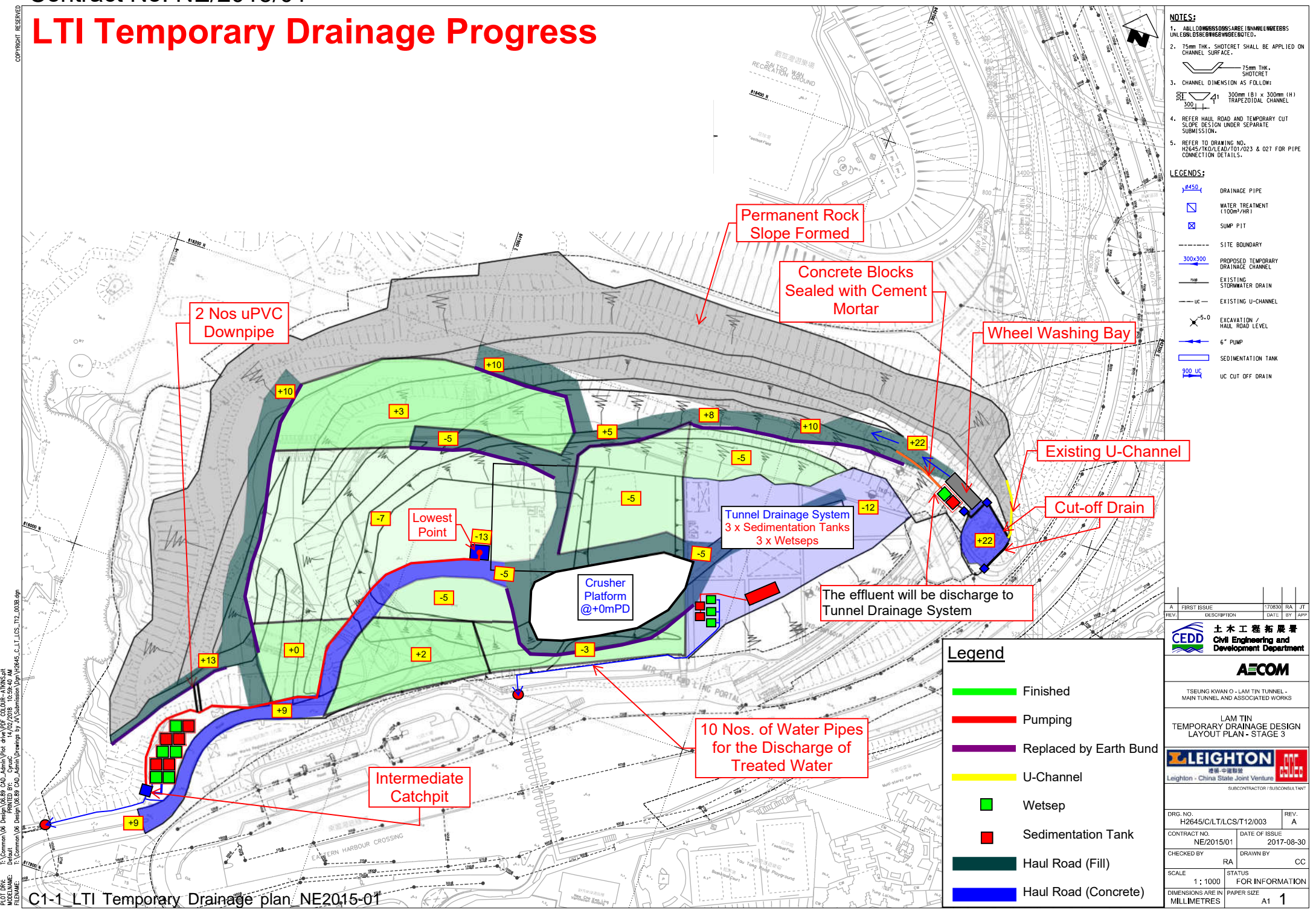


LTI Temporary Drainage Progress

COPYRIGHT RESERVED



- NOTES:**
1. ALL DIMENSIONS ARE LARGE 1000 MILLIMETRES UNLESS OTHERWISE SPECIFIED.
 2. 75mm THK. SHOTCRETE SHALL BE APPLIED ON CHANNEL SURFACE.
 3. CHANNEL DIMENSION AS FOLLOW:

	300mm (B) x 300mm (H) TRAPEZOIDAL CHANNEL
--	--
 4. REFER HAUL ROAD AND TEMPORARY CUT SLOPE DESIGN UNDER SEPARATE SUBMISSION.
 5. REFER TO DRAWING NO. H2645/T/0/LEAD/T01/02/3 & 027 FOR PIPE CONNECTION DETAILS.

- LEGENDS:**
- DRAINAGE PIPE
 - WATER TREATMENT (100m³/HR)
 - SUMP PIT
 - SITE BOUNDARY
 - PROPOSED TEMPORARY DRAINAGE CHANNEL
 - EXISTING STORMWATER DRAIN
 - EXISTING U-CHANNEL
 - EXCAVATION / HAUL ROAD LEVEL
 - 6" PUMP
 - SEDIMENTATION TANK
 - U-CUT OFF DRAIN

