

FaContract No:
NE/2017/01

Project Title:
Tseung Kwan O – Lam Tin Tunnel
Tseung Kwan O Interchange and Associated Works



Silt Curtain Deployment Plan

Document No: CWSTCMJV/940/CSF/0878a-2019
Revision: 06
Date: 11 Jun 2019

Revision History

Revision No.	Reason for Amendment	Amendment	Revised By	Date
00 First Submission	N/A	N/A	Clarence Yeung	16/03/2018
01 Second Submission	N/A	N/A	Clarence Yeung	18/04/2018
02 Third Submission	N/A	N/A	Clarence Yeung	03/08/2018
03 Fourth Submission	N/A	N/A	Clarence Yeung	05/10/2018
04 Fifth Submission	The existing silt curtain were damaged by the typhoon Mangkhut and amendments were made to ensure the silt curtain can be removed before the adverse weather at further stage.	<ol style="list-style-type: none"> 1. Section 3, para. 1 - the deployment method of the silt curtain is revised. 2. Section 5, para. 2 - silt curtain will be removed temporarily during adverse weather. 3. Appendix B - drawing no. JV-940-SK-007 is revised and drawing no. JV-940-SK-008 is removed. 4. Appendix D - inspection item 2 (supporting frame in good condition) is removed. 	Clarence Yeung	26/10/2018

Revision No.	Reason for Amendment	Amendment	Revised By	Date
05 Sixth Submission	Silt curtain arrangement for wastewater discharge during pile cap construction is added.	All the amendments are highlighted in yellow colour. 1. Section 3 - deployment methods of silt curtain for wastewater discharge are added. 2. Appendix B - drawing no. JV-940-SK-009, JV-940-SK-010 and JV-940-SK-011 are added. 3. Appendix C - specification of BONTEC SG110/110 is added.	Clarence Yeung	04/05/2019
06 Seventh Submission	Response to EPD's comment	Please be confirmed that total 30 nos. of pile caps will be constructed under this contract. 1. Drawing no. JV-940-TKO-PIERS-001 in Appendix E is revised.	Clarence Yeung	11/06/2019

Silt Curtain Deployment Plan

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Checked by :

Position	Signature	Name	Date
Site Agent		David Tung	2019-6-11
Deputy Site Agent		Yau Ming Hong	2019-6-11
Construction Works Manager		Patrick Chan	2019-6-11

Prepared by:


Environmental Officer		Clarence Yeung	2019-6-11
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Appendix C–	Specification of Geotextile for Silt Curtain
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1. General

1.1 Objective

Prior to the commencement of marine works as well as the whole construction period with marine works in the sea under Contract No. NE/2017/01, CW-STEC-CMGC Joint Venture (JV) will be responsible for the installation, operation and maintenance of the silt curtain. The silt curtain act as a measure to maintain the water quality in the vicinity of the marine works. JV will also be responsible to remove the aforementioned silt curtain after the completion of the works.

This deployment plan describes in detail the design, method of installation, operation and maintenance of the proposed silt curtain.

The silt curtain deployment plan shall also comply with the following reference Specifications and Drawings:

- General Specification Sections 21 and 25
- Particular Specification Sections 21 and 25
- Environmental Permit (EP No. EP-458/2013/C) Condition 2.8
- Working Drawings Nos. 60308751/C6/C00/1000 to 1002, 1011

1.2 Construction Plants

Plant and equipment to be used for the proposed silt curtain deployment include, but not limited to, the followings:

- | | |
|-------------------|-------|
| - Split Hopper | 1 no. |
| - Derrick Lighter | 1 no. |
| - Grab Dredger | 1 no. |

Adequate resources shall be deployed to suit the construction programme.

2. Scope of Works and Construction Programme

The works to be executed under this contract involves construction of Tseung Kwan O Interchange and Associated Works.

- Construction of marine viaducts forming the Tseung Kwan O Interchange at Junk Bay;
- Construction of 7 bridges and 28 bridge piers with 30 pile caps and approx. 59 piles (Including 3 interfacing piers to CBL);

In general, silt curtain will be deployed during all the marine works. A brief programme showing the tentative commencement and completion dates of the major marine works are enclosed in **Appendix A**.

3. Silt Curtain Design

General type silt curtain consists of a layer of geotextile mounted on the temporary working platform and extended to the seabed level secured by steel chain ballast. The silt curtain will surround the platform (8m*12m and 8m*18m) by tying the silt curtain to the railing of the platform. The panels can be assembled and connected by rope through a series of grommet. In between overlap sits the winching rope to adjust curtain depth whenever necessary.

Regarding the conditions of the discharge licence (WT00030716-2018), all the construction wastewater should be treated before discharge and the treated wastewater should be discharged within the silt curtain.

For the bore pile construction stage, wastewater will be generated during the drilling and piling works. The wastewater will be treated by sedimentation tank and discharged within silt curtain. The silt curtain will be deployed by surrounding the temporary platform as shown in **Appendix B – drawing no.:JV-940-SK-007**.

For the pile cap construction stage, ingress seawater needs to be pumped out from the precast pile cap shell to provide a dry condition for concreting. The effluent will be treated by sedimentation tank and discharged within silt curtain. The silt curtain will be deployed in the following ways:

- a. The silt curtain will surround two steel casings under the platform by tying the silt curtain to the railing of the platform (**Appendix B – drawing no.:JV-940-SK-009**).
- b. The silt curtain will surround the precast pile cap shell by tying the silt curtain to the railing of the precast pile cap shell (**Appendix B – drawing no.:JV-940-SK-010**).
- c. The enclosed silt curtain will be placed near the precast pile cap shell (**Appendix B – drawing no.:JV-940-SK-011**).

As for preventive measure against dropping of fresh concrete to the sea during the concreting stage at the shell, tarpaulin sheets will be provided between the barge and the shell to prevent the contamination to the seawater.

Woven geotextile will be used as the curtain fabric, heavy duty geotextile which is strong and has small pore size which consider suitable for such work. Reinforcement can be incorporated in the curtain body for strength and stiffness. Shackles will be placed as option at the reinforcement to strengthen panel connection.

Sufficient length of geotextile shall be allowed such that the silt curtain can be extended from the water surface to the seabed during high tide condition. The typical section of the proposed silt curtain is attached in **Appendix B** and the location of silt curtain is indicated in site layout attached in **Appendix E**. As the bridge piers in Portion V as shown in **Appendix E** do not belong to the scope of works of this contract, no silt curtain is proposed for them.

Product catalogue with specification and job reference of the proposed geotextile for the silt curtain is attached in **Appendix C**.

4. Silt Curtain Installation

JV will install the silt curtain as stated below:

1. Prepare the geotextile with size suitable for the specific platform size on the Derrick Lighter or Barge.
2. Tie the top end of the geotextile and connected to the reinforced belt, the bottom end with the steel chain ballast.
3. Row up the top part of the silt curtain to the specific length suitable for the lift up distance of the Derrick Lighter.
4. Lift the silt curtain up and place it above the temporary platform, make sure the bottom part of the silt curtain is surrounding the platform.
5. Lift down the silt curtain with steel chain ballast into sea and sit on seabed.
6. Workers with life jacket then tie the geotextile with the temporary platform by Steel plate.

In order to maintain the position of the silt curtain especially at location with strong current, spot check by workers will be carried out for each silt curtain before and after works every day.

JV will also conduct and submit weekly inspection with the supervisor throughout the periods of marine piling and pile cap construction to the *Project Manager* or *Supervisor* to demonstrate that the silt curtains are in good working conditions. Diver inspection would be carried out once per every three months or if necessary such as after the adverse weather and any unforeseeable condition which might damage the silt curtain physical condition to ensure the bottom of the silt curtain is well placed on the seabed level and no damage of silt curtain under water.

5. Silt Curtain Maintenance

On-board supervisors will be assigned to check the condition of the silt curtain before commencement of works every day. An inspection checklist will be prepared and filled in by the site supervisors. All checklists will be kept on site for record purpose. Refer **Appendix D** for the sample of Silt Curtain Inspection Checklist.

As the existing silt curtain were damaged by the typhoon Mangkhut, amendments were made to ensure the silt curtain can be removed before the adverse weather at further stage. For the tentative arrangement of silt curtain under adverse weather, the silt curtain will be removed temporarily during adverse weather and related works will be suspended immediately until the silt curtain is installed again.

Refuse around the silt curtains will be collected at regular intervals on a daily basis so that water behind the silt curtains will be kept free from floating debris.

Sufficient spare geotextile will be kept on site for replacing of damaged silt curtains. The spare geotextile shall be kept in place to avoid direct contact with water and sunlight.

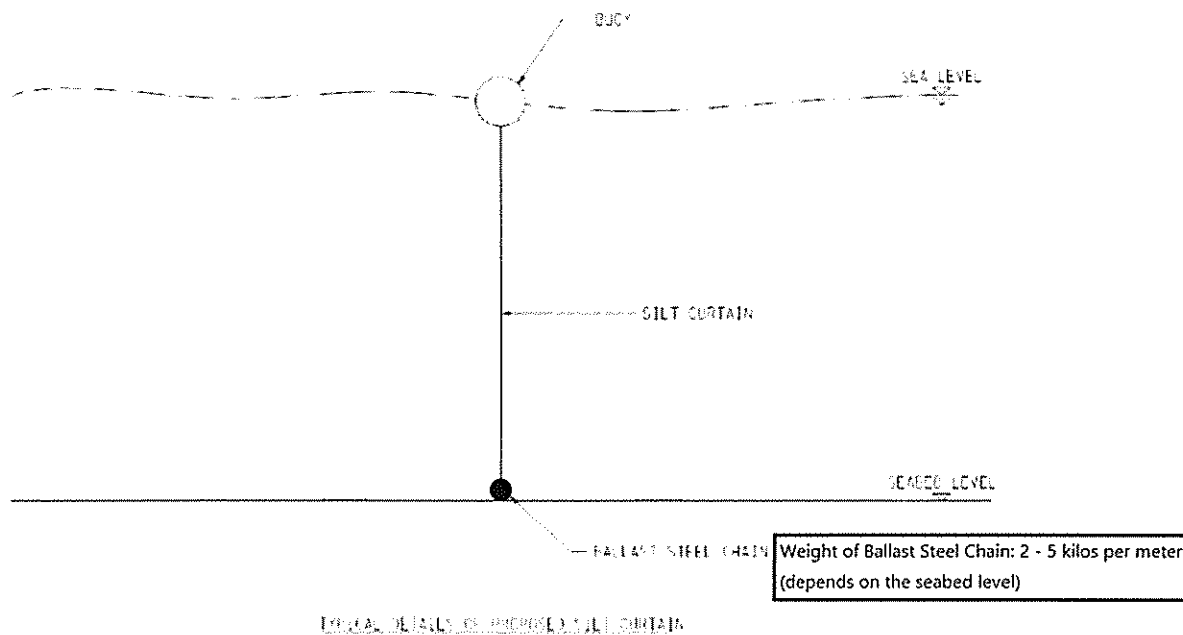


Figure 1 Typical details of proposed silt curtain

6. Silt Curtain Removal/ Repositioning

Removal of silt curtain shall be carried out by derrick lighter after completion of ground investigation and bored pile construction in order to reduce negative impact on water quality during ground investigation and bored pile construction.

Actions upon repositioning of silt curtain will be same as deployment of a new silt curtain. The condition of the silt curtain will be jointly inspected with the Supervisor before relocation to the new position. The JV will responsible to revise the SCDP if there is any amendments or changes from the original design in separate application.

NE/2017/01

Tseung Kwan O – Lam Tin Tunnel: Tseung Kwan O Interchange and Associated Works

Silt Curtain Deployment Plan

Appendix A – Tentative Programme for Major Marine Works

Activity ID	Activity Name	Original Duration	Start	Finish	2018												2019												2020												2021			
					Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1	Q2														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
NE/2017/01 - TKO-LTT C6 _180220		1168	10-Jan-18 A	22-Mar-21	[Summary bar]																																							
Contract Date		1168	10-Jan-18 A	22-Mar-21	[Works bar]																																							
Contract Date		12	10-Jan-18 A	22-Jan-18 A	[Milestone]																																							
CD000001	Contract Date	0	10-Jan-18 A		[Milestone]																																							
CD000003	Start Date	0	22-Jan-18 A		[Milestone]																																							
Key Dates		0	22-Mar-21	22-Mar-21	[Milestone]																																							
KD1000110	Completion date for the whole of the works	0		22-Mar-21*	[Milestone]																																							
Planned Completion Dates		173	30-Jul-20	19-Jan-21	[Works bar]																																							
Preliminaries		1105	11-Jan-18 A	19-Jan-21	[Works bar]																																							
Method Statement and Shop Drawing		442	26-Feb-18	13-May-19	[Works bar]																																							
Contractor's Alternative Design (AD)		403	23-Jan-18 A	01-Mar-19	[Works bar]																																							
Procurements & Subletting		752	26-Feb-18	18-Mar-20	[Works bar]																																							
Regular Submission / Issue		1073	12-Feb-18	19-Jan-21	[Works bar]																																							
Construction Works		796	16-Apr-18	16-Dec-20	[Works bar]																																							
Temporary Platform and Ground Investigation		433	16-Apr-18	27-Sep-19	[Works bar]																																							
Erect Temporary Platform		130	16-Apr-18	18-Sep-18	[Works bar]																																							
Ground Investigation Works		423	27-Apr-18	27-Sep-19	[Works bar]																																							
Bore Pile Construction (59nos) (Including plant mobilization)		442	03-Jul-18	23-Dec-19	[Works bar]																																							
Bore Pile Construction at Bridge ML		198	03-Jul-18	28-Feb-19	[Works bar]																																							
Bore Pile Construction at Bridge S200		260	05-Dec-18	23-Oct-19	[Works bar]																																							
Bore Pile Construction at Bridge S300		439	06-Jul-18	23-Dec-19	[Works bar]																																							
Bore Pile Construction at Bridge S100		140	13-Apr-19	03-Oct-19	[Works bar]																																							
Pile Cap Construction		534	23-Jul-18	12-May-20	[Works bar]																																							
Pre-cast Shell Casting		390	23-Jul-18	13-Nov-19	[Works bar]																																							
Pre-cast Shell Installation (After Bore Pile Testing)		443	09-Nov-18	12-May-20	[Works bar]																																							
In-fill Pour to Pile Cap		418	24-Nov-18	25-Apr-20	[Works bar]																																							
Pier Construction		358	04-Mar-19	20-May-20	[Works bar]																																							
Pier Construction at Bridge S100		127	09-Nov-19	16-Apr-20	[Works bar]																																							
Pier Construction at Bridge S200		238	13-Jul-19	02-May-20	[Works bar]																																							
Pier Construction at Bridge S300		358	04-Mar-19	20-May-20	[Works bar]																																							
Pier Construction at Bridge ML		227	06-Mar-19	07-Dec-19	[Works bar]																																							
Pier Head Segment Construction		344	26-Jun-19	20-Aug-20	[Works bar]																																							
Precast Pier Head Segment Installation		330	26-Jun-19	04-Aug-20	[Works bar]																																							
Cast-in-situ Diaphragm		343	27-Jun-19	20-Aug-20	[Works bar]																																							
Segment Erection		342	28-Aug-19	21-Oct-20	[Works bar]																																							
Bridge Furniture Installation		168	29-May-20	16-Dec-20	[Works bar]																																							
Remaining works		142	31-Jul-20	19-Jan-21	[Works bar]																																							



- ◆ Milestone
- Works
- Summary

**NE/2017/01 Tseung Kwan O - Lam Tin Tunnel
Tseung Kwan O Interchange and Associated Works**

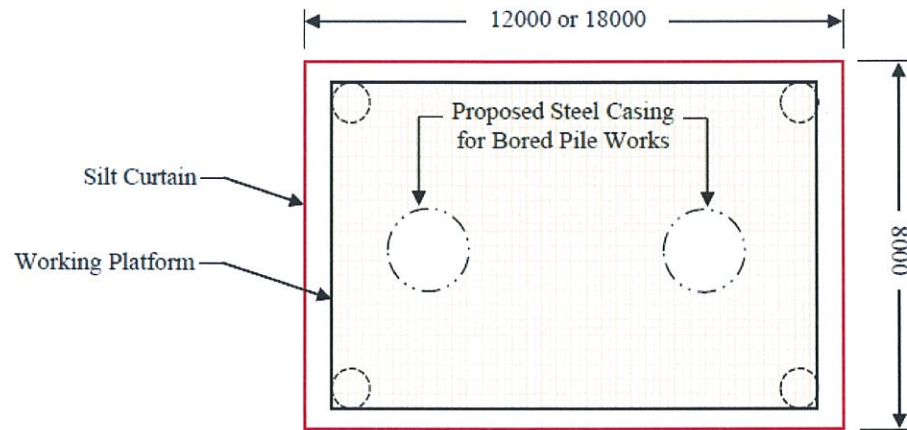
Construction Programme

NE/2017/01

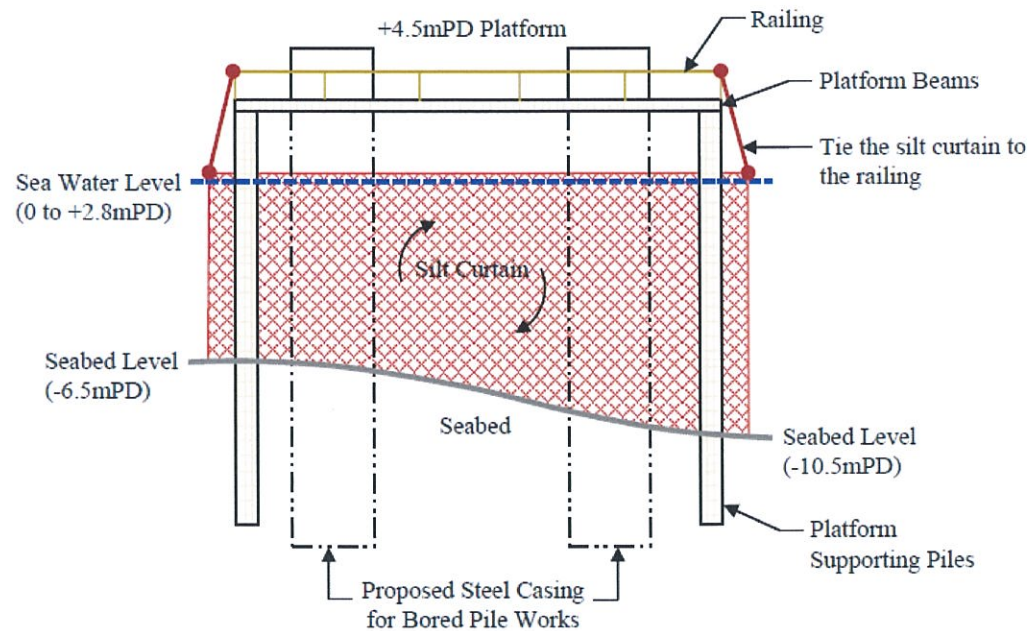
Tseung Kwan O – Lam Tin Tunnel: Tseung Kwan O Interchange and Associated Works

Silt Curtain Deployment Plan

Appendix B – Typical Details of Proposed Silt Curtain



PLAN



ELEVATION

PROJECT TITLE:
TSEUNG KWAN O - LAM TIN TUNNEL
TSEUNG KWAN O - INTERCHANGE AND
ASSOCIATED WORKS

REV.	DATE	REVISION NOTES	DRAWN BY	CHK BY	REV.	DATE	REVISION NOTES	DRAWN BY	CHK BY

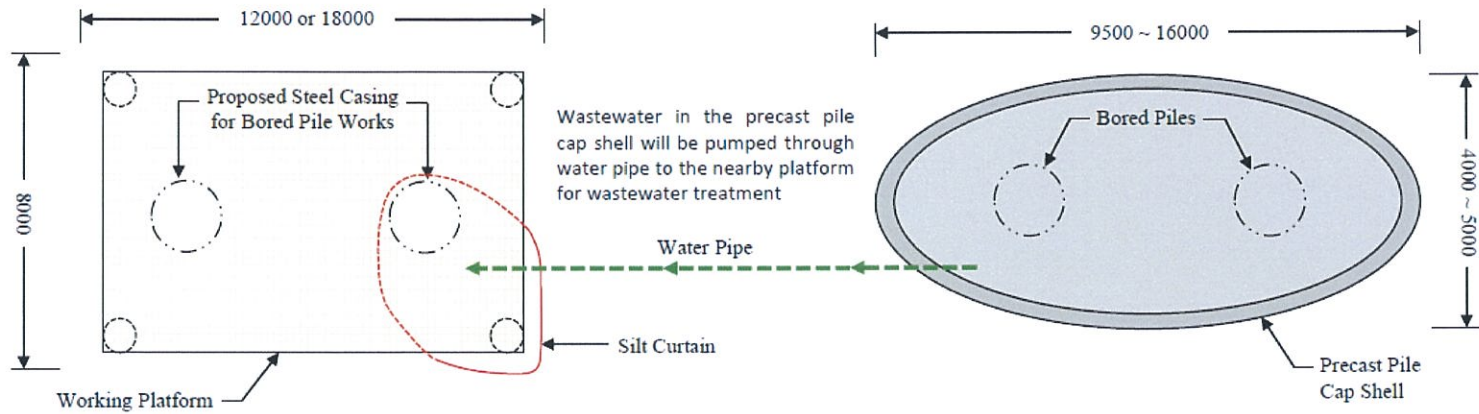
CLIENT:
CEDD 土木工程拓展署
Civil Engineering and
Development Department

CONSULTING ENGINEER:
AECOM

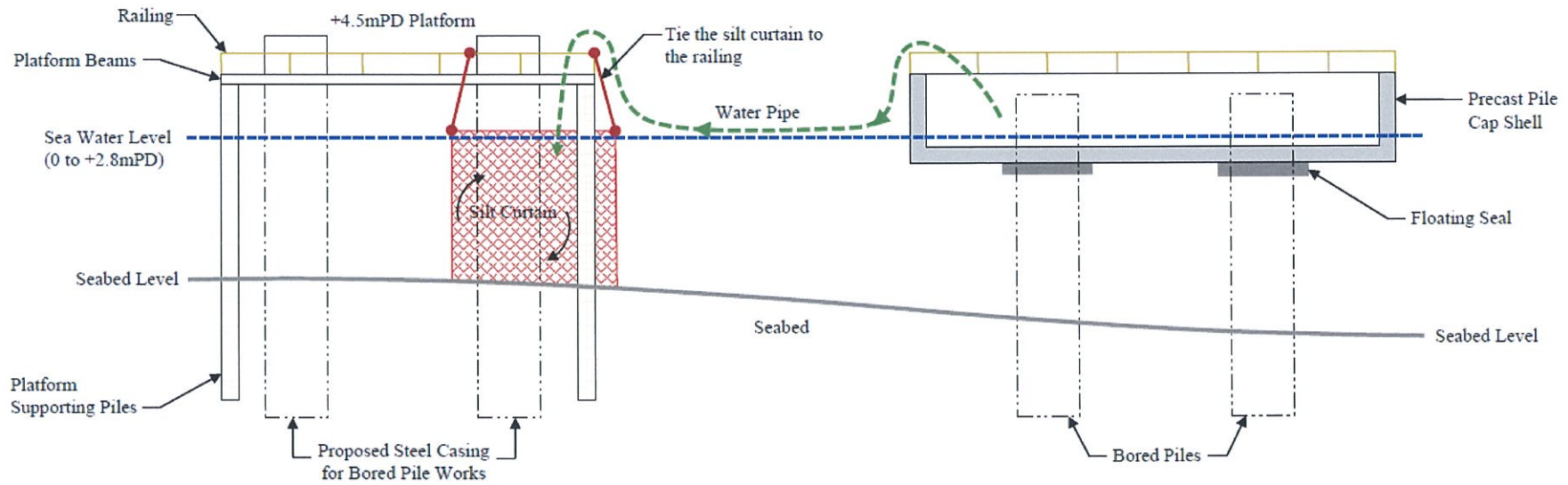
MAIN CONTRACTOR:
俊和-上隧-中冶聯營
CW - STEC - CMGC JV

DRAWING TITLE:
**SILT CURTAIN
ARRANGEMENT FOR BORE
PILE CONSTRUCTION**

SCALE: AS SHOWN DRAWING NO: JV-940-SK-007 REV: 1



PLAN



ELEVATION

PROJECT TITLE:
TSEUNG KWAN O - LAM TIN TUNNEL
TSEUNG KWAN O - INTERCHANGE AND
ASSOCIATED WORKS

DRAWING TITLE:
SILT CURTAIN ARRANGEMENT
FOR PILE CAP CONSTRUCTION
- OPTION A

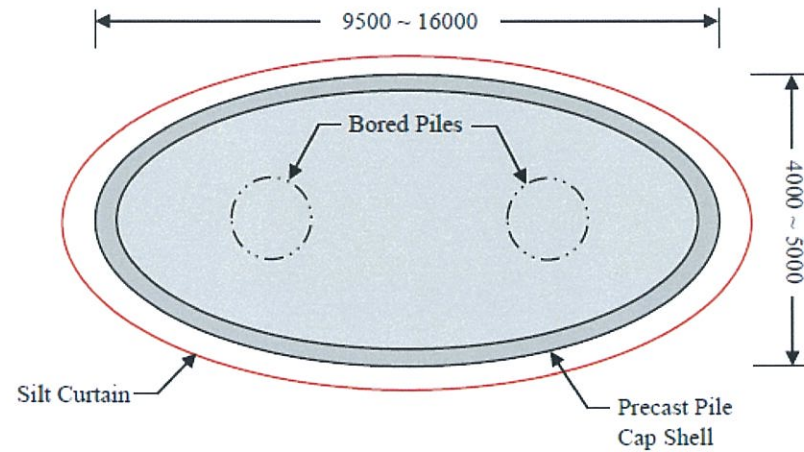
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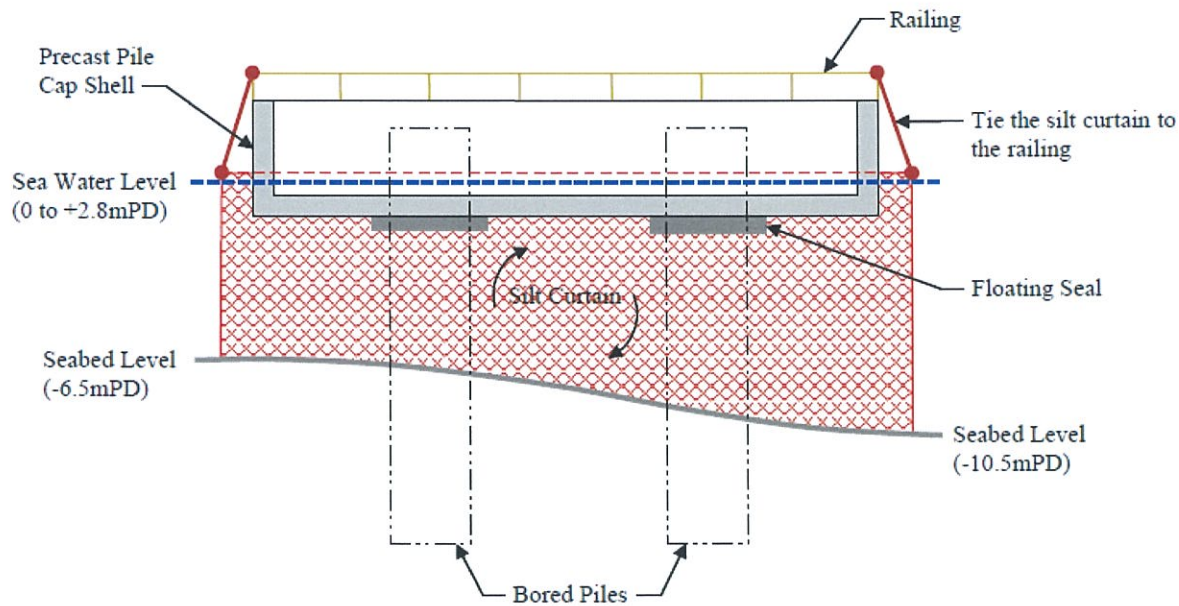
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CEDD 土木工程拓展署
Civil Engineering and
Development Department

CONSULTING ENGINEER:
AECOM

MAIN CONTRACTOR:
俊和-上隧-中冶聯營
CW - STEC - CMGC JV



PLAN



ELEVATION

PROJECT TITLE:
TSEUNG KWAN O - LAM TIN TUNNEL
TSEUNG KWAN O - INTERCHANGE AND
ASSOCIATED WORKS

REV.	DATE	REVISION NOTES	DRAWN BY	CHK BY	REV.	DATE	REVISION NOTES	DRAWN BY	CHK BY

CLIENT:
 土木工程拓展署
Civil Engineering and
Development Department

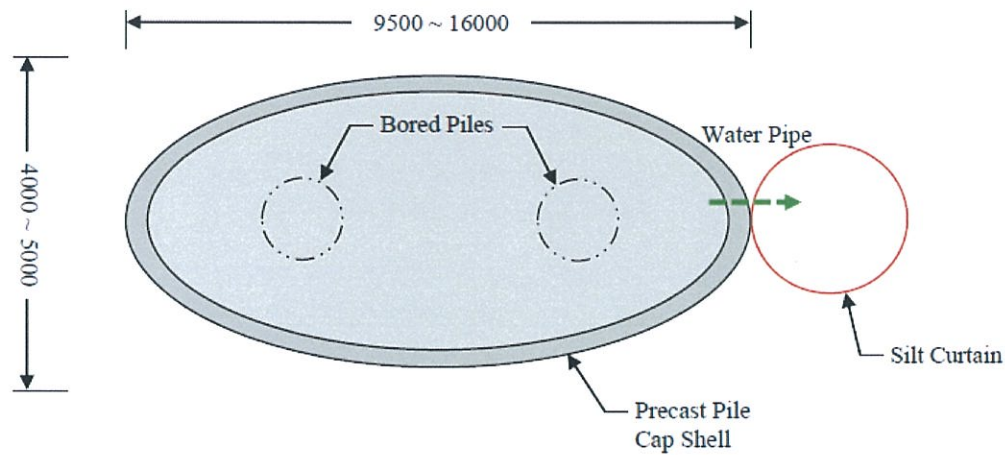
CONSULTING ENGINEER:


MAIN CONTRACTOR:

