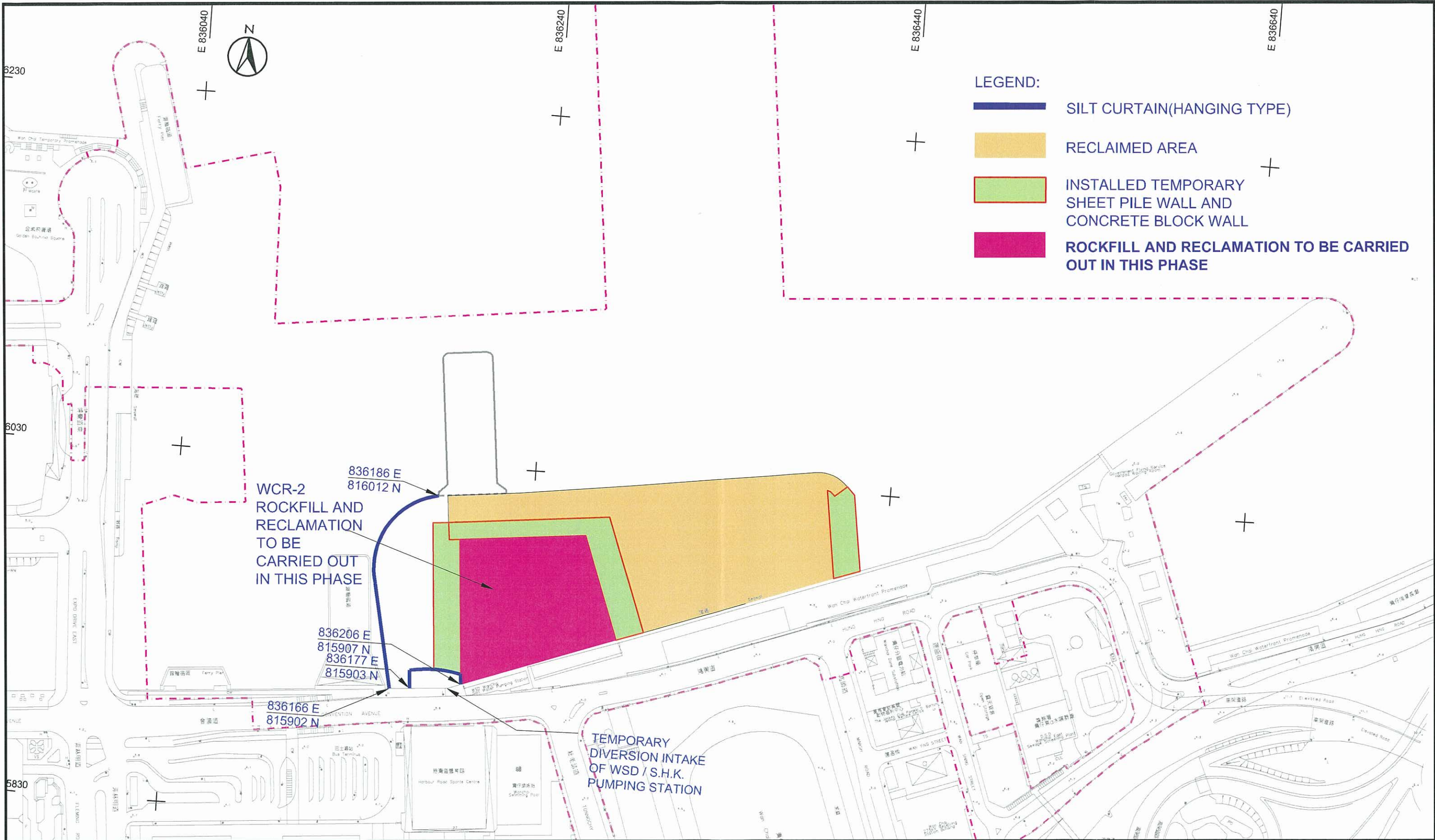
DRG. TITLE:  
 SILT CURTAIN ARRANGEMENT - PHASE 2A  
 (FOR DREDGING IN ZONE A)

SCALE	1:2000	CAD REF.	
DATE	06 JAN 2012		
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CHECKED	---	APPROVED	---
		DRG. NO.	
		CWCRJV/HK200902/SK0952	
		REV.	---



- LEGEND:**
- SILT CURTAIN(HANGING TYPE)
  - RECLAIMED AREA
  - INSTALLED TEMPORARY SHEET PILE WALL AND CONCRETE BLOCK WALL
  - DREDGING ZONE

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- LEGEND:**
- SILT CURTAIN(HANGING TYPE)
  - RECLAIMED AREA
  - INSTALLED TEMPORARY SHEET PILE WALL AND CONCRETE BLOCK WALL
  - ROCKFILL AND RECLAMATION TO BE CARRIED OUT IN THIS PHASE

WCR-2  
ROCKFILL AND  
RECLAMATION  
TO BE  
CARRIED OUT  
IN THIS PHASE

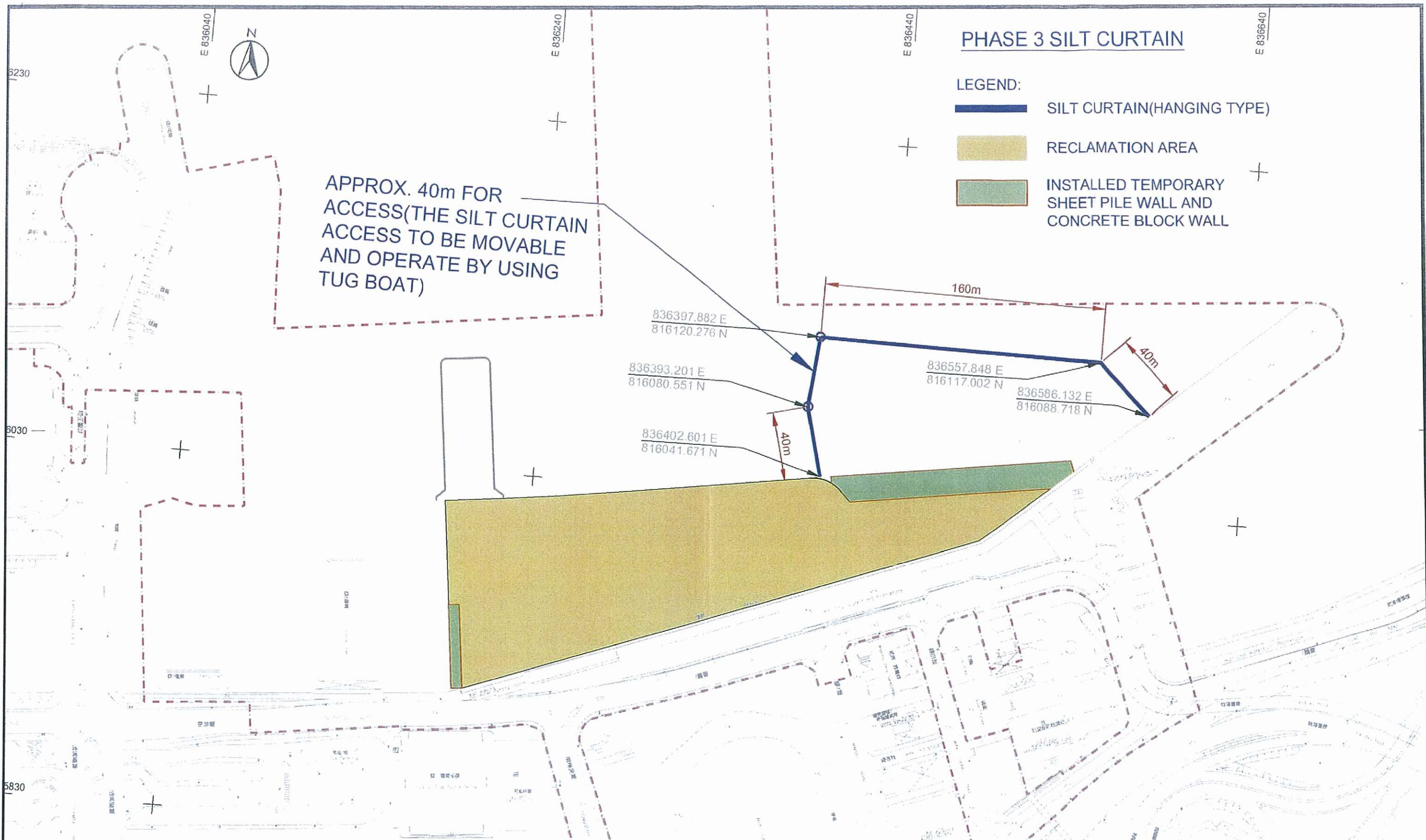
TEMPORARY  
DIVERSION INTAKE  
OF WSD / S.H.K.  
PUMPING STATION

836186 E  
816012 N

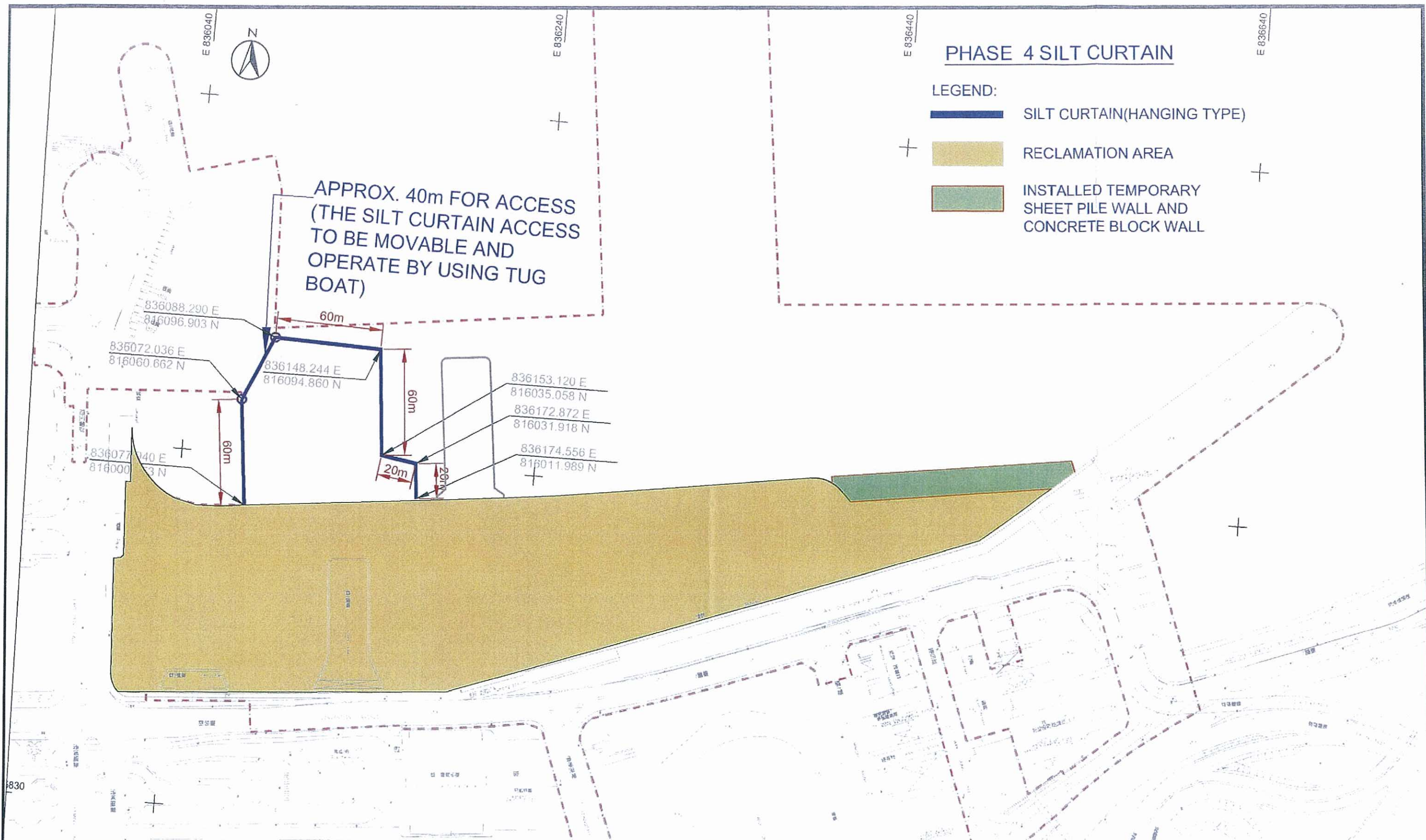
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815907 N  
836177 E  
815903 N