REV.	DESCRIPTION	DATE	BY	APP.
A	FIRST ISSUE	17/08/30	RA	JT

土木工程拓展署
 Civil Engineering and Development Department

TSEUNG KWAN O - LAM TIN TUNNEL - MAIN TUNNEL AND ASSOCIATED WORKS

LAM TIN TEMPORARY DRAINAGE DESIGN LAYOUT PLAN - STAGE 3

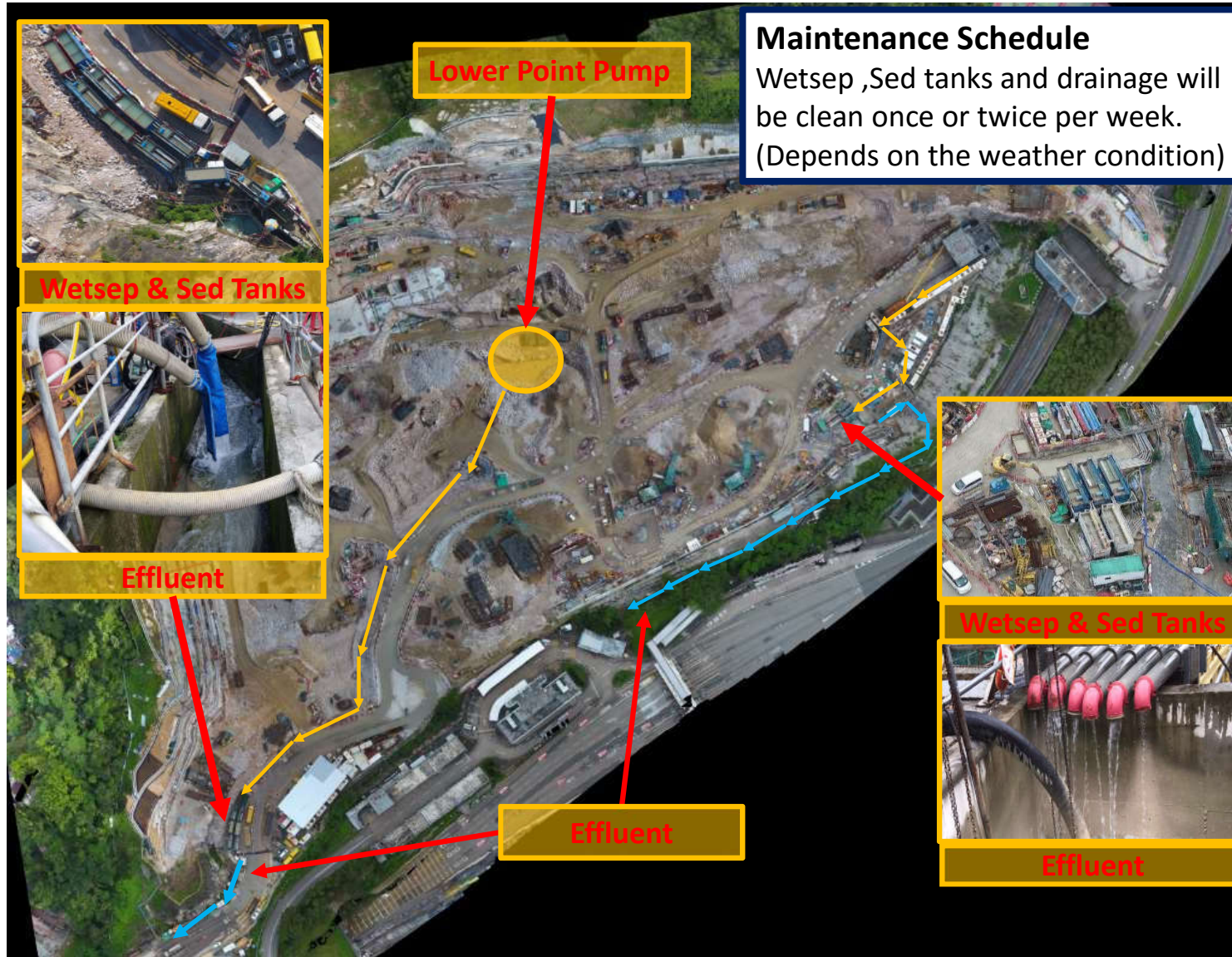
禮頓
 Leighton - China State Joint Ventures
 SUBCONTRACTOR / SUBCONSULTANT

DRG. NO. H2645/C/LT/CS/T12/003	REV. A
CONTRACT NO. NE/2015/01	DATE OF ISSUE 2017-08-30
CHECKED BY RA	DRAWN BY CC
SCALE 1 : 1000	STATUS FOR INFORMATION
DIMENSIONS ARE IN MILLIMETRES	PAPER SIZE A1 1

Legend

- Finished
- Pumping
- Replaced by Earth Bund
- U-Channel
- Wetsep
- Sedimentation Tank
- Haul Road (Fill)
- Haul Road (Concrete)

T:\Common\06 Design\06.02 CAD_Admin\Plot_dwg\PDF_COLOUR_A1M1000.ctb
 T:\Common\06 Design\06.02 CAD_Admin\Drawings by A\Submission\Draw\H2645.dwg
 PLOT DATE: 2017/08/30 10:00:00
 PLOT BY: RA



FOR CONSTRUCTION

ISSUE/REVISION

NO.	DATE	DESCRIPTION	BY	CHK
B	JUL 16	WORKING DRAWING	ALC	
A	OCT 15	TENDER ADDENDUM NO.1	CYKC	
-	AUG 15	TENDER DRAWING	CYKC	