俊和-上隧-中冶聯營
CW - STEC - CMGC JV

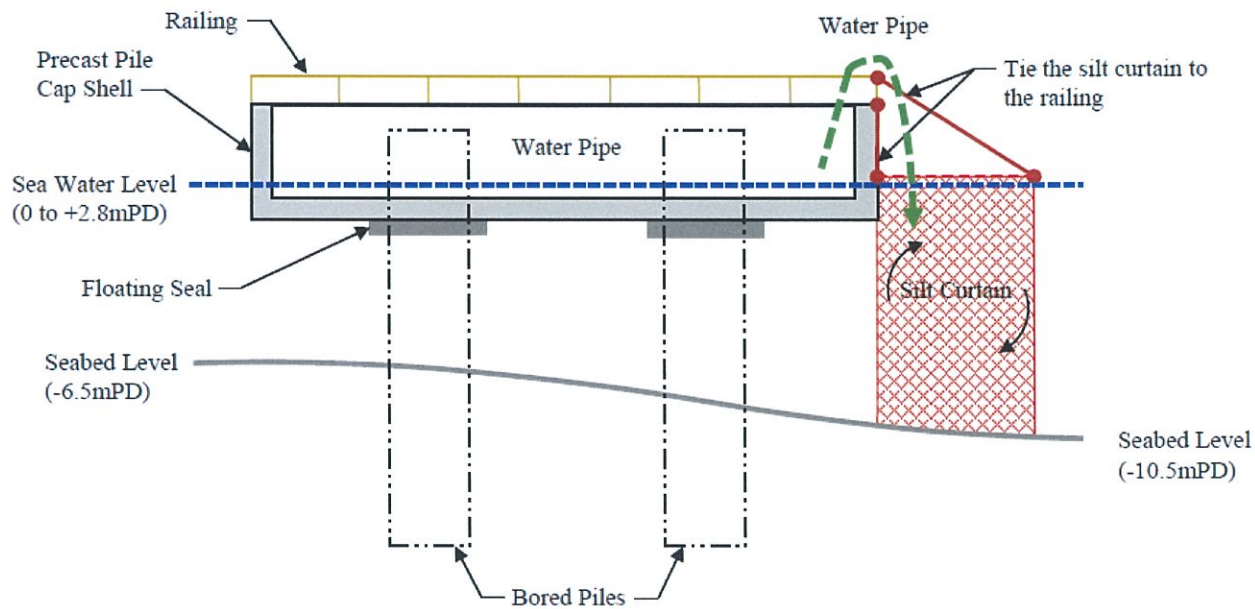
DRAWING TITLE:
SILT CURTAIN ARRANGEMENT
FOR PILE CAP CONSTRUCTION -
OPTION B

SCALE: AS SHOWN DRAWING NO.: JV-940-SK-010 REV.: 0



PLAN

Note:
 The enclosed silt curtain will be placed near the precast pile cap shell for wastewater treatment under below conditions:
 - there are no working platforms nearby the shell.
 - the site areas are confined to deploy the silt curtain around the shell



ELEVATION

REV.	DATE	REVISION NOTES	DRAWN BY	CHK BY	REV.	DATE	REVISION NOTES	DRAWN BY	CHK BY

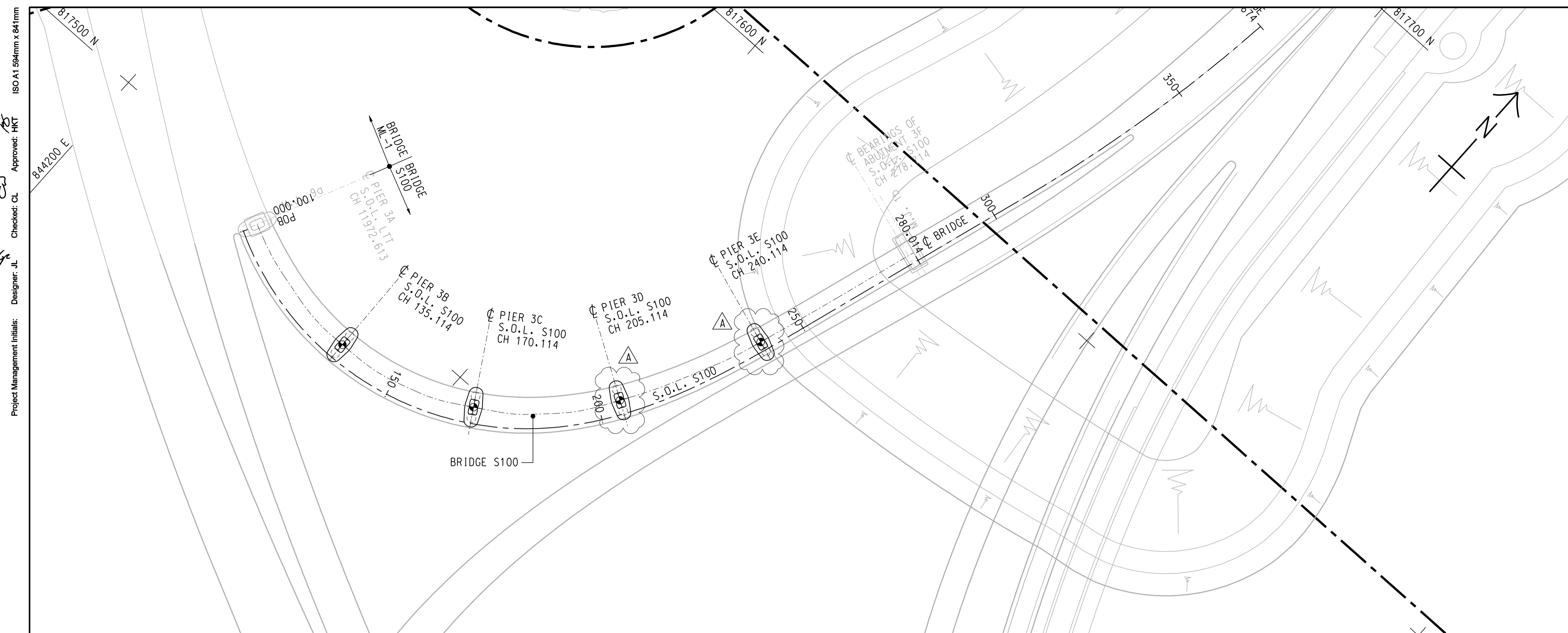
CLIENT:
 土木工程拓展署
 Civil Engineering and Development Department

CONSULTING ENGINEER:


MAIN CONTRACTOR:

 俊和-上隧-中冶聯營
 CW - STEC - CMGC JV

PROJECT TITLE: TSEUNG KWAN O - LAM TIN TUNNEL TSEUNG KWAN O - INTERCHANGE AND ASSOCIATED WORKS		
DRAWING TITLE: SILT CURTAIN ARRANGEMENT FOR PILE CAP CONSTRUCTION - OPTION C		
SCALE: AS SHOWN	DRAWING NO.: JV-940-SK-011	REV: 0



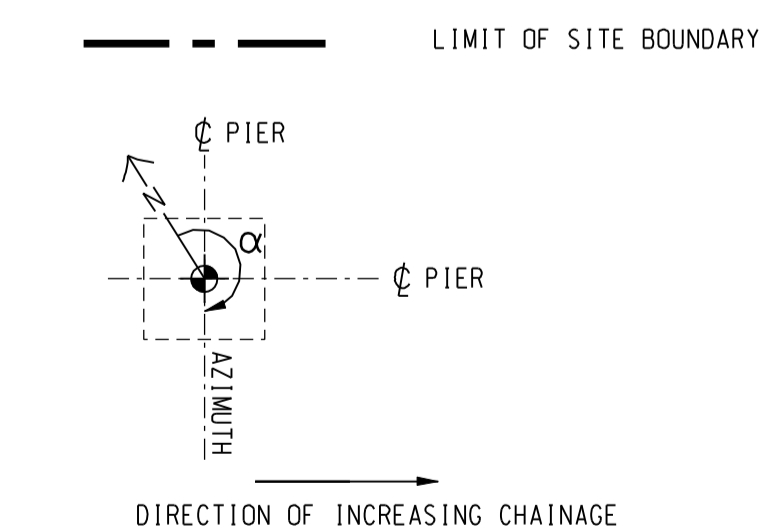
FOUNDATION SCHEDULE:

SUBSTRUCTURE REFERENCE NO.	TOP OF PILE CAP LEVEL (mPD)	S.O.L.	CHAINAGE	AZIMUTH OF FOUNDATION (α)	FOUNDATION TYPE	NO. OF PILES	TYPE OF PILE	PILE DIAMETER (mm)	PILE CUT OFF LEVEL (mPD)	TENTATIVE SEABED LEVEL (mPD)	TENTATIVE ROCKHEAD LEVEL (mPD)	TENTATIVE FOUNDING LEVEL (mPD)	MIN. SOCKET LENGTH (m)
3B	+2.50	S100	CH 135.114	178°35'32"	A2	2	BORED	2000	-0.40	-7.20	-16.0	-20.3	4.00
3C	+2.50	S100	CH 170.114	149°6'6"	A2	2	BORED	2000	-0.40	-7.20	-20.5	-23.8	3.00
3D	+2.50	S100	CH 205.114	121°54'54"	A2	2	BORED	2000	-0.40	-7.20	-21.5	-23.8	2.00
3E	+2.50	S100	CH 240.114	108°45'48"	A2	2	SLEEVED	2000	-0.40	-6.50	-19.0	-23.3	4.00

NOTES:

- FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NOS. 60308751/C6/C00/2000 AND 2001.
- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN mPD UNLESS OTHERWISE STATED.
- THE TENTATIVE FOUNDING LEVEL AND CUTOFF LEVEL SHOWN ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE ROCKHEAD LEVEL AND FINISH GROUND LEVEL AND SHALL AGREE WITH THE SUPERVISOR.
- ALL PILES SHALL BE SOCKETTED INTO SLIGHTLY TO MODERATELY DECOMPOSED MODERATELY STRONG ROCK OF MATERIAL WEATHERING GRADE III OR BETTER WITH A TOTAL CORE RECOVERY OF MORE THAN 85% AND A MINIMUM UNIAXIAL COMPRESSIVE STRENGTH OF NOT LESS THAN 25MPa WITH A MINIMUM SAFE BEARING CAPACITY OF 5000kPa.
- FOR TYPICAL FOUNDATION DETAILS REFER TO DRAWING NO. 60308751/C6/C00/2041.
- FOR TYPICAL BORED AND SLEEVED BORED PILE DETAILS REFER TO DRAWING NO. 60308751/C6/C00/2040.

LEGEND:



ISSUE/REVISION

REV	DATE	DESCRIPTION	CHK.
A	AUG.17	TENDER ADDENDUM NO.3	CL
-	JUN.17	TENDER DRAWING	CL

STATUS

圖說

SCALE

A1:500

DIMENSION UNIT

METRES

KEY PLAN

索引圖

PROJECT NO.

60308751

CONTRACT NO.

NE/2017/01

SHEET TITLE

BRIDGE S100
FOUNDATION LAYOUT

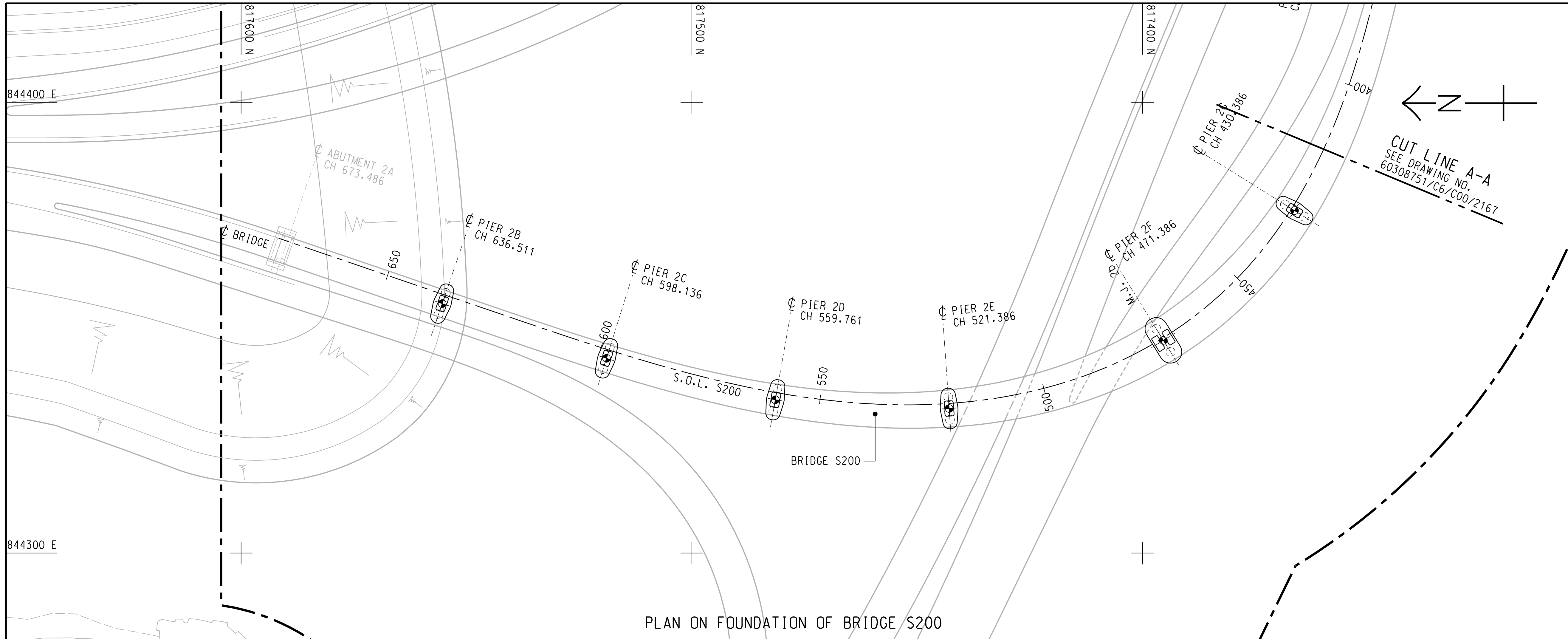
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60308751/C6/C00/2136A

ISO A1 594mm x 841mm
Approved: HKT
Checked: CL
Designer: JL
Project Management Initials:

Plot File by: LAIQW
2017/8/15
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PLAN ON FOUNDATION OF BRIDGE S200

FOUNDATION SCHEDULE:

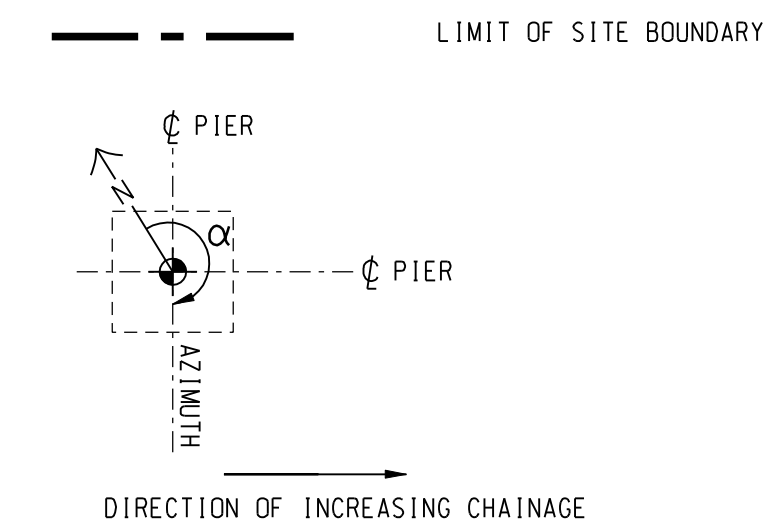
SUBSTRUCTURE REFERENCE NO.	TOP OF PILE CAP LEVEL (mPD)	S.O.L.	CHAINAGE	AZIMUTH OF FOUNDATION (α)	FOUNDATION TYPE	NO. OF PILES	TYPE OF PILE	PILE DIAMETER (mm)	PILE CUT OFF LEVEL (mPD)	TENTATIVE SEABED LEVEL (mPD)	TENTATIVE ROCKHEAD LEVEL (mPD)	TENTATIVE FOUNDING LEVEL (mPD)	MIN. SOCKET LENGTH (m)
2B	+2.50	S200	CH 636.511	108°50'17"	A2	2	SLEEVED	2000	-0.40	-6.50	-15.5	-19.3	3.50
2C	+2.50	S200	CH 598.136	107°23'3"	A2	2	BORED	2000	-0.40	-7.20	-21.5	-23.3	1.50
2D	+2.50	S200	CH 559.761	100°4'52"	A2	2	BORED	2000	-0.40	-7.20	-23.5	-25.3	1.50
2E	+2.50	S200	CH 521.386	85°56'2"	A2	2	BORED	2000	-0.40	-7.75	-25.0	-26.3	1.00
2F	+2.50	S200	CH 471.386	58°13'34"	B4	2	BORED	2000	-0.40	-10.20	-33.5	-35.8	2.00
2G	+2.50	S200	CH 430.386	32°0'53"	A2	2	BORED	2000	-0.40	-10.20	-39.0	-40.8	1.50

A

NOTES:

- FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NOS. 60308751/C6/COO/2000 AND 2001.
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- FOR TYPICAL FOUNDATION DETAILS REFER TO DRAWING NOS. 60308751/C6/COO/2041.
- FOR TYPICAL BORED AND SLEEVED BORED PILE DETAILS REFER TO DRAWING NO. 60308751/C6/COO/2040.
- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NO. 60308751/C6/COO/2167.

LEGEND:



ISSUE/REVISION
 修訂

A/R	DATE	DESCRIPTION	CHK.
修訂	日期	內容摘要	核核
A	AUG.17	TENDER ADDENDUM NO.3	CL
-	JUN.17	TENDER DRAWING	CL

STATUS
 階段

SCALE
 比例

A1 1:500

DIMENSION UNIT
 尺寸單位

METRES

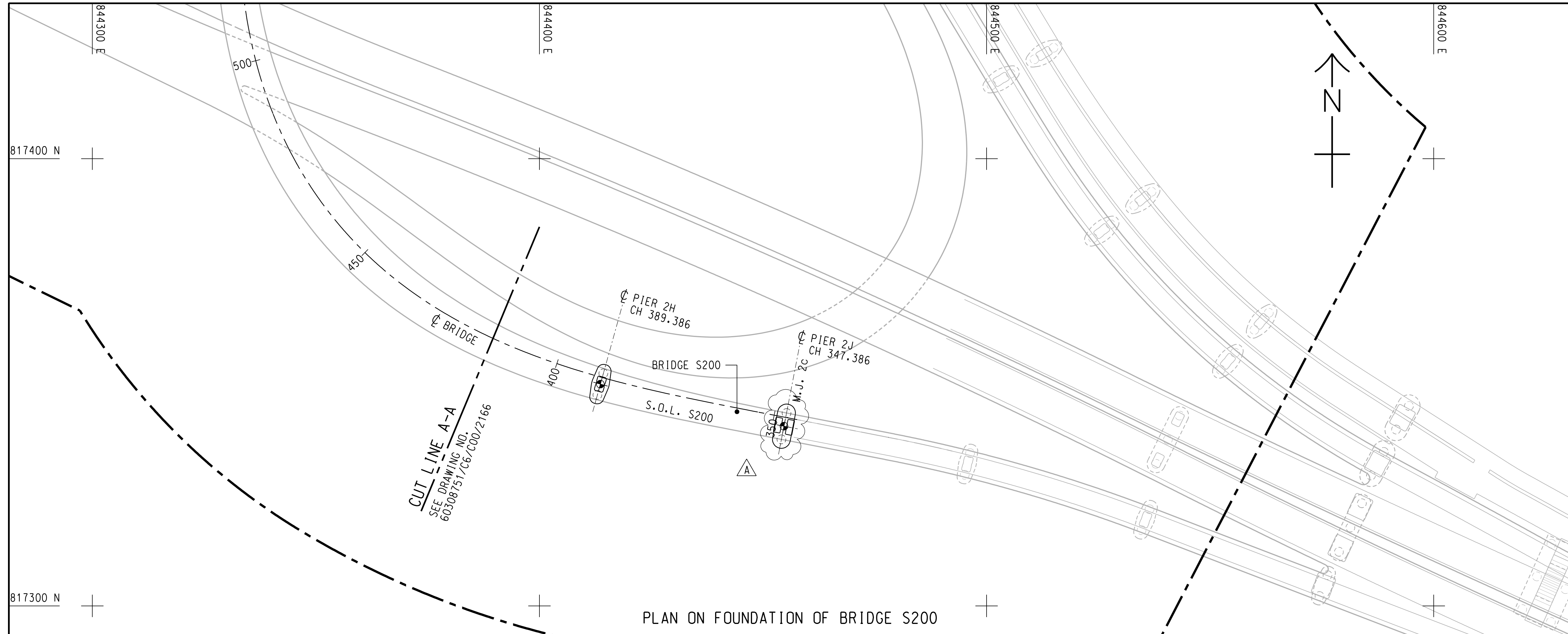
KEY PLAN
 索引圖

60308751

NE/2017/01

BRIDGE S200
 FOUNDATION LAYOUT

60308751/C6/COO/2166A



PLAN ON FOUNDATION OF BRIDGE S200

FOUNDATION SCHEDULE:

SUBSTRUCTURE REFERENCE NO.	TOP OF PILE CAP LEVEL (mPD)	S.O.L.	CHAINAGE	AZIMUTH OF FOUNDATION (α)	FOUNDATION TYPE	NO. OF PILES	TYPE OF PILE	PILE DIAMETER (mm)	PILE CUT OFF LEVEL (mPD)	TENTATIVE SEABED LEVEL (mPD)	TENTATIVE ROCKHEAD LEVEL (mPD)	TENTATIVE FOUNDING LEVEL (mPD)	MIN. SOCKET LENGTH (m)
2H	+2.50	S200	CH 389.386	15°32'33"	A2	2	BORED	2000	-0.40	-10.50	-47.0	-50.8	1.00
2J	+2.50	S200	CH 347.386	10°58'37"	B4	2	BORED	2000	-0.40	-10.50	-53.0	-54.8	1.00

NOTES:

- FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. 60308751/C6/C00/2166.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60308751/C6/C00/2166.

ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK.
修訂	日期	內容摘要	核核
A	AUG.17	TENDER ADDENDUM NO.3	CL
-	JUN.17	TENDER DRAWING	CL

STATUS
 階段

SCALE
 比例

A1 1 : 500

DIMENSION UNIT
 尺寸單位

METRES

KEY PLAN
 索引圖

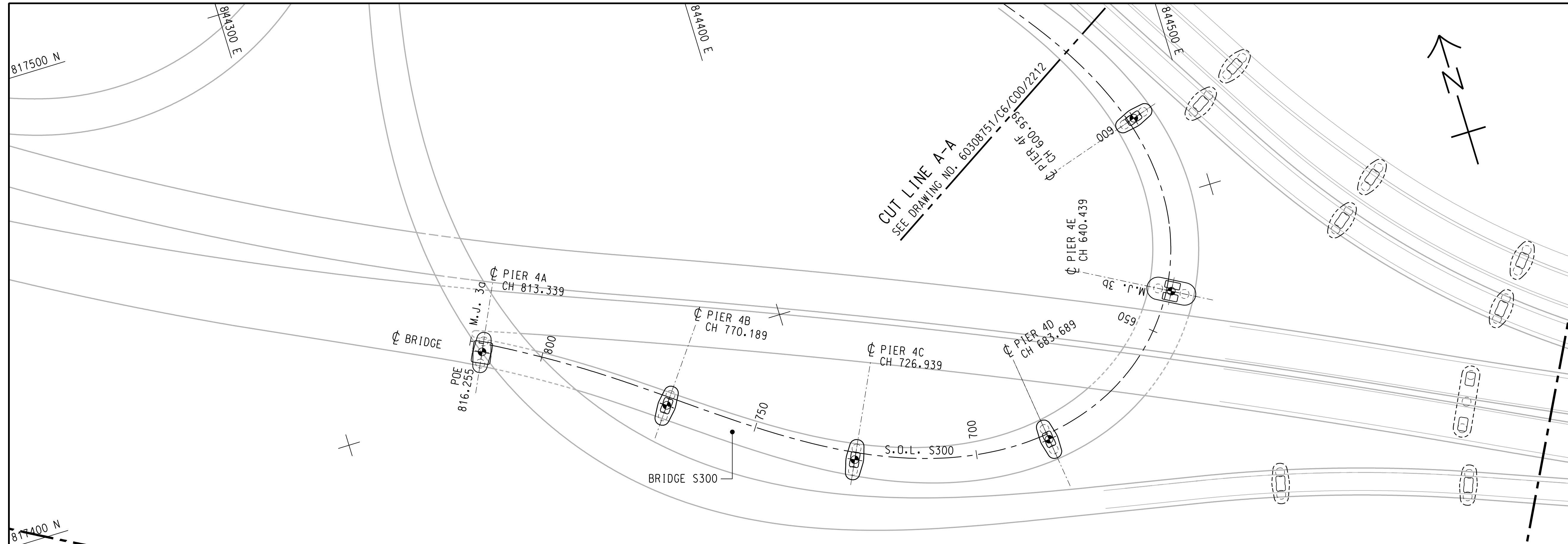
60308751

NE/2017/01

BRIDGE S200
 FOUNDATION LAYOUT

60308751/C6/C00/2167A

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PLAN OF FOUNDATION OF BRIDGE S300

FOUNDATION SCHEDULE:

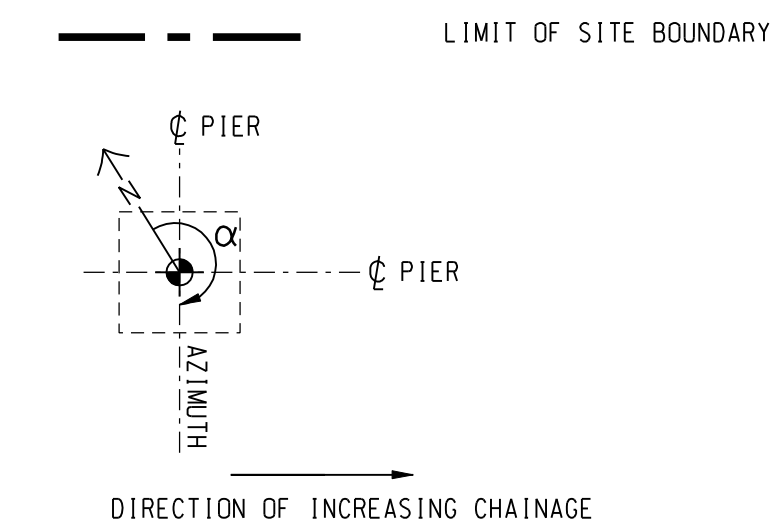
SUBSTRUCTURE REFERENCE NO.	TOP OF PILE CAP LEVEL (mPD)	S.O.L.	CHAINAGE	AZIMUTH OF FOUNDATION (α)	FOUNDATION TYPE	NO. OF PILES	TYPE OF PILE	PILE DIAMETER (mm)	PILE CUT OFF LEVEL (mPD)	TENTATIVE SEABED LEVEL (mPD)	TENTATIVE ROCKHEAD LEVEL (mPD)	TENTATIVE FOUNDING LEVEL (mPD)	MIN. SOCKET LENGTH (m)
4A	+2.50	S300	CH 813.339	25° 34' 26"	A2	2	BORED	2000	-0.40	-7.75	-29.0	-32.8	3.50
4B	+2.50	S300	CH 770.189	36° 33' 7"	A2	2	BORED	2000	-0.40	-10.20	-35.0	-38.3	3.00
4C	+2.50	S300	CH 726.939	26° 1' 12"	A2	2	BORED	2000	-0.40	-10.50	-45.0	-47.3	2.00
4D	+2.50	S300	CH 683.689	172° 35' 5"	A2	2	BORED	2000	-0.40	-10.50	-53.0	-54.3	1.00
4E	+2.50	S300	CH 640.439	118° 50' 18"	B4	2	BORED	2000	-0.40	-10.20	-53.0	-54.3	1.00
4F	+2.50	S300	CH 600.939	72° 36' 35"	A2	2	BORED	2000	-0.40	-10.20	-45.0	-46.3	1.00

A

NOTES:

- FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NOS. 60308751/C6/C00/2000 AND 2001.
- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS ARE IN mPD UNLESS OTHERWISE STATED.
- THE TENTATIVE FOUNDING LEVEL AND CUTOFF LEVEL SHOWN ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE ROCKHEAD LEVEL AND FINISH GROUND LEVEL AND SHALL AGREE WITH THE SUPERVISOR.
- ALL PILES SHALL SOCKETTED INTO SLIGHTLY TO MODERATELY DECOMPOSED MODERATELY STRONG ROCK OF MATERIAL WEATHERING GRADE III OR BETTER WITH A TOTAL CORE RECOVERY OF MORE THAN 85% AND A MINIMUM UNIAXIAL COMPRESSIVE STRENGTH OF NOT LESS THAN 25MPa WITH A MINIMUM SAFE BEARING CAPACITY OF 5000KPa.
- EXACT ROCKHEAD LEVEL SHALL BE PROPOSED BY THE CONTRACTOR AND SUBJECTED TO THE ACCEPTANCE OF THE SUPERVISOR.
- FOR TYPICAL FOUNDATION DETAILS REFER TO DRAWING NO. 60308751/C6/C00/2041.
- FOR TYPICAL BORED AND SLEEVED BORED PILE DETAILS REFER TO DRAWING NO. 60308751/C6/C00/2040.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING NO. 60308751/C6/C00/2212.

LEGEND:



ISSUE/REVISION
 修訂

NO.	DATE	DESCRIPTION	CHK.
A	AUG.17	TENDER ADDENDUM NO.3	CL
-	JUN.17	TENDER DRAWING	CL

STATUS
 階段

SCALE
 比例

A1 1:500

DIMENSION UNIT
 尺寸單位

METRES

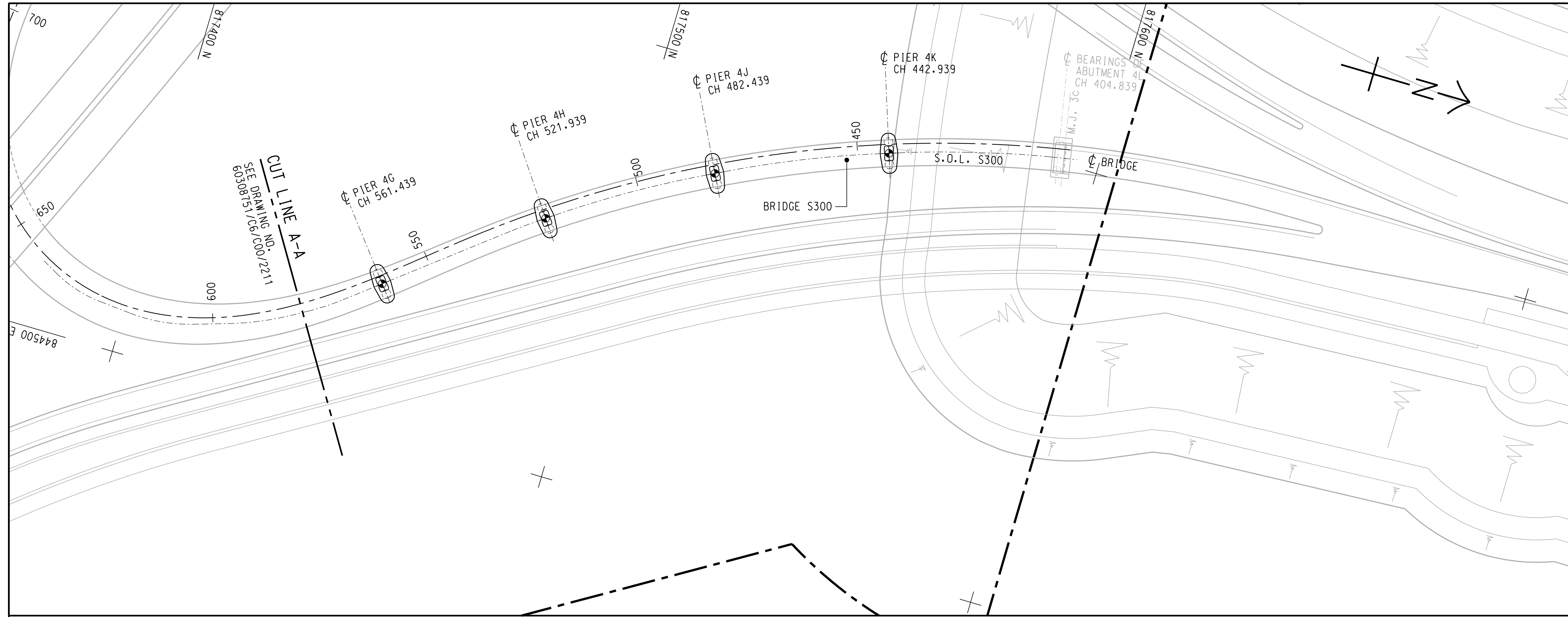
KEY PLAN
 索引圖

60308751

NE/2017/01

BRIDGE S300
 FOUNDATION LAYOUT

60308751/C6/C00/2211A



PLAN OF FOUNDATION OF BRIDGE S300

FOUNDATION SCHEDULE:

SUBSTRUCTURE REFERENCE NO.	TOP OF PILE CAP LEVEL (mPD)	S.O.L.	CHAINAGE	AZIMUTH OF FOUNDATION (α)	FOUNDATION TYPE	NO. OF PILES	TYPE OF PILE	PILE DIAMETER (mm)	PILE CUT OFF LEVEL (mPD)	TENTATIVE SEABED LEVEL (mPD)	TENTATIVE ROCKHEAD LEVEL (mPD)	TENTATIVE FOUNDING LEVEL (mPD)	MIN. SOCKET LENGTH (m)
4G	+2.50	S300	CH 561.439	231°24'56"	A2	2	BORED	2000	-0.40	-9.85	-37.5	-40.8	3.00
4H	+2.50	S300	CH 521.939	234°41'14"	A2	2	BORED	2000	-0.40	-9.85	-32.0	-35.3	3.00
4J	+2.50	S300	CH 482.439	242°56'50"	A2	2	BORED	2000	-0.40	-7.75	-28.0	-32.3	4.00
4K	+2.50	S300	CH 442.939	251°12'25"	A2	2	SLEEVED	2000	-0.40	-7.10	-25.0	-29.8	4.50

NOTES:

- FOR GENERAL NOTES AND LEGEND, REFER TO DRAWING NO. 60308751/C6/C00/2211.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60308751/C6/C00/2211.