836166 E  
815902 N

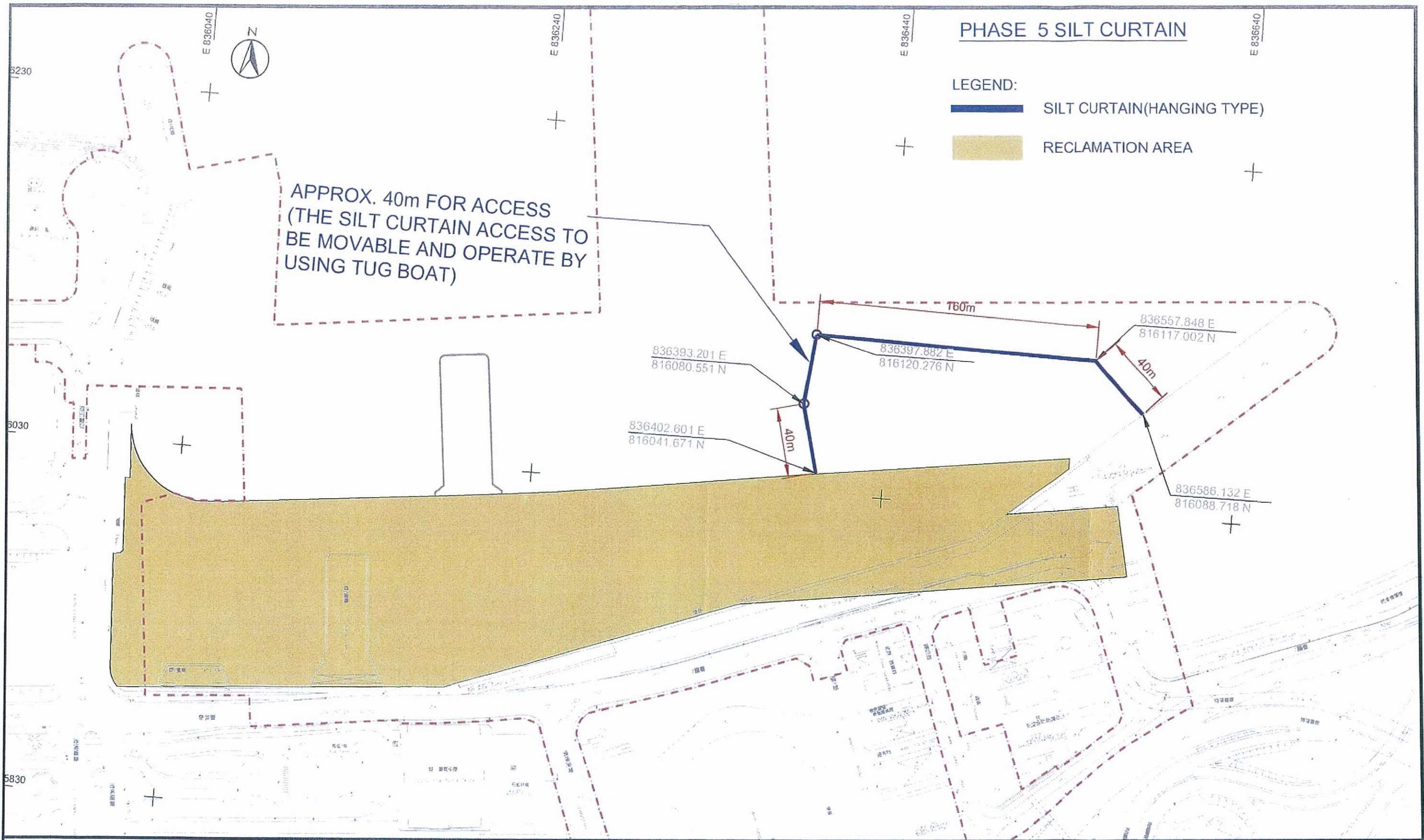
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							REV.	A





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**

### **Works Program**

Activity ID	Activity Name	OD	Start	Finish	% Complete	Total Float	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	20	
S10-T5-0015	Tunnel portion 5 pump test	14	13-Jun-15	30-Jun-15	0%	2												
S10-T5-0020	Tunnel portion 5 tunnel ELSW excavation	45	04-Jul-15	25-Aug-15	0%	0												
S10-T5-0030	Tunnel portion 5 tunnel structure construction	90	26-Aug-15	11-Dec-15	0%	0												
<b>Tunnel Portion 6</b>																		
S10-T6-0040	Tunnel portion 6 Predrill & guide	12	24-Apr-15	08-May-15	0%	0												
S10-T6-0050	Tunnel portion 6 diaphragm wall & bored pile works at Area 10	45	09-May-15	03-Jul-15	0%	0												
S10-T6-0055	Tunnel portion 6 pump test	14	25-Jun-15	11-Jul-15	0%	0												
S10-T6-0060	Tunnel portion 6 tunnel ELSW excavation at Area 10	45	04-Jul-15	25-Aug-15	0%	0												
S10-T6-0070	Tunnel portion 6 tunnel structure construction at Area 10	58	26-Aug-15	04-Nov-15	0%	0												
<b>Section XI Works - Remainder of Works, except Landscape Softworks and Establishment Works</b>																		
S11-0010	Completion of Section XI Works (2400 days)	0		23-Aug-16*	0%	0												
<b>WCR1 Works</b>																		
S11-S1-0010	Mobilization and plant set up	30	07-May-10	22-May-10 A	100%													
S11-S1-0020	Drainage diversion of 1800 pipe for WCR1 reclamation	30	08-May-10	20-Mar-11 A	100%													
S11-S1-0060	Possession of Unused WSD's pumping station at 880 days (Portion 3)	0	26-Jun-12*		0%	1035												
S11-S1-0070	Demolition of existing WSD salt water pumping station	210	26-Jun-12*	05-Mar-13	0%	1035												
S11-S1-0080	Possession of Un-used SHK's Pumping Station at 905 days (Portion 4)	0	21-Jul-12*		0%	1013												
S11-S1-0090	Demolition of existing Sun Hung Kai cooling water pumping station	210	21-Jul-12	02-Apr-13	0%	1013												
<b>WCR1 Reclamation Works</b>																		
<b>Temporary Seawall Works</b>																		
S11-S1-0335	Temporary Seawall Material Delivery	4	07-May-10	11-May-10 A	100%													
S11-S1-0435	Temporary Seawall Plants Mobilization	5	12-May-10	17-May-10 A	100%													
S11-S1-0535	Temporary Seawall Sheetpiling Construction West Side	93	18-May-10	10-Sep-10 A	100%													
S11-S1-0635	Temporary Seawall Sheetpiling Construction East Side	29	05-Jun-10 A	11-Sep-10 A	100%													
S11-S1-0735	Temporary Seawall Construction West Side Remaining Sheetpiles	14	11-Sep-10 A	23-Sep-10 A	100%													
<b>Seabed Dredging Works</b>																		
S11-S1-1137	TMTM Plan submission (July 10 to Oct 10)	82	26-Jul-10 A	15-Oct-10 A	100%													
S11-S1-1237	Dredging for WCR1 Contaminated Material (Bulk) Except Zone I	30	30-Jun-10 A	19-Aug-10 A	100%													
S11-S1-1337	Dredging for WCR1 Contaminated Material (Zone I)	12	19-Aug-10 A	11-Sep-10 A	100%													
S11-S1-1437	Trimming for WCR1 Dredging of Contaminated Material	7	20-Aug-10 A	30-Sep-10 A	100%													
S11-S1-1537	Dredging for WCR1 Uncontaminated Material (87000/3500=25day) - 1nos 11m3 grab & 1nos. 6m3 grab	25	01-Sep-10 A	09-Oct-10 A	100%													
S11-S1-1637	Final Survey and Trimming for WCR1 Dredging of Uncontaminated Material	7	11-Oct-10 A	18-Oct-10 A	100%													
S11-S1-1937	Dredging for Permanent Seawall (stage 1) - for outfall section	2	02-Oct-10 A	11-Oct-10 A	100%													
S11-S1-2037	Survey for Dredging for Permanent Seawall (Stage 1) - for outfall section	3	12-Oct-10 A	13-Oct-10 A	100%													
S11-S1-2137	Dredging for Permanent Seawall (Stage 2,3,4&5)	8	29-Sep-10 A	30-Oct-10 A	100%													
S11-S1-2237	Survey for Dredging for Permanent Seawall (Stage 2,3,4&5)	3	30-Oct-10 A	01-Nov-10 A	100%													
S11-S1-2937	Dredging for Temporary Seawall Contaminated Material - East	7	28-Aug-10 A	01-Sep-10 A	100%													
S11-S1-3037	Survey for Temporary Seawall Dredging of Contaminated Material - East	3	01-Sep-10 A	01-Sep-10 A	100%													
S11-S1-3137	Dredging for Temporary Seawall Un-contaminated Material - East	7	02-Sep-10 A	04-Sep-10 A	100%													
S11-S1-3237	Survey for Dredging for Temporary Seawall Un-contaminated Material - East	3	05-Sep-10 A	05-Sep-10 A	100%													
S11-S1-3337	Public Fill inside Temporary Seawall East	7	11-Sep-10 A	11-Sep-10 A	100%													
S11-S1-3437	Dredging for Temporary Seawall Contaminated Material - West	7	16-Sep-10 A	21-Sep-10 A	100%													
S11-S1-3537	Survey for Temporary Seawall Dredging of Contaminated Material - West	3	24-Sep-10 A	26-Sep-10 A	100%													
S11-S1-3637	Dredging for Temporary Seawall Un-contaminated Material - West	7	27-Sep-10 A	28-Sep-10 A	100%													
S11-S1-3737	Survey for Dredging for Temporary Seawall Un-contaminated Material - West	3	28-Sep-10 A	29-Sep-10 A	100%													
S11-S1-3837	Public Fill inside Temporary Seawall West	7	29-Sep-10 A	30-Sep-10 A	100%													
<b>Precast Units Fabrication</b>																		
S4C-160	Precast Works of Caisson Seawall x 6 nos	101	26-May-10	28-Oct-10 A	100%													
S4C-360	Precast Works of Salt Water Intake Culverts (Sections in Seawall Blocks)	40	04-Oct-10 A	10-Nov-10 A	100%													



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**CEDD CONTRACT NO. HK/2009/02**

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- Remaining Level of Effort
  - Actual Level of Effort
  - Actual Work
  - Remaining Work
  - Critical Remaining Work
- Milestone
  - Summary

Activity ID	Activity Name	OD	Start	Finish	% Complete	Total Float	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	20	
S4C-460	Precast Works of Box Culvert N1 (Sections in Seawall Blocks)	40	03-Oct-10 A	24-Dec-10 A	100%													
<b>Precast Units Installation</b>																		
S11-S1-1026	TMTM Plan submission (Period Oct 10 to Jan 10)	90	16-Oct-10 A	13-Jan-11 A	100%													
S11-S1-1027	Seawall Bedding - Rock Armour G400	19	24-Oct-10 A	08-Dec-10 A	100%													
S11-S1-1029	Seawall Bedding - Leveling Stone	14	17-Nov-10 A	16-Dec-10 A	100%													
S11-S1-1040	Installation of Z-section Submarine Outfall	21	16-Oct-10 A	27-Nov-10 A	100%													
S11-S1-1285	MDN Approval of Delivery of Precast Units	14	21-Sep-10 A	04-Oct-10 A	100%													
S11-S1-1290	1st Delivery of Precast Units	0	30-Nov-10 A		100%													
S11-S1-1295	2nd Delivery of Precast Units	0	15-Dec-10 A		100%													
S11-S1-1330	Temporary Loading of Precast Caisson no. 1R	1	02-Dec-10 A	02-Dec-10 A	100%													
S11-S1-1332	Installation of Pumping Station P9	1	03-Dec-10 A	03-Dec-10 A	100%													
S11-S1-1333	Installation of Pumping Station P7 & P8	2	05-Dec-10 A	06-Dec-10 A	100%													
S11-S1-1400	Installation of Precast Caisson no. 1R	1	17-Dec-10 A	17-Dec-10 A	100%													
S11-S1-1435	Installation of Precast Caisson no. 2L-1	1	14-Dec-10 A	15-Dec-10 A	100%													
S11-S1-1440	Installation of Precast Caisson no. 2S x 2nos	3	15-Dec-10 A	17-Dec-10 A	100%													
S11-S1-1445	Installation of Precast Caisson no. 2L-2	1	18-Dec-10 A	18-Dec-10 A	100%													
S11-S1-1449	Permanent Seawall Block Work Type 4 & Installation of Precast Intake Unit	14	07-Dec-10 A	04-Jan-11 A	100%													
S11-S1-1549	Permanent Seawall Block Work Type 5	14	11-Dec-10 A	30-Dec-10 A	100%													
S11-S1-1735	Permanent Seawall Block Work Type 6 & Installation Precast N1 Culverts	14	05-Mar-11 A	20-Mar-11 A	100%													
<b>Bulk Reclamation</b>																		
S11-S1-2035	1st Stage Bulk Reclamation by hopper barge (from dredging level to +2.5mPd)	46	09-Dec-10 A	02-Apr-11 A	100%													
S11-S1-2135	2nd Stage Bulk Reclamation by Land Plant (from +2.5mPd to +4.2 mPd)	15	11-Jan-11 A	13-Apr-11 A	100%													
<b>WCR2 Works</b>																		
S11-S2-0000	Submission & Approval of revised temporary water diversion scheme	34	30-Apr-11 A	03-Dec-11	90%	1												
S11-S2-0005	Temporary Diversion of Water Intake and discharge system for WSD and SHK	50	05-Oct-11 A	26-Jan-12	16%	1												
S11-S2-0010	WCR2 seabed dredging and temporary sheetpile works	50	03-Nov-11 A	24-Feb-12	50%	1												
S11-S2-0015	Temporary Seawall Construction	30	25-Feb-12	30-Mar-12	0%	1												
S11-S2-0020	WCR2 bulk reclamation work	40	31-Mar-12	22-May-12	0%	1												
S11-S2-0025	Receive As-built Information of Bowrington Box Culvert O	0	20-Nov-10 A		100%													
<b>TWCR4 &amp; WCR4 Works</b>																		
BO-00-0000	Complete Drainage diversion of existing Bowrington Box Culvert O to basin of ex-PCWA	180	20-Nov-10 A	31-Mar-12	30%	69												
BO-00-0020	D-wall & Bored Piles construction for Eastern Bulk Head and supports of the steel bridges	120	02-Jun-12*	22-Oct-12	0%	21												
BO-00-0030	TWCR4 and WCR4 reclamation	120	02-Jun-12	22-Oct-12	0%	21												
BO-00-0040	Diversion of on grade Traffic of HHR to Temp Seawall in TWCR4 (for the construction D-wall Panel at HHR)	3	24-Oct-12	29-Oct-12	0%	21												
BO-00-0050	D-wall Panels at HHR (including support for the steel bridges)	30	30-Oct-12	03-Dec-12	0%	21												
BO-00-0060	Steel Bridges (2nos) Installation across Tunnel Portion 3	60	04-Dec-12	16-Feb-13	0%	21												
BO-00-0080	Diversion of HHR traffic to two steel bridges (connecting to Flyover and on grade to cross harbour tunnel)	5	18-Feb-13	22-Feb-13	0%	21												
BO-00-0085	D-wall & Bored Piles construction for remaining portion in TWCR4, WCR4 and pet garden	130	23-Feb-13	01-Aug-13	0%	21												
BO-00-0090	Deep Excavation for Tunnel portion 3 and 4	120	02-Aug-13	21-Dec-13	0%	21												
BO-00-0100	Tunnel Structure Construction Portion 3 and 4	160	23-Dec-13	10-Jul-14	0%	21												
BO-00-0110	Tunnel Backfilling, ELS & D-wall removal and reinstatement of permanent Seawall Structure	180	11-Jul-14	12-Feb-15	0%	21												
BO-00-0120	Redivert Flyover Traffic to HHR	5	13-Feb-15	18-Feb-15	0%	21												
BO-00-0130	1st Steel Bridge Removal	21	23-Feb-15	18-Mar-15	0%	21												
BO-00-0140	Reinstate Box Culvert O portion on HHR	30	19-Mar-15	24-Apr-15	0%	21												
BO-00-0145	Redivert traffic to HHR (on grade cross harbour traffic)	5	25-Apr-15	30-Apr-15	0%	21												
BO-00-0150	2nd Steel Bridge Removal	21	02-May-15	27-May-15	0%	21												
BO-00-0160	Reinstate Box Culvert O (portion not at HHR)	76	28-May-15	26-Aug-15	0%	21												
BO-00-0170	Preparation works for Eastern Bulkhead Breaking off	30	27-Aug-15	02-Oct-15	0%	21												
<b>WCR3 Works</b>																		