STATUS
WORKING DRAWING

SCALE
1:500
DIMENSION UNIT
METRES

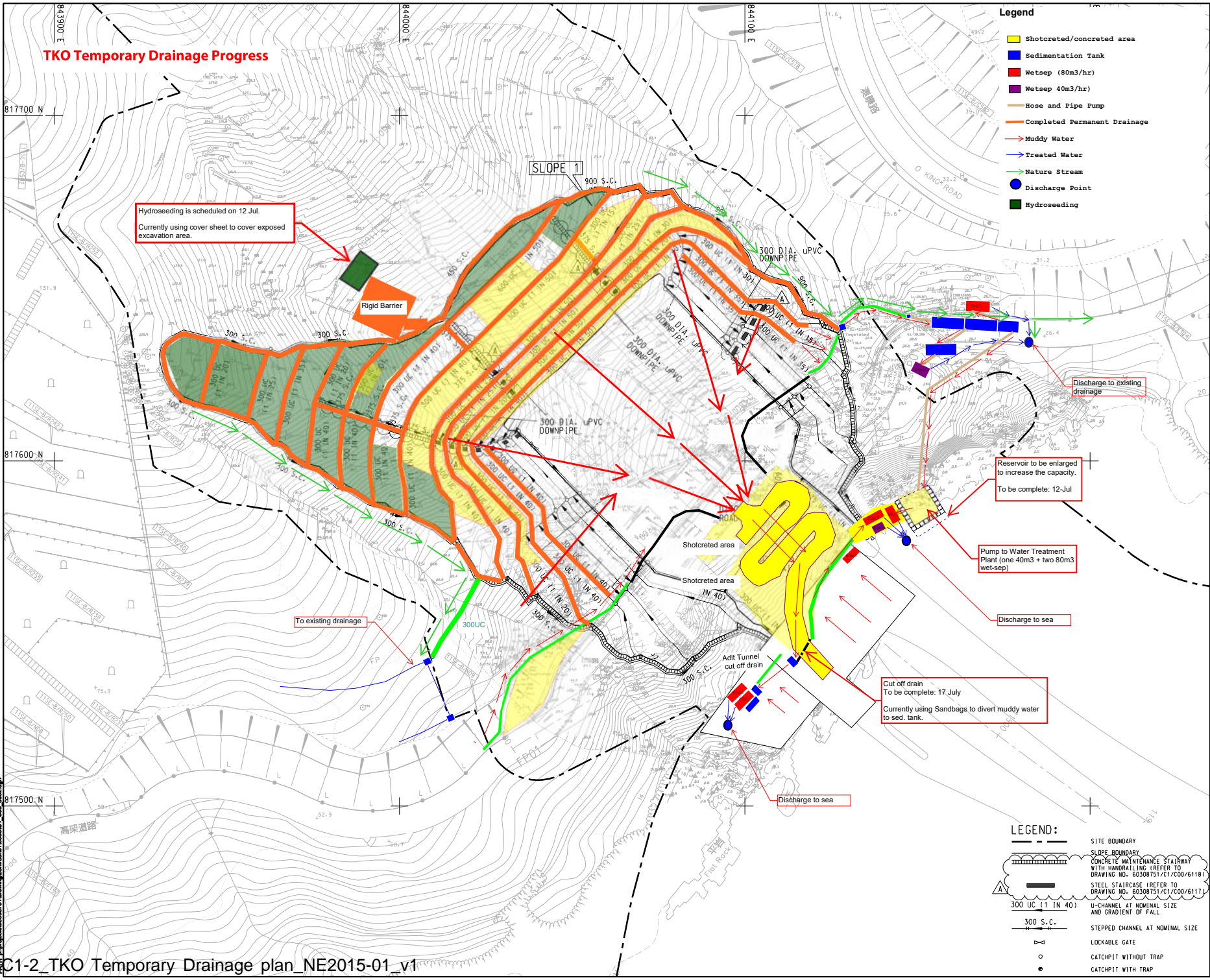
KEY PLAN

PROJECT NO. 60308751
CONTRACT NO. NE/2015/01

SHEET TITLE
TSEUNG KWAN O PORTAL SITE FORMATION DRAINAGE LAYOUT PLAN

SHEET NUMBER
60308751/C1/C00/6092B 3

Project Management Initials: Designer: BMS Checked: CHC Approved: CHN
 ISO 9001:2015 Certified
 2014/08/20
 60308751/C1/C00/6092B



- Legend**
- Shotcreted/concreted area
 - Sedimentation Tank
 - Wetsep (80m³/hr)
 - Wetsep 40m³/hr
 - Hose and Pipe Pump
 - Completed Permanent Drainage
 - Muddy Water
 - Treated Water
 - Nature Stream
 - Discharge Point
 - Hydroseeding

- LEGEND:**
- SITE BOUNDARY
 - SLOPE BOUNDARY
 - CONCRETE MAINTENANCE STAIRWAY WITH HANDRAILING (REFER TO DRAWING NO. 60308751/C1/C00/6118)
 - STEEL STAIRCASE (REFER TO DRAWING NO. 60308751/C1/C00/6117)
 - U-CHANNEL AT NOMINAL SIZE AND GRADIENT OF FALL
 - STEPPED CHANNEL AT NOMINAL SIZE
 - LOCKABLE GATE
 - CATCHPIT WITHOUT TRAP
 - CATCHPIT WITH TRAP

Maintenance Schedule
Wetsep ,Sed tanks and drainage will be clean once or twice per week.
(Depends on the weather condition)