ISSUE/REVISION
 修訂

I/R	DATE	DESCRIPTION	CHK.
A	AUG.17	TENDER ADDENDUM NO.3	CL
-	JUN.17	TENDER DRAWING	CL

STATUS
 階段

SCALE
 比例
 A1 1: 500

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

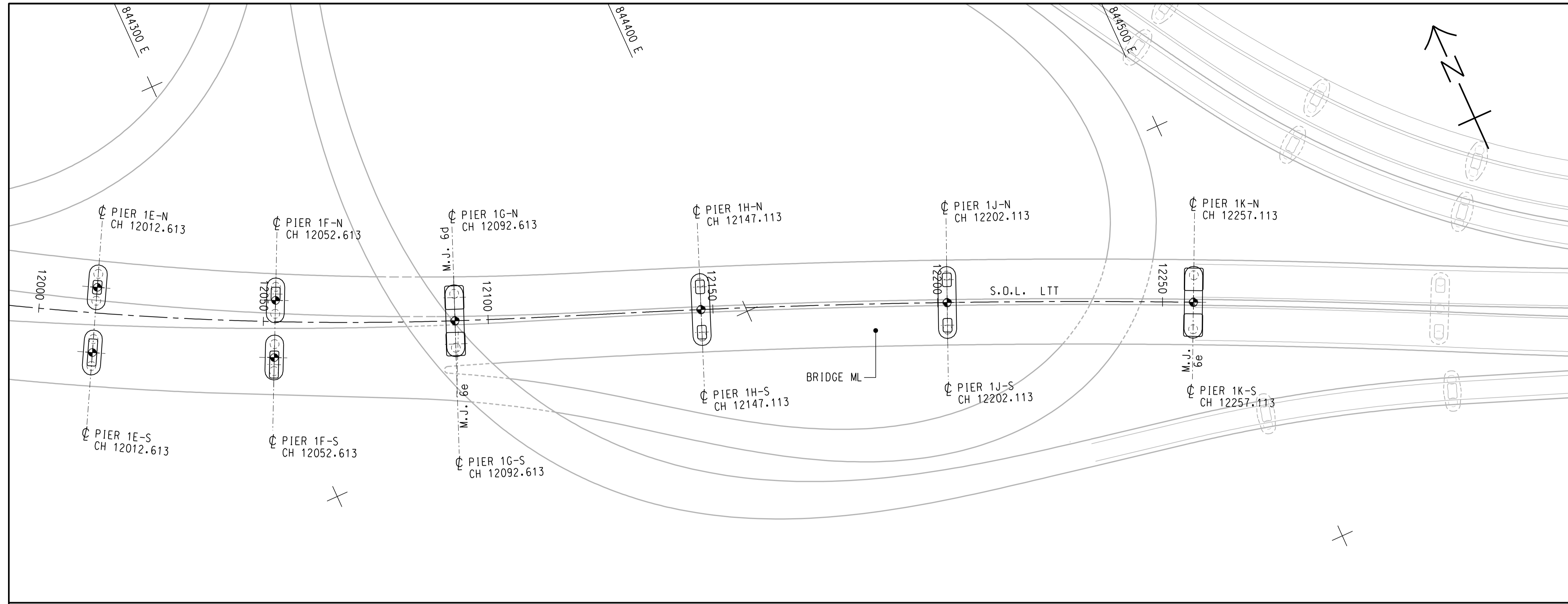
PROJECT NO.
 項目編號
 60308751

CONTRACT NO.
 合約編號
 NE/2017/01

SHEET TITLE
 圖紙名稱
 BRIDGE S300
 FOUNDATION LAYOUT

SHEET NUMBER
 圖紙編號
 60308751/C6/C00/2212A

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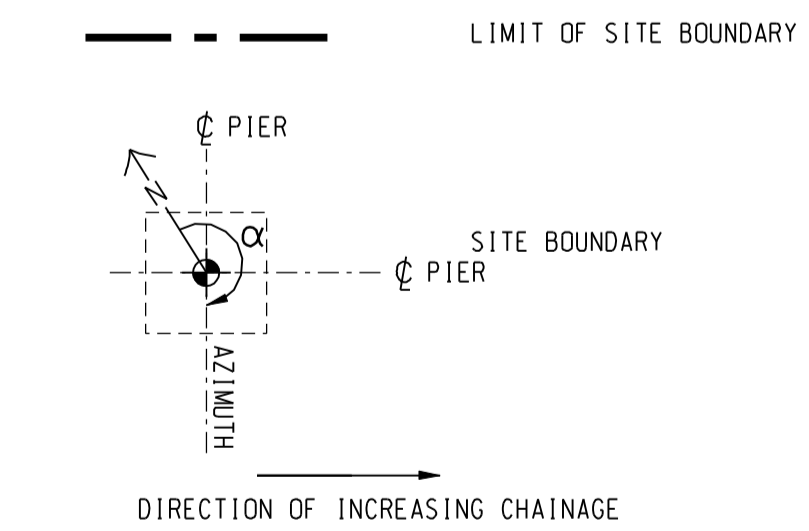
FOUNDATION SCHEDULE:

SUBSTRUCTURE REFERENCE NO.	TOP OF PILE CAP LEVEL (mPD)	S.O.L.	CHAINAGE	AZIMUTH OF FOUNDATION (α)	FOUNDATION TYPE	NO. OF PILES	TYPE OF PILE	PILE DIAMETER (mm)	PILE CUT OFF LEVEL (mPD)	TENTATIVE SEABED LEVEL (mPD)	TENTATIVE ROCKHEAD LEVEL m(PD)	TENTATIVE FOUNDING LEVEL (mPD)	MIN. SOCKET LENGTH (m)
1E-N	+2.50	LTT	CH 12012.613	208°37'47"	B1	2	BORED	2000	-0.40	-7.20	-16.5	-22.8	6.00
1E-S	+2.50	LTT	CH 12012.613	208°37'47"	B1	2	BORED	2000	-0.40	-7.20	-17.0	-23.3	6.00
1F-N	+2.50	LTT	CH 12052.613	205°34'26"	B1	2	BORED	2000	-0.40	-7.75	-22.0	-27.8	5.50
1F-S	+2.50	LTT	CH 12052.613	205°34'26"	B1	2	BORED	2000	-0.40	-7.75	-23.0	-28.8	5.50
1G	+2.50	LTT	CH 12092.613	202°31'27"	C	3	BORED	2000	-0.40	-7.75	-28.5	-34.8	6.00
1H	+2.50	LTT	CH 12147.113	201°53'37"	C	3	BORED	2000	-0.40	-10.30	-35.5	-41.3	5.50
1J	+2.50	LTT	CH 12202.113	203°28'10"	C	3	BORED	2000	-0.40	-10.30	-46.0	-51.8	5.50
1K	+2.50	LTT	CH 12257.113	205°4'34"	C	3	BORED	2000	-0.40	-10.20	-50.0	-55.8	5.50

NOTES:

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LEGEND:



ISSUE/REVISION
修訂

I/R	DATE	DESCRIPTION	CHK.
修訂	日期	內容摘要	核核
A	AUG.17	TENDER ADDENDUM NO.3	CL
-	JUN.17	TENDER DRAWING	CL

STATUS
圖版

SCALE
比例

A1 1:500

DIMENSION UNIT
尺寸單位

METRES

KEY PLAN
索引圖

PROJECT NO.
項目編號

60308751

CONTRACT NO.
合約編號

NE/2017/01

SHEET TITLE
圖紙名稱

BRIDGE ML
FOUNDATION LAYOUT

SHEET NUMBER
圖紙編號

60308751/C6/C00/2311A

NE/2017/01

Tseung Kwan O – Lam Tin Tunnel: Tseung Kwan O Interchange and Associated Works

Silt Curtain Deployment Plan

Appendix C – Specification of Geotextile for Silt Curtain

NE/2017/01

Tseung Kwan O – Lam Tin Tunnel: Tseung Kwan O Interchange and Associated Works

Silt Curtain Deployment Plan

1. DSP 15 Silt Curtain



Material Submission

Daeyoun Geotech

GEONIA Silt Protector



G AND E COMPANY LIMITED

14th Floor, Kiu Yin Commercial Building

361-363 Lockhart Road, Wanchai, HK

Tel: 2570 0103 Fax: 2570 0089 website: www.g-and-e.com

March 2018



Table of Contents

- 1) Manufacturing Company Catalogue**
- 2) Product Catalogue of Daeyoun Geotech GEONIA Silt Protector**
- 3) Product Specification of GEONIA Silt Protector**
- 4) Certificates**
- 5) Installation, Caution & Maintenance Guideline**
- 6) Project Reference**
- 7) Approval Letter**
- 8) Prototype Sample**
- 9) About the Supplier – G and E Company Limited**



Daeyoun Geotech
GEONIA Silt Protector

Manufacturing Company Catalogue

COMPANY INTRODUCTION



DAEYOUN GEOTECH

INDEX

- 1. Company Information**
- 2. Company History**
- 3. Factory Introduction**
- 4. Plant Investment Plan in the Future**
- 5. Manufacturing Process**
- 6. Main Buyer and Partnership with Construction Company**
- 7. Performance Experience in Vietnam & Overseas Market**
- 8. Certification**



COMPANY INFORMATION

Company Name	DAEYOUN GEOTECH CO., LTD
C.E.O	Mr. Sang Ki Lee
Establish	1991
Employee	35 people
Head office	No. 1121, Poonglim Bldg, Gongdeok-dong, Mapo-gu, Seoul, Korea
Main Business	PET/PP Woven Geotextiles Silt Protector / Curtain
Capacity	15 million sqm / year

HISTORY

- 2013 – Qualified for European Certification of **CE Mark** from SKZ in Germany
 - Became a member of **GMA**
 - **Built 2nd factory in Gimcheon city, Korea**
 - Attended the booth in Geosynthetics2013 in U.S.A.
- 2012 - Launched new brand "GEONIA®" of the geosynthetics by Daeyoun Geotech Co., Ltd.
 - Established Daeyoun Geotech Co., Ltd. **Geosynthetics's R & D Center**
 - Audit CE mark
 - IGS Membership
 - Attended the booth in Geosynthetics Asia 2012 in Bangkok, Thailand
- 2011 - Registered the certificate of Patent about the silt protector
- 2009 - Expansion of Gimcheon Plant, Korea
 - **Renewed ISO 9001, ISO 14001**
 - Assigned as a innovative company by Small and medium Business Administration
- 2008 - Completion of Gimcheon Plant
 - Annual contract with Korean Public Procurement Bureau for Woven Geotextile
- 2006 - Renamed to Daeyoun Geotech Co., Ltd.
 - Woven Geotextile business separated from Daeyoun Textech Co., Ltd.
- 1991 - Established Daeyoun Textech Co., Ltd

Factory Location

- Factory 1 (Gimcheon)**
 55-2, Dogok-ri, Jirye-myeon, Gimcheon-city,
 Gyeongsangbuk-do, Korea
 - It takes 3 hours from Seoul to Kimcheon by a Car
 - It take 1.5 hours from Seoul to Kimcheon by KTX
 - It takes 2 hours from Busan to Kimcheon factory by a Car
- Factory 2 (Gimcheon)**
 123, Apogongdan-gil, Apo-eup, Gimcheon-si,
 Gyeongsangbuk-do, Korea
- Veitnam Office (Hochiminh)**
 83 K7 ST, Ward 12, Tan Binh Dist.,
 Hochiminh city, Vietnam



DAEYOUN FACTORY 1

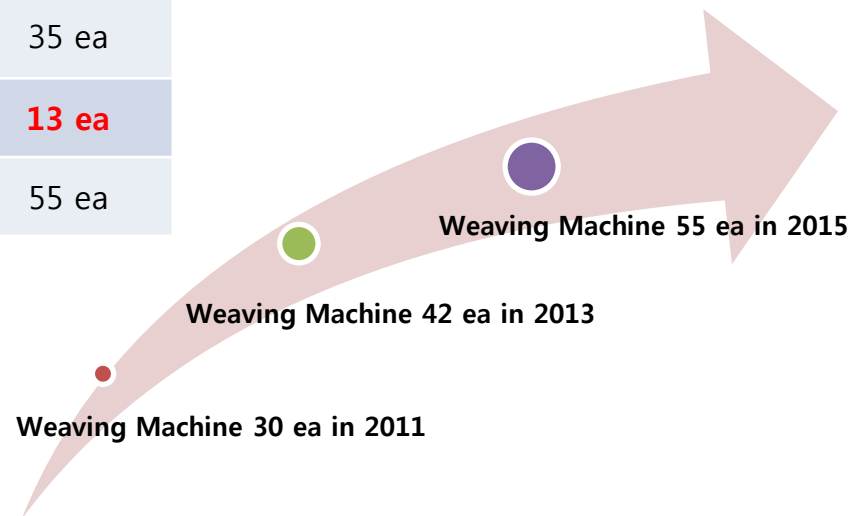


DAEYOUN FACTORY 2

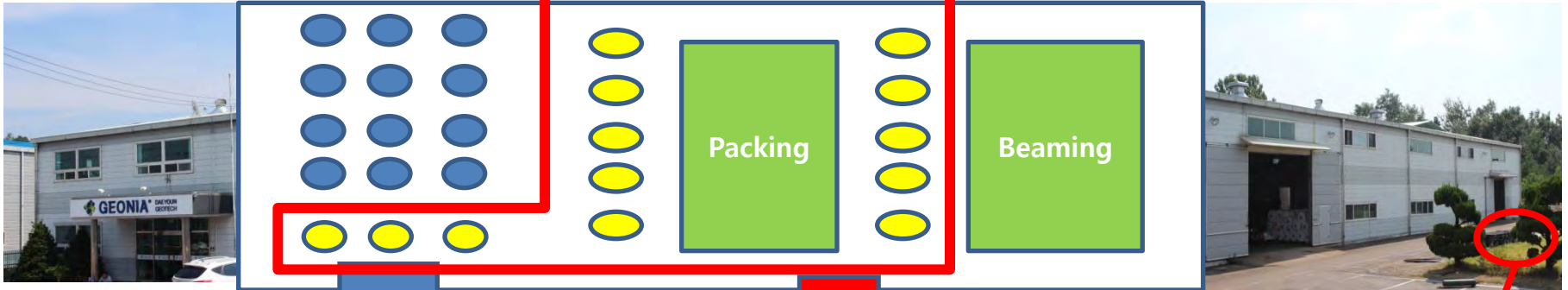


Plant Investment Plan in the Future

Weaving Machine	Factory 1	Factory 2	Total
2,100 mm	6 ea	1 ea	7 ea
3,600 mm	23 ea	12 ea	35 ea
5,200 mm	-	13 ea	13 ea
Total	29 ea	26 ea	55 ea



Plant Investment Plan in the Future



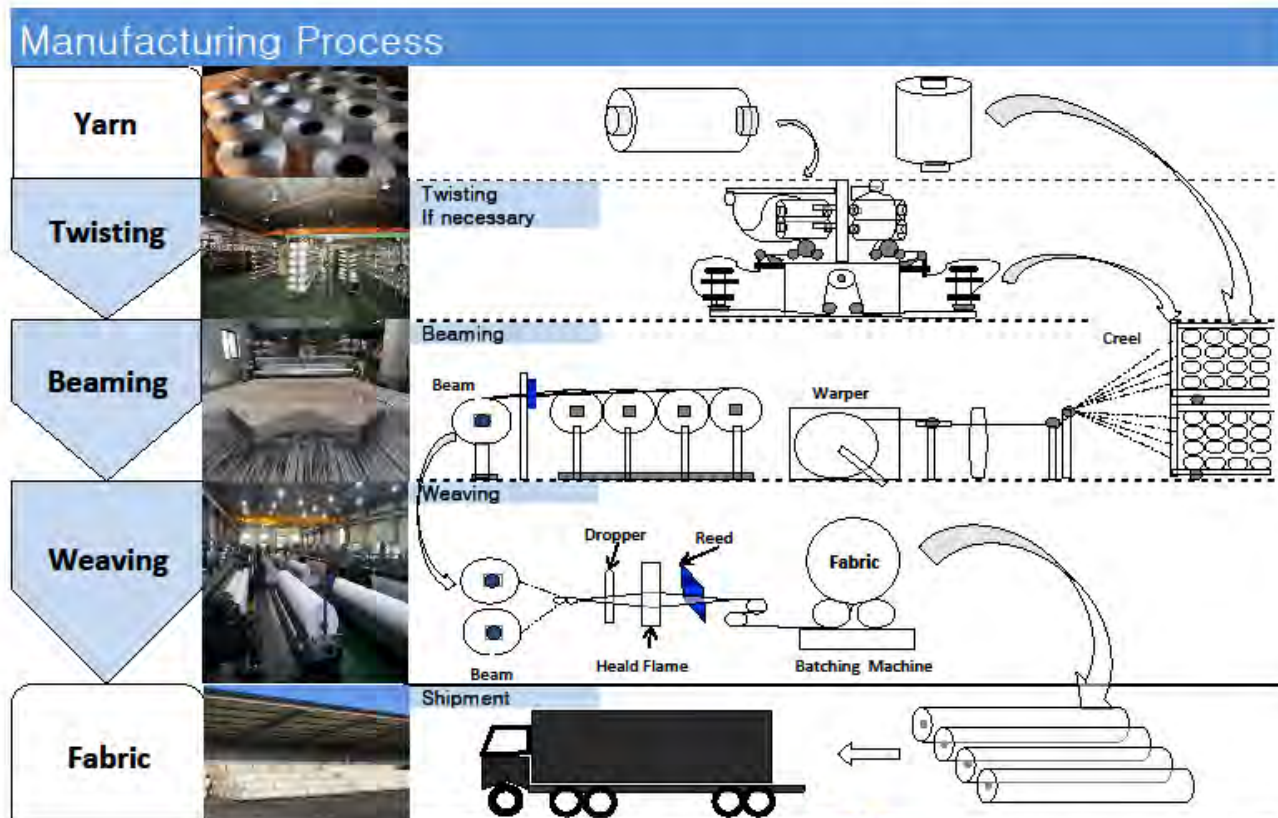
Office 12 Weaving Machines

New Plant – 13 Weaving Machines till 2015 year
and Build another new warehouse system.

New Warehouse

No. 1, Woven Geotextiles Manufacturer in Asia Market !!

MANUFACTURING PROCESS



 Daeyoun Geotech Kimcheon plant

PARTNERSHIP with Construction Company

ORDER



Performance Experience in Vietnam

ORDER

- 2012 : The Sothern Coastal Corridor-Minh Luong Project
Hanoi~Haiphong Express Way.
The Sothern Coastal Corridor-Kenh 14 Bridge
Rach Gia Giang Bypass Project
- 2011 : Hanoi~Haiphong Express Way.
Hochiminh TBO Project.
Caimep Industrial Park.
- 2010 : Hanoi~Haiphong Express Way.
Posco port for steel process factory in Phu My
Industrial Park 2nd area.
Caimep Industrial park.
National way No. 61B project.
National way Hochiminh ~Trung Luong project.
- 2009 : Hanoi~Hochiminh Express Way Cau gie-.Ninh binh project.
National way No. 51 project.
- 2008 : Hanoi~Hochiminh Express Way Cau gie-.Ninh binh project.
Hanoi Than Tri Bridge.

Market Share No. 1
in Vietnam Market
In 2012 & 2013

Performance Experience in Overseas

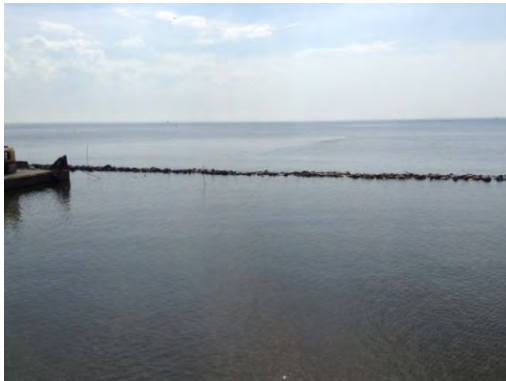
ORDER



Manila, Philippines



Manila, Philippines



Bangkok, Thailand



Korea

- Vietnam
- Philippines
- Thailand
- Malaysia
- Indonesia
- Singapore
- Colombia
- Middle East
- North Africa
- EU
- Russia

**No.1 Manufacturer for
Woven Geotextiles
in Asia**

CERTIFICATION



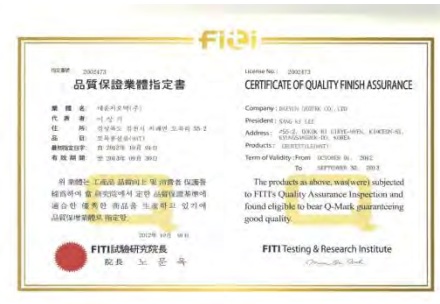
CE Mark by SKZ



ISO 9001 Certification



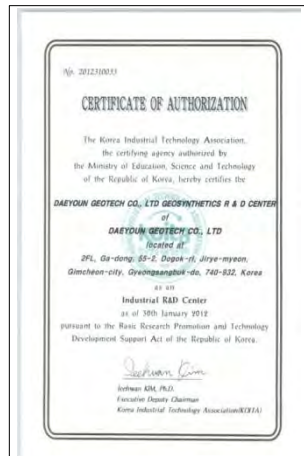
ISO 14001 Certification



Q Mark by FITI



Certificate of Patent DAEYOUN R&D CENTER



DAEYOUN R&D CENTER



Certificate of Reliability



IGS membership (International Geosynthetics Society)

THANK YOU





**Daeyoun Geotech
GEONIA Silt Protector**

Product Catalogue of Daeyoun Geotech GEONIA
Silt Protector

Geonia® is a registered trademark of DAEYOUN GEOTECH.

www.DYGEOTECH.com



GEONIA®

Silt Protector

We develop geosynthetics, under the mission of protecting environment as well as human, and supplying highly efficient and cost-effective solutions to global clients.



HEAD OFFICE (SEOUL) W 1707 Dangsang SKV1 Center, 11, Dangsang-ro 41-gil, Yeongdeungpo-gu, Seoul, 150-806, Rep. of KOREA

Tel: +82-2-539-9700 Fax: +82-2-539-9710 E-mail: overseas@egeonia.com

R&D CENTER (GIMCHEON) 55-2, Dogok-ri, Jirye-myoen, Gimcheon-si, Gyeongsangbuk-do, 740-932, Rep. of KOREA

Tel: +82-2-539-9700 Fax: +82-2-539-9710

FACTORY 1 (GIMCHEON) 55-2, Dogok-ri, Jirye-myoen, Gimcheon-si, Gyeongsangbuk-do, 740-932, Rep. of KOREA

Tel: +82-54-436-0800 Fax: +82-54-436-0550

FACTORY 2 (GIMCHEON) 123, Apogongdan-gil, Apo-eup, Gimcheon-si, Gyeongsangbuk-do, 740-862, Rep. of KOREA

Tel: +82-54-436-0800 Fax: +82-54-436-0550

VIETNAM SALES OFFICE (HOCHIMINH) 41 le trung Nghia P12 Tan Binh district Hochiminh Vietnam

Tel: +84-8-3811-2772 Fax: +84-8-3948-1920 E-mail: day0323@naver.com

JAPAN SALES OFFICE (TOKYO) Nakagawa BLDG, 4FL, 1-14-8, Nishishinbashi, Minato-ku, Tokyo, JAPAN 105-0003

Tel: +81-3-3507-9595 Fax: +81-3-5532-8624



Printed in Jun. 2015

**DAEYOUN
GEOTECH**



SILT PROTECTOR

PRODUCT

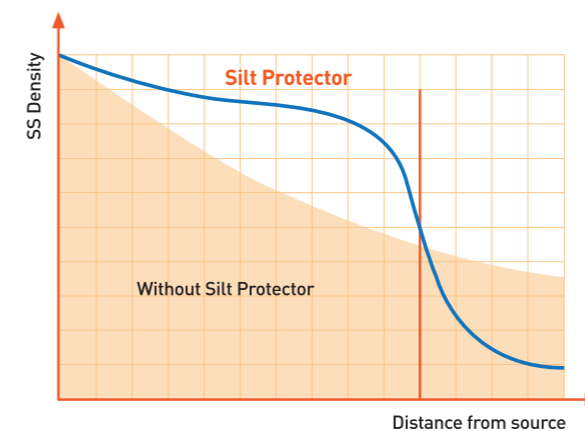
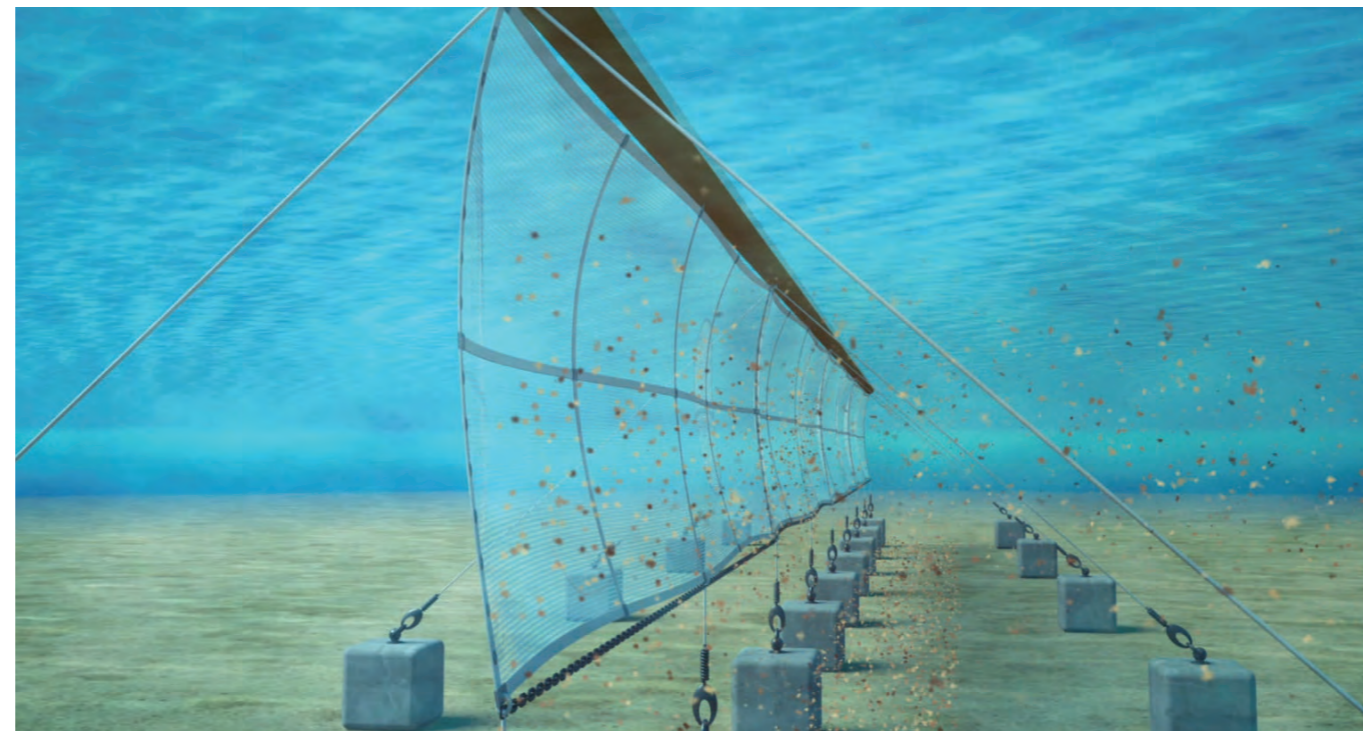
GEONIA® Silt Protector

GEONIA® Silt Protector is a silt fence installed in water for preventing spread of environmental contaminants induced by coastal and riverside construction. Leakage of silt from marine and sewage constructions has a serious influence on marine resources and natural environment of surrounding regions.

GEONIA® Silt Protector is used to preserve the natural environment and protect marine resources. By blocking a specific water zone with a special membrane composed of high strength synthetic fiber, soil particles that occur in the area are filtered and precipitated to prevent leakage and spread of silt water.

Application

- Protection of sea farming and swimming beach from nearby coastal construction
- Reclamation Protection
- Protection of revetment contamination
- Revetment of contaminant

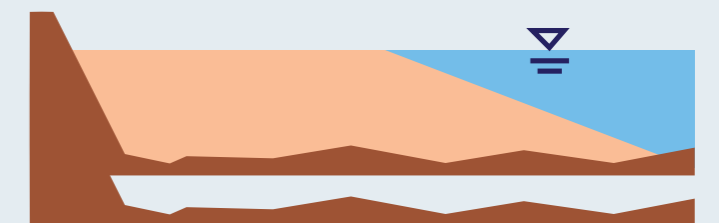


Function

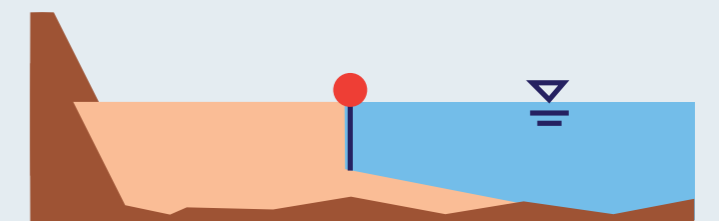
The main function of the GEONIA® Silt Protector is to enclose turbidity and to minimize the influences on outside sensitive areas. Enclosed by Silt Protector, current velocity inside is much lower than outside velocity. This means the GEONIA® Silt Protector is accelerating sedimentation of silt by reducing the flow of velocity.