█ Remaining Level of Effort    ◆ Milestone  
█ Actual Level of Effort    ⇨ Summary  
█ Actual Work  
█ Remaining Work  
█ Critical Remaining Work

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Activity ID	Activity Name	OD	Start	Finish	% nplete	Total Float	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	0
S11-S4-0110	WCR3 seabed dredging for permanent seawall	90	18-Mar-14	08-Jul-14	0%	2											
S11-S4-0120	WCR3 backfilling and permanent seawall work	90	09-Jul-14	24-Oct-14	0%	2											
S11-S4-0130	WCR3 bulk reclamation work	60	25-Oct-14	06-Jan-15	0%	2											
S11-S4-0140	Carry out temporary drilling & grouting in sealing up the existing 2M pipe pile wall near Area 10	14	07-May-15	22-May-15	0%	33											
S11-S4-0240	Remaining Work on Land in Area 11	120	20-Jan-16	16-Jun-16	0%	57											
<b>Section XI A Works - Remaining Landscape Softworks</b>																	
S10-T5-0040	Tunnel portion 5 backfilling & ELSW removal	30	12-Dec-15	19-Jan-16	0%	6											
S11A-0010	Remaining Landscape Softworks	180	20-Jan-16	26-Aug-16	0%	21											
S11A-0020	Completion of Section XI A Works (2430 days)	0		22-Sep-16*	0%	0											
<b>Section XI B Works - Remaining Establishment Works</b>																	
S11B-0010	Commencement of Remaining Establishment Works (365 days)	0	22-Sep-16		0%	0											
S11B-0015	Site Establishment Period	365	22-Sep-16	21-Sep-17	0%	0											
S11B-0020	Completion of Section XI B Works (2795 days)	0		22-Sep-17*	0%	0											
<b>Section XII Works - Protection and Preservation of Existing Trees</b>																	
S12-0010	Protection and preservation of existing trees	1800	24-Feb-10 A	23-Aug-16	18%	0											
S12-0020	Completion of Section XII Works (2400 days)	0		23-Aug-16*	0%	0											
<b>Section XIII Works - Remaining Works in Area 10</b>																	
S10-T6-0080	Tunnel portion 6 backfilling & ELSW removal at Area 10	30	05-Nov-15	09-Dec-15	0%	0											
S13-0010	Possession of Portion 9 (Area 10) from contract no. HK/2009/01 at 1925 days (Portion 9)	0	07-May-15		0%	0											
S13-0020	Remaining Works in Area 10 above tunnel structure at formation level	150	10-Dec-15	14-Jun-16	0%	0											
S13-0030	Handover of Section X (Area 10) to adjacent contractor (HK/2009/01) at 2190 days	0		15-Jun-16	0%	0											
S13-0040	Completion of Section XIII Works (2190 days)	0		14-Jun-16*	0%	0											



█ Remaining Level of Effort    ◆ Milestone  
█ Actual Level of Effort    ⇨ Summary  
█ Actual Work  
█ Remaining Work  
█ Critical Remaining Work

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CHUN WO - CRGL JOINT VENTURE

Contract No. HK/2009/02

Wan Chai Development Phase II

Central - Wan Chai Bypass at Wan Chai East

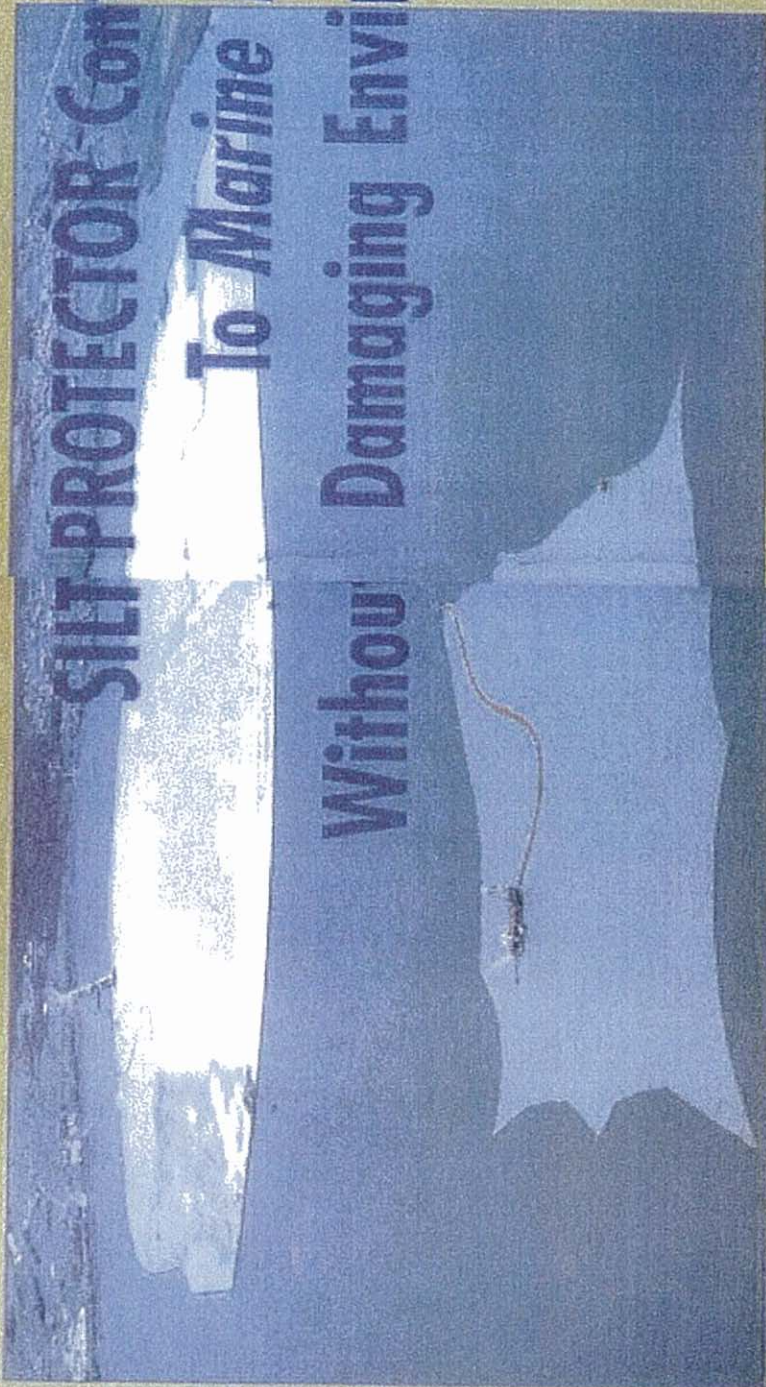
Silt Curtain Deployment Plan

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## 7.3 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 sea or rivers.

The pollution (fine particles) should be easily swept by tides or currents (increase the salinity in the bottom) including reducing the breaking of lakes difficult and making groundwater discharge. 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 typically consists of the curtain section that is made of synthetic active (mainly polyethylene), the flap that holds 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 parts 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.

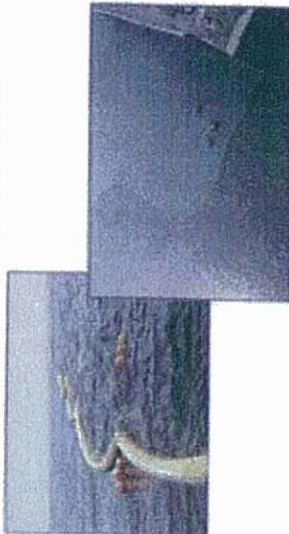
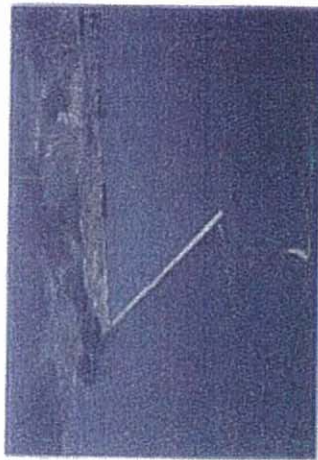
## Fixed Hanging Type Silt Protector

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 fixed 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 10m or less is used and spreading type is used together in many cases. When water is low, the curtain of 20m long or more may be used.

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



## General site condition for hanging fixed type

Model	Applicable site conditions	Standard specifications		
		Float size (mm)	Curtain material	Chain weight (kg/m)
A	Area outside of Impervious • Water height: 1.5m or less • Width of curtain: 0.5m/float or less	600	EPD-8000 or 100	10
B	Wide area inside of Impervious or inside of side foot is required for the normal submarine topography • Water height: 1.0m or less • Width of curtain: 0.2m/float or less	400	EPD-8000 or 300	5
C	Area with rough bottom inside of Impervious • Water height: 0.5m or less • Width of curtain: 0.1m/float or less	300	EPD-8000 or 8500	5
D	Shallow or wide shallow area or area on beach • Water height: 0.5m or less • Width of curtain: 0.10m/float or less	300	EPD-8000	3

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

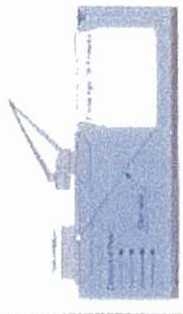
Installation of the Silt Protector as shown narrows the settlement reach, resulting in minimizing the diffusion of pollution after the use.



# More Types

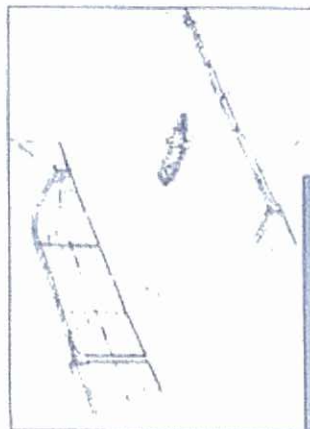
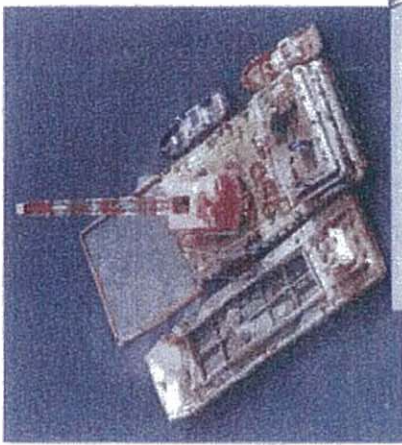
## ● Frame Type Silt Protector

This type has been designed to reduce local pollution caused by the grab dredging. It consists of fixed, loosely discharge pipes are used; curtains and ballast at the bottom. Modification 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 wind and winch rope. The length of the curtain is made less than 2m 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 dredger moves, sucking up curtain. For deep sea like 20m water depth, combined installation of hanging type and standing type is sometimes used. In case, boat passing 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 bottom in dredging or dumping of soil. This type consists of an anchor (usually steel H beam) is used; curtain and float that pulls up the curtain with its buoyancy. The diameter of generally used float is 300mm (square type), and one span of this type is 20m long. In more 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/out for the passage of vessel that enter into or exit from the reclamation area. 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 deeper on the water, the float is inflated by discharging a with air that can be compressed in a very short time. This unit can be sunk immediately by deflating the float. The typical case of application of the Silt Protector is the reclamation of artificial island.