Sed tanks

Site Clearance & provide cover to exposed excavation area

Wetsep

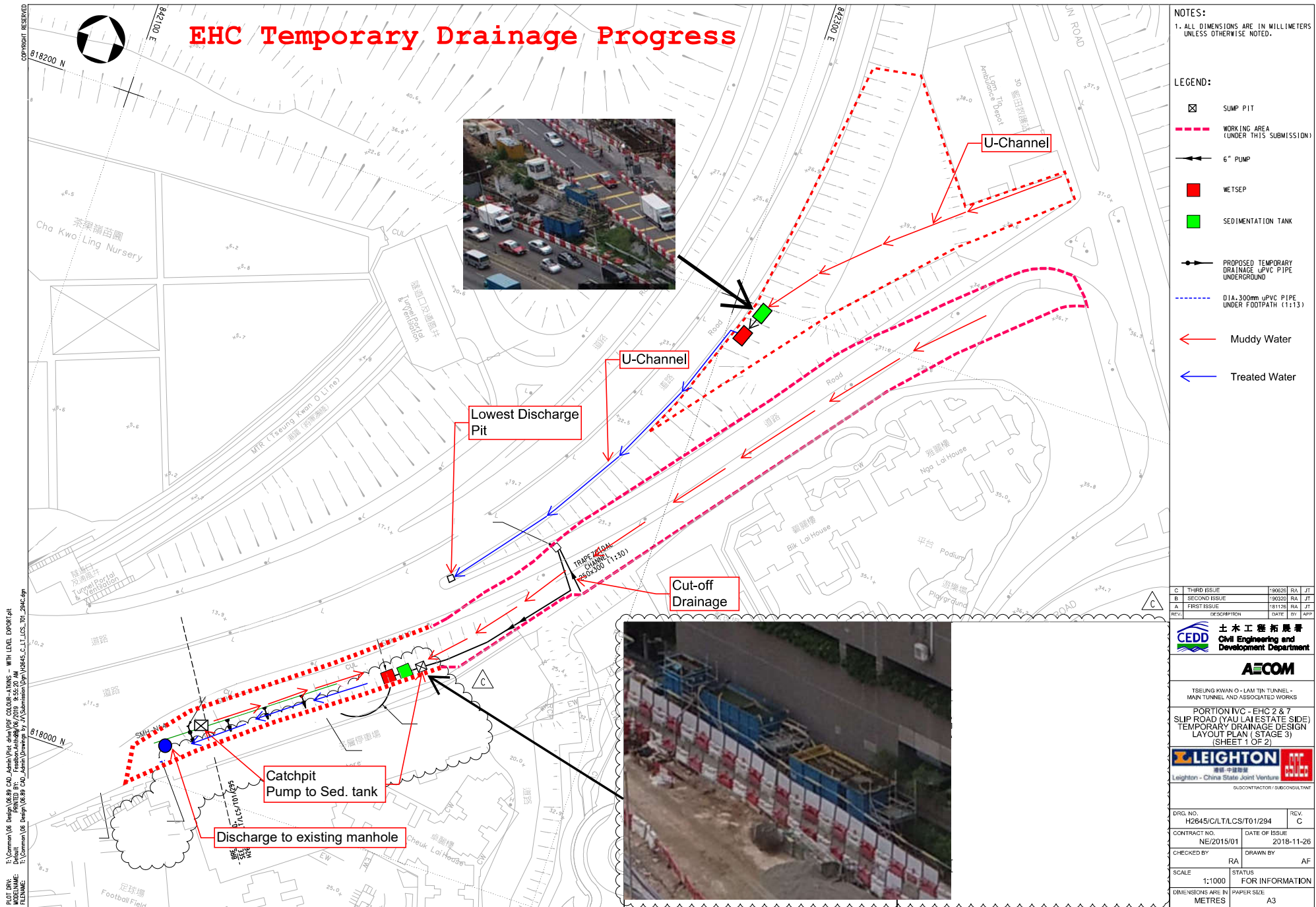
Effluent

Extension of Sed tanks

Contract Number NE/2015/01

2019年6月28日
新界

The image is an aerial photograph of a construction site for a road or bridge project. The site is situated on a hillside with terraced slopes. A large concrete structure, likely a bridge or viaduct, is under construction. Several callout boxes with yellow borders and red text are overlaid on the image, pointing to specific areas. A blue box at the top right contains the 'Maintenance Schedule' text. A yellow box labeled 'Sed tanks' points to a large rectangular structure. A yellow box labeled 'Site Clearance & provide cover to exposed excavation area' points to a worker in a yellow vest. A yellow box labeled 'Wetsep' points to a blue truck. A yellow box labeled 'Effluent' points to a concrete structure. A yellow box labeled 'Extension of Sed tanks' points to a concrete structure. A large black text 'Contract Number NE/2015/01' is overlaid on the right side of the image. A date stamp '2019年6月28日 新界' is visible in the top left corner of the image.



C	THIRD ISSUE	190226	RA	JT
B	SECOND ISSUE	190320	RA	JT
A	FIRST ISSUE	181126	RA	JT
REV.	DESCRIPTION	DATE	BY	APP

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

AECOM

TSEUNG KWAN O - LAM TIN TUNNEL - MAIN TUNNEL AND ASSOCIATED WORKS

PORTION IVC - EHC 2 & 7
SLIP ROAD (YAU LAI ESTATE SIDE)
TEMPORARY DRAINAGE DESIGN LAYOUT PLAN (STAGE 3)
(SHEET 1 OF 2)

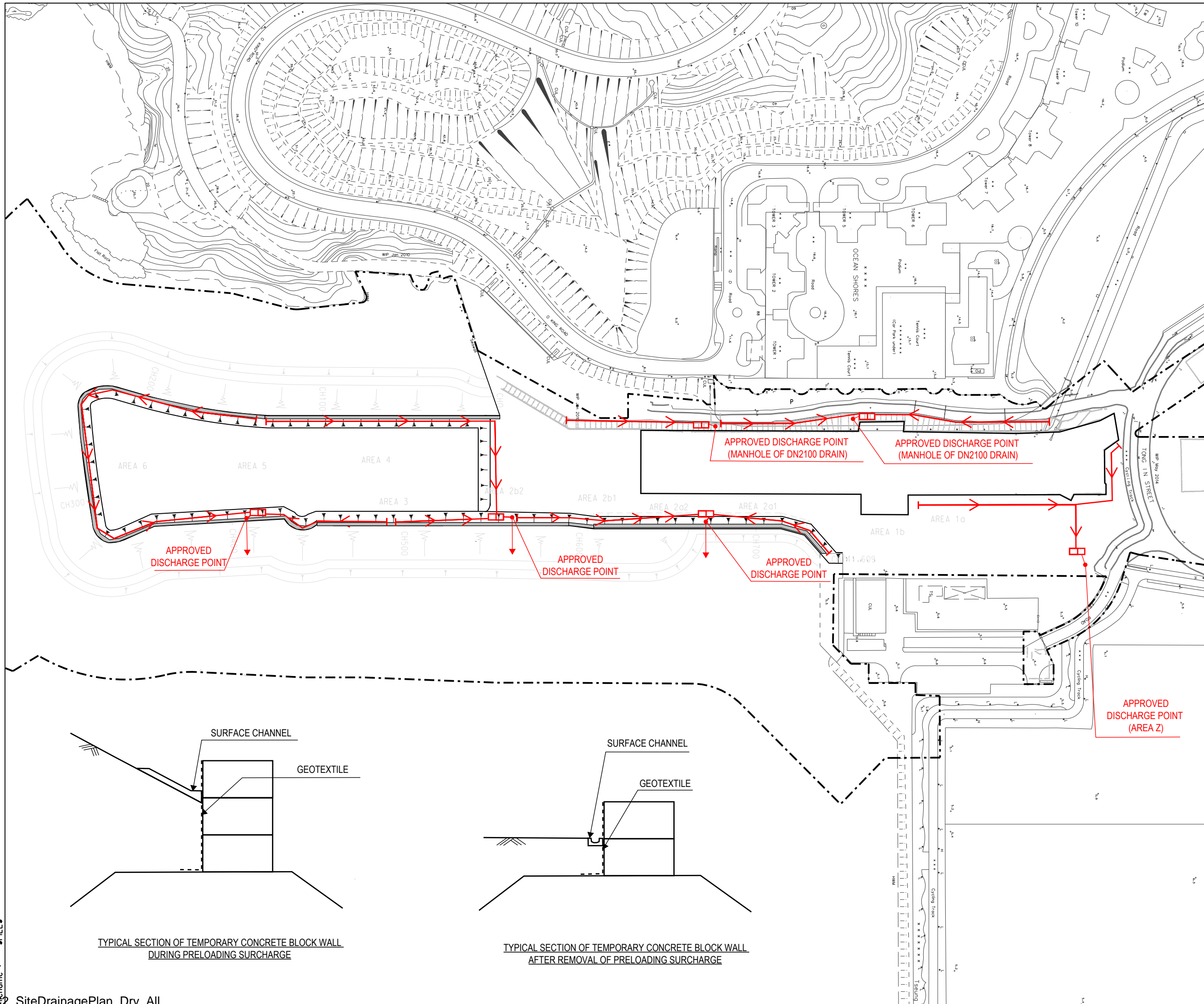
LEIGHTON 中國建築
Leighton - China State Joint Venture