- The acceleration of the settlement of silt by interference of particles – The installation of GEONIA® Silt Protector suppresses the diffusion of the pollution and make the soil particles interfere with each other to accelerate their settlement.
- The reduction of distance required to settle the silt – As shown, the installation of GEONIA® Silt Protectors narrows the settlement range, resulting in minimizing the diffusion of pollution after the unit.

Without GEONIA® Silt Protector



With GEONIA® Silt Protector

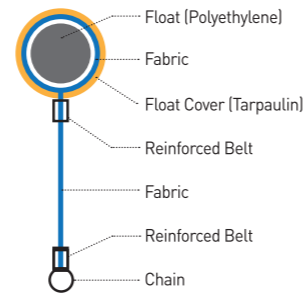
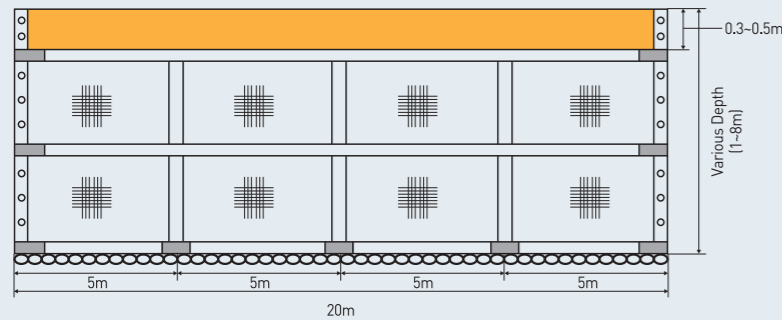


GEONIA® SILT PROTECTOR

TYPES

Tube Type

High external force of tide, wave and wind.

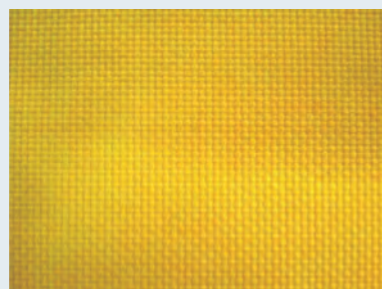


Durable Tube Type

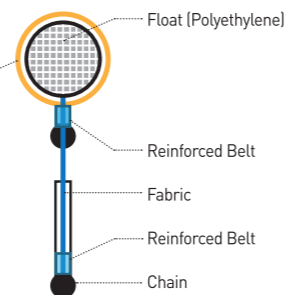
High external force of tide, wave and wind + long resistance from the sunlight



A broken PVC coated fabric in a part of the float



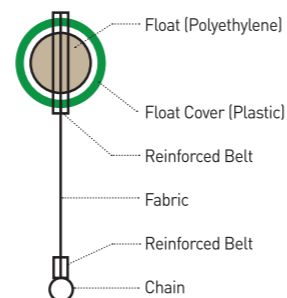
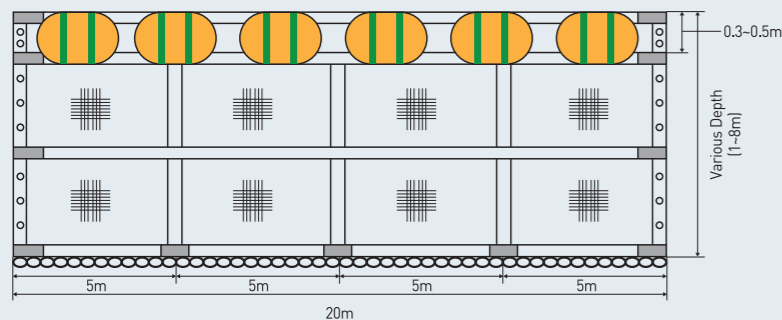
A durable fabric for the float using high tenacity colored yarn



Durable Tube Type GEONIA® Silt Protector applies a durable fabric for the float device by using high tenacity colored yarn, which was improved to solve the problem of fault construction, poor visibility caused by a damaged PVC coated fabric, and marine pollution of a broken PVC coated fabric.

Covering Head Type

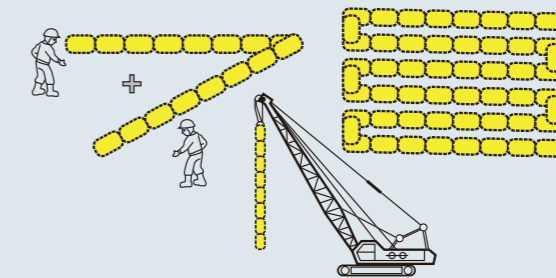
Less external force than tube type / easy to install



INSTALLATION

Installation of Tube Type GEONIA® Silt Protector

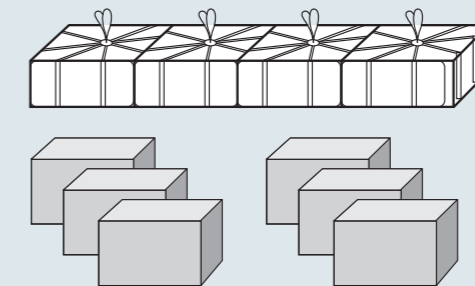
Assembly



Connect each unit of Silt Protectors (Assemble on land)



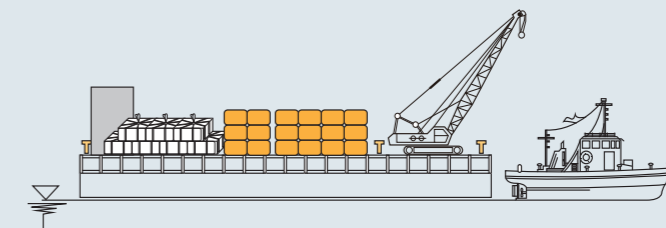
Production of Anchors



Make Ton Bag Anchors or Concrete Blocks



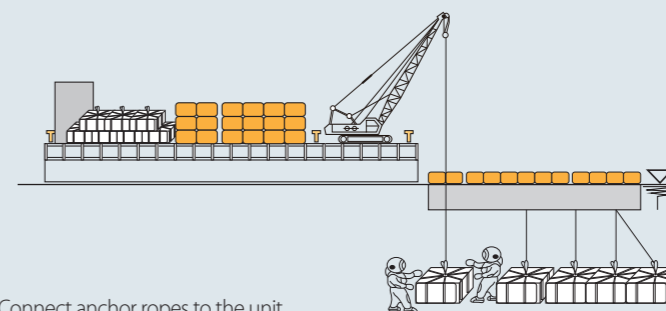
Transportation



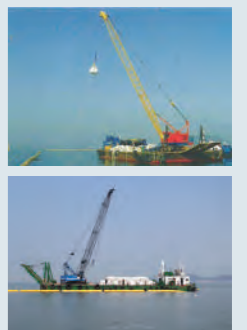
Load on to barge and move to where you want to install



Installation



Connect anchor ropes to the unit





Daeyoun Geotech
GEONIA Silt Protector

Product Specification of GEONIA Silt Protector

GEONIA® Silt Protector DSP Technical Data Sheet
 High Performance Silt Protector (Floating Curtain)

www.egeonia.com
DSP15 (150/150)

Mechanical Properties	Test Method		Unit		Value
Physical Properties					
Tensile Strength	MD	ASTM D4595	kN/m	≥	150
Tensile Strength	CD	ASTM D4595	kN/m	≥	150
Elongation	MD	ASTM D4595	%	≤	15
Elongation	CD	ASTM D4595	%	≤	15
Rate of Contraction		ISO 7771	%	±	0.2
Hydraulic Properties					
Water flow rate (h:50mm)		ASTM D4491	l/m ² /sec (mm/sec)	≥	1.0
Water Permittivity (h:50mm)		ASTM D4491	sec ⁻¹	≥	0.02
Apparent Opening Size(O ₉₅)		ASTM D4751	mm	≤	0.075

Above data sheet is our standard properties for the reference usage. DAEYOUN GEOTECH will not be responsible caused by any discrepancy with above data sheet. Please contact us if you need specified data sheet.

GEONIA® is a registered trademark of DAEYOUN GEOTECH.
MADE IN KOREA



DSP METALIC PARTS METARIAL AND COATING

2014-12-24

ITEM	METARIAL	COATING
EYELET	STEEL (S20C)	PAINTING (oil based paint)
STEEL PLATE	STEEL (S20C)	GALVANIZED (50~80μm)
REINFORCED STEEL PLATE	STEEL (S20C)	HOT DIP GALVANIZE (over 80μm)
BOLT&NUT	STEEL (S20C)	GALVANIZED (50~80μm)
CHAIN	STEEL (S20C)	COAL TAR PAINTING

* Above materials and coating methods can be changed according to manufacturer's decision.

* Any kind of change will be noticed to buyer in advance when it occurred.



Daeyoun Geotech
GEONIA Silt Protector

Certificate



Certification of Registration

DAEYOUN GEOTECH CO., LTD.

Head Office : 11, Dangsang-ro 41-gil, Yeongdeungpo-gu, Seoul, Korea
Factory : 123, Apogongdan-gil, Apo-eup, Gimcheon-si, Gyeongsangbuk-do, Korea

STANDARDS

ISO 9001 : 2008 / KS Q ISO 9001:2009

SCOPE OF SUPPLY

**Manufacture and Servicing of Industrial Fabrics
(PET Woven Geotextile, PP Woven Geotextile, Geocomposite, Base Cloth,
Geotextiles & Geosynthetics) , Twisted Yarns, Silt Protector & Sewing**

ITS Certification Body certifies that Quality Management System of this organization is conforming to the standard and certificate scope.

Certificate Valid Date : 19-Apr-2016 ~ 30-Aug-2019

Certificate No. : ITS-KQ-00426

Date of Initial Approval : 11-Oct-2010

Initial Certificate Expiry Date : 30-Aug-2016

Recertificate Issued Date : 13-Jul-2016

13-Jul-2016

by Joon Young Park

President



INTELLIGENCE TECHNOLOGY STANDARD ASSURANCE

서울시 영등포구 63로 32 (여의도동 라이프콤비 B/D) 1302 Website: www.itscert.or.kr webmaster@itscert.or.kr



- * KAB 마크는 한국인정원으로부터 품질/환경 인증기관으로 지정 (지정번호 : KAB-QC-46/KAB-EC-41) 되었음을 나타내는 인정마크입니다.
- * IAF MLA 마크는 QMS/EMS에 대한 국제인증기관협력기구의 국제다자간 상호 인정협정가입인증기관에 의한 인정마크입니다.



This certificate is the property of ITS Inc. and must be returned on request by ITS Inc.
*This certificate is available by September 14 2018 in accordance with the revised 2015 version of ISO standard.

Recertification Audit Date : 2016 07.11~12

Version 1.0



Certification of Registration

DAEYOUN GEOTECH CO., LTD.

Head Office : 11, Dangsang-ro 41-gil, Yeongdeungpo-gu, Seoul, Korea
Factory : 123, Apogongdan-gil, Apo-eup, Gimcheon-si, Gyeongsangbuk-do, Korea

STANDARDS

ISO 14001 : 2004 / KS I ISO 14001:2009

SCOPE OF SUPPLY

**Manufacture and Servicing of Industrial Fabrics
(PET Woven Geotextile, PP Woven Geotextile, Geocomposite, Base Cloth,
Geotextiles & Geosynthetics) , Twisted Yarns, Silt Protector & Sewing**

ITS Certification Body certifies that Environment Management System of this organization is conforming to the standard and certificate scope.

Certificate Valid Date : 31-Aug-2016 ~ 30-Aug-2019

Certificate No. : ITS-KE-00231

Date of Initial Approval : 11-Oct-2010

Initial Certificate Expiry Date : 30-Aug-2016

Recertificate Issued Date : 13-Jul-2016

13-Jul-2016

by Joon Young Park

President



INTELLIGENCE TECHNOLOGY STANDARD ASSURANCE

서울시 영등포구 63로 32 (여의도동 라이프콤비 B/D) 1302 Website: www.itscert.or.kr webmaster@itscert.or.kr



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* IAF MLA 마크는 QMS/EMS에 대한 국제인정기관협력기구의 국제다자간상호 인정협정가입인정기관에 의한 인정마크입니다.



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*This certificate is available by September 14 2018 in accordance with the revised 2015 version of ISO standard.

Recertification Audit Date : 2016 07.11~12

Version 1.0



Daeyoun Geotech
GEONIA Silt Protector

Installation, Caution & Maintenance Guideline



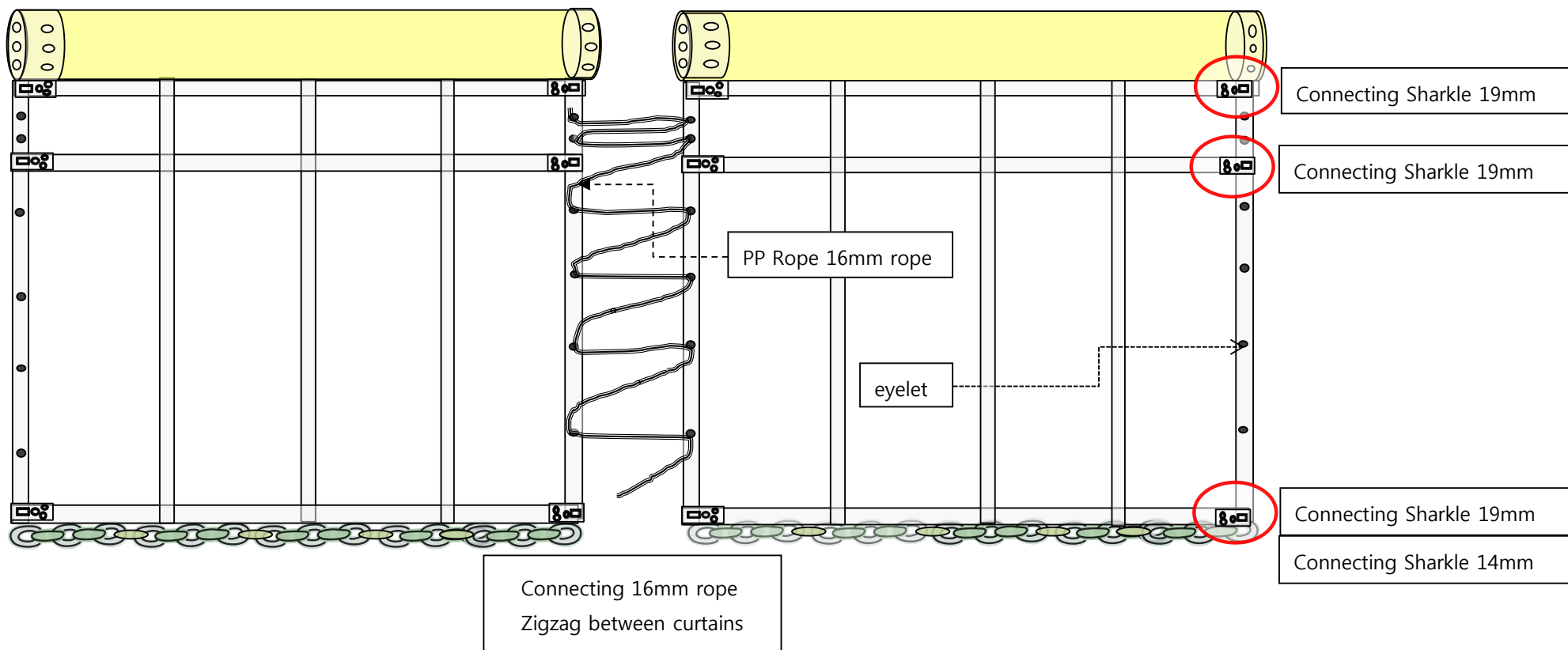
Silt Protector

Installation

Caution

Maintenance

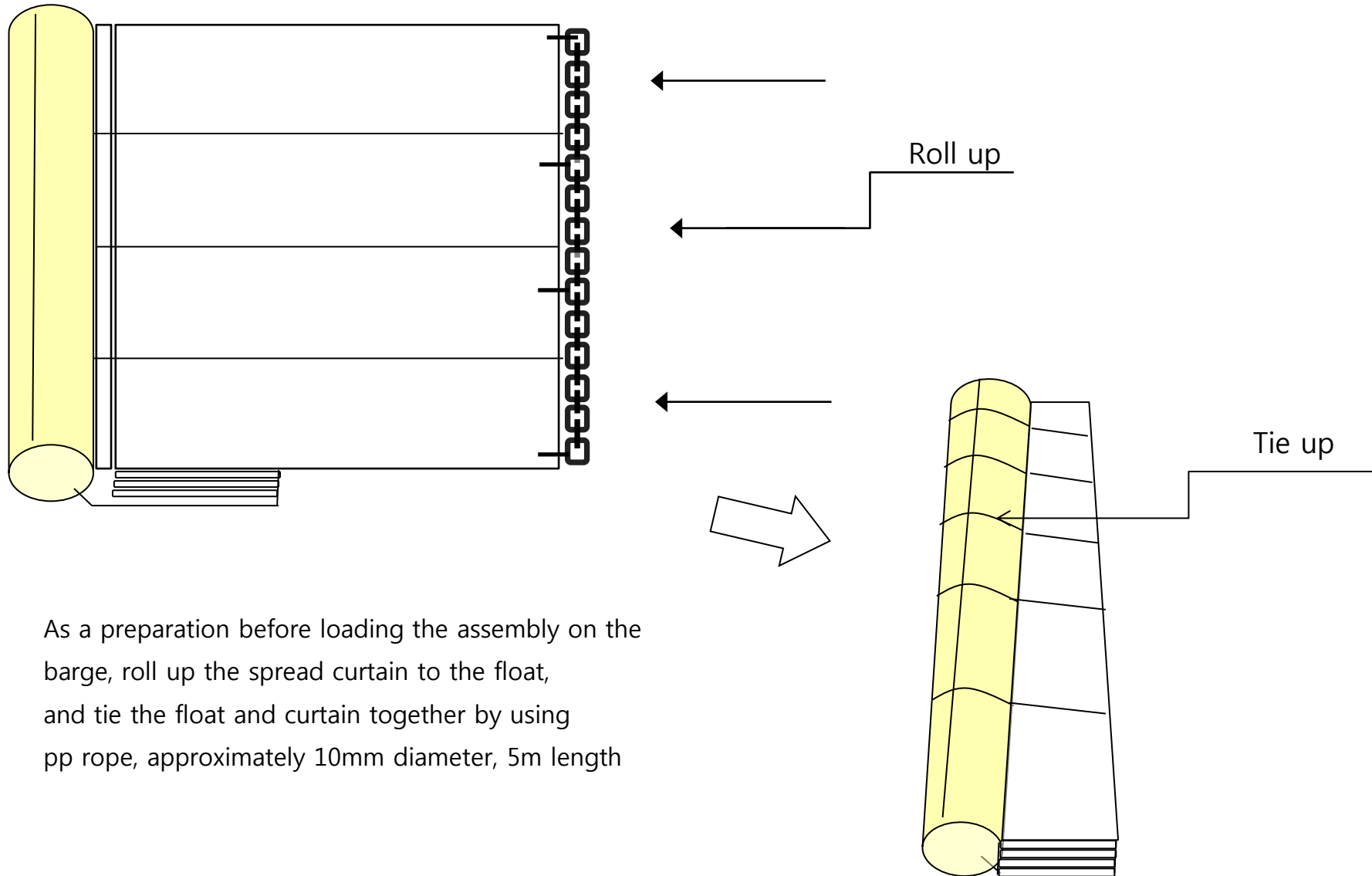
Installation Guide (Connecting curtain and curtain)



* Number of connections(between curtain and curtain)

	19mm sharkle	No. of eyelet
2m height of curtain	3	6
3m height of curtain	4	9
4m height of curtain	4	12
5m height of curtain	5	15
6m height of curtain	5	18

Installation Guide (Temporary tying curtains)



As a preparation before loading the assembly on the barge, roll up the spread curtain to the float, and tie the float and curtain together by using pp rope, approximately 10mm diameter, 5m length

Caution

Caution

Designate a person who is in charge of management of the Silt Protector.

If an environment that exceeds the design conditions is estimated, remove the Silt Protector immediately, or the unit may be damaged. If the Silt Protector requires a repair, take necessary actions soon. If it is left without being repaired, the function of the unit may be affected adversely or the damage may expand so that it cannot be repaired.

If the Silt Protector has been dislocated from the proper position or the layout has been deformed, restore it to original position or formation immediately. Otherwise, serious accident may be caused.

Be careful not to damage the float and curtain when removing sea shells and plants from these components. The float is made of Styrofoam which is inflammable. Keep fire away from this component.

Preconditions for maintenance

Check the Silt Protector periodically, and any component that have been deteriorated due to aging must be repaired or replaced with new component.

Maintenance 1

Maintenance

Daily inspection

The Silt Protector should be visually monitored by patrol during the period it is placed in the water. The patrol is performed on the boat for the purpose of preventing ships from running against the unit and of finding abnormality in earlier phase. (once per day)

Caution: In case the Silt Protector has a serious trouble, Failure to do the daily check may cause serious trouble in addition to the loss of its normal pollution protection performance.

Periodic inspection

In addition to visual inspection on the boat, periodically dive to check the unit thoroughly. (Once per every three months)

Caution: In case the Silt Protector has been damaged, failure to do the periodical check may cause the loss of its normal pollution protection performance and a damage that cannot be repaired to occur.

Extra inspection

After typhoon or other abnormal weather, check the unit for the purpose of finding possible damages or troubles earlier. This check is performed basically on the boat, but dive to check the unit if necessary.

Caution: In case the Silt Protector has been seriously damaged, failure to do the extra check may cause the loss of its normal pollution protection performance and a damage that cannot be repaired to occur.

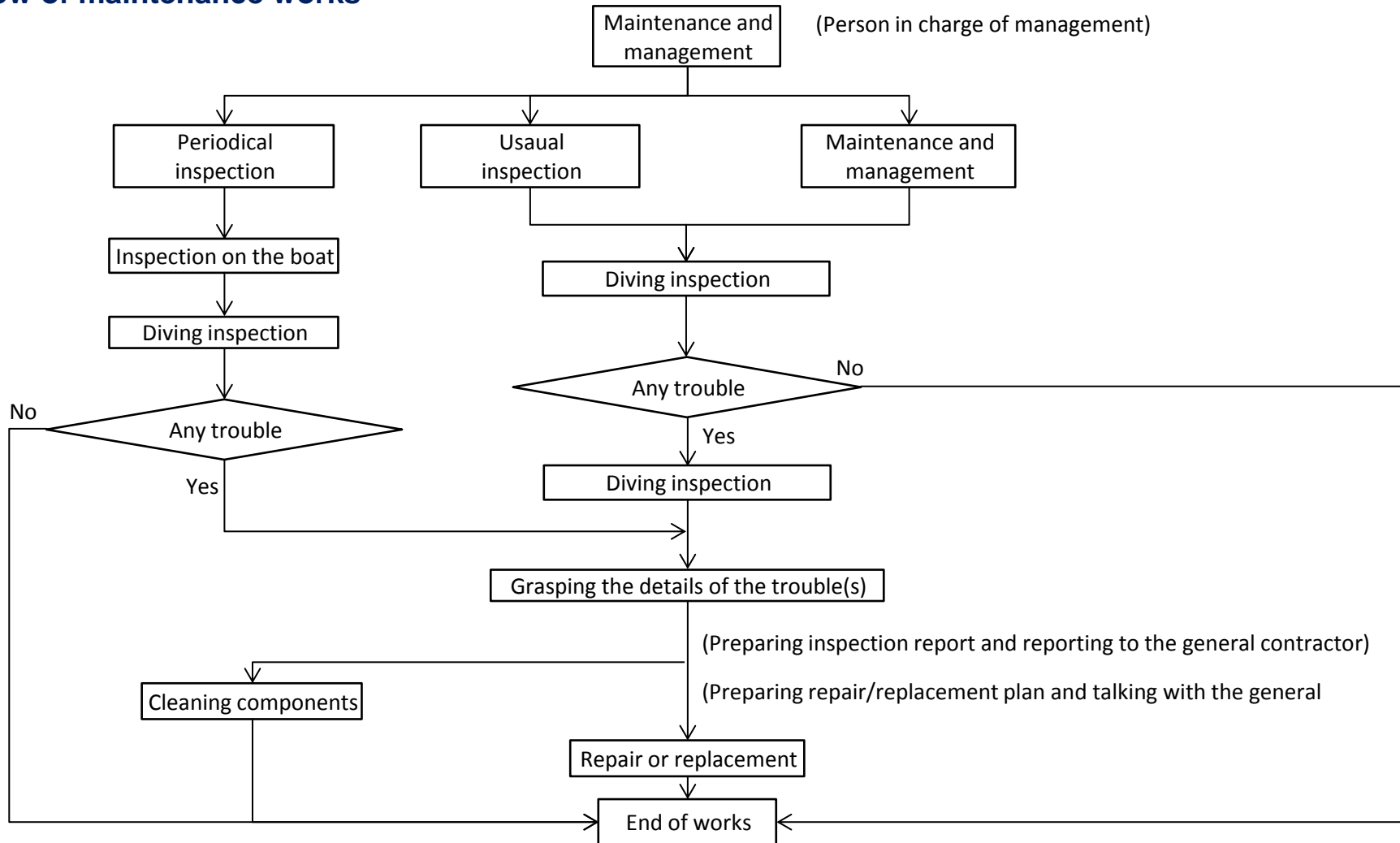
Sea shell removal

If it is found that the freeboard of the float is less than 1/2 of its diameter due to increase of the total weight with the growth of sea shells and plants on the float and curtain, dive to clean these components. It is recommended to monitor the change of the freeboard of the float. Check it at the periodical inspection, and record the growth of the sea organisms. (perform these works as necessary.)

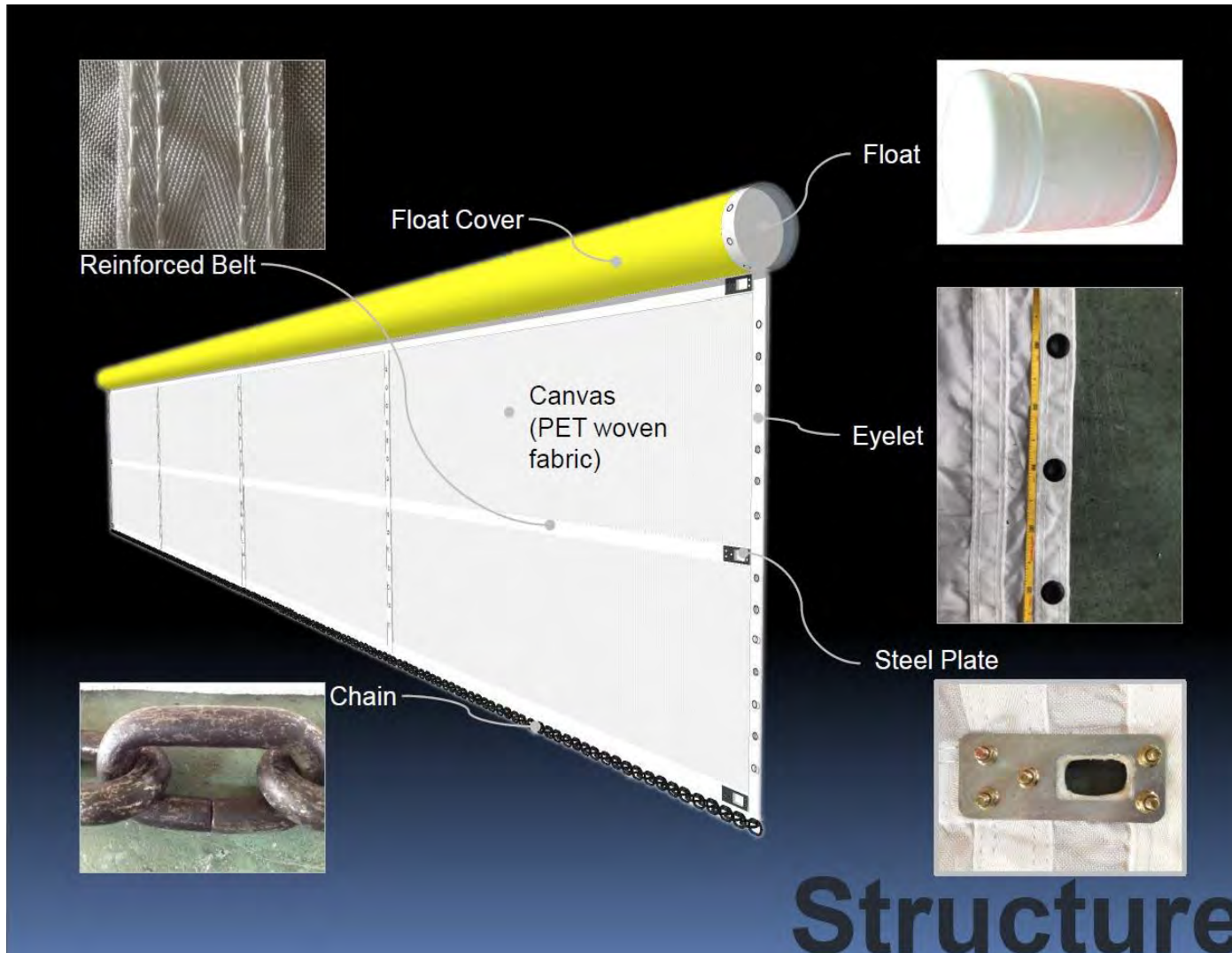
Caution: Failure to do the cleaning may increase the weight of the Silt Protector resulting in sinking it to cause loss of the function. Be careful not to damage the Silt Protector when cleaning the unit.

Maintenance 2

Flow of maintenance works



Parts



Project list of Silt Protector

We, Daeyoun Geotech, hereby certify that the following are our main project list in **Vietnam**.

Name of Project	Contract Amount (USD)	Month/Year	Span
NSRP Project	300,000	Sep. 2013	150 spans
Lach Huyen Project	100,000	Sep. 2013	100 spans
Total	400,000	-	250 spans

We, Daeyoun Geotech, hereby certify that the following are our main project list in **Korea**.