# Application

## Type of work

- Dredging**
  - Cutter suction dredging
  - Grab dredging
  - Hopper suction dredging

## Offshore dumping

- From hopper barge
- From hopper suction dredger

## Reclamation

- Submergence by dikes
- Seepage through

## Cross Section



## Pollution Removal Rate (%)

$$\begin{aligned} & 70 - 10 && \times 100 = 70.0 \\ & 80 - 12 && \times 100 = 80.0 \\ & 90 - 12 && \times 100 = 80.0 \\ & 100 - 12 && \times 100 = 70.0 \\ & 80 - 15 && \times 100 = 81.3 \end{aligned}$$

## Upper layer, all side

$$\frac{51.0 - 14.0}{81.0} \times 100 = 95.1$$

## Upper layer, right side

$$\frac{30.4 - 10.1}{40.4} \times 100 = 67.3$$

## 66% layer, all side

$$\frac{77.0 - 20.0}{77.0} \times 100 = 40.3$$

## 66% layer, right side

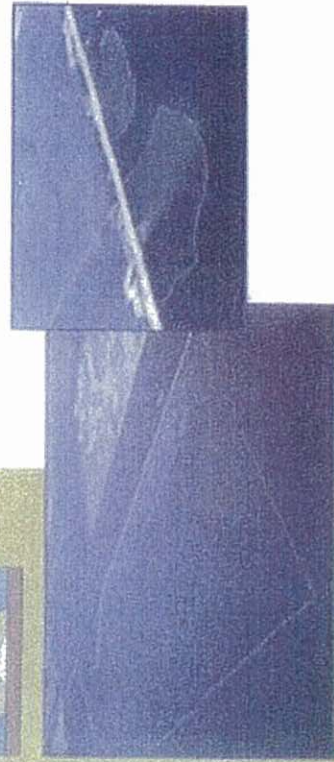
$$\frac{20.1 - 10.1}{30.1} \times 100 = 48.4$$



$$\frac{172 - 0}{172} \times 100 = 04.0$$

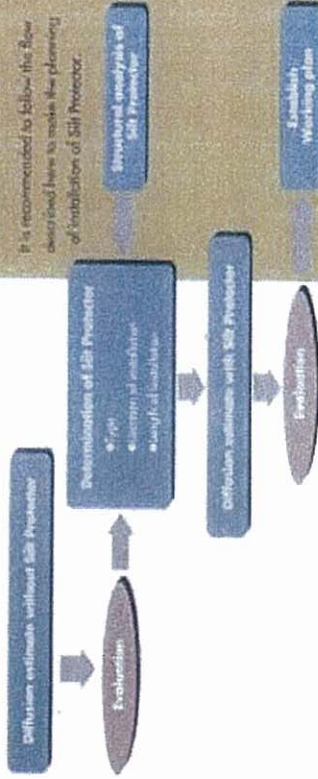
$$\frac{200 - 97}{200} \times 100 = 81.0$$

Pollution removal rates shown in the above table are data taken from actual sites



## Examination Flow

It is recommended to follow the flow described here to make the planning of installation of Silt Protector.



## Structural Analysis

The specifications for the Silt Protector to be used are determined based on the external conditions of the site such as wave height, current speed, water height and depth of water by using a specified structural calculation.

## Diffusion Estimate

Long Krige Corporation theoretically estimates the diffusion of pollution in case the Silt Protector is used, and affect of Silt Protector.

## Design conditions

- Wind velocity
- Current velocity
- Wave height
- Wave period
- Bottom soil
- Period of use
- Water depth
- Tidal range

## External force

The design external force, W applied to the Silt Protector is divided into the following three types of horizontal pressures.



## Estimate conditions

- Area of work
- Work item
- Dredging rate
- Working hours
- Operation period
- Soil state
- Larger value of JS
- Current velocity
- Water depth

## Typical diffusion of pollution



# Examination

# Installation

## ● Installation works for Fixed Hanging Type Silt Protector

### Preparation

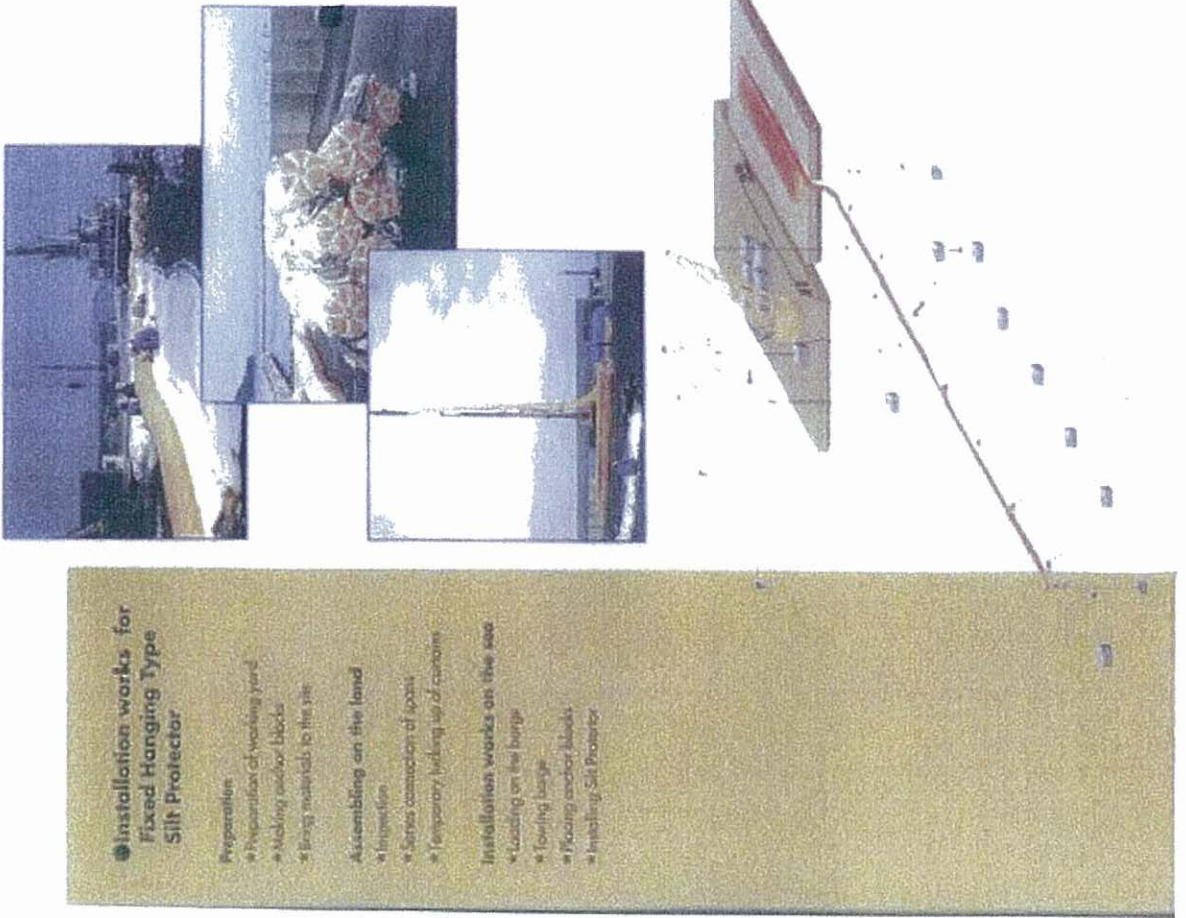
- Preparation of working yard
- Stacking outdoor blocks
- Bring materials to the site

### Assembling on the land

- Inspection
- Series connection of spools
- Temporary linking up of curtains

### Installation works on the sea

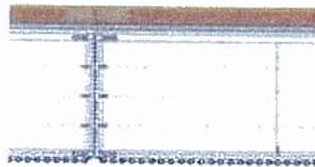
- Loading on the barge
- Towing barge
- Fixing anchor blocks
- Installing Silt Protector



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

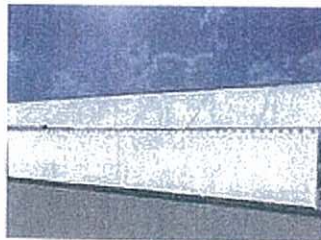


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[A type](#) | [B type](#) | [C type](#) | [D type](#) | [SD type](#)



**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.

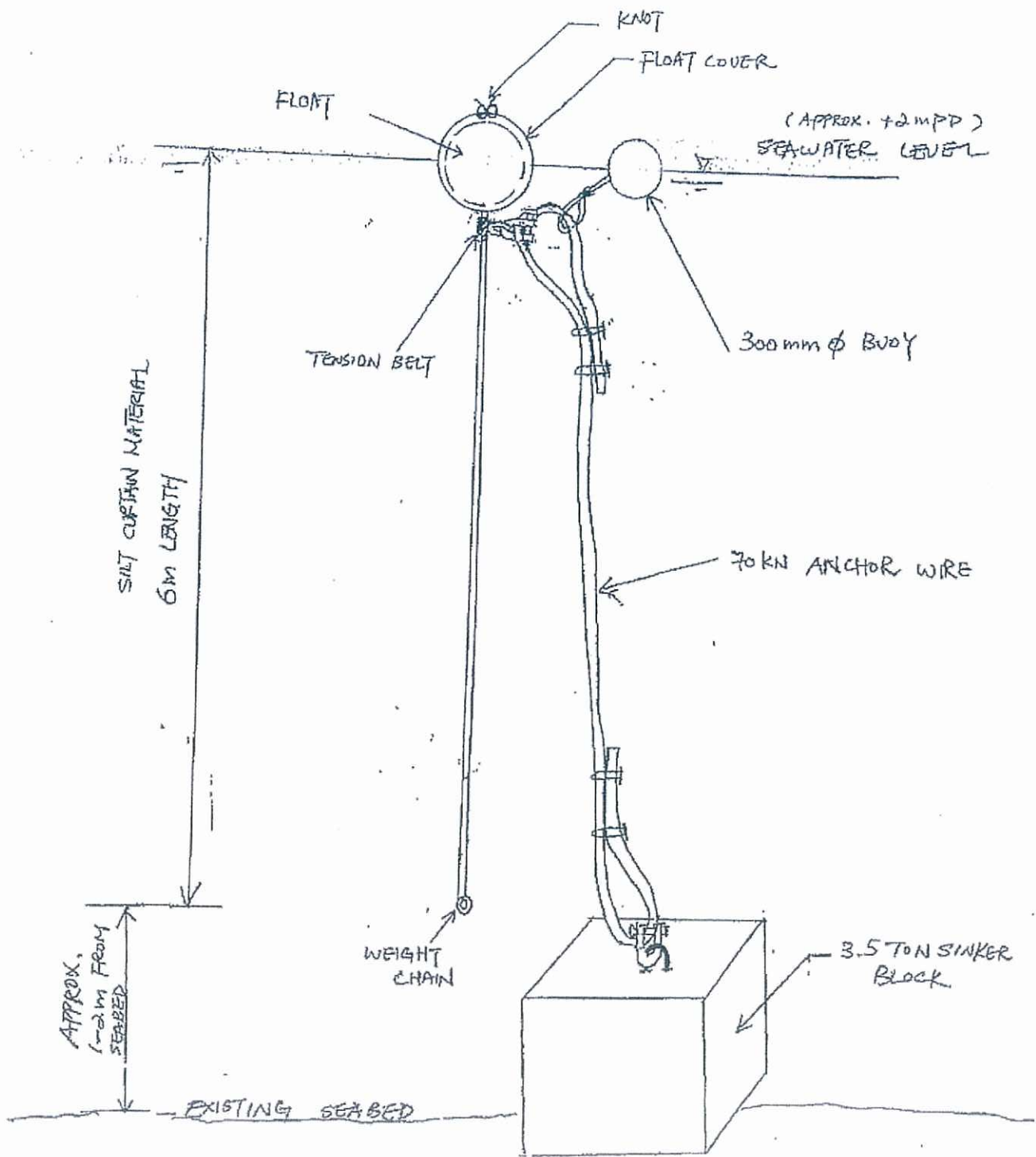


**FRAME TYPE FOR GRAB DREDGER**

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.

[▲ ThisPage's Top](#)

Typical Drawing



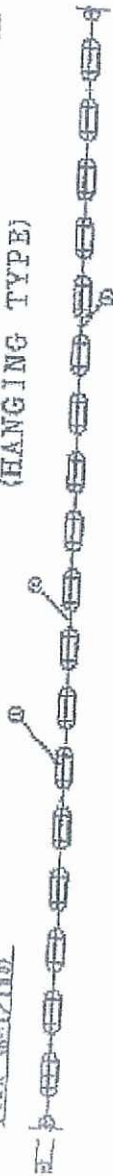
SECTION VIEW OF SILT CURTAIN INSTALLATION DETAILS

01.06.2010

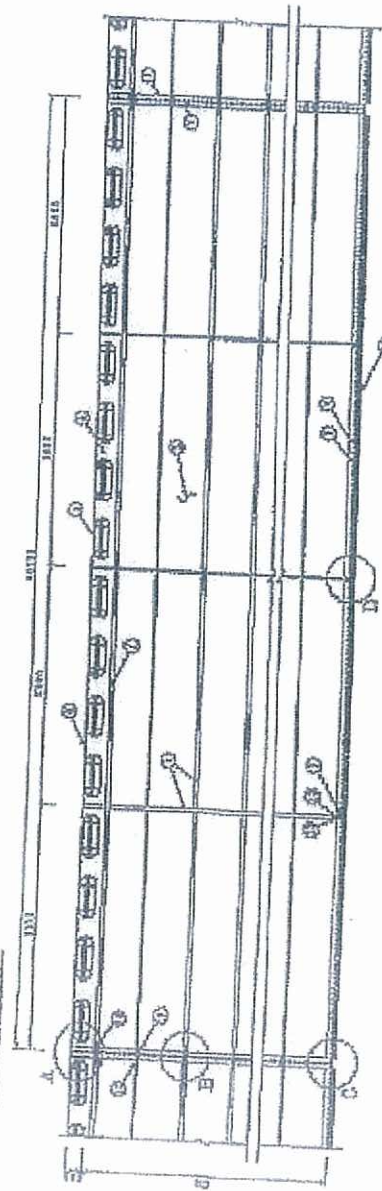
UNITED STATES GOVERNMENT

# Silt Protector Specification (HANGING TYPE)

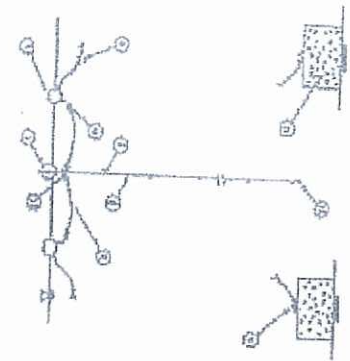
Plan (S=1/100)



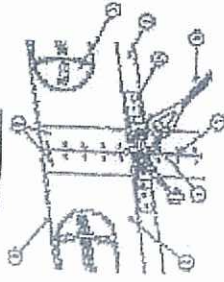
Side (S=1/100)



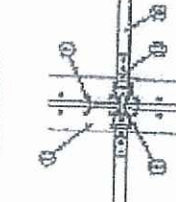
SECTION (S=1/100)