DRG. NO. H2645/C/LT/LCS/T01/294

CONTRACT NO. NE/2015/01 DATE OF ISSUE 2018-11-26

CHECKED BY RA DRAWN BY AF

SCALE 1:1000 STATUS FOR INFORMATION
DIMENSIONS ARE IN METRES PAPER SIZE A3



- LEGEND**
- FLOW PATH
 - SEDIMENTATION/ DESILTING TANK AND WETSEP (80m3/hr)
 - TEMPORARY CONCRETE BLOCK WALL

Temporary Works Design Drawings
in compliance with Contract No. NE/2015/02

22/05/2019

Chengrui HU MSc, CEng, MICE, MHKIE, RPE Date
Independent Checking Engineer
on behalf of: Hewson Consulting Limited,
Unit 1101, 11/F, 9 Chong Yip Street,
Kwun Tong, Kowloon, Hong Kong

Rev.	Description	By	Date

PM

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

Supervisor
AECOM AECOM Asia Co. Ltd.

Contractor
CRBC 中國路橋 BuildKing
CRBC-Build King Joint Venture

Project title
工程名稱

Contract No. NE/2015/02
Tseung Kwan O - Lam Tin Tunnel
Road P2 and Associated Works

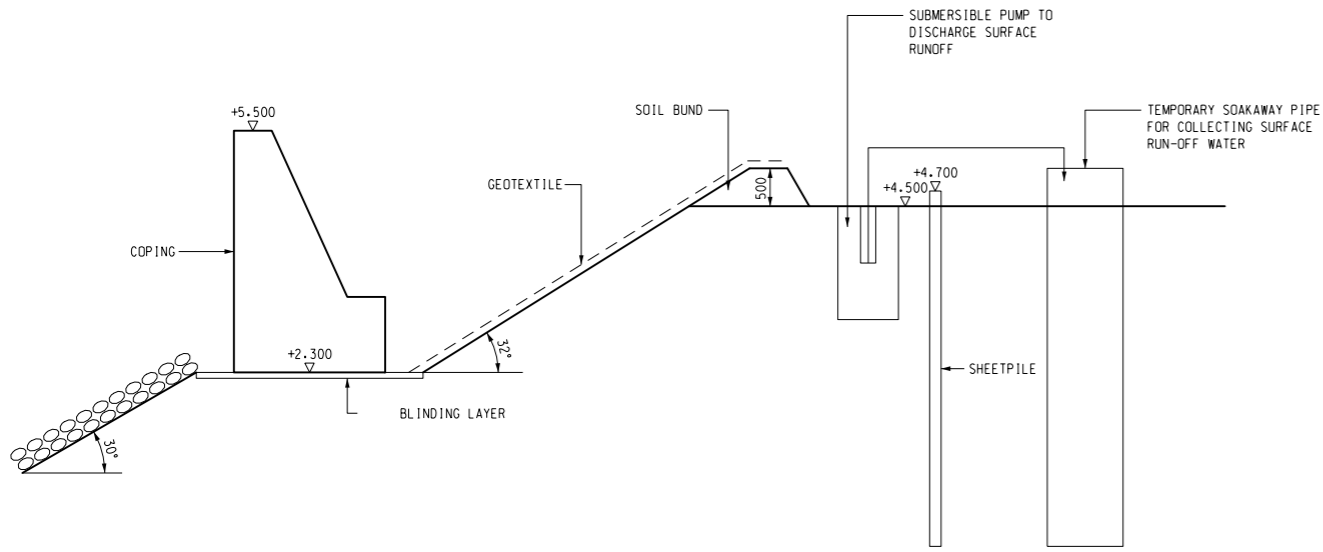
Drawing title
圖紙名稱

TEMPORARY DRAINAGE MANAGEMENT PLAN
AT PORTION V, VI, IX AND AREA Z AFTER THE
REMOVAL OF TEMPORARY STEEL COFFERDAM

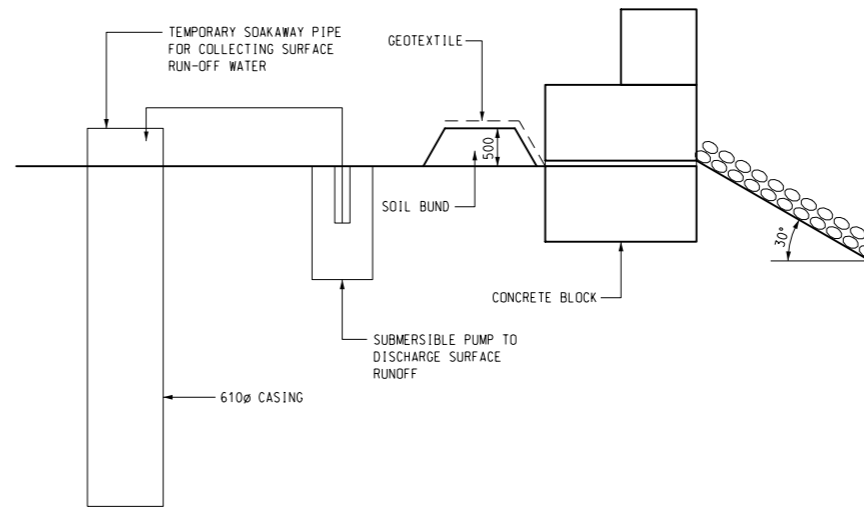
Drawing no. 圖紙編號	NE/2015/02/SK/1321	Rev. 修訂	-
Drawn By 繪圖	AL	Checked By 覆核	Approved By 批准人
Scale 比例	1:600 @ A1	Status 階段	7

Printed by : \$DATE\$
Filename : \$FILE\$

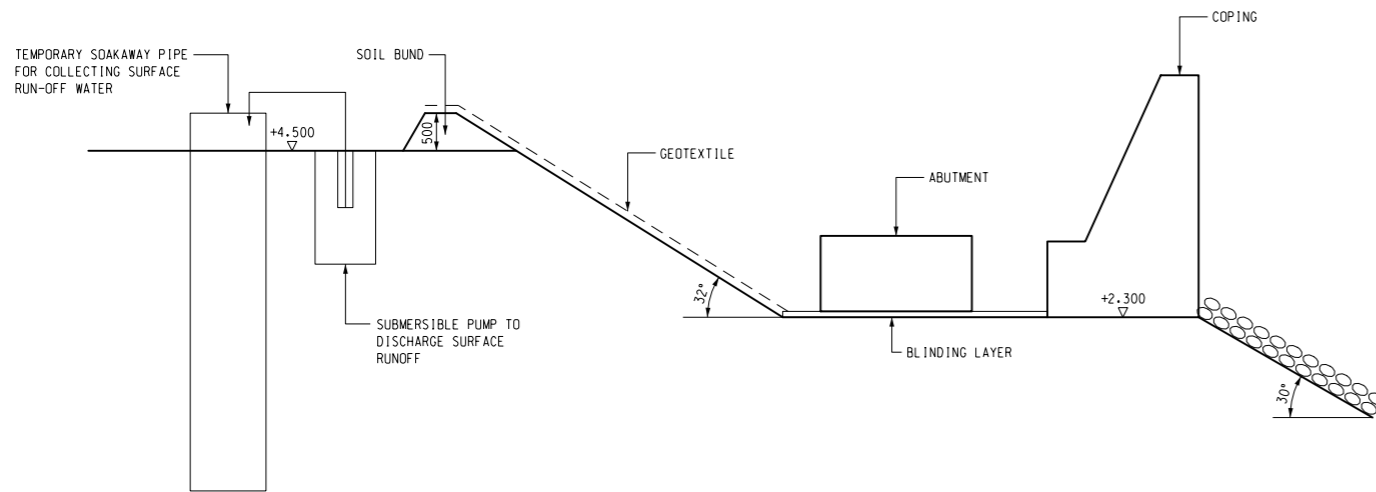
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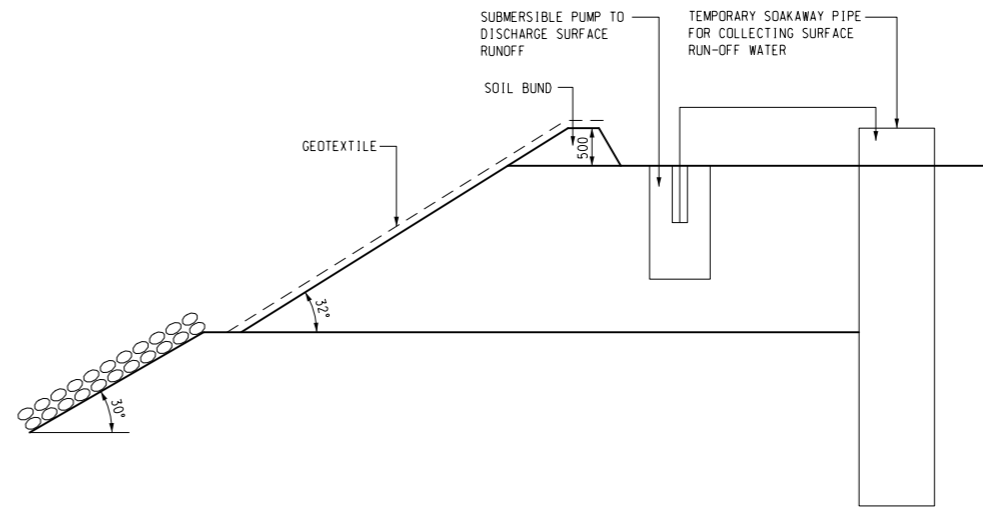
A WEST SIDE