Name of Project	Contract Amount (USD)	Month/Year	Span
Gamcheon Port (International Fish Market) Construction	160,000	Nov. 2013	267 spans
Boryeong-Taeon 2 Sector	210,000	Oct. 2013	350 spans
Heaundae Beach	432,000	May. 2013	720 spans
Dangjin Thermal Power Plant Construction	450,000	Aug. 2013	750 spans
Incheon Port International Passenger Wharf Construction	10,000	Sep. 2012	17 spans
Pusan New Port Second (2-5 Step)	10,000	Sep. 2012	17 spans
Galsa Bay Shipbuilding Industry Construction	100,000	Aug. 2012	167 spans
Mokpo South-Port Government Ships Pier Construction	50,000	Aug. 2012	83 spans
Aewol Port Step 2	10,000	Jul. 2012	17 spans
Port Mooring Facilities Construction	15,000	Mar. 2012	25 spans
Gogyunsan 3 Sector	10,000	Jan. 2012	17 spans
Gwangyang Drainage Construction	15,000	Jan. 2012	25 spans
Sinma Port Construction	25,000	Jul. 2011	42 spans
Ulsan New Port Construction	12,000	Jul. 2011	20 spans
Gwangyang Plant Expansion Construction	20,000	May. 2011	33 spans
Yeosu Oil Tank Construction	10,000	Apr. 2011	17 spans
Samcheong Green Power Construction	13,000	Feb. 2011	22 spans
Pusan Port Coast Guard Pier Construction	10,000	Feb. 2011	17 spans
Jeongoghang Aquarium Relocation	10,000	Feb. 2011	17 spans
Dangjin Thermal Power Plant Construction	15,000	Feb. 2011	25 spans
Kyungin-Ara Waterway Construction	12,000	Feb. 2011	20 spans
Seogmun 5 Sector	10,000	Jan. 2010	17 spans
Daewoo Tongyeong LNG Construction	20,000	Sep. 2009	33 spans
Total	1,629,000	-	2715 spans

SILT PROTECTOR PROJECT LIST (OVERSEAS)

We, Daeyoun Geotech, hereby certify that the following are our main overseas project list in overseas

Name of Project	Nation	Contract (USD)	Month/Year
Pinang Island Reclamation Project	Malaysia	11,585	MAR. 2016
Tsuen Wan West Station, TW-6 Property Development	HongKong	898	AUG. 2015
Replacement and rehaulitaion of water mains at Peng Chau	HongKong	3,016	MAR. 2015
Deep vetem Mixing Trial Works	HongKong	10,186	MAR. 2015
Dual 2-lane carriageway between HZMB BCF and North Lantsu Highway	HongKong	20,306	APR. 2014
Catbi airport	VIETNAM	300,000	DEC. 2013
Congio Island development	VIETNAM	100,000	DEC. 2013
Congio Island development	VIETNAM	100,000	DEC. 2013
Pomosa Posco	VIETNAM	300,000	DEC. 2013
Hanoi-Haiphong pkg7 GS	VIETNAM	500,000	DEC. 2013
Pomosa Hathin Steel	VIETNAM	200,000	DEC. 2013
Camau Road & etc	VIETNAM	1,500,000	DEC. 2013
The Sothern Coastal Corridor-Minh Luong project	VIETNAM	730,000	DEC. 2012
Siltprotect(NSRP Project)	VIETNAM	300,000	SEP. 2013
Siltprotect(Lach Huyen Project)	VIETNAM	100,000	SEP. 2013
The Sothern Coastal Corridor-Kenh 14 Bridge	VIETNAM	100,000	NOV. 2012
Rach Gia Giang Bypass Project	VIETNAM	250,000	NOV. 2012
Hanoi-Haiphong Express Way 5 Sector	VIETNAM	500,000	AUG. 2012
Hanoi-Haiphong Express Way 4 Sector	VIETNAM	1,000,000	MAR. 2012
Hanoi-Haiphong Express Way 6 Sector	VIETNAM	520,000	MAR. 2012
Hanoi-Haiphong Express Way 2 Sector	VIETNAM	520,000	OCT. 2011
Hanoi-Haiphong Express Way 10 Sector	VIETNAM	520,000	SEP. 2011
Hanoi-Haiphong Express Way 3 Sector	VIETNAM	600,000	SEP. 2011
Hanoi-Haiphong Express Way 8 Sector	VIETNAM	600,000	SEP. 2011
Hanoi-Haiphong Express Way 7 Sector	VIETNAM	615,000	APR. 2011
Hochiminh TBO Project	VIETNAM	50,000	APR. 2011
Posco port for steel process factory in Phu My	VIETNAM	150,000	APR. 2010
National way Hochiminh~Trung Luong project	VIETNAM	200,000	FEB. 2010
Caimep Industrial Park	VIETNAM	200,000	JUN. 2010
National way No. 61B project	VIETNAM	200,000	JUN. 2010
National way No.51 project	VIETNAM	300,000	JUN. 2009
Hanoi-Hochiminh Express Way Caugie-Ninh binh project	VIETNAM	400,000	JAN. 2008
Hanoi Than Tri Bridge	VIETNAM	300,000	JAN. 2008



**Daeyoun Geotech
GEONIA Silt Protector**

Project Reference



Daeyoun Geotextile Silt Protector

Date	Project	Client	Consultant	Model	Size (W x Lm)	No. of Span
Jul-03	CV/2002/04 Penny's Bay Reclamation Stage 2	Gammon Construction Ltd	Scott Wilson Ltd		5 x 20m 5 x 10m	86 256
May-13	DC/2011/01 Drainage Maintenance and Construction in Mainland South Districts (2011-2015)	World Diamond Engineering Ltd	Drainage Services Department	GSP 15	5x20m 3x5m 3x2m 3x13m	1 10 1 4
Apr-14	HY/2012/07 Dual 2-lane carriageway between HZMB BCF and North Lantau Highway	Gammon Construction Ltd	AECOM Asia Co Ltd	DSP15	6 x 20 7 x 20 9 x 20	24 10 10
Mar-15	16/WSD/11 Replacement and rehabilitation of water mains at Peng Chau, Sunshine Island and Hei Ling Chau	Pipe Tech Ltd MIRDTEC HK Ltd	AECOM Asia Co Ltd	DSP 15 DSP 15 DSP 15	0.6 x 20 1.2 x 20 1.5 x 20	1 22 6
Mar-15	P552 Deep Cement Mixing Trial Works	Penta Ocean Construction Co	Atkins	DSP30 DSP30	8 x 20 8 x 25	2 6
Aug-15	Tsuen Wan West Station, TW-6 Property Development	Hip Hing Construction Co Ltd	Mannars Chan & Associates	DSP15	4 x 20	1
Dec-15	HK/2012/08 Wan Chai Development Phase II - Central Wan Chai Bypass at Wan Chai West	China State - Leader JV	AECOM Asia Co. Ltd	DSP30 DSP30 DSP15 DSP15 DSP15	10 x 20 5 x 10 10 x 20 9 x 20 8 x 20	6 6 5 5 5
Mar-16	Asia Pacific Gateway (APG) - Tseung Kwan O (Cape Collinson)	Maritime Mechanic Ltd	Environmental Resources Management	DSP15	14 x 12	20
Nov-16	Dredging works at Marina Cove	Fung Kau Kee Contractors Ltd		DSP15	5 x 20	2
Nov-16	HY/2012/08 Tuen Mun - Chek Lap Kok Link Northern Connection Sub-sea Tunnel Section	Crown Asia Engineering Ltd Dragages - Bouygues JV	AECOM Asia Co. Ltd	DSP15	8 x 20 9 x 20 10 x 20 Marker Buoy Dia: 520mm	5 5 5 12 nos.
Dec-16	C3203 3rd Runway System Project DCM Ground Improvement Works (Package 3)	Sambo E & C Co Ltd	Airport Authority	DSP 30 Barge Type	4 x 10 2 x 10 4 x 9 1.6 x 9 2.8 x 9 1.8 x 9 2 x 9	46 2 246 4 2 2 2
Dec-16	C3204 3rd Runway System Project DCM Ground Improvement Works (Package 4)	CRBC-Sambo JV	Airport Authority	DSP30	6 x 5.3 6 x 11.3 6 x 12.3 6 x 12.8 6 x 13.8 6 x 6	2 2 20 4 4 30
Jan-17	C3201 3rd Runway System Project DCM Ground Improvement Works (Package 1)	Penta Ocean-China State- Dong Ah JV	Airport Authority	DSP 30	6 x 8	134
Feb-17	P560 Aviation Fuel Pipeline Diversion Works	Kat Yue Construction Engineering Ltd	Airport Authority	DSP15	1.5 x 20	8
Apr-17	HKHA20120023 Public rental housing, Shek Mun Estate	Hin Sum Engineering Co Ltd	Housing Authority	DSP / SG110	3 x 20	2
Jun-17	C3204 3rd Runway System Project DCM Ground Improvement Works (Package 4)	CRBC - Sambo JV	Airport Authority	DSP30	6 x 6	50
Jul-17	Refuse Boom at Tai O by World Wide Fund	G and E Co Ltd		DSP15	0.5 x 20	3
Aug-17	Lyric Theater Complex and Extended Basement Project for the WKCD Authority	Gammon Construction Ltd	AECOM Asia Co. Ltd / Mott Macdonald HK	DSP15	8 x 20	6



G AND E COMPANY LIMITED

14/F Kiu Yin Commercial Building
361 - 363 Lockhart Road,
Wanchai, Hong Kong
Tel: 852-2570 0103 Fax: 852-2570 0089
website: www.g-and-e.com



Date	March 2016
Project	Asia Pacific Gateway (APG) - Tseung Kwan O
Client	China Mobile International Limited
Consultant	Environmental Resources Management
Main Contractor	Maritime Mechanic Ltd
Works	Fiber Optic Laying Turbidity Control
Material	DSP15 Silt Curtain



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14/F Kiu Yin Commercial Building
361 - 363 Lockhart Road,
Wanchai, Hong Kong
Tel: 852-2570 0103 Fax: 852-2570 0089
website: www.g-and-e.com



Date	May 2014
Project	HY/2012/07 Tuen Mun - Chek Lap Kok Link- Sothern Connection Viaduct Section
Client	Highway Department
Consultant	AECOM Asia Co. Ltd
Main Contractor	Gammon Construction Ltd
Material	DSP 15 Silt Curtain
Quantity	6m x 20m 24 spans 7m x 20m 10 spans 9m x 20m 10 spans



G AND E COMPANY LIMITED

14/F Kiu Yin Commercial Building
361 - 363 Lockhart Road,
Wanchai, Hong Kong
Tel: 852-2570 0103 Fax: 852-2570 0089
website: www.g-and-e.com






Date	April 2015
Project	Contract No. 16/WSD/11 Replacement and rehabilitation of water mains, stage 4 phase 2
Client	Water Service Department
Consultant	AECOM Asia Company Limited
Main Contractor	Pipe Tech Ltd
Material	Daeyoun Geotech DSP 15 Silt Curtain
Quantity	1.2 x 20m 2 spans 1.5 x 20m 4 spans



**Daeyoun Geotech
GEONIA Silt Protector**

Approval Letter

		CONTRACTOR'S SUBMISSION	CR-CPJV 	CS No.	Rev
				CCOM No.	1503
NEC Option C					
CONTRACT:	Improvement of Fresh Water Supply to Cheung Chau	CONTRACT No.:	1/WSD/13		
LETTER REF.:	CR-CPJV/1WSD/13/S210(01)/574	ISSUE DATE:	26-Sep-2015		
CAPTION:	Submission of Alternative Design and Material for Silt Curtain	PREVIOUS SCOMM.:			
DISCIPLINE:	N/A	REVISION No.:			

Section A:

To: The Project Manager

Submission for Acceptance of:

Copies to: Mr. Stephen Cheung W/E

Period for reply:

- Drawings
- Programme
- Test Results
- Method Statement
- Others: _____



The following is submitted for your review and acceptance:-

Copies	Date	No.	Description
1	26-Sep-15		Submission of Alternative Design and Material for Silt Curtain

We submit herewith the alternative design and material for silt curtain. The material is supplied by "G AND E COMPANY LIMITED". Attached please find the quotation of materials, design drawings and materials catalogue for your information and approval. the proposed materials shall be "Covering Head Type" as shown in the

Signed for Contractor:

Title: Gordon Ng
(Site Agent)

Section B: Response **COMM No.:** **Letter Ref.:**

To: The Contractor

The Submission is returned as indicated:

Copy to:

- Accepted
- Accepted as Noted
- Revise and Re-submit as Noted
- Rejected as Noted

Notes:




Contractor reply needed: Yes / No

Signed by: _____

Period for reply:

Name / Title: _____

Date: _____

		CONTRACTOR'S SUBMISSION	CR-CPJV 	CS No.	Rev
				CCOM No.	1541
NEC Option C					
CONTRACT:	Improvement of Fresh Water Supply to Cheung Chau	CONTRACT No.:	1/WSD/13		
LETTER REF.:	CR-CPJV/1WSD/13/S210(01)/589	ISSUE DATE:	13-Oct-2015		
CAPTION:	RE: Submission of Alternative Design and Material for Silt Curtain	PREVIOUS SCOMM.:	SCOM/01448		
DISCIPLINE:	N/A	REVISION No.:			

Section A:

To: The Project Manager

Copies to: Mr. Stephen Cheung W/E

Period for reply:

Submission for Acceptance of:

- Drawings
- Programme
- Test Results
- Method Statement
- Others: _____

LETTER IN
No. 1897

The following is submitted for your review and acceptance:-

Copies	Date	No.	Description
1	13-Oct-15		RE: Submission of Alternative Design and Material for Silt Curtain

We refer to your letter SCOM/01448 dated 7 October 2015 regarding the captioned, we submit herewith the supplementary document in response to the comments given for your approval.

1. Confirmation letter from supplier.
2. As shown in the quotation, one span is 20m length.
3. Verification of material from ET.

RECEIVED

20 OCT 2015

BY: 

Signed for Contractor:

(Original Signed)

Title:

Gordon Ng
(Site Agent)

Section B:

Response

COMM No.: SCOM/01472

Letter Ref.:

1/WSD/13/M25/350/02655

To: The Contractor

Attn: Mr. Gordon Ng (Site Agent)

The Submission is returned as indicated:

Copy to:

- Accepted
- Revise and Re-submit as Noted
- Accepted as Noted
- Rejected as Noted

Caption: **RE: Submission of Alternative Design and Material for Silt Curtain**

Notes:

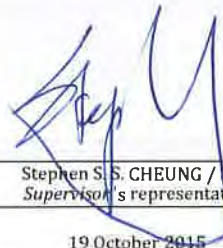
We have no adverse comment on the proposed silt curtain subject to the following:

1. Please ensure the depth of the silt curtain is longer than the water depth at the installation location as recommended by the ET in the submitted email;
2. The verification from the ET would be forwarded to the IEC accordingly and addition comments may be issued; and
3. Please detail the subcontracting arrangement for the installation, maintenance and repair as commented in our previous reply (SCOM/01503).

Signed by:

Name / Title:

Date:



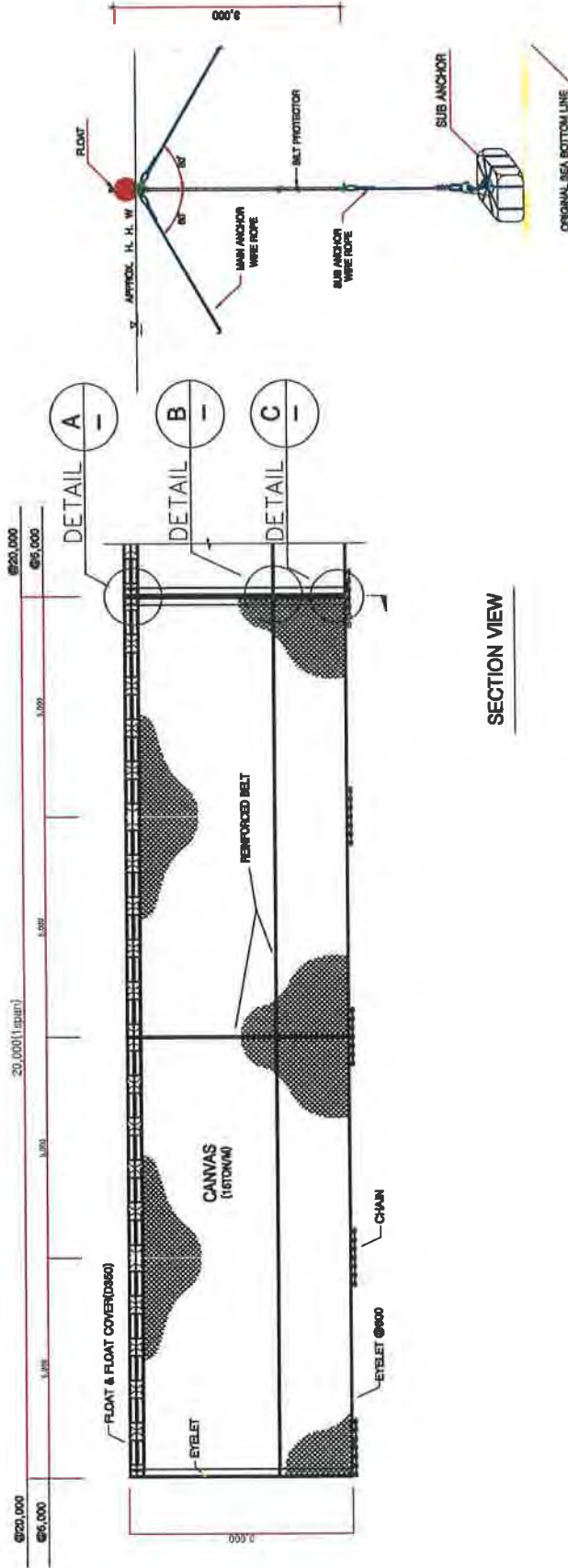
Stephen S. CHEUNG / SRE
Supervisor's representative

19 October 2015

Contractor reply needed: Yes / No (for comment no. 3)

Period for reply: 21 days

SILT PROTECTOR (Cover Type)



SECTION VIEW



DETAIL A

DETAIL B

DETAIL C

설계자	설계 일자	DESIGNED BY	DATE	CHECKED	SCALE	1:1	DESIGN CHECKER	DATE	APPROVED BY	DATE	DESIGN NO.	SHEET NO.	SERIES	PROJECT TITLE	DSP16/2020/0360
-----	-------	-------------	------	---------	-------	-----	----------------	------	-------------	------	------------	-----------	--------	---------------	-----------------



**Daeyoun Geotech
GEONIA Silt Protector**

Prototype Sample

Prototype Sample



Tube Type



Coverhead Type





Daeyoun Geonia DML80
Non Woven Geotextile

Introduction to G and E Co. Ltd



G AND E COMPANY LIMITED

14/F Kiu Yin Commercial Building
361 – 363 Lockhart Road,
Wanchai, Hong Kong
Tel: 2570 0103

Fax: 2570 0089

website: www.g-and-e.com

G and E – a Perspective

G and E, founded in 1984, is a geosynthetics specialist who distributes a wide variety of geosynthetics from a list of renowned global manufacturers. The Company also manages a competent installation contracting service. To better serve our clients, design and engineering service have also been established in our portfolio. We aspire to provide our client comprehensive engineering solutions, from technical application and design, the supply of materials and their installation, to the conformance testing and project commissioning.

G and E takes a strong vision on geosynthetics application and development by working closely with international consultants, academics, professional organizations, research institutions, testing laboratories and renowned manufacturers, a mission to broaden the versatility of geosynthetics and its innovation.



Our vast product range covers:

Geotextile, geomembrane, geodrain, geocomposite, geogrid, geocell, band drain, erosion control systems, geosynthetic clay liner, rockfall barrier, gabion, geofoam, silt curtain, concrete mattress and geotextile container, extending a very wide scope of application in most civil, geotechnical and marine engineering.

We offer our clients:

- Extensive product knowledge and installation method statement
- Comprehensive services, application, design, contracting and commissioning
- Highly attentive and superior professional work
- Superb quality products at competitive price



G and E is ISO9001:2008 quality management certified, and a VSRS registered subcontractor. G and E has a remarkably successful working relationship with a long list of clients, the Government, project owners, contractors, designers, consultant engineers, overseas distributors and trading partners. The clientele extends to Macau, Southeast Asia and Southern China.

Talk to us today and see how we can work together for cost-effective and time saving solutions. We are stepping into our 32nd year in the field and have valuable experience to share with you.

ISO9001:2008

International Geosynthetics
Society

Product Endorsement

A Registered Subcontractor



G and E is a distribution network and sourcing agent of geosynthetics, as well as a provider of professional design and installation services.



Central – Wan Chai Bypass - seawall separation using heavy non-woven geotextile Bontec SNW120

The company handles a comprehensive range of geosynthetic materials:

<u>GEOTEXTILE:</u>	PP, PET woven, non-woven, thermal bonded, needle punched, spun bond, special weave & composite
<u>GEOMEMBRANE:</u>	HDPE, LLDPE, PVC, keyed preformed, tunnel lining, concrete protection liner, gas barrier, basement waterproofing, leakage collection & effluent containment
<u>GEODRAIN:</u>	Geonet, geocomposite, band drain, sheet drain & roof drain
<u>GEOGRID:</u>	HDPE, PET, PP for reinforced slope and wall, MSEW, stabilization geogrid, special composite
<u>EROSION CONTROL:</u>	Erosion mat, concrete mat, coir mat, geocell, gabion, rockfall mesh, flexible rockfall fence
<u>MARINE ENGINEERING:</u>	Silt curtain, turbidity control, block mat, geotextile tube, trash boom, geotextile container
<u>GCL:</u>	Geosynthetic clay liner, bentonite liner and composite
<u>HDPE PIPE:</u>	Sewer pipe, dual wall pipe, submarine outfall
<u>TUNNELING:</u>	GFRP rebar for soft eye, tunnel support & invert drainage
<u>SPECIAL SERVICE:</u>	Geomembrane leak location survey, HDPE pipe welding, HDPE lining repair

Registration Certificate

This is to certify that the Management Systems of

G & E Company Limited

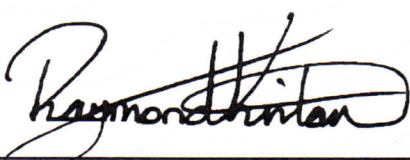
have been assessed by AJA Registrars and registered
against the requirements of

ISO 9001:2008

Certificate No. : **AJA14/17026** Date of Original Registration : **22nd January 2014**
Expiry Date : **15th September 2018** Date of Re-Registration : **16th February 2017**
Previous Expiry Date : **14th December 2016**



0059


Chief Executive - AJA Registrars Ltd



This certificate is issued in respect of the locations & scope of registration detailed in the Associated Registration Schedule.
This certificate is the property of AJA Registrars Ltd Unit 6 Gordano Court Gordano Gate Business Park Serbert Close Portishead Bristol UK BS20 7FS
and must be returned on request. A member of the AJA Group of Companies

NE/2017/01

Tseung Kwan O – Lam Tin Tunnel: Tseung Kwan O Interchange and Associated Works

Silt Curtain Deployment Plan

2. BONTEC SG110/110

Material Submission

BONTEC SG110/110 Woven Polypropylene Geotextile



G AND E COMPANY LIMITED

14/F., Kiu Yin Commercial Building,
361 - 363 Lockhart Road,
Wanchai, Hong Kong
Tel: 2570 0130 Fax: 2570 0089
website: www.g-and-e.com

January 2019



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- ISO 14001:2015 Certificate
- Certificate of Conformity of the Factory Production Control
- Typical Conformance Certificate

5) **Installation Guideline**

- Recommendation on Installation

6) **Project Reference**

- Name and details of Project
- Photo References

7) **Approval Letters**

- Product Recognition and Acceptance

8) **About the Supplier – G and E Company Limited**

- An Introduction to G and E Company Limited
- ISO 9001:2015 Certificate

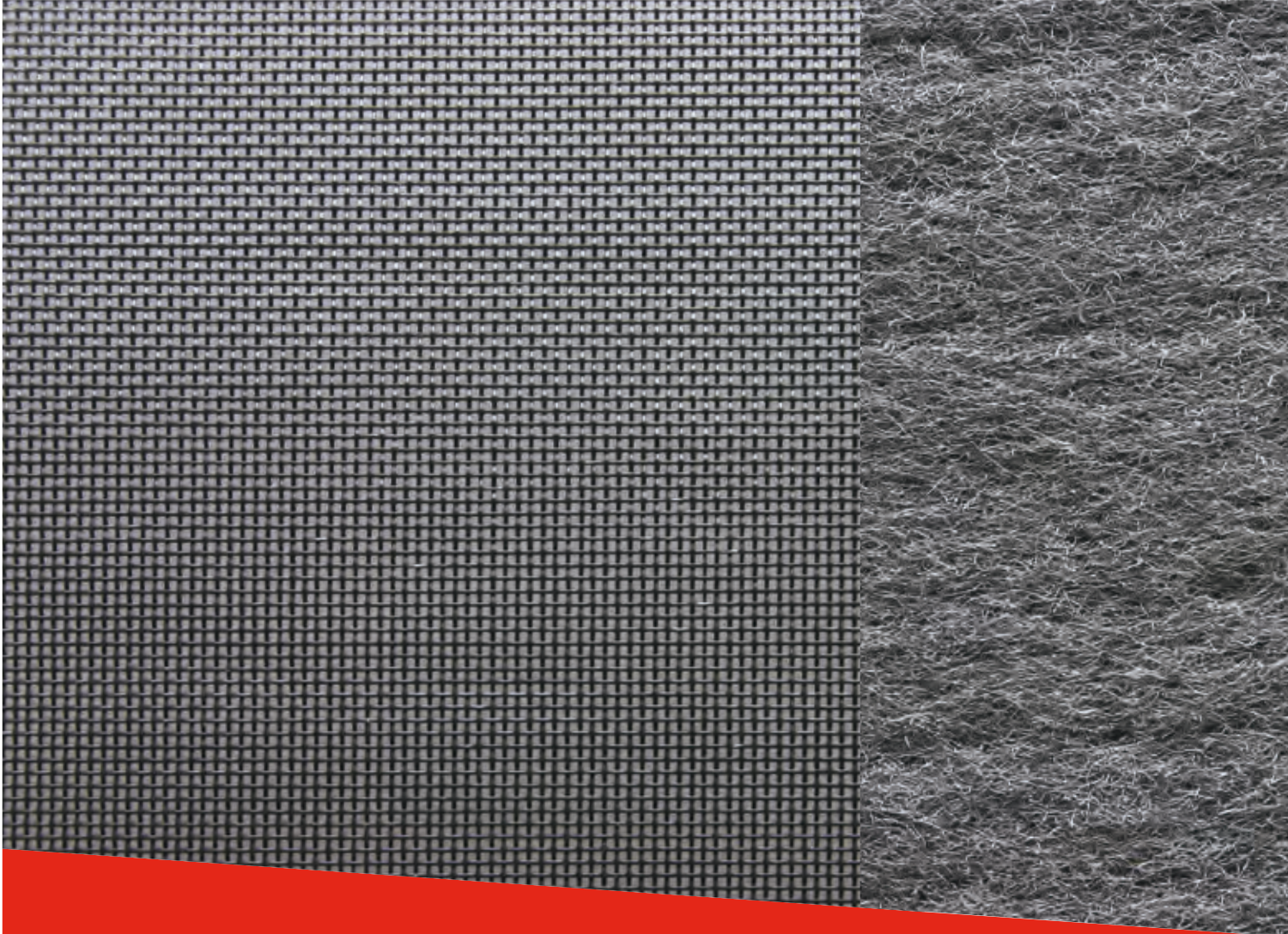


**Bontec SG110/110
Woven Geotextile**

Manufacturing Company Profile

bontec

woven and nonwoven geotextiles



GEOTEXTILE

WE UNDERCOVER
THE WORLD



Bonar
partners in performance

Bontec Geotextile

Bontec is an internationally renowned brand of geotextiles. We have earned this reputation over the past thirty years thanks to our quality, service and flexible production processes. This flexibility is a result of the vertical integration of our production. We control the entire process – from raw materials to finished product – for both our woven and nonwoven varieties.

We are therefore not dependent upon the quality or delivery time of others, and we can guarantee your success. Our Bontec brand offers state of the art woven and nonwoven geotextiles that provide answers to meet all of your challenges. Thanks to continuous research and investment in the latest technology, we provide the best solutions for all possible functions of geotextiles.

Nonwoven process Woven process

Starting with polypropylene granules,

we extrude endless synthetic filaments. After stretching and shrinking, these filaments are cut into fibres.

These fibres are then deposited in layers by a crosslapper.

By means of our own unique process we needle punch the layers into each other, after which they are thermo fixated. The result is an extremely high performance geotextile.

Starting with polypropylene granules,

we extrude an endless synthetic foil. This foil is then cut into fine tapes.

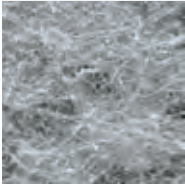
After stretching, the tapes are wound on spools that form the basis of a beam. That beam feeds the loom in the machine direction.

Subsequently the tapes are woven on a loom to a fabric with the desired specifications.



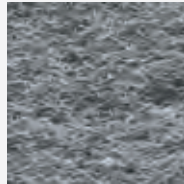
Nonwoven Geotextile

NW Thermally Bonded Nonwoven Geotextiles



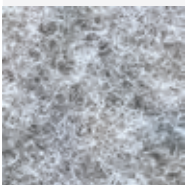
Produced by applying mechanical and thermal bonding processes. NW has the highest tensile strength of the range and is used primarily for lightweight separation and filtration. Its excellent hydraulic properties are ideal for use in filtration applications. Typical uses include the encapsulation of a trench drain.

VNW Nonwoven Needle Punched (Colored) Geotextile



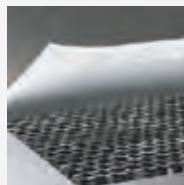
Produced by needle punching colored polypropylene fibres. The range varies from 200 to 2,000 g/m². VNW is used for protection of membranes, as a component for drainage composites, or as a component for erosion control composites.

SNW Superior Needle Punched Nonwoven Geotextiles



Produced in a manner similar to NW, SNW offers extraordinary properties for its very low weight. SNW is used primarily in circumstances that require both high tensile strength and elongation. Typical areas of application include membrane protection in reservoirs and landfills.

LG Geocomposites



For the production of LG, woven and nonwoven geotextile are needle punched together. This process combines the properties of the two types in a single layer. These products are used in situations that require a high tensile strength as well as extreme protection.

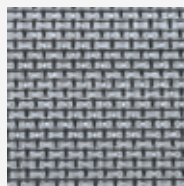
Woven Geotextile

SG Lightweight 'Standard Grade' Woven Geotextile



These lightweight, woven geotextiles from 65 to 250 g/m² are used primarily for separation. For example, SG prevents good quality sand or granules from mixing with underlying soil. It is used for the construction of roads, parking lots and airport runways.

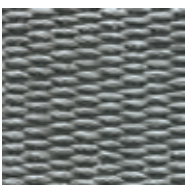
HF 'High Flow' Woven Geotextile



Thanks to their specific structure, HF geotextiles have high permeability. This quality is very important for erosion control and infiltration applications. Typical applications include:

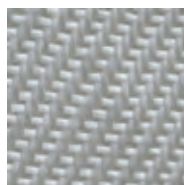
- As an under layer for concrete revetment blocks or between dissimilar layers of quick draining granular fill consisting of fine sand and rounded gravel.
- The envelopment of infiltration crates or tubes for rainwater management.

SG Heavyweight 'Standard Grade' Woven Geotextile



These heavyweight, woven geotextiles vary from 250 to 600g/m² and they possess tensile strengths up to 200 kN/m and above. Heavyweight SG is used in heavy load circumstances, such as temporary basal reinforcement, coastal reinforcement and soil stabilization.

HS 'High Strength' Woven Geotextile



The polyester wovens have a very high tensile strength of up to 600 kN /m. This strength and their very low stretch make them ideal for situations where:

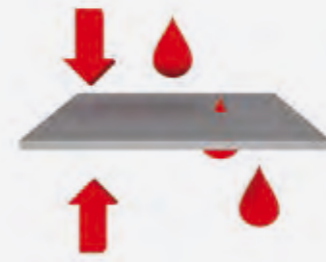
- Reinforcement of the ground is essential.
- The construction of very steep, or even vertical, slopes with different types of soil is required.

Use of Geotextiles



1 Erosion control

In erosion control, the geotextile protects soil surfaces from the tractive forces of moving water or wind and rainfall erosion.



2 Filtration

The use of geotextiles in filter applications is probably the oldest, most widely known, and most used function of geotextiles. The geotextile is used to prevent fine soil particles from moving with the water flow normal to the plane.



3 Protection

A geotextile can be used as a protective layer against mechanical damage during installation and after the completion of a particular construction project. It will help prevent the puncturing of geomembranes used in constructions such as tunnels, landfills or reservoirs.