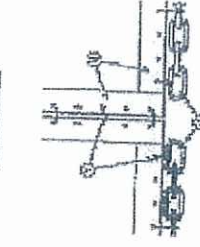
A Detail



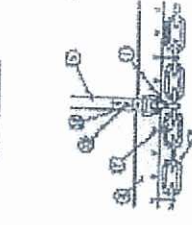
B Detail



C Detail



D Detail



Part-1

No.	Description
1	Frame
2	Filter Cloth
3	Support
4	Vertical Bar
5	Horizontal Bar
6	Joint
7	Washer
8	Nut
9	Pin
10	Bracket
11	Anchor Bolt

No.	Description
12	Joint
13	Washer
14	Nut
15	Pin
16	Bracket
17	Anchor Bolt

Part-2 (Installation)

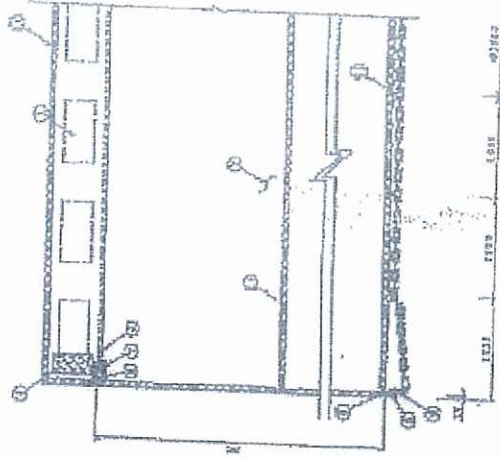
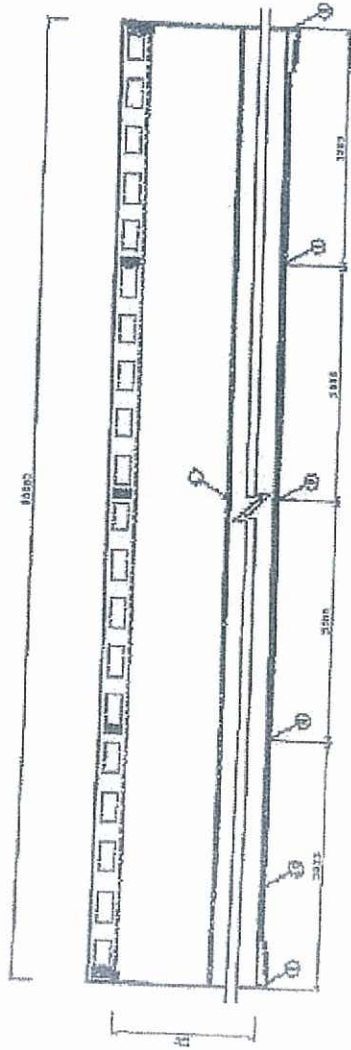
No.	Description
1	Frame
2	Filter Cloth
3	Support
4	Vertical Bar
5	Horizontal Bar
6	Joint
7	Washer
8	Nut
9	Pin
10	Bracket
11	Anchor Bolt

DATE

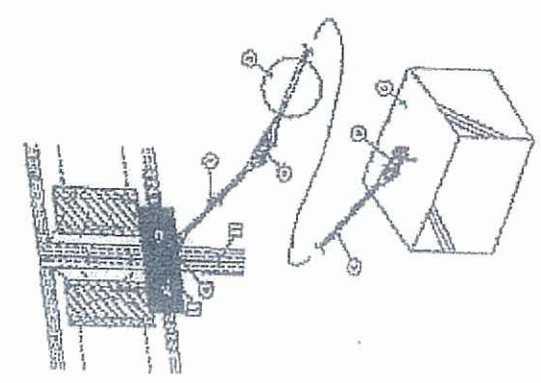
SILT PROTECTOR (SD TYPE)

SIZE P-208

SCALE 1/4" = 1'-0"



Span Joint detail embay



Part - I

No.	Description
1	Plate
2	Washer
3	Bracket
4	Bracket
5	Bracket
6	Bracket
7	Bracket
8	Bracket
9	Bracket
10	Bracket
11	Bracket
12	Bracket
13	Bracket
14	Bracket
15	Bracket
16	Bracket
17	Bracket
18	Bracket
19	Bracket
20	Bracket

Part - II (Installation)

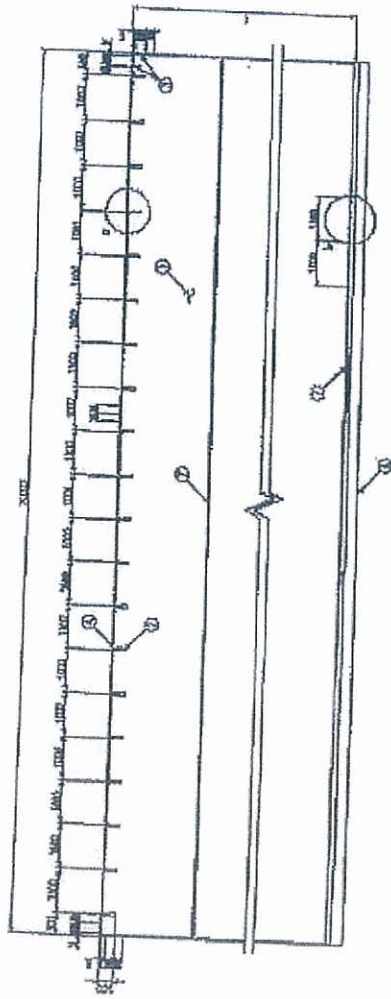
No.	Description
1	Plate
2	Washer
3	Bracket
4	Bracket
5	Bracket
6	Bracket
7	Bracket
8	Bracket
9	Bracket
10	Bracket
11	Bracket
12	Bracket
13	Bracket
14	Bracket
15	Bracket
16	Bracket
17	Bracket
18	Bracket
19	Bracket
20	Bracket

DRAWING NO. SD-208  
 SHEET NO. 1 OF 1  
 PROJECT NO. SD-208-911  
 DATE 10/10/50

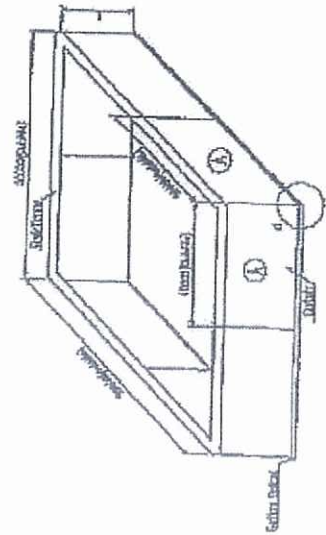
# Frame Type Silt Protector SD (Grab Frame (2.0 m x 2.0 m))

Curtain (A) Sider s=1/SD  
14 Sheet / Grab Frame (2.0m x 2.0m)

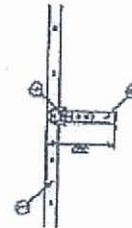
Curtain (A) Section s=1/SD  
(4 Sheet / Grab Frame (2.0 x 2.0m))



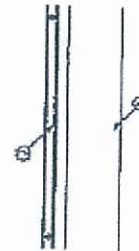
General Construction of Frame Type Silt Ditch  
Hanging From Grab Frame 5-Free



a detail



b detail



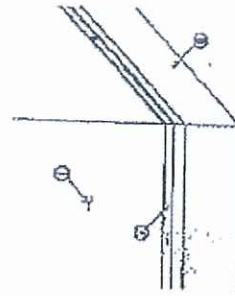
c detail



Curtain Joint detail



d detail



No.	Detailed
1	Curtain
2	Reinforcement Bar
3	Weld Bolt
4	Reinforcement Plate
5	Anchor Bolt
6	Beam Lifting
7	Fix Bolt

No.	Rev.	Date	By	Check
1	1			

Frame Type Silt Protector SD  
 Grab Frame (2.0 x 2.0 m)  
 No. 1/2  
 Date  
 By  
 Check  
 No. 1/2  
 Date  
 By  
 Check





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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## 7.4 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>不用</i>							
2. 沒有泥水在架內							
3. 已清理架內垃圾 <i>已清理</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.
Wong Hai Poi (Full-Time)	Foreman	6160 3837
Lee Kam Chuen (Emergency on Call)	Supervisor	6462 5096
Cecil Cheng (Emergency on Call)	Assistance Construction Manager	9225 7150
GARRY LAW (Emergency on Call)	Construction Manager	9408 1241
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 Fuk	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 the 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.



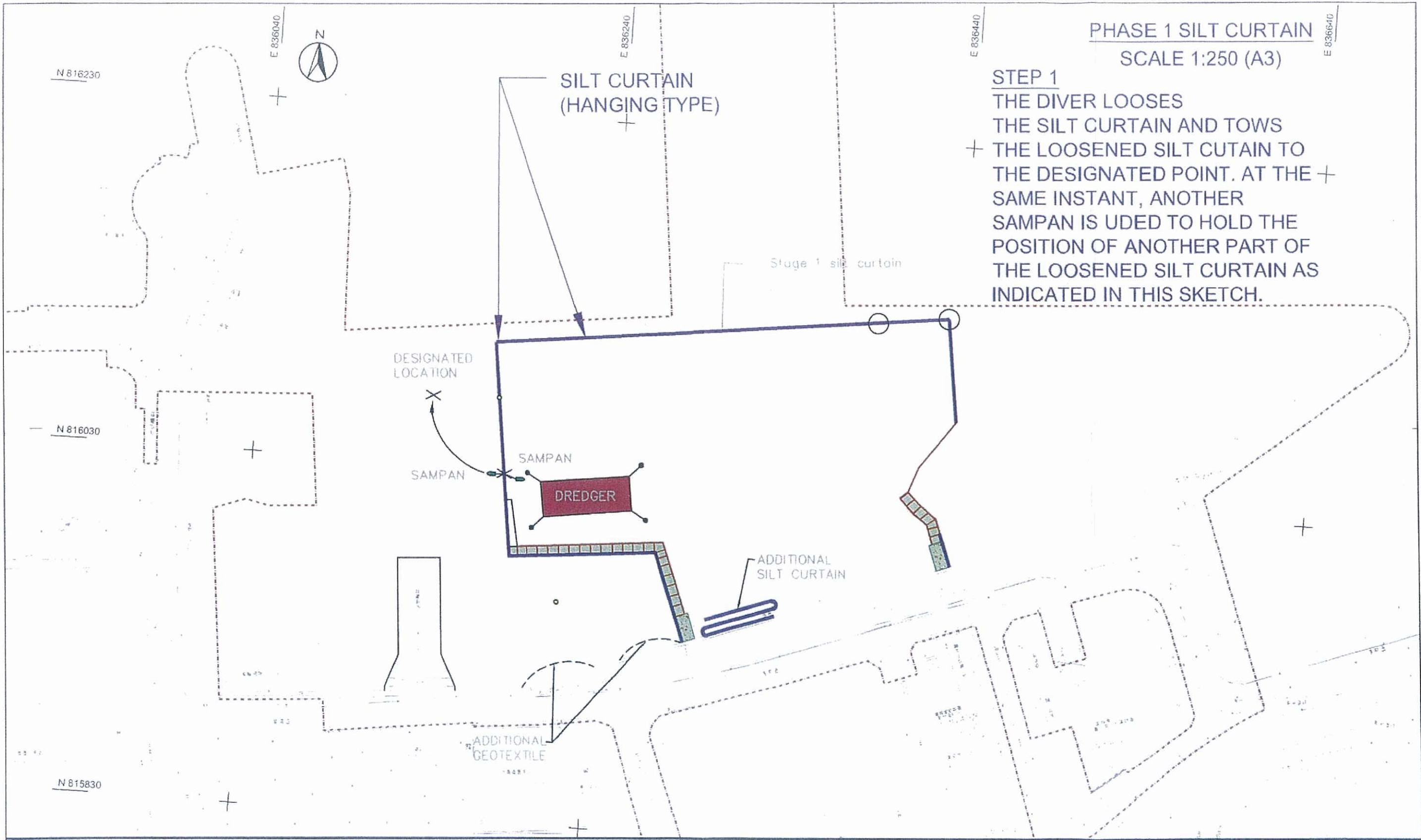
俊和 - 中國中鐵聯營  
CHUN WO - CRGL JOINT VENTURE

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:	SCALE	1:2000	REF. TO DWG NO.	
	ENGINEER'S REPRESENTATIVE	PROJECT	SEQUENCE OF RELOCATION OF SILT CURTAIN (STEP 1)	DATE	22 SEPTEMBER 2010		Sheet 1 of 9
		CONTRACT NO. HK/2009/G2 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST		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.

SILT CURTAIN  
(HANGING TYPE)

Stage 1 silt curtain

SAMPAN

TUG BOAT

YELLOWISH MARKER BUOY  
WITH YELLOWISH FLASHING LIGHT &  
RED FLAG

SAMPAN

DREDGER

MOORING WIRE  
OF THE DREDGER

ADDITIONAL  
SILT CURTAIN

ADDITIONAL  
GEOTEXTILE

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

JOB TITLE:

SEQUENCE OF RELOCATION OF SILT CURTAIN  
(STEP 2)

SCALE 1:2000

REF. TO  
DWG NO.