B EAST SIDE



C SOUTH SIDE



D TYPICAL SECTION

Rev.	Description	By	Date
PM	 土木工程拓展署 Civil Engineering and Development Department		
Supervisor	 AECOM Asia Co. Ltd.		
Contractor	 中國路橋 CRBC BuildKing CRBC-Build King Joint Venture		
Project title 工程名稱			
Contract No. NE/2015/02			
Tseung Kwan O - Lam Tin Tunnel Road P2 and Associated Works			
Drawing title 圖紙名稱			
SEAWALL SECTION AND DETAILS			
Drawing no. 圖紙編號		Rev. 修訂	
NE/2015/02/SK/0465		-	
Drawn By 繪圖	Checked By 覆核	Approved By 批准人	
AL			
Scale 比例	1:50 @ A1	Status 階段	

Surface Runoff Assessment for Portion IX (inc. surcharge area)	
Portion IX Surface area :	19683.57 m ²
Design rainfall	
Assuming 1 hour of heavy rainfall has occurred :	70 mm/h
Design flow Rate (Qp):	$Q_p = C i A$ $= 0.18 \times 70 \times 19683.5$ $= 248 \text{ m}^3/\text{h}$
Water Treatment Facility	
Capacity of water treatment plan	= 80 m ³ /h
Number of water treatment plant*	= 248 / 80
	= 3

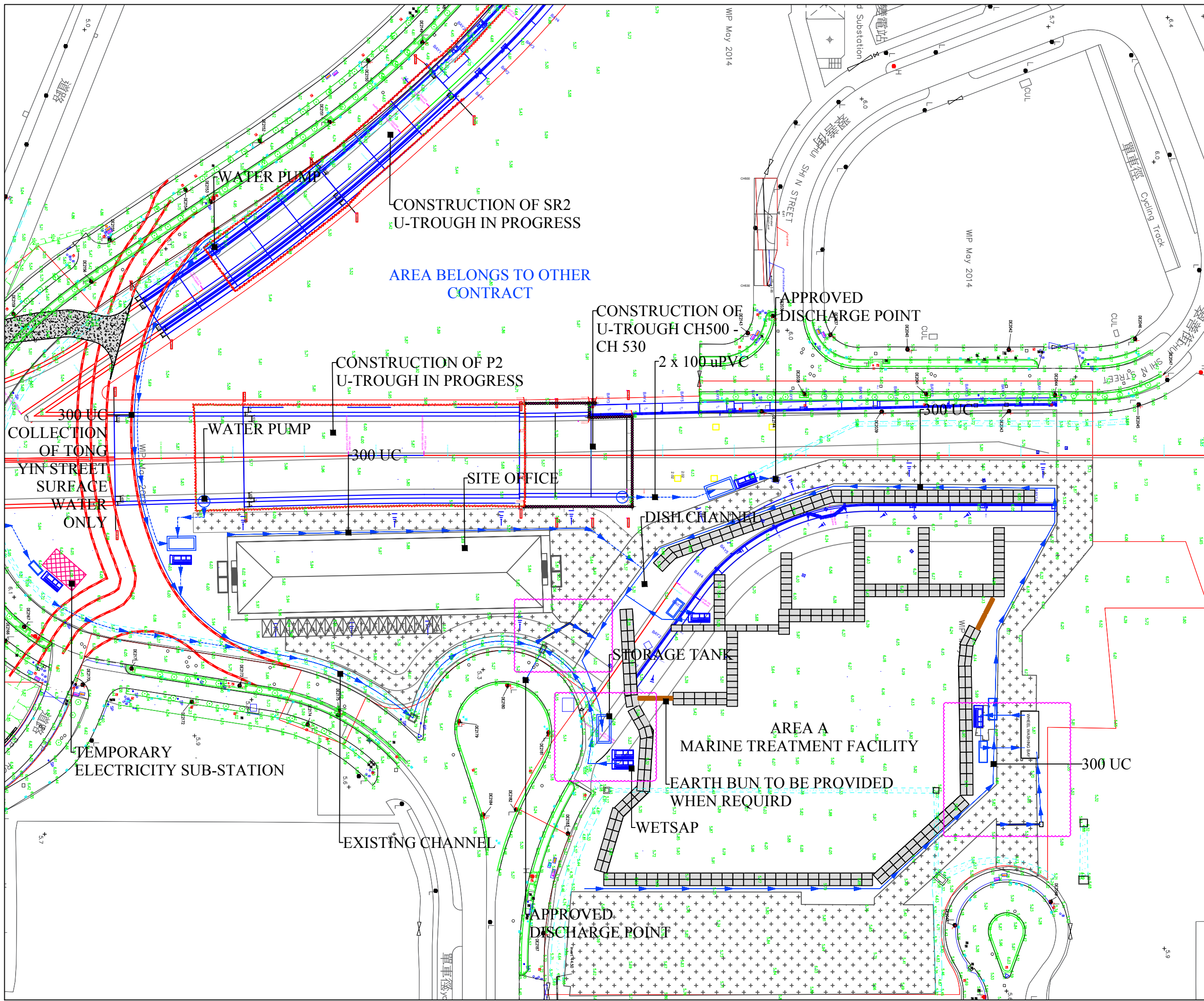
Thus, 3 nos of water treatment plant are required. In addition, 2 others are provided on site for emergency use

*Treatment of stormwater within the worst affected hour is assumed

Printed by : 7/12/2017
 Filename : Z:\Survey\TKOLTT\JOB\JOB0143_AREA_Z_GRAY_FUNG_20171206_NE201502SK0096_NE_2015_02_SK_0096.dgn



Rev.	Description	By	Date
修訂	內容摘要	設計	日期
PM			
土木工程拓展署 Civil Engineering and Development Department		Supervisor	
AECOM Asia Co. Ltd.		Contractor	
中國路橋 CRBC-Build King Joint Venture		BuildKing	
Project title 工程名稱			
Contract No. NE/2015/02			
Tseung Kwan O - Lam Tin Tunnel Road P2 and Associated Works			
Drawing title 圖紙名稱			
PLAN			
Drawing no. 圖紙編號	NE/2015/02//SK/0096		Rev. 修訂
Drawn By 繪圖	AL	Checked By 覆核	Approved By 批准人
Scale 比例	1:400 @ A1		Status 階段