4 Drainage

When functioning as a drain, a geotextile acts as a conduit for the movement of liquids or gasses in the plane of the geotextile. Relatively thick nonwoven geotextiles are the products most commonly used. Selection should be based on transmissivity, which is the capacity for in-plane flow.



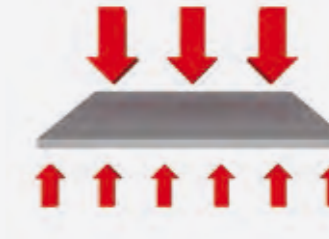
5 Stress relief

The geotextile provides a stress-relieving interlayer between the existing pavement and the overlay that reduces and retards reflective cracks under certain conditions. It also acts as a moisture barrier to prevent surface water from entering the pavement structure.



6 Reinforcement

The geotextile interacts with soil through friction or adhesion forces to resist tensile or shear forces. To provide reinforcement, a geotextile must have sufficient strength, low elongation and low creep to avoid movement of the structure.



7 Separation

Separation is the process of preventing two dissimilar materials from mixing. In this function, a geotextile is most often required to prevent the undesirable mixing of fill and natural soils or of two different types of fill.



Value chain

World player with local market presence

- Most complete product range
- Vertically integrated production - from raw material to finished stock
- Strong logistic service and stock supported key products to meet market needs
- Health and Safety from production right through delivery on site as an absolute priority
- Over 30 years of experience in a constantly evolving hi-tech market:
 - > Innovation driven
 - > Project specific engineered solutions

Advantages of Bontec Geotextiles

- Intelligent installation techniques
- Cost and energy saving
- Increased life-span of projects



PRODUCTION SITES

- Belgium - Zele & Lokeren
- China - Yizheng
- Germany - Groß Ippener & Obernburg
- Hungary - Tiszaújváros
- Saudi-Arabia - Yanbu
- The Netherlands - Arnhem & Emmen
- USA - Asheville, NC

Development Centers in the Netherlands, Belgium and USA
Sales offices in UK, France and China



PRODUCT PORTFOLIO

Geotextiles
Geocomposites
Geogrids
Geocells
Vertical Drains
Erosion Control Systems
Construction Fibres

Bonar N.V.

Industriestraat 39 / 9240 Zele
Belgium
T +32 52 45 74 11 / F +32 52 45 74 95
info@bonar.com / www.bonar.com

Bonar B.V.

P.O. Box 9600 / 6800 TC Arnhem
The Netherlands
T +31 85 744 1200 / F +31 85 744 1210
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Bonar Inc.

P.O. Box 1057 / Enka, NC 28728
United States of America
T +1 828 665 5000 / F +1 828 665 5065
info-usa@bonar.com / www.bonar.com

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Bonar
partners in performance

www.bontec.be



**Bontec SG110/110
Woven Geotextile**

Product Specification



SG WOVEN GEOTEXTILES

we under^{cover} the world

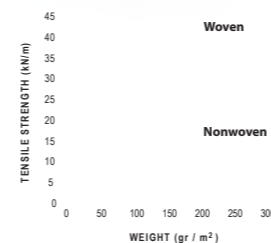
A TOTAL RANGE OF GEOTEXTILES

Headquarters:
BONAR TECHNICAL FABRICS NV/SA
 Industriestraat 39
 B-9240 Zele
 BELGIUM
 T.: +32 (0) 52 457 487
 F.: + 32 (0) 52 457 495
 E-MAIL: geotextiles@bonartf.com

For UK and Ireland:
BONAR YARNS & FABRICS Ltd
 St. Salvador Street
 Dundee Scotland
 DD3 7EU
 T.: +44 (0)1382 346102
 F.: +44 (0)1382 229238
 E-MAIL: geotextiles@bonaryarns.com

website: www.bonartf.com

bontec
 woven and nonwoven geotextiles



SEPARATION



REINFORCEMENT



Other geotextiles available within the Bontec range include Highflow, High strength Wovens and Thermally Bonded & Needle-punched Nonwovens

Visit us at our website:
www.bonartf.com

For UK and Ireland: **BONAR YARNS & FABRICS Ltd**
 St. Salvador Street | Dundee | Scotland | DD3 7EU
 T.: +44 (0)1382 346102 | F.: +44 (0)1382 229238
 E-MAIL: geotextiles@bonaryarns.com

SG Woven Geotextiles PRODUCT PROFILE

“An exciting range of Standard Grade geotextiles that offer the perfect solution to your Separation requirements. With tensile strengths ranging from 10 to 300 kN/m you can be certain that an SG fabric will be available with the performance that you are looking for.”

DAILY SEPARATION, SOIL STRENGTHENING OR GROUND REINFORCEMENT?

Bontec SG woven geotextiles are manufactured from polypropylene tapes & yarns, and exhibit an excellent chemical resistance to commonly encountered acids and alkalis at ambient temperatures. Available in a lightweight range with products from 80 to 200g/m², and a heavyweight range from 200 to 800g/m².

Bontec SG facts include:

Tensile strengths up to 300 kN per metre (kN/m) width
 CBR Puncture Strengths ranging from 1.800 N to 12.500 N

SG Mechanical Properties that offer maximum strength at minimal cost and ensure the products survivability both against installation damage and in the longer term.

Lightweight woven geotextiles typically offer greater mechanical strengths per unit weight than comparable nonwoven grades. This makes lightweight woven geotextiles the ideal choice for separation

Waterflows normal to the plane that are generally several times more than that required by design

A range of consistent opening sizes suited for use in soils ranging from clay to coarse granular fill.

SG hydraulic properties that are suited to the demands of everyday separators.

Available ex-stock in 4.5m and 5.25m wide rolls or other widths to order

Typical applications for SG woven geotextiles include:

As a general purpose separator for use under site access roads and areas of hardstanding.

As a separation and strengthening layer under new roadways, car parks, industrial units etc.

As an erosion control layer under heavy rock armour in coastal defence projects. For any separation application where there exists a need to prevent the intermixing of soft foundation soils with good clean granular fill.

SG Woven Geotextiles have been manufactured as a cost effective solution to your soil separation and stabilisation applications. They are manufactured from highly durable polypropylene polymer and have a long life expectancy when used in permanent structures.

For further product information, be it a technical data sheet or to discuss your project with one of our in-house geotextile experts please do not hesitate to contact one of our offices listed below.

Headquarters: **BONAR TECHNICAL FABRICS NV/SA**
 Industriestraat 39 | B-9240 Zele | BELGIUM
 T.: +32 (0) 52 457 487 | F.: + 32 (0) 52 457 495
 E-MAIL: geotextiles@bonartf.com



**Bontec SG110/110
Woven Geotextile**

Product Profile

Bontec® SG 110/110

Heavy weight Polypropylene Woven Geotextiles

Technical data sheet

Product description

Polymer	Density	Melting Point	Construction
100% Polypropylene	0,91 kg/dm ³	165 °C	Tapes

Properties

Mechanical Properties	Standard	Performance	Tolerance
Tensile strength - MD	EN ISO 10319	110 kN/m	-9,9 kN/m
Tensile strength - CMD	EN ISO 10319	110 kN/m	-9,9 kN/m
Elongation at maximum load - MD	EN ISO 10319	10 %	+/-2,3 %
Elongation at maximum load - CMD	EN ISO 10319	8 %	+/-1,8 %
Static puncture resistance (CBR)	EN ISO 12236	12,5 kN	-2,5 kN
Dynamic perforation resistance (cone drop)	EN ISO 13433	10 mm	+2,0 mm
Tensile strength at 2% elongation - MD	EN ISO 10319	15 kN/m	
Tensile strength at 2% elongation - CMD	EN ISO 10319	25 kN/m	
Tensile strength at 5% elongation - MD	EN ISO 10319	45 kN/m	
Tensile strength at 5% elongation - CMD	EN ISO 10319	60 kN/m	
Hydraulic Properties	Standard	Performance	Tolerance
Water permeability normal to the plane (Vlh50)	EN ISO 11058	25 l/m ² s	-8 l/m ² s
Characteristic Opening Size (O90)	EN ISO 12956	230 µm	+/-69,0 µm
Physical Properties	Standard	Performance	Tolerance
Weight	EN ISO 9864	464 g/m ²	+/-46,4 g/m ²
Length (+/- 1%) x width (+/- 1%)		100 x 5,25 m	
Truck Load Volume (+/- 10%)		30450 m ²	
Roll diameter (+/- 10%)		45 cm	
Durability	Standard	Performance	
Predicted minimal durability in years in natural soils with 4 < pH < 9 and soil temperatures < 25°C	EN 13249 +1 : 2015	60 years	

Version date : 1/11/2014

3

Version n°

The Quality Management System of Bonar has been approved to the ISO 9001 Quality Management System Standard. Certificates are available on request.



The information set forth in this data sheet reflects the best knowledge at the time of publication. The document is subject to change pursuant to new developments and findings. The same reservation applies to the properties of the products described. No liability is undertaken for results obtained by usage of the products and information.



Low & Bonar NV
Industriestraat 39, 9240 Zele, Belgium
T: +32 (0) 52 457 487 / F: +32 (0) 52 457 495
info@lowandbonar.com / www.bontecgeosynthetics.com



**Bontec SG110/110
Woven Geotextile**

Certification

QUALITY MANAGEMENT SYSTEM CERTIFICATE

ISO 9001 : 2015

BQA nv hereby declares that the management system of the company

Low & Bonar NV – Site at Zele and Lokeren



Progress through performance

*located at Industriestraat 39 - 9240 Zele - Belgium, has been examined on 2017-03-20
and found in conformity with the ISO 9001, edition 2015, standard for the following application field:*

Development, manufacture and sales of a standard range of (concrete) fibres and textiles such as agrotextiles, building textiles and geosynthetics, as well as similar products especially designed to customer specifications.

This certificate has been issued by BQA nv according to its quality manual concerning the certification of systems, and after concluding the contract of certification N° CER_ELA_QMS2015_21-3-2017_301_N under which the company accepts a regular control of its management system.

Certificate N° BQA_QMS019_C_2004301

Valid until 2020-03-19



BQA N° 019-QMS

A blue ink signature of D. SIMOENS.

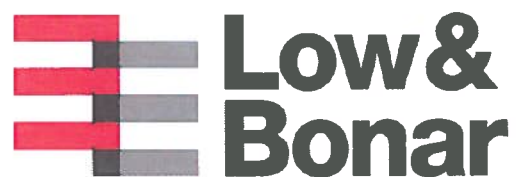
*D. SIMOENS
Directeur*



CERTIFICATE OF ENVIRONMENTAL MANAGEMENT SYSTEM ISO 14001 : 2015

BQA nv hereby declares that the environmental management system of the company

Low & Bonar NV – Site in Zele and Lokeren



Progress through performance

*located at Industriestraat 39 – 9240 Zele - Belgium, has been examined on 2017-03-20
and found in conformity with the ISO 14001, edition 2015, standard for the following application field:*

***Development, manufacture and sales of a standard range of (concrete) fibres and textiles such as agrotextiles,
building textiles and geosynthetics, as well as similar products especially designed to customer specifications.***

*This certificate has been issued by BQA nv according to its quality manual EMS concerning the certification of environmental
management systems, and after the contract of certification N° CER_ELA_EMS2015_21-3-2017_411_N
under which the company accepts a regular control of its environmental management system.*

Certificate N° BQA_EMS019_C_200402

Valid until 2020-03-19



BQA N° 019-EMS

*D. SIMOENS
Directeur*



Certificate of Conformity of the Factory Production Control 1213–CPR–5945

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product(s)

NW 5, 6, 6 UV, 7, 8, 8 D, 8/8 ABG, 8.5, 9, 10, 10 UV, 10 UV IT, 11, 12, 12 UV, 13, 130 N, 15, 15 I, 15 UV, 150 I, 16, 16 ABG, 160 N, 18, 18 UV, 19 UV, 20, 20 XUV, 200 I, 21, 21 UV, 23 P, 250 I,

GTX-N, needle punched, thermally treated; PP; used for the functions: S + F + D

25, 25 R, 26, 29, 30, 32, 32 R, 40, 40 R, 45,

GTX-N, needle punched, thermally treated; PP; used for the functions: S + F + D + P

Forte, Light, Medium, Supra, UNI, X Forte, X Light

GTX-N, needle punched, thermally treated; PP; used for the functions: S + F

SNW 100, 120, 140, 25, 25 XUV, 31, 40 UV, 46, 50, 50 SP, 55, 55 M, 55 XUV, 62, 70, 75, 75 XUV, 80, 85, 90,

GTX-N, needle punched; PP; used for the functions: S + F + D + P

14, 17, 17 T,

GTX-N, needle punched; PP; used for the functions: S + F + D

VNW 200-PP-K, 200-PP-Z, 300-PP-K, 350-PPZ30, 400-PP-K, 450-PP-K, 500-PP-K, 600-PP-K, 600-PPZ30, 700-PP-K, 800-PP-K, 1000 PP-K, 1200-PP-K, 1500-PP-K, 1800-PP-K, 2000-PP-K,

GTX-N, needle punched; PP; used for the functions: S + F + D + P

produced by or for

Bonar NV
Industriestraat 39
9240 Zele / Belgium

and produced in the manufacturing plant(s)

615

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard(s)

**EN 13249:2000/A1:2005; EN 13250:2000/A1:2005; EN 13251:2000/A1:2005;
EN 13252:2000/A1:2005; EN 13253:2000/A1:2005; EN 13254:2000/A1:2005;
EN 13255:2000/A1:2005; EN 13257:2000/A1:2005; EN 13265:2000/A1:2005**

under system 2+ for the performances set out in this certificate are applied and that the factory production control

fulfils all the prescribed requirements for these performances.

This certificate was first issued on 2014-11-04 and will remain valid as long as the test methods and/or factory production control requirements included in the harmonised standard(s), used to assess the performance of the declared essential characteristics, do not change, and the construction product, and the manufacturing conditions in the plant are not modified significantly, unless suspended or withdrawn by the factory production control certification body.

i. V.

Certificate of Conformity of the Factory Production Control 1213–CPR–5945

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product(s)

**PROTEC 250, 250 FR, 300, 33, 400, 500, 500 SP, 600, 700, 750, 750 XUV, 800 FR,
800, 800 XUV, 1000 FR,**

GTX-N, needle punched; PP; used for the functions: S + F + D + P

X 1000, X 1200

GTX-N, needle punched; PP; used for the functions: F + D + P

TS

1, 2,

GTX-N, thermally bonded; PP; used for the functions: S + F

3, 4, 5,

GTX-N, thermally bonded; PP; used for the functions: S + F + D

produced by or for

Bonar NV

Industriestraat 39
9240 Zele / Belgium

and produced in the manufacturing plant(s)

615

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard(s)

**EN 13249:2000/A1:2005; EN 13250:2000/A1:2005; EN 13251:2000/A1:2005;
EN 13252:2000/A1:2005; EN 13253:2000/A1:2005; EN 13254:2000/A1:2005;
EN 13255:2000/A1:2005; EN 13257:2000/A1:2005; EN 13265:2000/A1:2005**

under system 2+ for the performances set out in this certificate are applied and that the factory production control

fulfils all the prescribed requirements for these performances.

This certificate was first issued on 2014-11-04 and will remain valid as long as the test methods and/or factory production control requirements included in the harmonised standard(s), used to assess the performance of the declared essential characteristics, do not change, and the construction product, and the manufacturing conditions in the plant are not modified significantly, unless suspended or withdrawn by the factory production control certification body.

Würzburg, 04 November 2014

i. V.

Dipl.-Ing. Helmut Zanzinger
Certification Body



Ref: G&E042811(declaration SG110110)

Date: 26 April 2011

Attn: To whom it may concern

Declaration - Bontec SG 110/110 Woven Geotextile

We hereby would like to confirm that Bontec SG 110/110 woven geotextiles are made of silt film tapes. Silt film tapes are manufactured in our slit film extrusion department in Belgium, prior to being woven on Sulzer looms. The Geotextiles are being produced in accordance with:

- ISO 9001:2000 – Quality Certificate (in annex)
- ISO 14001: Environmental Certificate (in annex)

Bontec SG 110/110 woven geotextiles are:

- Resistant to all naturally occurring soil acids and alkalis;
- Resistant to biological attack;
- Resistant to deterioration caused by the effects of exposure to weather and burial; and
- Stable over the temperature range 0°C and 60°C.

The geotextiles have the following characteristics :

CBR Burst Strength (EN ISO 12236)	12,500N (*)
Tensile Strength (EN ISO 10319)	110kN/m (*)
Volume water flow rate (VWFR) at 100mm water head (EN ISO 11058)	25 l/m ² /s (at 50mm head) (*) 50 l/m ² /s (at 100mm head) (*)

(*) The common tolerances around the avg which are used in the industry are applied and are stated on the CE datasheets

Should you require further information, please do not hesitate to contact us.

Thank you.

Best Regards,

Koen Van Compernelle
Bonar Technical Fabrics

BONAR TECHNICAL FABRICS
Industriestraat 39
B-9240 Zele
BTW BE 421.053.442
T: 003252457483 - F. 003252457495

Zelee, 14/01/2019

CERTIFICATION OF COMFORMANCE

The undersigned supplier LOW & BONAR NV, hereby states under his responsibility that the following product complies with the indicated technical properties:

order 247038 your order PO 190110A

Type	NW 10 525	: 13.125,00 m ²
	SNW 120 525	: 2.756,25 m ²
	SG 20/20 F	: 7.875,00 m ²
	SG 110/110	: 10.500,00 m ²

Delivery docs : Packing list Nr T1900388 – T1900386

Manufacturer : Low & Bonar NV, Industriestraat 39, 9240 Zelee, Belgium
Goods are of Belgian (EU) origin

LOW AND BONAR NV



LOW & BONAR NV
Industriestraat 39
B - 9240 Zelee
BTW BE 0421 053 442
T. 0032 52 457 441
F. 0032 52 457 495



**Bontec SG110/110
Woven Geotextile**

Installation Guideline



RECOMMENDATION FOR THE INSTALLATION OF GEOTEXTILES

- The **BONTEC** geotextiles shall be kept in its original packaging in order to protect it from damaging UV-rays and high temperatures.
- The **BONTEC** geotextiles shall be stored protected from wind, rain, excess moisture or sunlight.
- The **BONTEC** geotextiles shall only be unpacked just before use. The material shall be covered within 1 week
- The **BONTEC** geotextiles shall be labelled and show the following data :
 - roll number
 - quality
 - name of the manufacturer
 - roll length & width
 - roll weight
- The **BONTEC** geotextiles shall be laid with the longitudinal ascis down slopes
- A minimum overlap of 500 mm between the different sheets shall be respected. Sewing of the different fabrics shall be done with a double prayer stitching technique with non deteriorating thread.
- Wherever visibility or installation of the **BONTEC** geotextile is poor an extra safety overlap of +/- 1 m shall be respected
- The surfaces to be covered with **BONTEC** geotextiles shall be smooth and free of sticks, roots, sharp objects, and all debris that may damage the fabric. The surface to be covered shall be firm and unyielding, with no sudden changes or brakes in grade.
- The compacted sub-base shall be maintained in a smooth, uniform and compacted condition during installation of the fabric.
- In area's where wind is prevalent, fabric installation shall be started at the upwind side of the project and proceed downwind. The leading edge of the fabric shall be secured at all times with sandbags or other means sufficient to hold it down during high winds. Sandbags or rubber tires may be used as required to hold the fabric in position during installation. Tires shall not have exposed steel cords or other sharp edges which may snag or cut the fabric. Materials, equipment or other items shall not be dragged across the fabric or be allowed to slide down slopes on the fabric.
- Should the fabric be damaged during any step of the installation, the damaged section shall be repaired by covering it with a piece of fabric which extends at least 0,6 meter in all directions beyond the damaged area. The fabric shall be secured as directed by the engineer.
- Smoking shall not be permitted by personnel working on the fabric.



**Bontec SG110/110
Woven Geotextile**

List of Project Reference

Bontec SG Range Woven Geotextile

Date	Project	Client	Consultant	Product	Qty
Feb-05	CV/2003/06 Stanley Waterfront Improvement Project - Construction Pier and Boardwalk	Sun Fook Kong (Civil) Ltd	Civil Engineering and Development Department	NW10 SG100/100	3,150 2,080
Feb-05	99/9028 Lamma Power Station	Wai Kee (Zens) Construction & Transportation Co Ltd	Maunsell Geotechnical Services Ltd	SG100/100	1,040
Feb-05	CV/2004/02 Reconst. of Wong Shek & Ko Lau Wan Public Piers	Kin Shing Construction Co Ltd	Civil Engineering and Development Department	SG100/100	4,680
Apr-05	CV/2002/04 Penny's Bay Reclamation Stage 2	Gammon Skanska Ltd Shun Tat Construction Engineering Ltd	Scott Wilson Ltd	SG100/100 SG100/100	4,160 3,150
Apr-05	HK/12/02 CED, Central Reclamation Phase III, Engineering Works	Best Leader Engineering Ltd Leighton - China State - Van Oord Joint Venture	Atkins China Ltd	SG100/100 SG100/100	1,040 2,615
May-05	03/8013 Lamma Island to Cyberport	Leader- Marine Contractors Ltd Honwin Engineering Ltd	Maunsell Geotechnical Services Ltd	SG100/100 SG100/100	1,040 1,050
Jul-05	Shenzhen to Tai Po Twin Submarine Gas Pipeline Project	Honwin Engineering Ltd		SG100/100	3,675
Sep-05	TP37/03 Remaining Engineering Infrastructure Works for Pak Shek Kok Development Package 2A	Leader - Wai Kee (C&T) Joint Venture	Hyder Consulting Ltd	SG100/100	1,040
Nov-05	HY/2002/26 Stonecutter's Bridge	Hong Kong River Engineering Co Ltd	Ove Arup & Partners HK Ltd	SG100/100	1,050
Feb-06	CV/2005/12 Fill Reception Facilities at Tseung Kwan O Area 137 Quarry Bay and Mui Wo	Penta-Ocean Construction Co Ltd	Civil Engineering and Development Department	SG100/100	525
Mar-06	Maintenance Dredging at Castle Peak Power Station (CPPS) Jetty	New Concepts Engineering Development Ltd	Civil Engineering and Development Department	SG100/100	525
Mar-06	CV/2004/04 Maintenance and Repairs to Government / Public Piers and Immersed Tubes of Hung Hom Cross-Harbor Tunnel	China Harbour Engineering Co. Ltd	Civil Engineering and Development Department	SG100/100	1,050
Mar-06	HY/2005/06 Castle Peak Road Improvement West of Tsing Lung Tau	Shun Tat Construction Engineering Limited Chun Wo Construction & Engineering Co Ltd	Mouchel Halcrow JV	SG100/100 SG100/100	1,050 525
May-06	212 Main Works for the Proposed Third Golf Course Development at Kau Sai Chau, Sai Kung	China Harbour Engineering Co. Ltd	Ove Arup & Partners HK Ltd	SG100/100	3,150
Jun-06	Hong Kong Convention and Exhibition Centre Project - Silt Screen for Intake Pipe	Wai Kee (Zens) Construction & Transportation Co Ltd Kaden - Wai Kee (C&T) JV	NA	SG100/100 SG100/100	2,100 2,100



Aug-06	EP/SP/52/06 Development of EcoPark in Tuen Mun Area 38	Kaden Construction Limited	Scott Wilson Ltd	SG100/100	1,050
Sep-06	CV/2004/06 Management and Capping of Contaminated Mud Pit IV at East of Sha Chau - Phase III	Kaden - Wai Kee (C&T) Joint Venture	Civil Engineering and Development Department	SG100/100	1,050
Oct-06	Lamma Island Cable Landing	United Marine Co Ltd	Hong Kong Electric Co Ltd	SG100/100	2,100
Nov-06	CV/2004/01 Maintenance and Repairs to Seawalls, Piers and Other Port Works	Kin Shing Construction Co Ltd	Civil Engineering and Development Department	SG100/100	2,625
Dec-06	Private project	Friendly Benefit Engineering Ltd	NA	SG100/100	525
Feb-07	Prebored Socketted H-Piles at Hong Kong Convention & Exhibition Centre	Yee Hop Engineering Co Ltd	NA	SG100/100	3,623
May-07	HY/2005/06 Castle Peak Road Improvement - West of Tsing Lung Tau	Chun Wo Construction & Engineering Co Ltd	Mouchel-Halcrow JV	SG100/100	525
May-07	CV/2004/05 Maintenance Dredging	China Harbour Engineering Co Ltd	Civil Engineering and Development Department	SG100/100	2,100
Aug-07	Dredging Project in Lai Chi Kok Shipyard	Maritime Mechanic Ltd	NA	SG100/100	525
Aug-07	6/WSD/06 Construction of Salt Water Supply System for Penny's Bay	Univic Engineering Ltd	Water Supplies Department	SG100/100	1,050
Nov-07	Permanent Aviation Fuel Facility Hong Kong International Airport (Contract No. H2104)	UDL Dredging Ltd	Babtie Asia Ltd	SG100/100	1,050
Dec-07	Seawall Modify, Tuen Mun Area 38	Cheer Engineering Ltd	Scott Wilson Ltd	SG100/100	525
May-08	DC/2007/10 Design and Construction of HK West Drainage Tunnel	Tapbo Civil Engineering Co Ltd	Ove Arup & Partners HK Ltd	SG100/100	5,486
Sep-08	CV/2006/05 Maintenance of Seawalls and Navigation Channels	China Harbour Engineering Co Ltd	Civil Engineering and Development Department	SG100/100	6,825
Sep-08	Marine Works at Maldives	Kwan Sing Engineering & Construction Co Ltd		SG100/100	525
Nov-08	DC/2007/06 River Improvement Works in Upper Lam Tsuen River, She Shan River and Upper Tai Po River	Kwan Lee Construction Co Ltd	Maunsell Consultants Asia Ltd	SG100/100	10,500
Mar-09	DC/2007/01 Drainage Improvement Works in Ki Lun Tsuen, Kwu Tung, Ma Tso Lung and Sha Ling	Shanghai Urban Construction Group Corp	Mott Connell Ltd	SG100/100 SG40/40	7,875 71,925
Jun-09	CHEC247 Lamma Power Station - Navigation Channel Improvement	China Harbour Engineering Co Ltd	Civil Engineering and Development Department	SG100/100	7,350



Jan-10	Tsing Yi	Sam Woo Bore Pile Foundation Ltd		SG110/110	525
Feb-10	HY/2009/11 Central - Wanchai Bypass - North Point Reclamation	China Harbour Engineering Co UDL Ship Management Ltd	AECOM Asia Co Ltd	SG110/110 SG110/110	21,541 1,050
Mar-10	KL/2009/01 Site formation for Kai Tak Cruise Terminal Development	Penta-Ocean Construction Co. Ltd Kwan Sing Construction Ltd Crown Asia Engineering Ltd	Scott Wilson Ltd	SG110/110 SG110/110 SG110/110	28,875 5,775 1,050
Apr-10	TK/2009/01 Infrastructure Works at Town Centre South and Tiu Keng Leng, Tseung Kwan O	Shun Tat Construction Engineering Ltd	Meinhardt (C&S) Ltd	SG110/110 SG40/40	9,450 1,050
Apr-10	Lau Fau Shan	Wang Hip Iron Works Wirks Co Ltd		SG110/110	525
May-10	HK/2009/01 Wan Chai Development Phase II Central Wanchai Bypass	Leader Civil Engineering Corp Ltd Chun Wo-CRGL Joint Venture	AECOM Asia Co Ltd	SG110/110 SG110/110	5,250 29,400
Jun-10	9/WSD/08 Laying of Western Cross Harbour Main and Associated Land Main Form West Kowloon to Sai Ying Pun	Shun Tat Construction Engineering Ltd	Mott Connell Ltd	SG110/110	10,470
Oct-10	DC/2007/12 Design and Construction of Tsuen Wan Drainage Tunnel	Shun Tat Construction Engineering Co Ltd	Hyder Consulting Ltd	SG110/110	2,100
Oct-10	TP/2010/02 Cycle Tracks from Sheung Shui to Ma On Shan	Richwell Machinery Engineering Ltd	Scott Wilson Ltd	SG110/110	525
Dec-10	CV/2010/03 Maintenance Contract for Seawalls and Navigation Channels	China Harbour Engineering Co Ltd	Civil Engineering and Development Department	SG110/110	12,075
Dec-10	HK/2009/02 Wan Chai Development Phase II	Tung Wo Engineering Co Ltd Chun Wo-CRGL Joint Venture Shun Tat Construction Eng Ltd	AECOM Asia Co Ltd	SG110/110 SG110/110 SG110/110	4,200 4,200 1,050
Jan-11	HY/2009/15 Central-Wanchai Bypass-Tunnel Causeway Bay Typhoon Shelter	Shun Tat Construction Eng Ltd China State Engineering Co Ltd Tung Wo Engineering Ltd Hong Kong River Engineering Co Ltd	AECOM Asia Co Ltd	SG110/110 SG110/110 SG110/110 SG110/110	50,400 2,625 1,050 10,831
Jan-10	DC/2008/09 Submarine outfall Aberdeen	Paul Y Construction Co Ltd	AECOM Asia Co Ltd	SG110/110	525
Jan-10	KL/2008/07 Kai Tak Development - Advance	Crown Asia Engineering Ltd	AECOM Asia Co Ltd	SG110/110	1,050
Jan-10	DC/2011/04 Reconstruction, improvement and rehabilitation of Kai Tak River	Leader - Sunnic JV	Scott Wilson Ltd	SG110/110	525
Jan-11	CV/2009/02 Handling of surplus public fill	China Harbour Engineering Co Ltd	Civil Engineering and Development Department	SG110/110	525
Mar-11	HK/2010/06 Wanchai Development Phase II-Central-Wanchai Bypass over MTR Tsuen Wan Line	Leader Civil Engineering Corp Ltd Gammon Construction Ltd	AECOM Asia Co Ltd	SG110/110 SG110/110	8,400 1,575
Apr-11	HY/2009/19 Central-Wanchai Bypass-Tunnel (North Point Section)	S W Marine Works Ltd Chun Wo Foundations Ltd Cheer Engineering Ltd	AECOM Asia Co. Ltd	SG110/110 SG110/110 SG110/110	4,200 19,950 525