DATE 22 SEPTEMBER 2010

Sheet 2 of 9

DRAWN WAFFERY DESIGNED

SKETCH NO

REV

CHECKED --- APPROVED ---

CWCRJV/HK200902/SK/RS/0001

CLIENT

ENGINEER'S REPRESENTATIVE

N 816230

E 836040



E 836240

E 836440

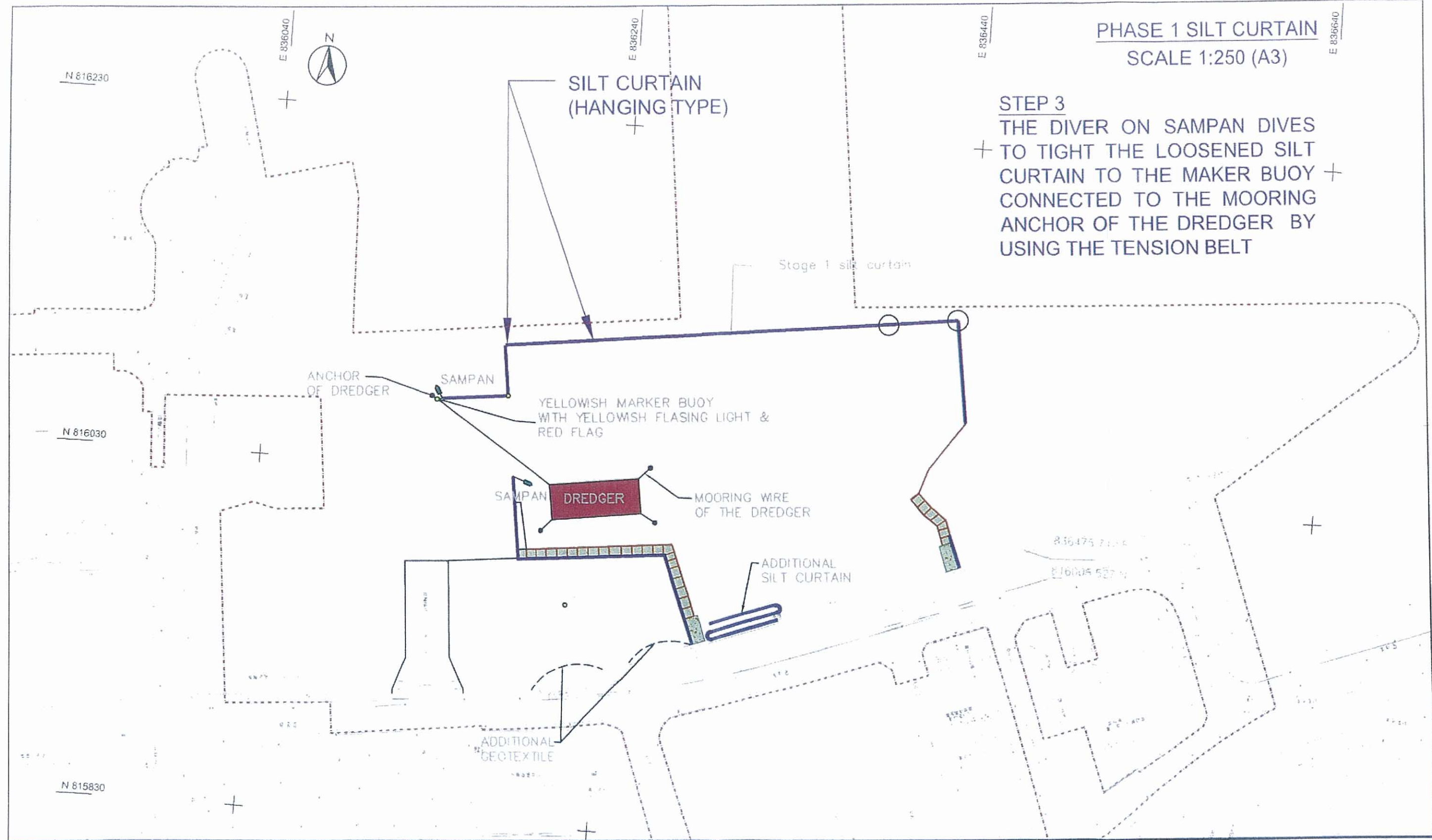
E 836640

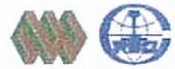
N 816030

N 815830

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: <b>SEQUENCE OF RELOCATION OF SILT CURTAIN          (STEP 3)</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 3 of 9
			DRAWN WAFFERY	DESIGNED
			CHECKED ---	APPROVED ---
				SKETCH NO
				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.

SILT CURTAIN  
(HANGING TYPE)

Stage 1 silt curtain

ANCHOR  
OF DREDGER

SAMPAN

YELLOWISH MARKER BUOY  
WITH YELLOWISH FLASHING LIGHT &  
RED FLAG

SAMPAN

DREDGER

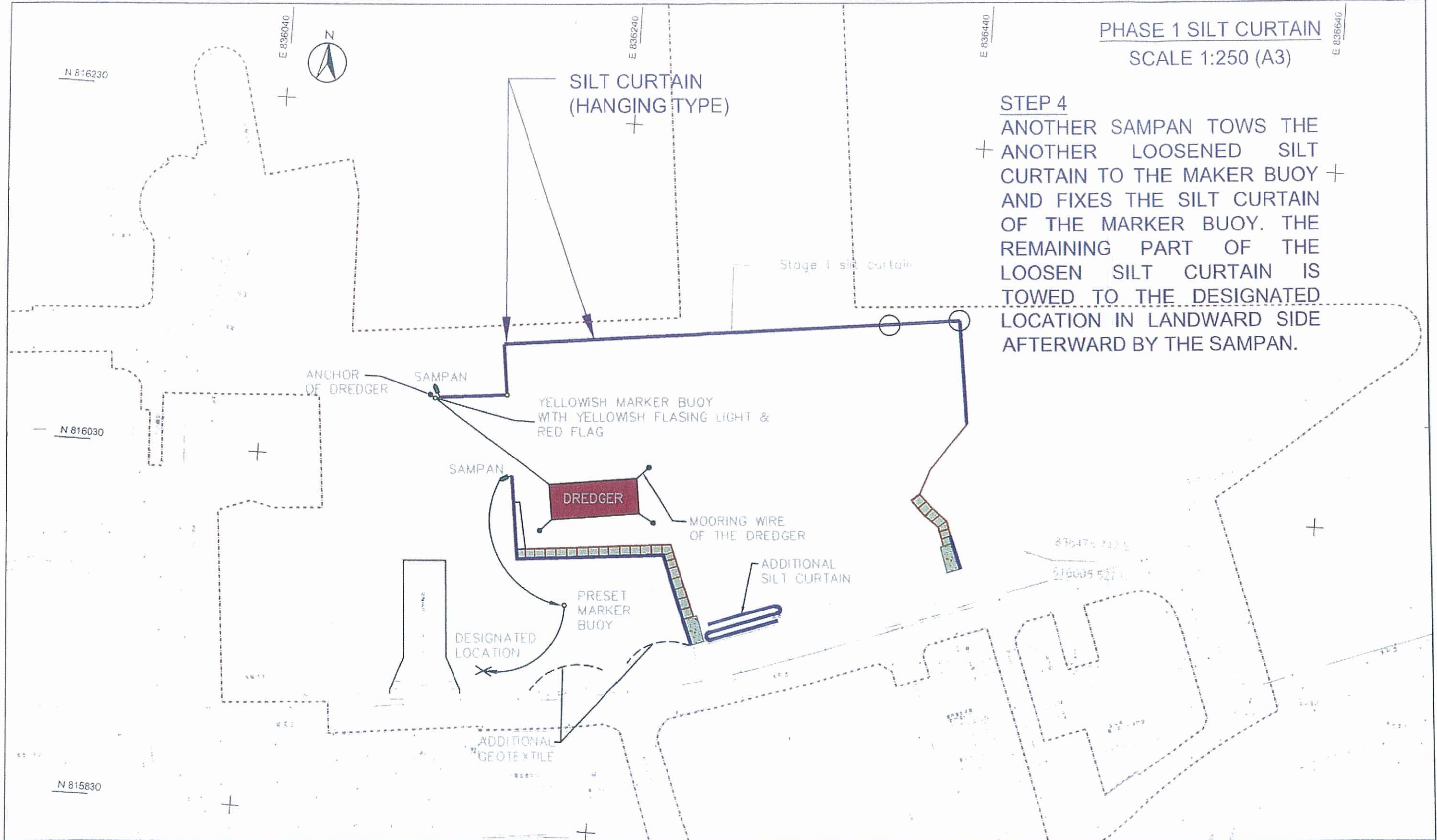
MOORING WIRE  
OF THE DREDGER


ADDITIONAL  
SILT CURTAIN

PRESET  
MARKER  
BUOY

DESIGNATED  
LOCATION

ADDITIONAL  
GEOTEXTILE

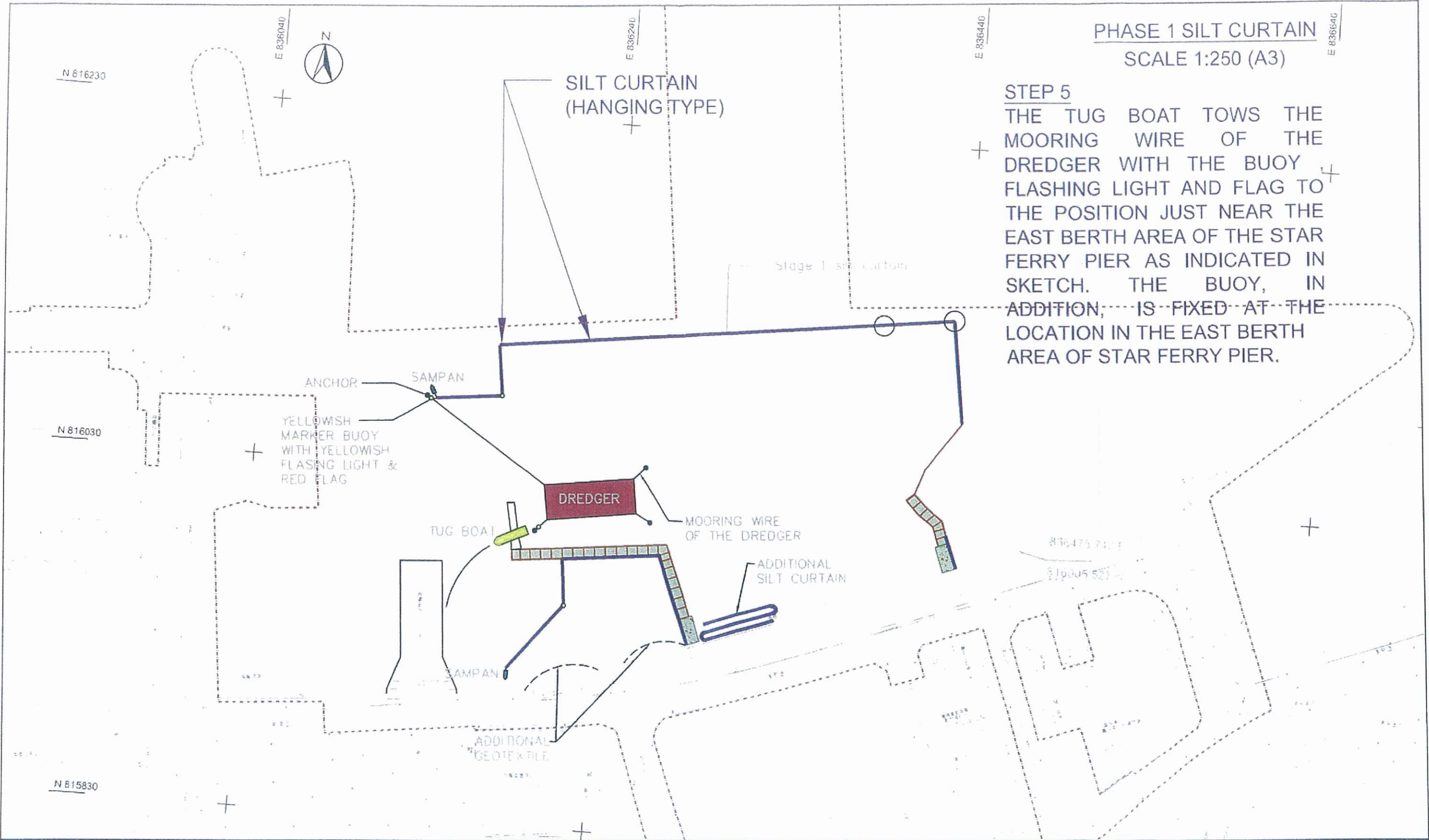



CLIENT	CONTRACTOR  俊和 - 中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	JOB TITLE: <b>SEQUENCE OF RELOCATION OF SILT CURTAIN (STEP 4)</b>	SCALE 1:2000	REF. TO DWG. NO.
ENGINEER'S REPRESENTATIVE	PROJECT: CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST		DATE 22 SEPTEMBER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

SILT CURTAIN (HANGING TYPE)

Stage 1 silt curtain

ANCHOR SAMPAN

YELLOWISH MARKER BUOY WITH YELLOWISH FLASHING LIGHT & RED FLAG

YELLOWISH MARKER BUOY WITH YELLOWISH FLASHING LIGHT & RED FLAG

DREDGER

MOORING WIRE OF THE DREDGER

YELLOWISH MARKER BUOY WITH YELLOWISH FLASHING LIGHT & RED FLAG

ANCHOR

SAMPAN

ADDITIONAL SILT CURTAIN

ADDITIONAL GEOTEXTILE

CLIENT

CONTRACTOR



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

JOB TITLE:

SEQUENCE OF RELOCATION OF SILT CURTAIN  
(STEP 6)

SCALE

1:2000

REF. TO DWG NO.