May-11	DC/2009/13 Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan	Leader Civil Engineering Corp Ltd	Scott Wilson CDM Joint Venture	SG110/110	1,575
May-11	DC/2009/22 Drainage Improvement Works in Shuen Wan, Tai Po- Contract 1	Kwan Lee-Kuly Joint Venture	AECOM Asia Co. Ltd	SG110/110	2,625
Jul-11	SIL (E) 903 Stage 2 Ocean Park Station Wong Chuk Hang Station, Viaducts and Aberdeen Channel Bridge	Leighton Contractors (Asia) Ltd Cheer Engineering Ltd	Vector International Ltd	SG110/110 SG110/110	4,725 1,575
Aug-11	KL/2010/02 Kai Tak Approach Channel Improvement Works Stage 1	Kwan Sing Contractors Ltd	AECOM Asia Co. Ltd	SG110/110	7,350
Sep-11	DC/2010/02 Drainage Improvement Works in Shuen Wan And Shek Wu Wai	Kwan Lee-Kuly Joint Venture	AECOM Asia Co. Ltd	SG110/110	10,500
Oct-11	DC/2007/16 Design and Construction of Lai Chi Kok Transfer Scheme	Fortress Development Ltd	Maunsell Consultants Asia Ltd	SG110/110	2,100
Dec-11	HY/2010/02 HK-Zhuhai-Macau Bridge - HK Boundary Crossing Facilities Reclamation Works	China Harbour Engineering Co Ltd Sharon Asia Waste Sorting Eng Ltd Chung Kong Marine Engineering Ltd	Ove Arup & Partners HK Ltd	SG110/110 SG110/110 SG110/110	68,775 525 10,500
Jul-12	GSPD/SP/TKW-NP/089/2011 Installation of Submarine Gas Pipeliners and Associated Facilities from to Kwa Wan to North Point	Macdow - Kaden Joint Venture	Mott Connell Limited	SG110/110	3,150
Aug-11	HY/2011/03 HK-Zhuhai Macau Bridge - Hong Kong Link Road - Scenic Hill and Hong Kong Boundary Crossing Facilities	China State Construction Eng (HK) Ltd Will Pak Engineering Ltd Shun Tat Construction Engineering Ltd Chun Ngai Construction Engineering Ltd	Ove Arup & Partners HK Ltd	SG110/110 SG20/20F SG110/110 SG110/110 SG20/20F	23,100 23,625 1,575 6,825 10,500
Mar-13	1017EM10 Kai Tak Former Runway	Crown Asia Engineering Ltd	Civil Engineering and Development Department	SG110/110	1,050
Mar-13	2/WSD/09 Salt Water Supply for Northwest New Territories - Construction of Lok On Pai Salt Water Pumping Station and Associated Works	Sunrise Enterprises Ltd	Water Supplies Department	SG40/40	525
Apr-13	Yuen Long	Kwong Wah Electrical Co Ltd	-	SG40/40	525
May-13	HK/2012/08 Wan Chai Development Phase II - Central Wan Chai Bypass at Wan Chai West	Hong Kong River Engineering Co Ltd China State - Leader JV Will Pak Engineering Ltd	AECOM Asia Co. Ltd	SG110/110 SG110/110 SG110/110	47,250 525 525
Jun-13	SCL1111 Hung Hom North Approach Tunnels	Gammon - Kaden Joint Venture	AECOM Asia Co. Ltd	SG40/40 SG110/110	19,425 525
Aug-13	Near Hoi Sum Park, King Wan, Tokuawan	Hong Kong Marine Contractors Ltd		SG110/110	525



Sep-13	HY/2012/07 Tuen Mun - Chek Lap Kok Link-Sothorn Connection Viaduct Section	Gammon Construction Ltd Right Lead Construction Co Ltd	AECOM Asia Co. Ltd	SG110/110 SG110/110	9,450 1,050
Oct-13	Mongkok	S W Marine Works Ltd		SG110/110	525
Jan-14	2/WSD/09 Construction of Lok On Pai salt water pumping station and associated works	CPC Construction Hong Kong Ltd	Water Supplies Department	SG40/40	1,050
Jan-14	CV/2013/02 Maintenance contract for seawalls and navigation channels	China Harbour Engineering Co Ltd	Civil Engineering and Development Department	SG110/110	25,725
Feb-14	16/WSD/11 Replacement and rehabilitation of water mains at Peng Chau, Sunshine Island and Hei Ling Chau	MIRDTEC HK Ltd.	AECOM Asia Co. Ltd	SG110/110	2,625
Mar-14	Remodeling of New World Centre at Salisbury Road	Kaden Construction Ltd		SG110/110	1,050
Apr-14	KL/2011/01 Kai Tak Development - Reconstruction and Upgrading of Kai Tak Nullah	Chit Cheung Construction Co Ltd	AECOM Asia Co. Ltd	SG110/110 SG20/20F	2,100 8,400
Jul-14	CV/2013/05 Construction of Cycle Parking Area near Yung Shue Ferry Pier, Lamma Island	Tak Cheong Construction Co Ltd	Civil Engineering and Development Department	SG110/110	525
Oct-14	MTRC SIL (E) 902 Nam Fung Tunnel and Ventilation Buildings	Nishimatsu Construction Co. Ltd	Scott Wilson Ltd	SG110/110	7,875
Nov-14	HY/2010/08 Central-Wanchai Bypass-Tunnel (Slip Road 8 Section)	Shun Tat Construction Eng Ltd	AECOM Asia Co Ltd	SG110/110	8,925
Jan-15	SCL1121 Shatin to Central Link - NSL Cross Habour Tunnel	Penta Ocean - China State JV Crown Asia Engineering Ltd	AECOM Asia Co. Ltd	SG110/110 SG20/20F SG110/110	25,200 525 1,050
Apr-15	KL/2013/01 Site Formation for Kai Tak Cruise Terminal Development - Remaining Works	Zhen Hua Engineering Company Limited	URS Hong Kong Ltd	SG110/110	15,750
May-15	Yau Tong Bay Redevelopment - Land Decontamination Works	Hong Kong River Engineering Co Ltd	AECOM Asia Co Ltd	SG110/110	2,100
Sep-15	MTRC810A West Kowloon Terminus Station North	Leighton - Gammon JV	AECOM-Aedas JV	SG110/110	11,025
Oct-15	Private job in Crooked Island	Maritime Mechanic Ltd		SG110/110	1,050
Nov-15	Private job in Tung Chung	Fortress Development Ltd		SG110/110	525
Jan-16	MTRC810B West Kowloon Terminus Station South	Laing O'Rourke - Hsin Chong - Paul Y. Joint Venture Tapbo Civil Engineering Co Ltd	AECOM - Aedas JV	SG110/110 SG110/110	1,050 2,625
Jan-16	Proposed revitalization of Avenue of Star and east TST Promenade Waterfront	Kaden Construction Ltd	New World Development	SG110/110	1,575



Feb-16	HY/2013/01 HKZMB - Construction of Passenger Clearance Building	Leighton-Chun Wo Joint Venture S W marine Works Ltd Cheer Engineering Ltd	AECOM Asia Co Ltd	SG110/110 SG110/110 SG110/110	2,625 2,100 2,100
Mar-16	KL/2014/01 Kai Tak Development - Stage 2 Infrastructure Works for Developments at Southern Part of the Former Runway	CEC-CCC Joint Venture Cheer Engineering Ltd	AECOM Asia Co Ltd	SG110/110 SG110/110	10,500 525
Mar-16	1/WSD/15 Term Contract for Waterworks District E - New Territories East	Yick Sing Civil Engineering Ltd	Water Services Department	SG110/110	2,625
Mar-16	Fill Bank at Tuen Mun Area 38	Fortress Development Ltd	CH2M Hill (China) Limited	SG110/110	525
May-16	SCL 1128 Causeway Bay Typhoon Shelter to Admiralty Tunnels	Dragages-Bouygues J.V. Tapbo Civil Engineering Co Ltd VSL	Intrafor	SG110/110 SG110/110	1,575 525
Jun-16	Silt Curtain Repair	Hong Kong Marine Contractors Ltd		SG110/110	5,250
Jul-16	EP/SP/10/91 SENT Landfill, Tseung Kwan O	Green Valley Landfill, Limited	Rust Asia Pacific Ltd	SG40/40F	5,250
Sep-16	NE/2015/02 Tseung Kwan O - Lam Tin Tunnel Road P2 and Associated Works	CRBC-Build King Joint Venture Hong Kong River Engineering Shun Tat Construction Engineering	AECOM Asia Co Ltd	SG110/110 SG110/110	28,875 23,625
Nov-16	CC/2016/3B/045 Main Contract for the Park at West Kowloon Cultural Center	Sun Fook Kong Construction Ltd Chung Kong Marine Engineering Ltd	ACLA	SG110/110	525
Dec-16	HY/2011/03 HK-Zhuhai Macau Bridge - Hong Kong Link Road - Scenic Hill and Hong Kong Boundary Crossing Facilities	China State Construction Engineering (HK) Ltd Sun Rise Civil Engineering Ltd	Ove Arup & Partners HK Ltd	SG110/110 SG20/20F SG20/20F	2,625 1,050 2,625
Dec-16	C3206 Three Runway System - Main Reclamation Works	Chung Kong Marine Engineering Ltd WinSino Engineering Co China Dredging Co ZHEC-CCCC-CDC JV	Airport Authority	SG110/110 SG110/110 SG110/110 SG110/110	4,725 11,025 1,575 2,625
Feb-17	NE/2015/01 TKO - Lam Tin Tunnel - Main tunnel and associated works	Leighton - China State JV Shun Tat Construction Engineering Ltd	AECOM Asia Co Ltd	SG110/110 SG110/110	5,250 4,725
Mar-17	C3205 3rd Runway System Project DCM Ground Improvement Works (Package 5)	Bachy Soletanche -Sambo Joint Venture Tapbo Civil Engineering Co Ltd Crown Asia Engineering Ltd	Airport Authority	SG110/110 SG110/110	3,675 1,050
May-17	CV/2016/05 Reconstruction of Sharp Island Pier	Sze Fung Engineering Ltd	Civil Engineering and Development Department	SG110/110	2,625
Jun-17	SJC Hong Kong Shore-End Installation, Chung Hom Kok	Hong Kong Marine Contractors Ltd		SG110/110	1,575
Jul-17	CV/2016/01 Maintenance Contract for Seawalls and Navigation Channels	Chung Kong Marine Engineering Ltd China Harbor Engineering Co Ltd	AECOM Asia Co Ltd	SG110/110 SG110/110	1,050 3,675
Aug-17	CV/2012/05 Bathing Beach at Lung Mei, Tai Po	Welcome Construction Co Ltd Shun Tat Construction Engineering Ltd Hugh Loyal Management Ltd	Civil Engineering and Development Department	SG110/110 SG110/110 SG110/110	2,625 9,450 525
Sep-17	C3202 3rd Runway System Project DCM Ground Improvement Works (Package 2)	Samsung - Build King Joint Venture Shun Tat Construction Engineering Ltd	Fugro Hong Kong Ltd	SG110/110 SG110/110	2,100 1,050



Jan-18	KL/2015/02 Kai Tak development - Stage 5A, Infrastructure at Former North apron Area	Peako - Wo Hing Joint Venture	AECOM Asia Co Ltd	SG110/110	1,050
Jan-18	SCL1123 Exchange and Western Approach Tunnel	Leighton - China State Joint Venture Shun Tat Construction Engineering Ltd	Ove Arup & Partners HK Ltd	SG110/110	3,150
Jan-18	CHEC311 Marine dredging works (2017-2020) for Hong Kong Electric	China Harbour Engineering Co. Ltd	Hong Kong Electric	SG110/110	4,725
Jan-18	Pacific Light Cable Network - Deep Water Bay	Hong Kong Marine Contractors Ltd	Environmental Resources Management	SG110/110	525
Mar-18	HY/2012/08 Tuen Mun - Chek Lap Kok Link Northern Connection Sub-sea Tunnel Section	Dragages - Bouygues JV	AECOM Asia Co. Ltd	SG110/110	4,725
Apr-18	MTRC1121 Shatin to Central Link - NSL Cross Harbour Tunnels	Penta-Ocean - China State JV Crown Asia Engineering Ltd	AECOM Asia Co Ltd	SG110/110	1,050
May-18	Kowloon Inland Lot No. 11251 Design and Construction of Piling Foundation at Pine Street / Oat Street, Tai Kok Tsui	Yau Lee Construction Management Limited K. H. Foundation Ltd	David S. K. Au & Associates	SG110/110	1,050
May-18	NL/2017/03 Tung Chung New Town Extension - Reclamation and Advance Works	Build King - SCT JV Tapbo Civil Engineering Co Ltd Leader Marine - Yoon & Plac JV	AECOM Asia Co Ltd	SG110/110 SG110/110 SG110/110	1,050 2,100 2,100
May-18	KL/2014/03 Kai Tak Development - Stage 3, Infrastructure Works for Development at the Southern Part of the Former Runway	Hong Kong River Engineering Co Ltd	Hyder - Meinhardt JV	SG110/110	525
May-18	EP/SP/66/12 Integrated Waste Management Facilities Phase 1	Chung Kong Marine Engineering Ltd Shun Tat Construction Engineering Ltd	AECOM Asia Co Ltd	SG110/110 SG110/110	6,300 2,100
Jun-18	DC/2016/02 Building and Civil Maintenance and Minor Works to DSD Plants and Facilities	Paul Y. Construction Co Ltd World Diamond Engineering Ltd	Drainage Services Department	SG110/110	1,050
Aug-18	HY/2013/02 HZMB BCF - Infrastructure Works Stage 1 (Western Portion)	China Harbour Engineering Co. Ltd	AECOM Asia Co Ltd	SG110/110	525
Aug-18	Hong Kong Shipyard	Works of Diving Hong Kong Co Ltd		SG110/110	525
Sep-18	HY/2014/16 Hiram's Highway Improvement Stage 1 - Between Clearwater Bay Road and Marina Cove	China State Construction Engineering (HK) Ltd	Meinhart Infrastructure and Environmental Ltd	SG110/110	525
Sep-18	Private project in Lung Kwu Tan	S W Marine Works Ltd		SG110/110	1,575
Sep-18	P575 NCD Main Infrastructure Works	China State Construction Engineering (Hong Kong) Ltd Will Pak Engineering Ltd	Hong Kong Airport Authority	SG110/110	1,050
Oct-18	EP/SP/66/12 Integrated Waste Management Facilities Phase 1	Keppel Seghers - Zhen Hua Joint Venture Shun Tat Construction Engineering Ltd Denson Engineering Ltd	AECOM Asia Co Ltd	SG110/110	6,825



Oct-18	NE/2017/07 Cross Bay Link, Tseung Kwan O - Main Bridge and Associated Works	Hong Kong River Engineering Co Ltd	AECOM Asia Co Ltd	SG110/110	1,050
Oct-18	Yau Ma Tei project	Max Team Engineering Ltd		SG110/110	525



Date	June 2018
Project	Contract No. NE/2015/02 Tseung Kwan O - Lam Tin Tunnel Road P2 and Associated Works
Client	Civil Engineering and Development Department
Consultant	AECOM Asia Company Limited
Main Contractor	CRBC-Build King Joint Venture Shun Tat Construction Engineering
Works	Site Boundary Silt Curtain
Material	Bontec SG110/110 Geotextile fabric
Quantity	60,375 sqm



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Date	June 2014
Project	Contract No. HY/2012/08 Tuen Mun - Chek Lap Kok Link Northern Connection Sub-sea Tunnel Section
Client	Highway Department
Consultant	AECOM Asia Co. Ltd
Main Contractor	Dragages Bouygues Joint Venture
Works	Seawall Construction
Material	Bontec SG110/110
Quantity	4,725 sqm



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Date	August 2017
Project	Contract No. CV/2012/05 Bathing Beach at Lung Mei, Tai Po
Client	Civil Engineering and Development Department
Consultant	Civil Engineering and Development Department
Main Contractor	Welcome Construction Co Ltd Shun Tat Construction Engineering Ltd
Works	Silt Curtain
Material	Woven Geotextile Bontec SG110/110
Quantity	12,600 sqm



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Date	Jan 2016
Project	Proposed revitalization of Avenue of Star and east TST Promenade Waterfront
Client	New World Development
Main Contractor	Kaden Construction Ltd
Works	Silt Protector
Material	Woven Geotextile Bontec SG110/110
Quantity	1,050 sqm



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Date	May 2014
Project	HY/2012/07 Tuen Mun - Chek Lap Kok Link- Sothern Connection Viaduct Section
Client	Highway Department
Consultant	AECOM Asia Co. Ltd
Main Contractor	Gammon Construction Ltd
Material	Woven geotextile Bontec SG110/110
Works	Silt Protector
Quantity	8,925 sqm



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Date	Nov 2014
Project	Contract No. HY/2010/08 Central-Wanchai Bypass - Tunnel (Slip Road 8 Section)
Client	Highway Department
Consultant	AECOM Asia Co Ltd
Main Contractor	China State Construction Engineering (HK) Ltd
Works	Silt Curtain
Material	Woven Geotextile Bontec SG110/110
Quantity	1,575 sqm



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Date	May 2013
Project	Contract No. HK/2012/08 Wan Chai Development Phase II - Central Wan Chai Bypass at Wan Chai West
Client	Civil Engineering and Development Department
Consultant	AECOM Asia Co. Ltd
Main Contractor	China State Construction Engineering Co. Ltd Hong Kong River Engineering Co Ltd
Works	Silt Curtain
Material	Woven Geotextile SG110/110
Quantity	47,250 sqm



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Date	June 2013
Project	Contract No: HY/2011/03 HK-Zhuhai Macau Bridge Hong Kong Link Road - Scenic Hill and Hong Kong Boundary Crossing Facilities
Client	Highway Department
Consultant	Ove Arup & Partners HK Ltd
Main Contractor	China State Construction Engineering
Works	Tailor-made Silt Protector
Material	Woven Geotextile Bontec SG110/110
Quantity	37,275 sqm



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Date	January 2015
Project	Contract No. SCL1121 Shatin to Central Link - NSL Cross Harbour Tunnel
Client	MTR Corporation
Consultant	AECOM Asia Co. Ltd
Main Contractor	Penta Ocean - China State JV
Works	Silt Curtain
Material	Woven Geotextile Bontec SG110/110
Quantity	26,250 sqm



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Date	Jan 2014
Project	Contract No. CV/2013/02 Maintenance contract for seawalls and navigation channels
Client	CEDD
Consultant	CEDD
Main Contractor	China Harbour Engineering Co Ltd
Works	Silt Protector
Material	Woven Geotextile Bontec SG110/110



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Date	Feb 2014
Project	Contract No. DC/2011/04 Reconstruction, improvement and rehabilitation of Kai Tak River from Wong Tai Sin Police Station to Tung Tau II Estate
Client	Drainage Service Department
Consultant	Scott Wilson Limited
Main Contractor	Leader - Sunnic JV
Works	Silt Curtain to Kai Tak Nullah
Material	Woven Geotextile Bontec SG110/110
Quantity	525 sqm



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Date	June 2014
Project	Contract No. HY/2010/02 HK-Zhuhai-Macau Bridge - HK Boundary Crossing Facilities Reclamation Works
Client	Highway Department
Consultant	Ove Arup & Partners HK Ltd
Main Contractor	China Harbour Engineering Co Ltd
Works	Tailor-made Silt Protector
Material	Woven Geotextile Bontec SG110/110
Quantity	79,800 sqm



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Date	November 2005
Project	Contract No. HY/2002/26 Stonecutters Bridge
Client	Highway Department
Consultant	Ove Arup and Partners HK Ltd
Main Contractor	Hong Kong River Engineering Co Ltd Maeda - Hitachi - Yokogawa - Hsing Chong Joint Venture
Material	Woven geotextile Bontec SG110/110
Works	Tailor-made Silt Curtain
Size	1,050 sqm



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Date	May 2011
Project	Contract No. DC/2009/22 Drainage Improvement Works in Shuen Wan, Tai Po
Client	Drainage Service Department
Consultant	AECOM (Asia) Ltd
Main Contractor	Kwan Lee - Kuly Joint Venture
Works	Separation
Material	Woven geotextile SG110/110
Quantity	2,625 sqm



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Date	June 2013
Project	Contract No. HY/2009/15 Central-Wanchai Bypass-Tunnel (Causeway Bay Typhoon Shelter Section)
Client	Highway Department
Consultant	AECOM Asia Co. Ltd
Main Contractor	China State Construction Engineering (HK) Limited
Works	Tailor-made Silt Curtain
Material	Woven Geotextile Bontec SG110/110



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Date	March 2014
Project	Contract No. HK/2009/02 Wan Chai Development Phase II Central - Wan Chai Bypass Wan Chai East
Client	Civil Engineering and Development Department
Consultant	AECOM (Asia) Ltd
Main Contractor	Chun Wo Construction & Engineering Co.Ltd
Application	Silt Protector
Material	Woven Geotextile SG110/110
Quantity	9,450 sqm



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Date	March 2010
Project	Contract No. HK/2009/01 Wan Chai Development Phase II -Central - Wanchai Bypass at Hong Kong Convention and Exhibition Centre
Client	Civil Engineering and Development Department
Consultant	AECOM Asia Co. Ltd
Main Contractor	Chun Wo - Leader Joint Venture
Works	Intake Silt Curtain
Materials	Woven Geotextile SG110/110
Size	34,125 sqm



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Date	March 2010
Project	KL/2009/01 Site formation for Kai Tak Cruise Terminal Development
Client	CEDD
Consultant	Scott Wilson Ltd
Main Contractor	Penta-Ocean Construction Co. Ltd
Materials	SG110/110
Size	1,050 sqm



Date	March 2010
Project	Contract No. DC/2007/01 Drainage Improvement Works in Ki Lun Tsuen, Kwu Tung, Ma Tso Lung and Sha Ling
Client	Drainage Services Department
Consultant	Mott MacDonald
Main Contractor	Shanghai Urban Construction (Group) Corporation
Works	Soil filter
Material	Woven Geotextile Bontec SG110/110 Woven Geotextile Bontec SG40/40
Quantity	SG110/110 - 7,875 sqm SG40/40 - 71,925 sqm



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Date	April 2011
Project	Contract No. HY/2009/11 Central - Wanchai Bypass - North Point Reclamation
Client	Highways Department
Consultant	AECOM Asia Ltd
Main Contractor	China Harbour Engineering Company
Works	Tailor-made Silt Curtain
Materials	Woven Geotextile SG110/110
Quantity	22,066 sqm



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Date	May 2004
Project	Contract No. CV/2001/12 Reconstruction of Cheung Chau and Wu Kai Sha Public Piers
Client	Civil Engineering and Development Department
Engineer	Civil Engineering and Development Department
Main Contractor	Hong Kong and Macau Scent On Engineering & Construction Ltd
Works	Tailor-made Silt Curtain
Material	Woven Geotextile Bontec SG110/110



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Date	October 2006
Project	Lamma Island Cable Landing
Client	Hong Kong Electric Co Ltd
Consultant	Hong Kong Electric Co Ltd
Main Contractor	United Marine Co Ltd
Works	Tailor-made Silt Curtain
Material	Woven Geotextile SG110/110
Quantity	2,100 sqm



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Date	March 2006
Project	Contract No. HY/2005/06 Castle Peak Road Improvement West of Tsing Lung Tau
Client	Highway Department
Consultant	Mouchel Halcrow JV
Main Contractor	Chun Wo Construction & Engineering Co., Ltd.
Material	Woven Geotextile Bontec SG110/110
Works	Tailor-made Silt Curtain
Quantity	1,050 sqm



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Date	February 2005
Project	Contract No. CV/2003/06 Stanley Waterfront Improvement Project - Construction Pier &
Client	Civil Engineering and Development Department
Consultant	Civil Engineering and Development Department
Main Contractor	Sun Fook Kong (Civil) Ltd
Works	Silt Curtain - SG110/110
Quantity	2,080 sqm



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Date	May 2011
Project	Contract No. DC/2009/13 Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan
Client	Drainage Service Department
Consultant	Scott Wilson CDM Joint Venture
Main Contractor	Leader Civil Engineering Corp Ltd
Material	Bontec SG110/110 woven geotextile
Works	Silt Curtain
Quantity	1,575 sqm



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Date	Jan 2005
Project	Contract No. HK/12/02 Central Reclamation Phase III Engineering Works
Client	Civil Engineering and Development Department
Consultant	Atkins China Ltd
Main Contractor	Leighton - China State - Van Oord JV
Material	Woven Geotextile Bontec SG110/110
Works	Silt Curtain
Quantity	3,655 sqm



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website: www.g-and-e.com



Date	January 2010
Project	KL/2008/07 Kai Tak Development-Infrastructure works at Southern part of former runway, Stage 1
Client	CEDD
Consultant	AECOM
Main Contractor	Friendly Benefit Engineering Ltd
Works	Fabrication of Silt Curtain
Materials	SG110/110



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Tel: 852-2570 0103 Fax: 852-2570 0089
website: www.g-and-e.com



Date	March 2013
Project	Contract No. 1017EM10 Seawall Modification Work at Outfall Area at Kai Tak Development
Client	Civil Engineering and Development Department
Consultant	AECOM
Main Contractor	Crown Asia Engineering Ltd
Works	Silt Curtain
Material	Woven geotextile Bontec SG110/110
Quantity	1,050 sqm



**Bontec SG110/110
Woven Geotextile**

Approval Letters

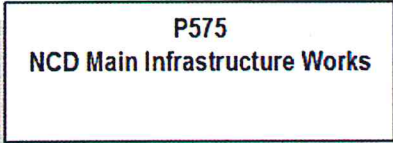
Karen Yip
CHINA STATE CONSTRUCTION ENGINEERING (HK)...

CSECEL/P575/M/00193C - Material Submission f... 2018-10-08
文件传送 CSECEL-TRANSMIT-000287

已回复

Bill Mar
AIRPORT AUTHORITY

Re: CSECEL/P575/M/00193C - Material Submissi... 下午3点13分
文件传送 AAHK-TRANSMIT-000306



邮件类型
文件传送
参考号
CSECEL-TRANSMIT-000287

邮件编号
AAHK-TRANSMIT-000306

Re: CSECEL/P575/M/00193C - Material Submission for Geotextile Type 1 for Seawall Modification and Box Culvert for Outfall 8A

发件人 Mr Bill Mar - Airport Authority
收件人 (2) Mr Bill Mar - Airport Authority (+1 更多...)
抄送收件人 (15) Mr Henry Chan - Airport Authority (+14 更多...)
已发送 2018年10月19日 星期五 3:13:56 PM HKT (GMT +08:00)
状态 不适用

详情

Discipline Civil
Area Outfall 8A
Submission number CSECEL/P575/M/00193C
Submission Response (AA reply) A -Notice of No-Objections

消息

PROJECT MANAGER'S REPLY TO CONTRACTOR'S SUBMISSION

TITLE OF SUBMISSION: Material Submission for Geotextile Type 1 for Seawall Modification and Box Culvert for Outfall 8A
SUBMISSION NUMBER: CSECEL/P575/M/00193C

RESPONSE:
Submission for Review
(Ref. GS 18.4)

A -Notice of No-Objections

A

Submission for Permission or Consent (Ref GS 18.5)	B1- No-Objection subj. to comments,resub	
	B2- Subj. to comments,resub not required	
	C -Notice of Objection, please resubmit	
	D -Notification of Permission or Consent	
	E -Notification of Permission or Consent subject to compliance with conditions; please confirm acceptance of conditions	
	F -Permission or Consent withheld	
Submission for information	R -Submission acknowledged	

COMMENTS:

We have no objection to your proposed use of Geotextile Type 1 "Bontec SG 110/110 Woven Polypropylene Geotextile".

AA DISTRIBUTION: File Ref:			From: PM's Representative	Contractor's Stamp
Name	Action	Info		
			Name:	
			Signature:	
			Date:	

CONTRACTOR'S SUBMISSION

TITLE OF SUBMISSION : CSECEL/P575/M/00193C - MATERIAL SUBMISSION FOR GEOTEXTILE TYPE 1 FOR SEAWALL MODIFICATION AND BOX CULVERT FOR OUTFALL 8A

CSCS SUBMISSION REF. NO. : CSHK/CDP/A.3/7.23/2018/00713

SUBMISSION NUMBER : CSECEL/P575/M/00193C

SPECIFICATION REFERENCE : PS / F / A14/ 1.17

DRAWING REFERENCE :PBA/P273/BDC/6532, PBA/P273/BDC/6533 & PBA/P273/BDC/6534

DESCRIPTION OF CONTENTS :

As per your comments given on AAHK-TRANSMIT-000256 dated 23 July 2018, we are pleased to submit herewith Geotextile Type 1 "Bontec SG 110/110 Woven Geotextile" information for review and approval.

Appendix A: Test report by Precision – TRI Geosynthetic Laboratory Int.

Appendix B: Certificate of Precision – TRI Geosynthetic Laboratory Int. by Geosynthetic Accreditation Institute.

Appendix C: Method of Sewing Seam.

Remarks :	AA Distribution
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To.: Cc.: Discipline: Area: Submission No.: CSECEL/P575/ Submission Response (AA reply):	File Ref.: 15.00/CFR																								
	<table border="1"> <thead> <tr> <th>Name :</th> <th>Action</th> <th>Comments</th> <th>Info</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	Name :	Action	Comments	Info																				
Name :	Action	Comments	Info																						
From: CSCE's Representative Name : Thomas Lui Signature : (N/A FOR ELECTRONIC SUBMISSION) Date:	Contractor's Name CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.																								

KYW/GY/WSC/ky

Key to "Document Type" in Submission No. D - Permanent Works or Plants Design; T - Temporary Works Design; S - Survey and Setting Out; O - Other Q - Quality Control/Quality Assurance; P - Progress and Programme; M - Materials; Z - General Construction

This mail has been approved for release by K Yip on 2018-10-08 11:17:11 HKT

此邮件已由J Law 准备



Your Ref : KSZHJV/OUT/2018/05/01.11/000513
Our Ref : IWMF/(EP/SP/66/12)/R20/820/B00076

7 June 2018

Keppel Seghers-Zhen Hua Joint Venture
19/F, China Harbour Building
370-374, King's Road
North Point
Hong Kong

Attn: Mr. Chung Tai Tung, Peter

Dear Sir,

Contract No. EP/SP/66/12
Integrated Waste Management Facilities Phase 1

Material Submission – Geotextile for Silt Curtain (Bontex SG110/110)

We refer to your letter ref No. KSZHJV/OUT/2018/05/01.11/000513 dated 1 June 2018 and our discussion on 1 June 2018 where you clarified the typo of "Bontex SC110/110" that the description should be "Bontex SG110/110" as per the manufacturer's information sheets.

We have no objection in principle to your proposed use of Geotextile Bontex SG110/110 for Silt Curtain, provided that the material shall be used and stored in strict compliance with the Specification and the manufacturer's recommendations.

Please also be reminded that, pursuant to Clause 3.3 of Condition of Contract, any of our comments on your submission, or any areas of the subject of your submission we have not provided comments on, shall not in any way operate to relieve any of your duties, responsibilities, obligations or liabilities under the Contract.

Yours faithfully,
For and on behalf of
AECOM Asia Co. Ltd.

Henry Chan
Chief Resident Engineer

c.c. PEPO(SFG),EPD - Attn: Mr. Yu Wang Pong
AACL - Attn: Mr. Bevis Mak

By Fax (3529 2991) only

HC/EW/CW/ml



Your Ref : KSZHJV/OUT/2018/05/01.11/000513
Our Ref : IWMF/(EP/SP/66/12)/R20/820/B00076

7 June 2018

Keppel Seghers-Zhen Hua Joint Venture
19/F, China Harbour Building
370-374, King's Road
North Point
Hong Kong

Attn: Mr. Chung Tai Tung, Peter

Dear Sir,

Contract No. EP/SP/66/12
Integrated Waste Management Facilities Phase 1

Material Submission – Geotextile for Silt Curtain (Bontex SG110/110)

We refer to your letter ref No. KSZHJV/OUT/2018/05/01.11/000513 dated 1 June 2018 and our discussion on 1 June 2018 where you clarified the typo of "Bontex SC110/110" that the description should be "Bontex SG110/110" as per the manufacturer's information sheets.

We have no objection in principle to your proposed use of Geotextile Bontex SG110/110 for Silt Curtain, provided that the material shall be used and stored in strict compliance with the Specification and the manufacturer's recommendations.

Please also be reminded that, pursuant to Clause 3.3 of Condition of Contract, any of our comments on your submission, or any areas of the subject of your submission we have not provided comments on, shall not in any way operate to relieve any of your duties, responsibilities, obligations or liabilities under the Contract.

Yours faithfully,
For and on behalf of
AECOM Asia Co. Ltd.