DATE

22 SEPTEMBER 2010

Sheet 6 of 9

ENGINEER'S REPRESENTATIVE

PROJECT

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

DRAWN

WAFERY

DESIGNED

SKETCH NO

REV

CHECKED

APPROVED

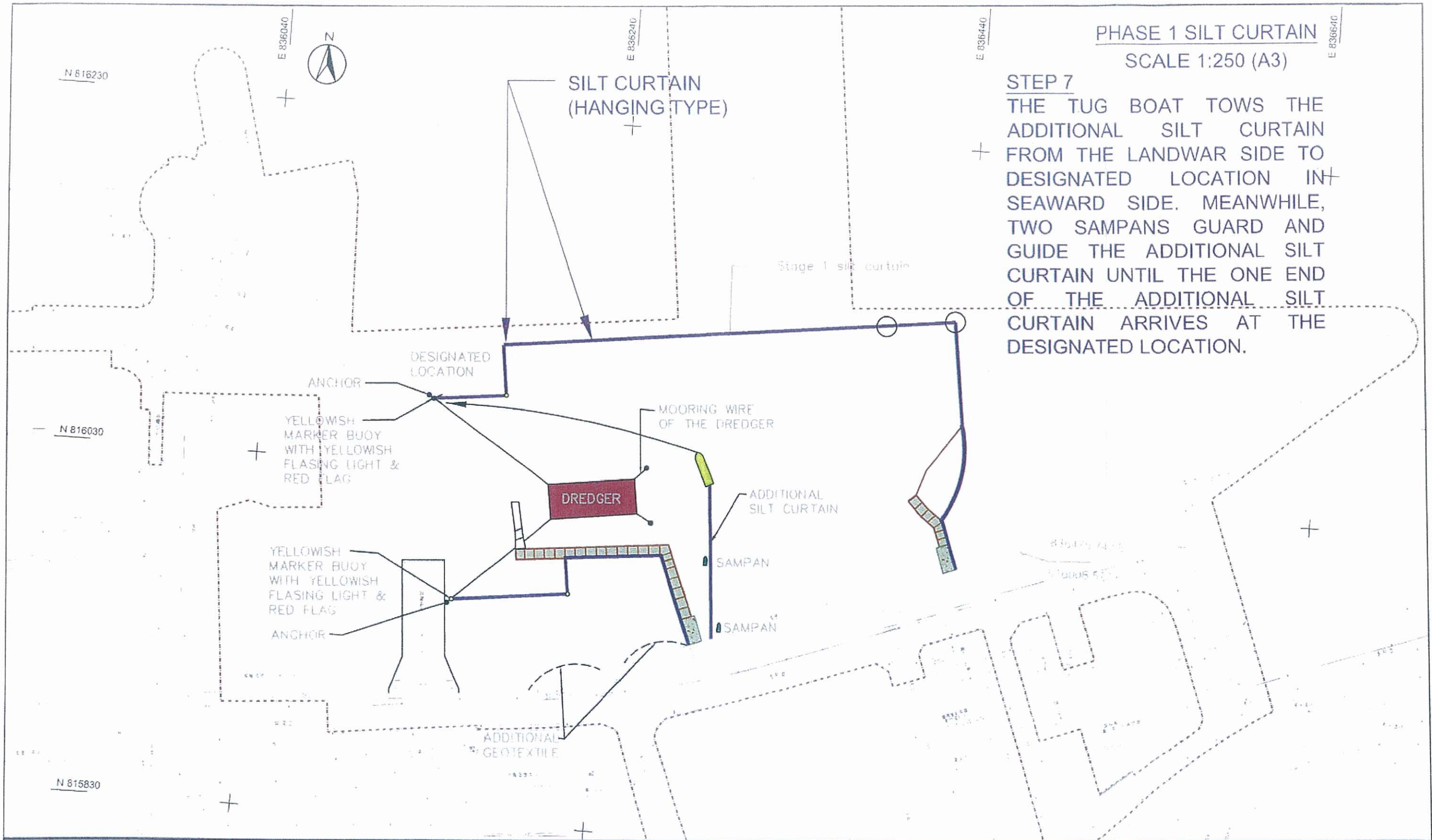
CWCRJV/HK200902/SK/RS/0001


PHASE 1 SILT CURTAIN

SCALE 1:250 (A3)

STEP 7

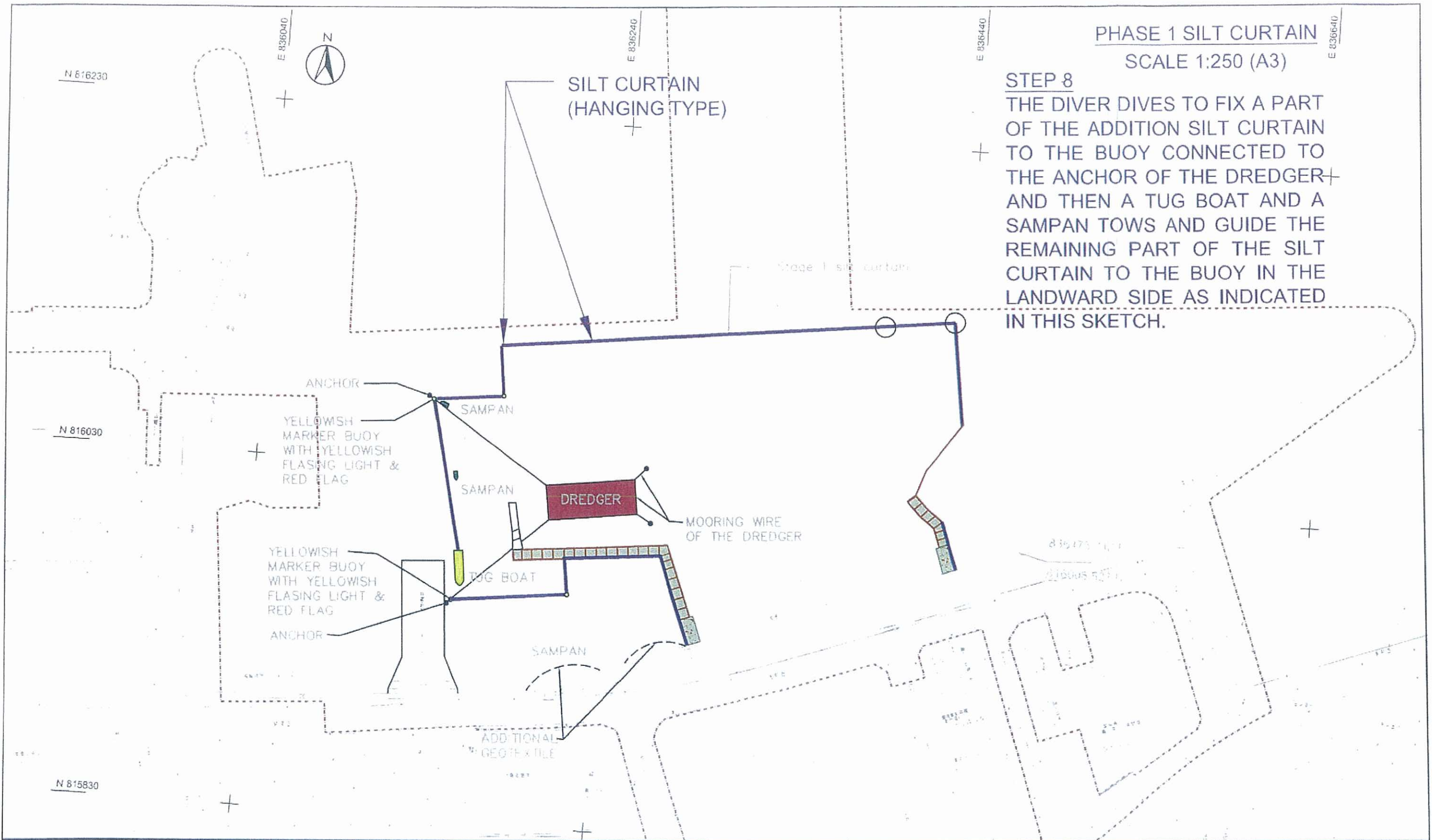
THE TUG BOAT TOWS THE ADDITIONAL SILT CURTAIN FROM THE LANDWARD SIDE TO DESIGNATED LOCATION IN SEAWARD SIDE. MEANWHILE, TWO SAMPANS GUARD AND GUIDE THE ADDITIONAL SILT CURTAIN UNTIL THE ONE END OF THE ADDITIONAL SILT CURTAIN ARRIVES AT THE DESIGNATED LOCATION.

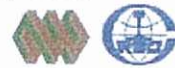


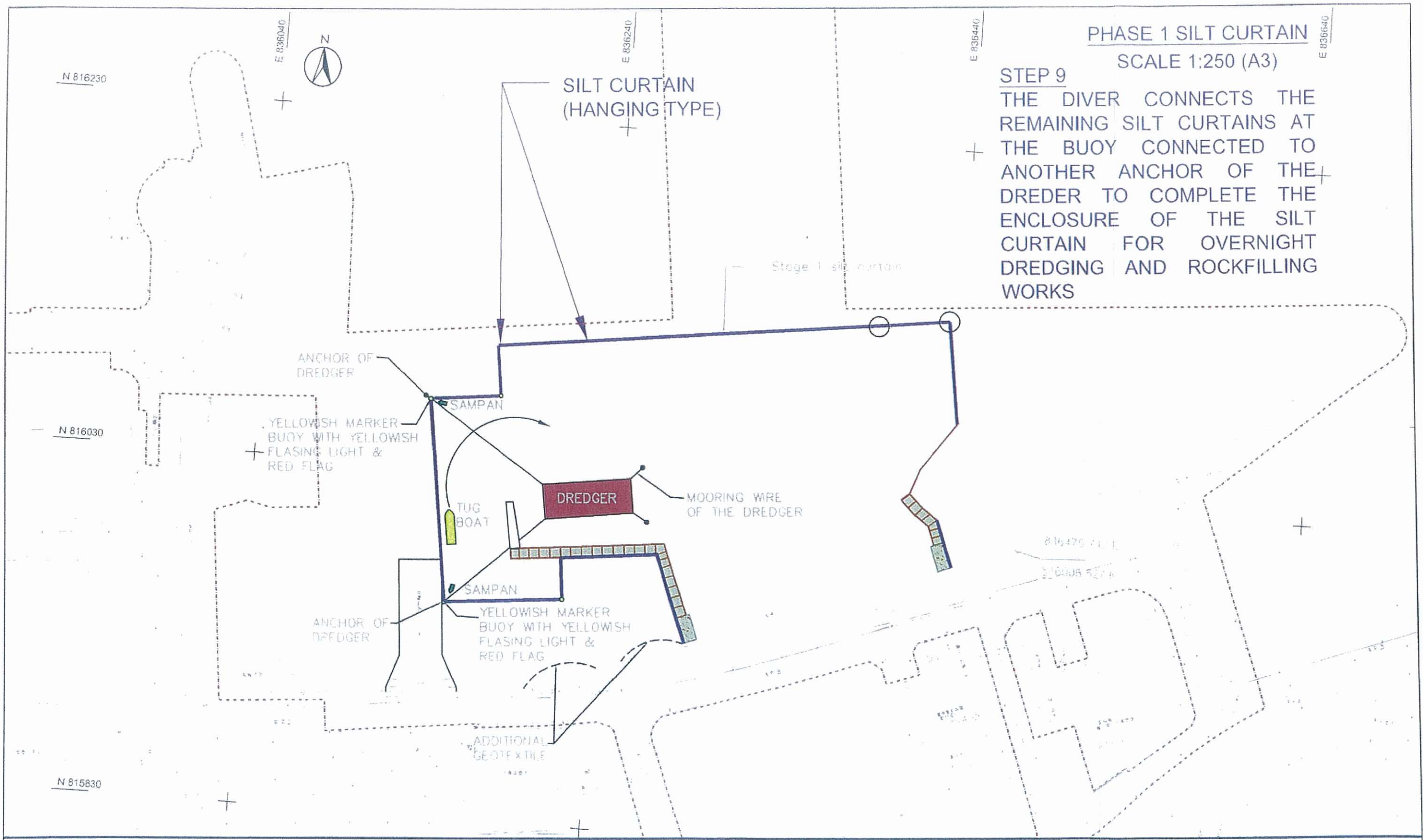
CLIENT	CONTRACTOR  俊和 - 中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	JOB TITLE: SEQUENCE OF RELOCATION OF SILT CURTAIN (STEP 7)	SCALE 1:2000	REF. TO DWG. NO.
ENGINEER'S REPRESENTATIVE	PROJECT CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST		DATE 22 SEPTEMBER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

PHASE 1 SILT CURTAIN  
SCALE 1:250 (A3)

**STEP 8**  
THE DIVER DIVES TO FIX A PART OF THE ADDITION 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:	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 8)	DATE	22 SEPTEMBER 2010	Sheet 8 of 9
			DRAWN	WAF-ERY	DESIGNED
			CHECKED	---	APPROVED
					SKETCH NO CWCRJV/HK200902/SK/RS/0001
					REV ---



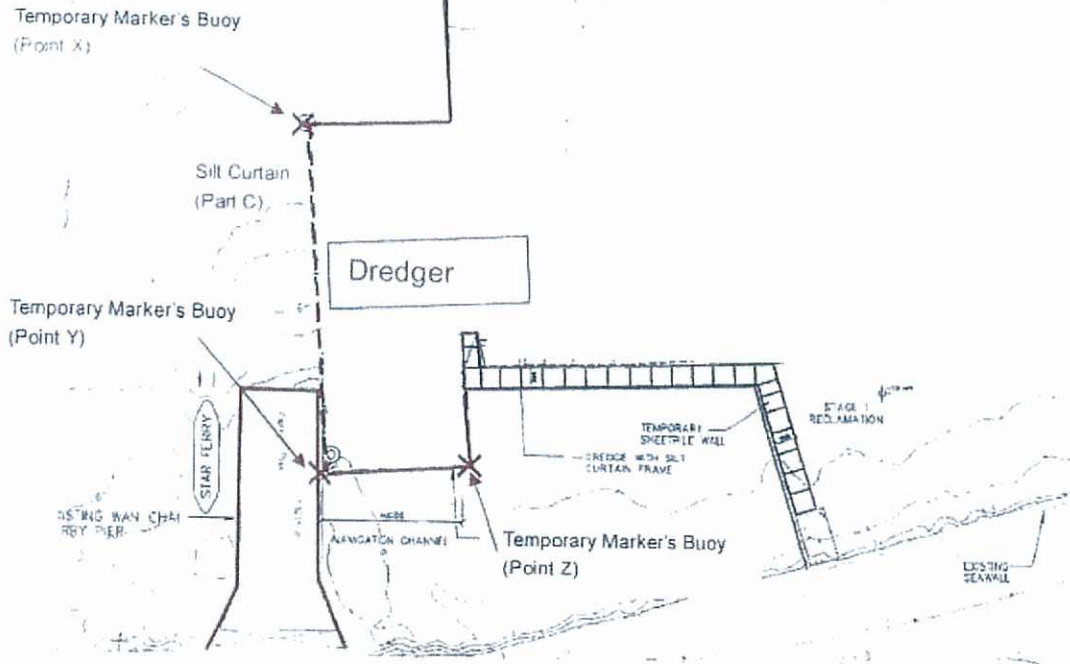
**PHASE 1 SILT CURTAIN**  
**SCALE 1:250 (A3)**