Henry Chan
Chief Resident Engineer

c.c. PEPO(SFG),EPD - Attn: Mr. Yu Wang Pong
AACL - Attn: Mr. Bevis Mak

By Fax (3529 2991) only

HC/EW/CW/ml

RESPONSE TO CONTRACTOR'S SUBMISSION

Our Ref. : C2/(HY/2012/08)/M25/110/B017642

To : DBJV

Attn. : Mr. Ivan Chau

Location : Southern Landfall - Outfall	CSF No. : TMCLKL8/MAS/SAA/001173/A	
Title of Submission : Geotextile for Seawall Reinstatement (Originated in Outfall Construction - Bontec SG110/110 from DBJV)	Rev.: A	Date: 3 April 2018

The Supervising Officer's Representative's Comment(s) :

I refer to the captioned material submission dated 3 April 2018 proposing the Geotextile - Bontec SG110/110, supplied by G and E Company Limited to be used for the reinstatement of seawall at the drainage outfalls in the Southern Landfall.

I have no objection in principle to the proposed material subject to the method of jointing the geotextile attached in your submission should be strictly followed.

20224 18 APR 8 10:45:58

Project : TMCLKL8							
Date : 09 APR 2018							
Reg No. : 030224							
Dept	Name	Act	Info	Dept	Name	Act	Info
MGT	FGUE			Ext/Civil	DLa		
	ICH			-NVS/NVB	Wam		
Comm	PAT			-NAR/REC	Wam		
-Contract	LaC			-BoxCulv	Wam		
	NWc			-SLF	CDc		
	LCK			-SVS/SVB	Mai		
-Subcon	JDo			-MHS(Tun)	Mai		
Safety	TYC			-MHS(Cat)	PiM		
Q&E	ERe			Tun/Pla	DLa		
Technical	ASc			-Surface	KWc		
-Design	BSh			-Int Struc	KWc		
-Method	Eca			-FP	PCh		
-Geo	CCh			-Precast	RKw		
Planning	WYu			-Plant(N/S)	CY		
Survey	CWL			-Plant(S)	AM		
AGP	FGI			-Purch	AKw		
-Cost/Ctrl	EYI			TBM	FDe		
-Admin	CSu			CrossP	FRg		
-PR	CSc			BYTP			
Board				OAP			
WJ				GLD			
MBN				ATK			
ACD				Instructor			

AOK

Status : Approved; Not approved and resubmission required;

Approved subject to condition(s) as stated / further required information as stated.

Approval not required. Others _____
(Please specify)

The Supervising Officer's Representative :


 Roger Man

Date of Response : 7 April 2018

c.c. File No. - C20/670

AJW/AGX/EY/RKFL/ac

**ENGINEER'S OFFICE
BLACK & VEATCH
HONG KONG LTD.**
25th Floor, Millennium City 6
392 Kwun Tong Road, Kowloon, Hong Kong.
Tel : 2601 1000
Fax : 2601 3988



**ENGINEER'S
REPRESENTATIVE'S
OFFICE**
Butterfly Valley Fresh Water Primary Service Reservoir
Kowloon, Hong Kong
(Not a postal address)

Your ref. : C9103/BVSR/WF/0076/10/13
Our ref. : 4991/(4/WSD/11)/M25/120/L100071

Date: 22 October 2013

Contract: 4/WSD/11 Project Office
c/o China Geo – Engineering Corporation
Rooms 2421-2425, 24/F, Sun Hung Kai Centre
30 Harbour Road
Wan Chai
Hong Kong

By Hand

Attn: Mr. Wong Fai (Site Agent)

Dear Sirs,

**Agreement No. CE 55/2008 (WS)
Contract No. 4/WSD/11
Construction of Butterfly Valley Fresh Water Primary Service Reservoir Extension and
Associated Mainlaying
Material Submission – Geotextile Filter**

We refer to your letter of 10 October 2013 supplementing the additional information for your proposal to use the following material:

<i>Item</i>	<i>Material</i>	<i>Manufacturer</i>	<i>Supplier</i>
1.	Geotextile Filter	Bonar Technical Fabrics	G & E Co. Ltd.

Please be advised that we have no objection in principle to your proposal, provided that the application of such materials shall be in full compliance with the manufacturer's recommendations and the Contract Specification.

You are reminded, pursuant to PS Clause 7.196S(3)(d), to provide the sieve size of the base soil upon collection of soil sample on Site for our information.

Yours faithfully,

Peter K H Ng
Engineer's Representative

PNg/AC/JT/dt



Drainage Services Department
Drainage Projects Division
44/F, Revenue Tower, 5 Gloucester Road,
Wan Chai, Hong Kong

渠務署
排水工程部
香港灣仔告士打道5號
稅務大樓44樓

來函編號 Your Ref: KLKJV/DC201002/T40/0173

本署編號 Our Ref: () in DP/8/4109CD/DC1002/30

電話 Tel: (852) 2435 7031

傳真 Fax: (852) 2827 8700

By fax and post
(Fax No. 2674 6688)

29 August 2011

Kwan Lee – Kuly Joint Venture
Unit 6, 16/F Yuen Long Trading Centre,
33 Wang Yip Street West,
Yuen Long, N.T.

(Attention: Mr. CHAN Wing-kai – Project Manager)

Dear Sirs,

Contract No. DC/2010/02
Drainage Improvement Works in Shuen Wan and Shek Wu Wai

Material Submission – Type B Geotextile

I refer to your above quoted letter dated 19 August 2011 and the attached email dated 29 August 2011 enclosing further information in response to the comments given in my letter dated 25 August 2011 regarding the captioned subject.

Please be advised that I have no objection to your proposal of using "Bontec SG110/110 Woven Polypropylene Type B Geotextile" manufactured by "Bonar Technical Fabrics" and supplied by "G and E Company Limited" as the geotextile filter Type B / Geotextile Type 2 for this Contract subject to its satisfactory performance on site.

Yours faithfully,


(W. L. YIP)
Engineer's Representative
Drainage Projects Division
Drainage Services Department

Encl.

cc. DC/2010/02 Site Office

Internal (to note in file): E/D19

WLY/

D1045

RECEIVED
08 JUN 2011

BY:

Your Ref. : KLKJV/DC200922/M60/1498
Our Ref. : (DC/2009/22)/R20/106(0019)

8 June 2011

Kwan Lee – Kuly Joint Venture
Unit 6, 16/F, Yuen Long Trading Centre
33 Wang Yip Street West, Yuen Long
New Territories, Hong KongShuen Wan RE's Office
Fo Chun Road, Pak Shek Kok, Tai Po, H.K.
T +852 2603 6933
F +852 2603 7998Attn : Mr. WONG Ching Lung (Site Agent)

Dear Sirs

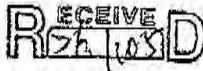
Contract No. DC/2009/22
Drainage Improvement Works in Shuen Wan, Tai Po – Contract 1**Material Submission – Type B Geotextile**

I refer to your above referenced letter dated 31 May 2011 enclosing further information in response to the comments given in my letter ref. (0017) in the same series dated 27 May 2011 on the captioned material submission for my approval.

Please be advised that I have no objection to your proposal of using "Bontec SG 110/110" manufactured by "Bonar Technical Fabrics Company" and supplied by "G & E Company Limited" "as the geotextile filter Type B / Geotextile Type 2 for this Contract subject to its satisfactory performance on site.

You are reminded to strictly follow the manufacturer's guidelines on storage, handling and installation procedures for application of the material.

Yours faithfully,
For and on behalf of
AECOM Asia Co. Ltd.
Eddie LUK
Resident Engineer
Water & Urban Developmentcc AECOM - Attn : Mr. Joseph HO
M/FEL/VH/pc
✓、



土木工程處
Civil Engineering Office

Web site 網址 : <http://www.cedd.gov.hk>
E-mail 電子郵件 :
Telephone 電話 : (852) 2760 3737
Facsimile 傳真 : (852) 2714 2054
Our reference 本署檔號 : () in PW WC/CV0402/R20/340 Pt.1
Your reference 來函檔號 : KS330/2005

香港九龍公主道101號
土木工程拓展署大樓四樓
4/F, Civil Engineering and Development Building,
101 Princess Margaret Road,
Kowloon, Hong Kong

Kin Shing Construction Company Limited
1/F,
27 Yin Chong Street,
Mong Kok
Kowloon
(Attn.: Mr. Patrick P K Chau - Site Agent)

24 January 2005

BY MAIL & FAX No. 2780 2085

Dear Sirs,

Contract No. CV/2004/02
Reconstruction of Wong Shek and Ko Lau Wan Public Piers

Material Submission - Geotextile for Silt Curtain

I refer to your letter of 14.1.2005 enclosing the particulars of the geotextile for fabrication of silt curtain.

In accordance with PS Clause 26.08(2), the proposed "SG 100/100" woven geotextile manufactured by Bonar Technical Fabrics is approved to be used under the captioned Contract.

Pursuant to PS Clause 26.08(1), you are required to submit details of the silt curtains 3 weeks before their deployment.

Contract No.	Post	Initial	Copy	Action
CV/2004/02	CM			
	PM			
	SA			
	Sub-A			
	Eng. (1)			
	Eng. (2)			
	G.F.			
	Foreman			
	Q.S.			
	Safety			
	Material			
	Survey			

Yours faithfully,

(Signature)
(W H LEE)
Engineer's Representative
Port Works Division
Civil Engineering and Development Department

c.c.
SIOW/P2B - Site Copy

cls

24-FEB-2005 18:57 FROM SFK

TO 25700089

P.01/01

10:47:10L

土木工程拓展署
CEDD Civil Engineering and Development Department

Web site 網址 : <http://www.cedd.gov.hk>
 E-mail 電子郵件 :
 Telephone 電話 : (852) 2762 5035
 Facsimile 傳真 : (852) 2714 2054
 Our reference 本署編號 : (15) in PW WC/CV0306/R20/340 Pt.01
 Your reference 來函編號 : CIV:002091/1.2/HW/SY/CC/me(S0087), CIV:002091/1.2/HW/SY/CC/me(S0118)

土木工程處
 Civil Engineering Office

112

香港九龍公主道 101 號
 土木工程拓展署大樓 4 樓
 4/F, Civil Engineering and Development Building,
 101 Princess Margaret Road,
 Kowloon, Hong Kong

18 February 2005

Sun Fook Kong (Civil) Limited
 Rms. 3207-10,
 Great Eagle Centre,
 23 Harbour Road,
 Wan Chai,
 Hong Kong
 (Attn: Mr. Howard KONG - Fax No.2827 6275)

Dear Sirs,

Contract No. CV/2003/06
Stanley Waterfront Improvement Project -
Construction of Pier and Boardwalk

Fabric for Silt Curtain

I refer to your above letters dated 21.1.2005 and 15.2.2005 proposing the SG100/100 fabric supplied by "Bonar Technical Fabrics" for silt curtain.

I have no objection to your proposed material for silt curtain.

Yours faithfully,

Paul Y K MA
 (Paul Y K MA)

Engineer's Representative
 Port Works Division
 Civil Engineering and Development Department

c.c.
 Site Office (Attn: S1OW/PIA)
 CEG/PIA

File PW WC/CV0306/M10/300

YKM/olam

Post-It® Fax Note	7671	Date	24/2/05
To	MR. STANLEY WAN	From	CHANG SEE-FAU
Co./Dept.	G&E	Co.	SFK
Phone #	25700028	Phone #	60347709
Fax #	25700089	Fax #	

Maunsell Consultants Asia Ltd

8/F Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Shatin, N.T., Hong Kong

茂盛(亞洲)工程顧問有限公司

香港新界沙田鄉事會路 138 號新城市中央廣場第 2 座 8 樓

T +852 2605 6262 F +852 2691 2649 www.maunsell.aecom.com

SRE's Office T +852 2669 0708 F +852 2631 2889 E sre@ltriw.com.hk

Your Ref. : DC0706/M1.2/1512 & 1529
Our Ref. : (DC/2007/06)/R20/106(0023)

RECEIVED
13 NOV 2008

BY:

Chiu Hing Construction & Transportation Co. Ltd.
Room 201, 2/F Fuk Shing Commercial Building
28 On Lok Mun Street
On Lok Tsuen, Fanling
New Territories, Hong Kong

Attn : Mr. Roger Lau (Site Agent)

13 November 2008

Dear Sir,

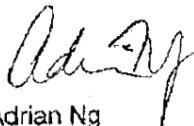
Contract No. DC/2007/06
River Improvement Works in Upper Lam Tsuen River,
She Shan River and Upper Tai Po River

Proposed Geotextile at Gabion Wall in She Shan River and Upper Tai Po River

I refer to your letter dated 7 November 2008 and 12 November 2008 respectively.

Please be advised that since the water flow rate of the proposed geotextile model Bontec SG100/100 meets the requirements in accordance with P.S. Clause 7.150, I have no further objections to your proposed use of woven geotextile model Bontec SG100/100, supplied by "G and E Company Ltd." at gabion wall in She Shan River and Tai Po River, subject to its satisfactory performance on site.

Yours faithfully,



Adrian Ng
Resident Engineer

cc MCAL - Attn : Mr. Conder Yan
Chiu Hing H.O.

AN/BC/ek



**Bontec SG110/110
Woven Geotextile**

G and E Company Introduction



G AND E COMPANY LIMITED

14/F Kiu Yin Commercial Building

361 – 363 Lockhart Road,

Wanchai, Hong Kong

Tel: 2570 0103

Fax: 2570 0089

website: www.g-and-e.com

G and E – a Perspective

G and E, founded in 1984, is a geosynthetics specialist who distributes a wide variety of geosynthetics from a list of renowned global manufacturers. The Company also manages a competent installation contracting service. To better serve our clients, design and engineering service have also been established in our portfolio. We aspire to provide our client comprehensive engineering solutions, from application and design, supply of materials and their installation, to conformance testing and project commissioning.

G and E takes a strong vision in geosynthetics application and development by working closely with consultants, academics, professional organizations, research institutions, testing laboratories and manufacturers, a mission to broaden the versatility of geosynthetics and its innovation.



Our vast product range covers:

Geotextile, geomembrane, geodrain, geocomposite, geogrid, geocell, band drain, erosion control systems, geosynthetic clay liner, cementitious liner, rockfall barrier, gabion, geofoam, silt curtain, concrete mattress and geotextile container, extending a wide scope of application in most civil, geotechnical and marine engineering construction.

We offer our clients:

- Extensive product knowledge and installation method statement
- Comprehensive application, design, contracting and commissioning services
- High integrity and superior professional attention
- Superb quality products at competitive price



G and E is ISO 9001:2015 quality management certified and a VSRS registered contractor, with a remarkably successful working relationship with a long list of clients, the Government, project owners, contractors, designers, consultant engineers, overseas distributors and trading partners. The clientele extends to Macau, Southeast Asia and Southern China.

Talk to us today and see how we can work together for cost-effective and time saving solutions. We are into our 35th year in the industry, we have a library of experience to share and to support your project.

ISO9001:2015



IGAI



International Geosynthetics Society



Product Endorsement



Registered Subcontractor



G and E runs a distribution network and sourcing agent of geosynthetics, as well as a provider of professional design and installation services.



TKO - Lam Tin Tunnel - Main tunnel and associated works using DSP silt curtain

The company handles a comprehensive range of geosynthetic materials:

GEOTEXTILE: Woven, non-woven, thermal bonded, needle punched, spun bond, special weave & composite

GEOMEMBRANE: HDPE, LLDPE and PVC membrane, keyed preformed, tunnel, conductive and concrete protection liner, gas barrier, basement waterproofing, leakage collection & effluent containment

GEODRAIN: Geonet, geocomposite, band drain, sheet drain and miradrain

GEOGRID: Uni, mono direction and composite geogrid

EROSION CONTROL: Erosion mat, concrete mat, coir mat, geocell, gabion, rockfall mesh, flexible rockfall fence, cementitious liner

MARINE: Silt curtain, turbidity control, block mat, geotextile tube, oil & trash boom, geotextile bag & container

GEOSYNTHETIC CLAY LINER: Bentonite liner and composite

TUNNEL: Tunnel support & invert drainage void former

LANDSCAPING : Geotextile filter, root barrier and drainage mat and roof drain

SPECIAL SERVICE: Geomembrane leak location survey, HDPE pipe welding, HDPE lining repair and Dust Control

Registration Certificate

This is to certify that the Management Systems of

G & E Company Limited

have been assessed by AJA Registrars and registered
against the requirements of

ISO 9001:2015

Certificate No. : **AJA14/17026**

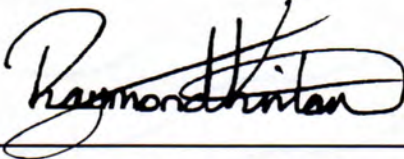
Date of Original Registration : **22nd January 2014**

Expiry Date : **27th March 2021**

Date of Re-Registration : **27th March 2018**



0059


Chief Executive - AJA Registrars Ltd



This certificate is issued in respect of the locations & scope of registration detailed in the Associated Registration Schedule.
This certificate is the property of AJA Registrars Ltd Unit 6 Gordano Court Gordano Gate Business Park Serbert Close Portishead Bristol UK BS20 7FS
and must be returned on request. A member of the AJA Group of Companies

NE/2017/01

Tseung Kwan O – Lam Tin Tunnel: Tseung Kwan O Interchange and Associated Works

Silt Curtain Deployment Plan

Appendix D – Silt Curtain Inspection Checklist



Contract No: NE/2017/01
 Project Title: Tseung Kwan O - Lam Tin Tunnel -
 Tseung Kwan O Interchange and Associated Works

Ref. no.: _____
 Date: _____

Daily Silt Curtain Inspection List (for JV internal use)

Item	Description	Condition		Immediate Action Required? *		Target Rectification Date	Remark
		Yes	No	Yes	No		
1	Any floating debris/ refuse within silt screen/ curtain?						
2	Tying to the platform in good condition?						
3	Geotextile intact and in good condition						
4	Any obstruction to water flow between geotextile?						

*Note: For silt curtain with defects which need to be rectified immediately, related marine works have to be stopped until rectification works are completed to the satisfaction of the *Supervisor*
 Please Tick the Appropriate Box

JV's Representative
 Inspected by : _____
 Post : _____
 Signature : _____
 Date : _____

Silt Curtain ID: _____

Location: _____

Inspection Date and Time: _____



Contract No: NE/2017/01
 Project Title: Tseung Kwan O - Lam Tin Tunnel -
 Tseung Kwan O Interchange and Associated Works

Ref. no.: _____
 Date: _____

Weekly Silt Curtain Inspection List (for JV and *Supervisor* joint inspection use)

Item	Description	Condition		Immediate Action Required? *		Target Rectification Date	Remark
		Yes	No	Yes	No		
1	Any floating debris/ refuse within silt screen/ curtain?						
2	Tying to the platform in good condition?						
3	Geotextile intact and in good condition						
4	Any obstruction to water flow between geotextile?						

*Note: For silt curtain with defects which need to be rectified immediately, related marine works have to be stopped until rectification works are completed to the satisfaction of the *Supervisor*
 Please Tick the Appropriate Box

JV's Representative
 Inspected by : _____
 Post : _____
 Signature : _____
 Date : _____

Supervisor's Representative
 Reviewed by : _____
 Post : _____
 Signature : _____
 Date : _____

Silt Curtain ID: _____

Location: _____

Inspection Date and Time: _____



Contract No: NE/2017/01
 Project Title: Tseung Kwan O - Lam Tin Tunnel -
 Tseung Kwan O Interchange and Associated Works

Ref. no.: _____
 Date: _____

Silt Curtain Inspection List (for Diver Team's use)

Item	Description	Condition		Immediate Action Required? *		Target Rectification Date	Remark
		Yes	No	Yes	No		
1	Any floating debris/ refuse within silt screen/ curtain?						
2	Tying to the platform in good condition?						
3	Geotextile intact and in good condition?						
4	Steel chain ballast in good condition?						
5	Any obstruction to water flow between geotextile?						

*Note: For silt curtain with defects which need to be rectified immediately, related marine works have to be stopped until rectification works are completed to the satisfaction of the *Supervisor*
 Please Tick the Appropriate Box

Diver Team's Representative
 Inspected by : _____
 Post : _____
 Signature : _____
 Date : _____

Supervisor's Representative
 Reviewed by : _____
 Post : _____
 Signature : _____
 Date : _____

Silt Curtain ID: _____

Location: _____

Inspection Date and Time: _____

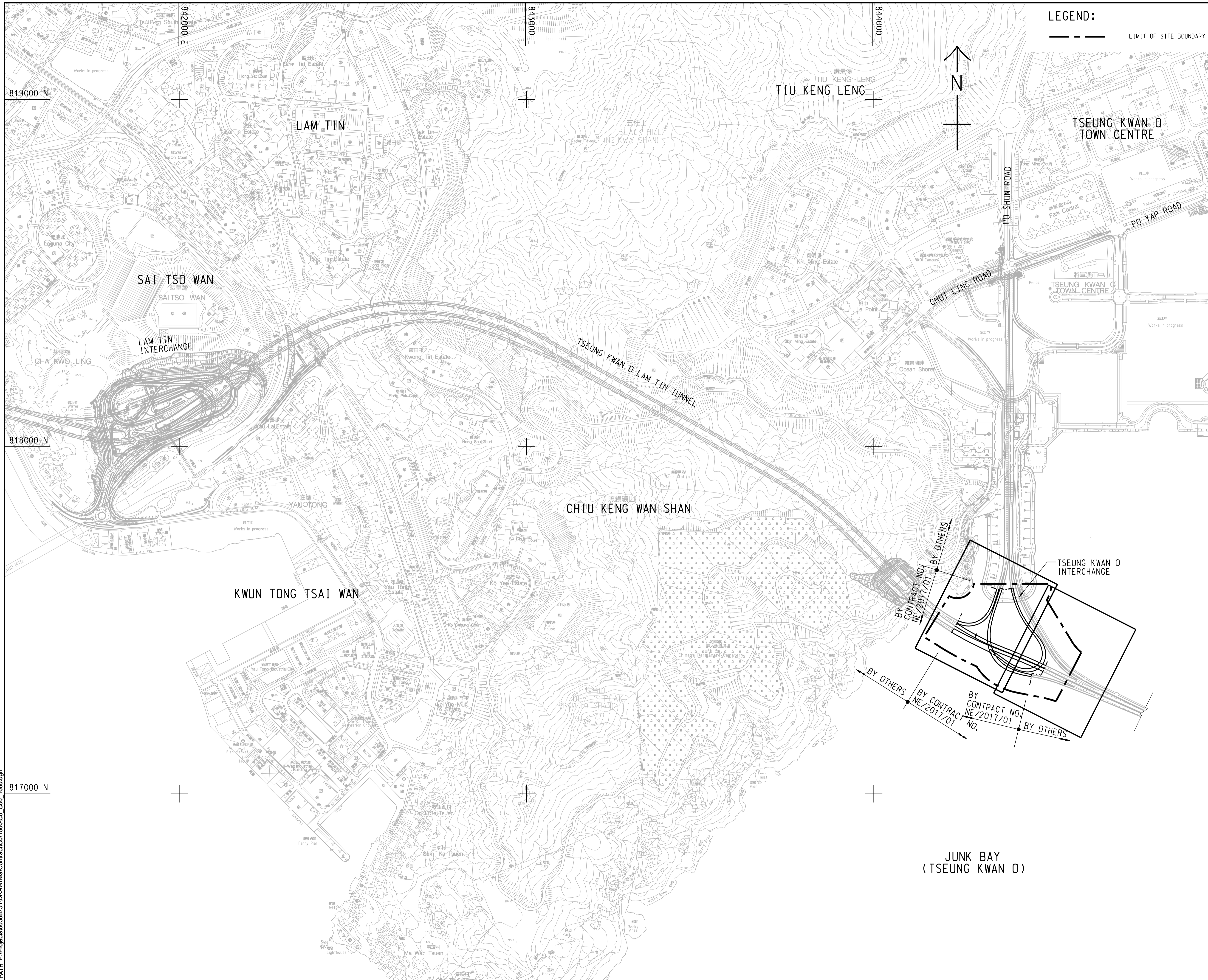
NE/2017/01

Tseung Kwan O – Lam Tin Tunnel: Tseung Kwan O Interchange and Associated Works

Silt Curtain Deployment Plan

Appendix E – Site Layout

ISO A1 594mm x 841mm
 Approved: HKT
 Checked: RPCM
 Designer: WN
 Project Management Initials:
 2017/09
 HEDS
 PATH: P:\Projects\603075\DRAWING\Contract\603075\000\CS_C00_1000.dgn



LEGEND:
 - - - - - LIMIT OF SITE BOUNDARY



PROJECT
 項目
TSEUNG KWAN O - LAM TIN TUNNEL

CONTRACT TITLE
 TSEUNG KWAN O - LAM TIN TUNNEL
 TSEUNG KWAN O INTERCHANGE AND ASSOCIATED WORKS

CLIENT
 業主
 土木工程拓展署
 Civil Engineering and Development Department

CONSULTANT
 工程顧問公司
 AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 分判工程顧問公司

ISSUE/REVISION
 修訂

I/R	DATE	DESCRIPTION	CHK.
-	JUN.17	TENDER DRAWING	RPCM

STATUS
 階段

SCALE
 比例
 A1 1 : 5000

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

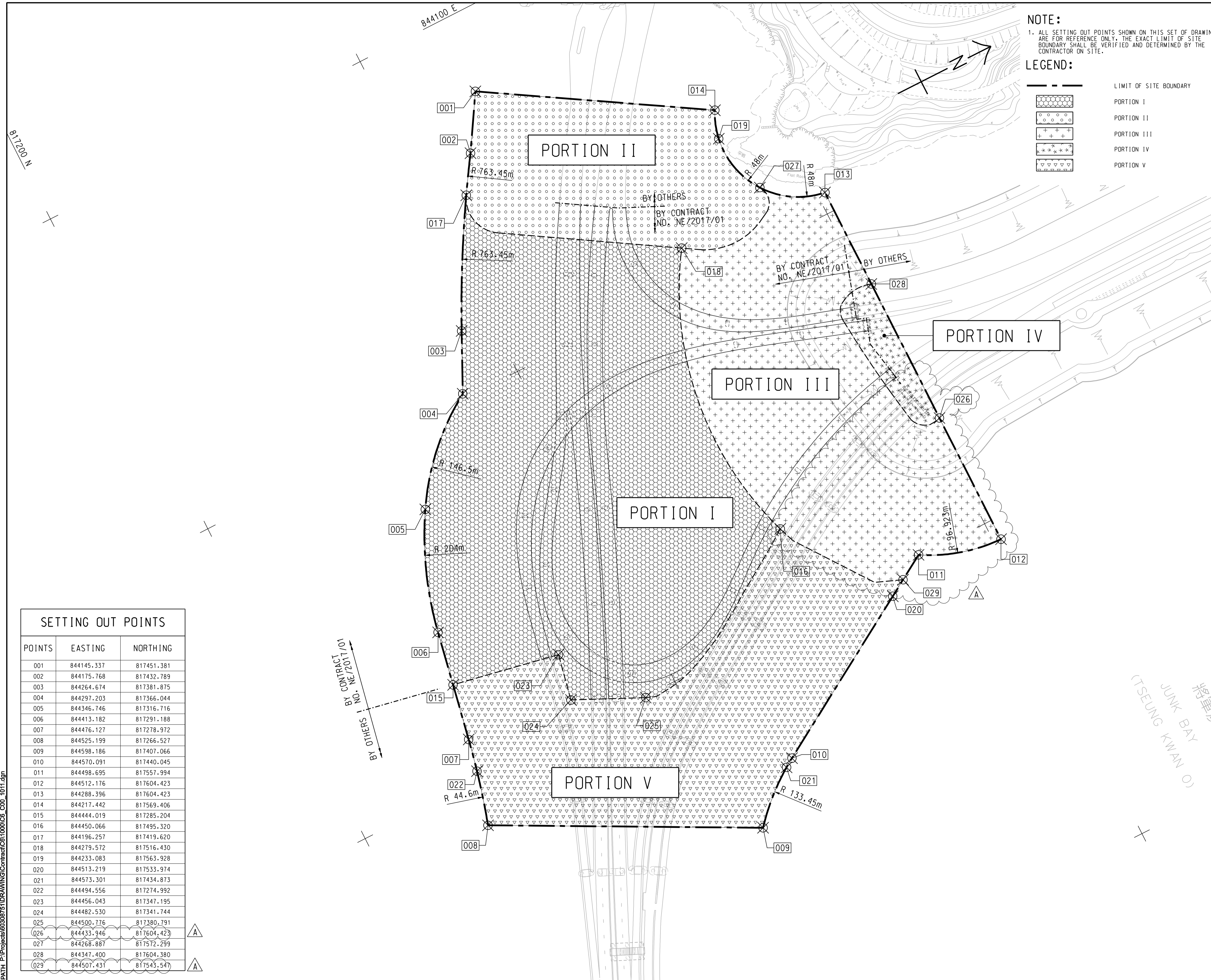
PROJECT NO.
 項目編號
 60308751

CONTRACT NO.
 合約編號
 NE/2017/01

SHEET TITLE
 圖紙名稱
 KEY PLAN AND LOCATION PLAN

SHEET NUMBER
 圖紙編號
 60308751/C6/C00/1000

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NOTE:
1. ALL SETTING OUT POINTS SHOWN ON THIS SET OF DRAWINGS ARE FOR REFERENCE ONLY. THE EXACT LIMIT OF SITE BOUNDARY SHALL BE VERIFIED AND DETERMINED BY THE CONTRACTOR ON SITE.

LEGEND:

---	LIMIT OF SITE BOUNDARY
[Pattern]	PORTION I
[Pattern]	PORTION II
[Pattern]	PORTION III
[Pattern]	PORTION IV
[Pattern]	PORTION V

SETTING OUT POINTS

POINTS	EASTING	NORTHING
001	844145.337	817451.381
002	844175.768	817432.789
003	844264.674	817381.875
004	844297.203	817366.044
005	844346.746	817316.716
006	844413.182	817291.188
007	844476.127	817278.972
008	844525.199	817266.527
009	844598.186	817407.066
010	844570.091	817440.045
011	844498.695	817557.994
012	844512.176	817604.423
013	844288.396	817604.423
014	844217.442	817569.406
015	844444.019	817285.204
016	844450.066	817495.320
017	844196.257	817419.620
018	844279.572	817516.430
019	844233.083	817563.928
020	844513.219	817533.974
021	844573.301	817434.873
022	844494.556	817274.992
023	844456.043	817347.195
024	844482.530	817341.744
025	844500.176	817380.791
026	844433.946	817604.423
027	844268.887	817572.299
028	844347.400	817604.380
029	844507.431	817545.547

AECOM

PROJECT
TSEUNG KWAN O - LAM TIN TUNNEL

CONTRACT TITLE
TSEUNG KWAN O - LAM TIN TUNNEL
TSEUNG KWAN O INTERCHANGE AND ASSOCIATED WORKS

CLIENT
土木工務拓展署
Civil Engineering and Development Department

CONSULTANT
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
分列工程顧問公司

ISSUE/REVISION

I/R	DATE	DESCRIPTION	CHK.
A	JUL.17	TENDER ADDENDUM NO.1	RPCM
-	JUN.17	TENDER DRAWING	RPCM

SCALE
A1 1: 1000

DIMENSION UNIT
公尺/米

KEY PLAN
索引圖

PROJECT NO.
60308751

CONTRACT NO.
NE/2017/01

SHEET TITLE
PORTION OF SITE

SHEET NUMBER
60308751/C6/C00/1011A

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JUNK BAY
將軍澳
(TSEUNG KWAN O)