**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

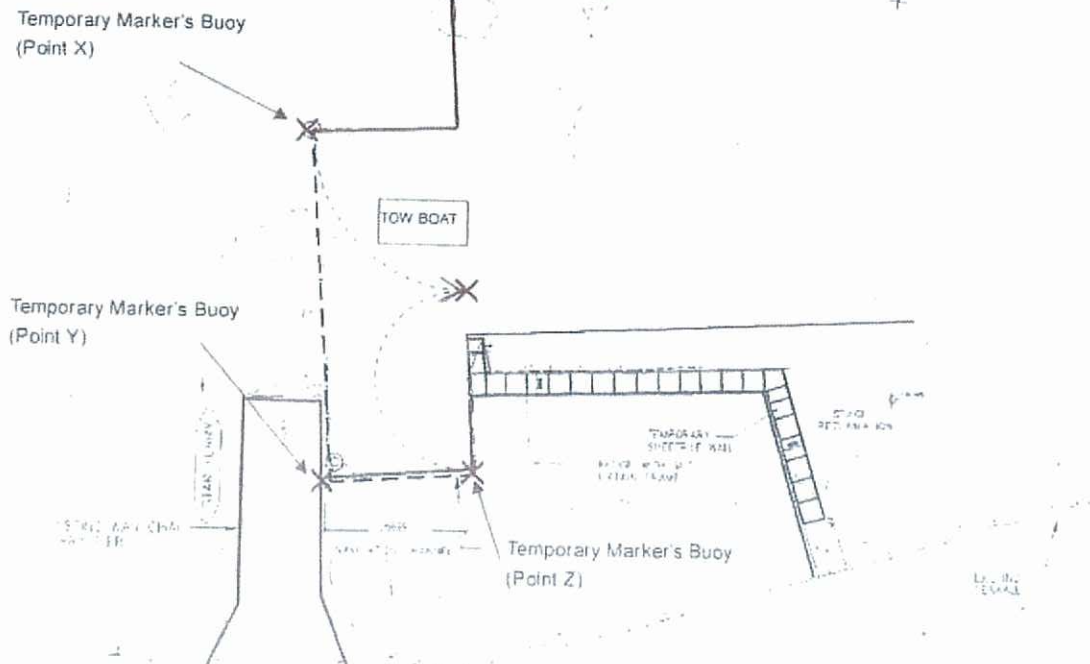
CLIENT	CONTRACTOR  俊和 - 中國中鐵聯營 CHUN WO - CRGL JOINT VENTURE	JOB TITLE: <b>SEQUENCE OF RELOCATION OF SILT CURTAIN      (STEP 9)</b>	SCALE 1:2000	REF. TO DWG NO.
ENGINEER'S REPRESENTATIVE	PROJ. NO. CONTRACT NO. HK/2009/02 WAN CHAI DEVELOPMENT PHASE II - CENTRAL - WAN CHAI BYPASS AT WAN CHAI EAST		DATE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

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

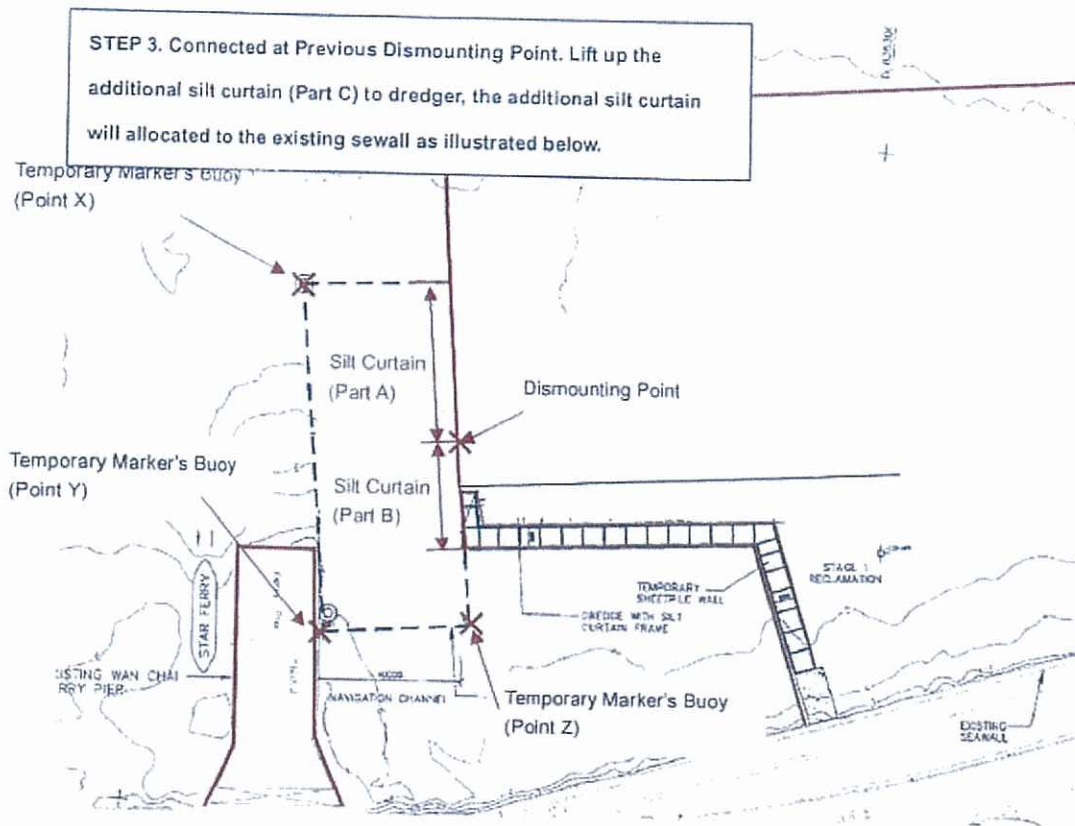
STEP 1. Dismount Silt Curtain (Part C) which is towed to the Dredger, Temporary Marker Buoy will be Picked Up by Dredger.



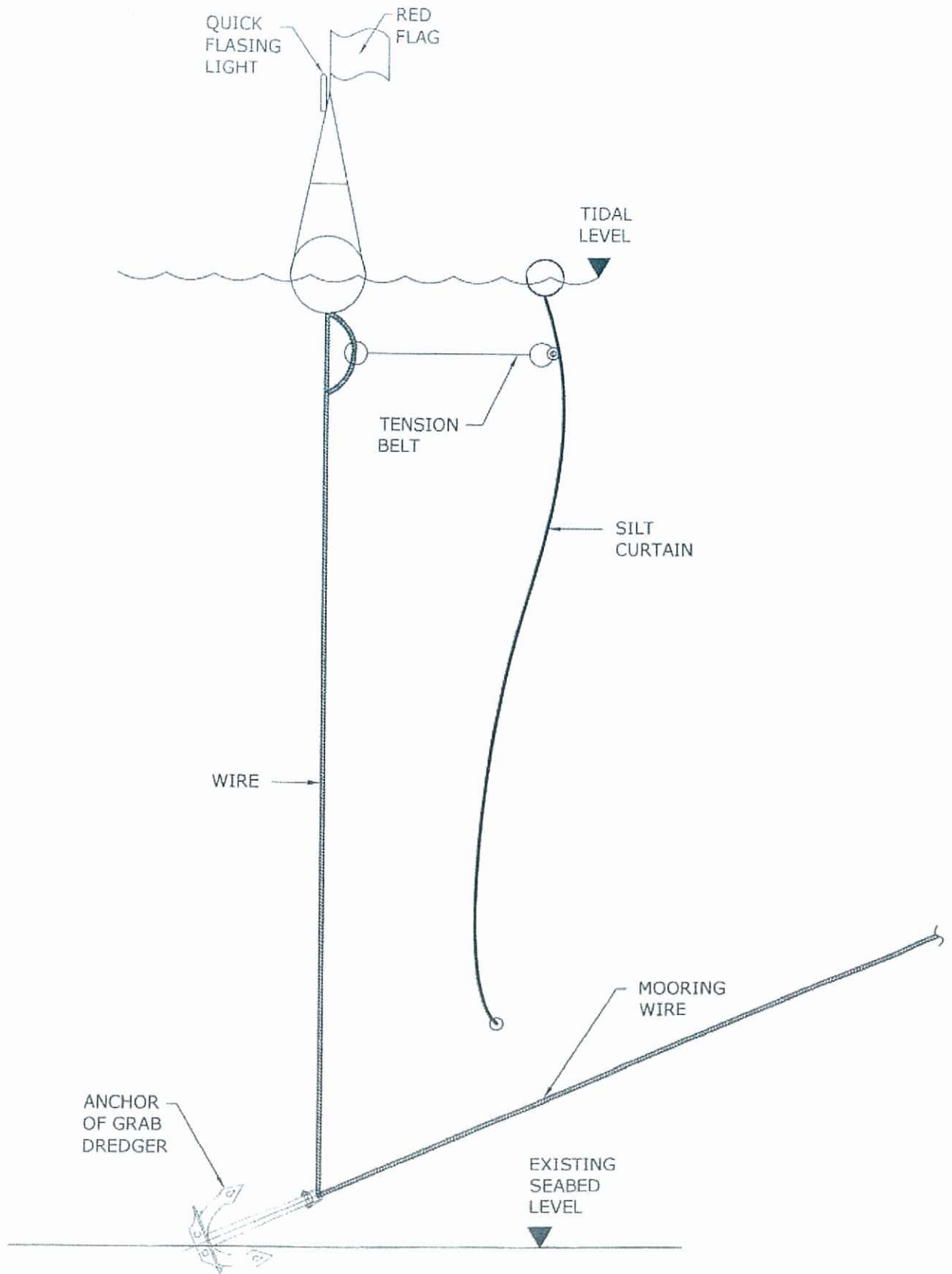
STEP 2. Tow and Fix the Silt Curtain (Part A and Part B) back to Original Alignment of Existing Silt Curtain.



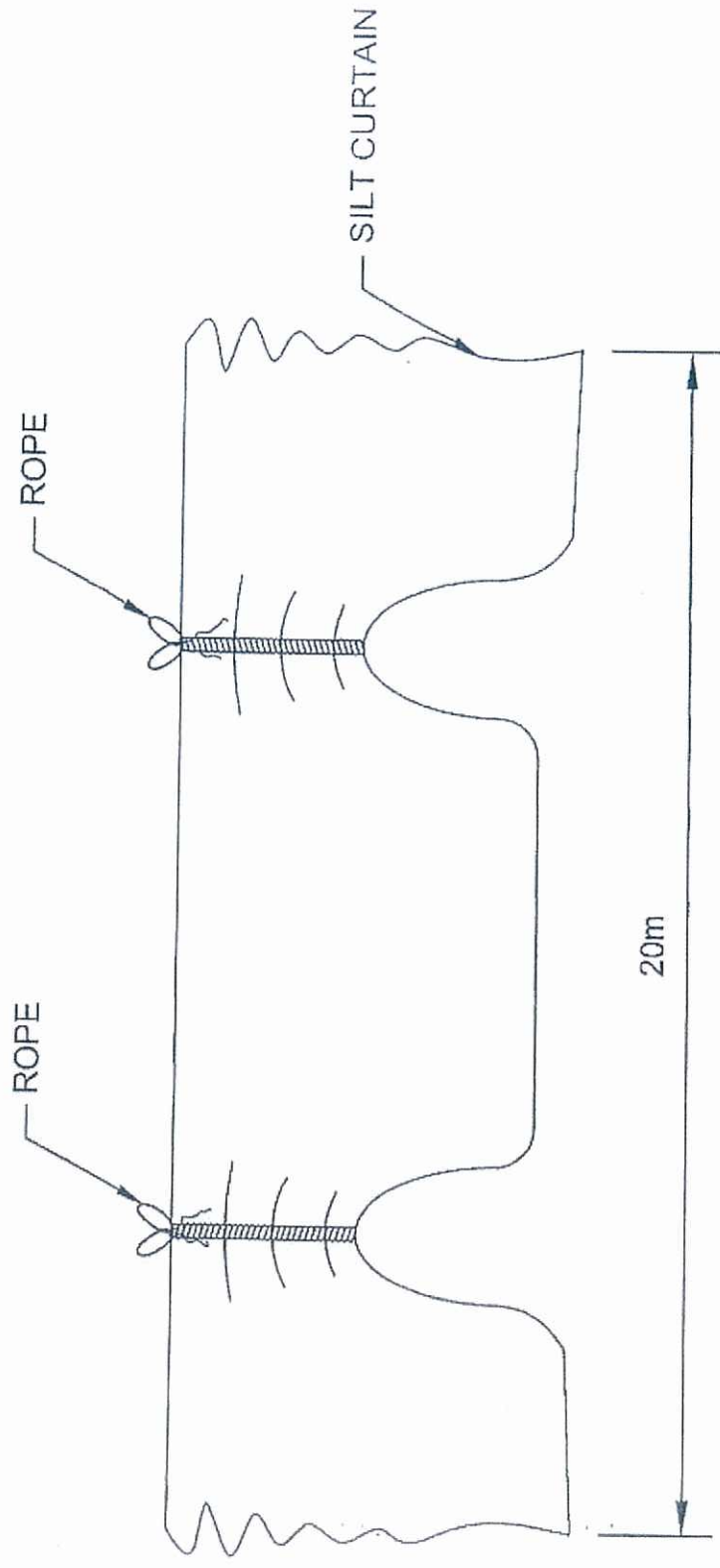
## Working Sequence of Removal of Temporary Silt Curtain and Reinstatement of Existing Silt Curtain







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