- NOTES**
 1. ALL DIMENSION ARE IN m UNLESS STATED.
- LEGEND:**
- FLOW PATH
 - WETSAP
 - WATER PUMP (TO BE INSTALLED WHEN REQUIRED)
 - EARTH BUN (TO BE PROVIDED WHEN REQUIRED)
 - AREA OF UPDATE

Rev	Amendment	By	Chk.	App.	Date

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

SUPERVISOR

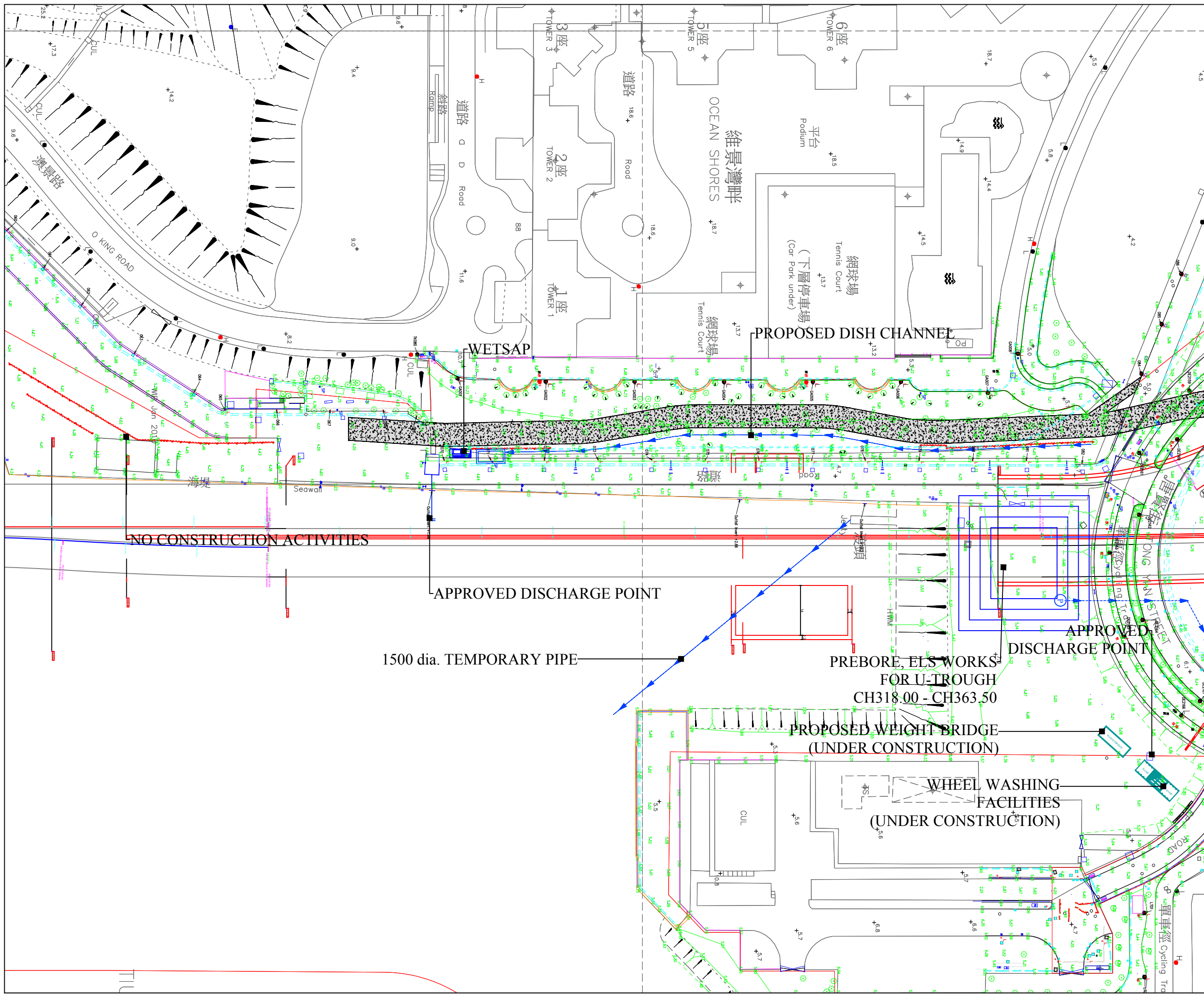
Contractor

 CRBC-Build King Joint Venture

Project
 TSEUNG KWAN O - LAM TIN TUNNEL ROAD P2 AND ASSOCIATED WORKS

Title
 TEMPORARY DRAINAGE PROPOSAL (UPDATE JULY 2018)

Status SUBMISSION		
Drawn	Checked	Approved
Scale 1:1000 A3	CAD File No. SK096E	Date 20-07-2018
First issued 20-07-18	Drawing No.	Rev.
© Copyright Reserved 版權所有 不得翻印 NE201502/CIVIL/096E/GA/001		



- NOTES**
 1. ALL DIMENSION ARE IN m UNLESS STATED.
- LEGEND:**
- FLOW PATH
 - WETSAP
 - WATER PUMP (TO BE INSTALLED WHEN REQUIRED)
 - EARTH BUN (TO BE PROVIDED WHEN REQUIRED)

Rev	Amendment	By	Chk.	App.	Date

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

SUPERVISOR
AECOM

Contractor
CRBC 中國路橋 **Build King**
 CRBC-Build King Joint Venture

Project
 TSEUNG KWAN O - LAM TIN TUNNEL ROAD P2 AND ASSOCIATED WORKS

Title
 TEMPORARY DRAINAGE PROPOSAL (UPDATE JULY 2018)

Status SUBMISSION		
Drawn	Checked	Approved
Scale 1:1000 A3	CAD File No. SK096E	Date 20-07-2018
First issued 20-07-2018	Drawing No.	Rev.
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Contract No.: NE/2017/02

**Contract Title: Tseung Kwan O – Lam Tin Tunnel – Road P2/D4 and
Associated Works**

Flooding Mitigation Plan

Treatment facility







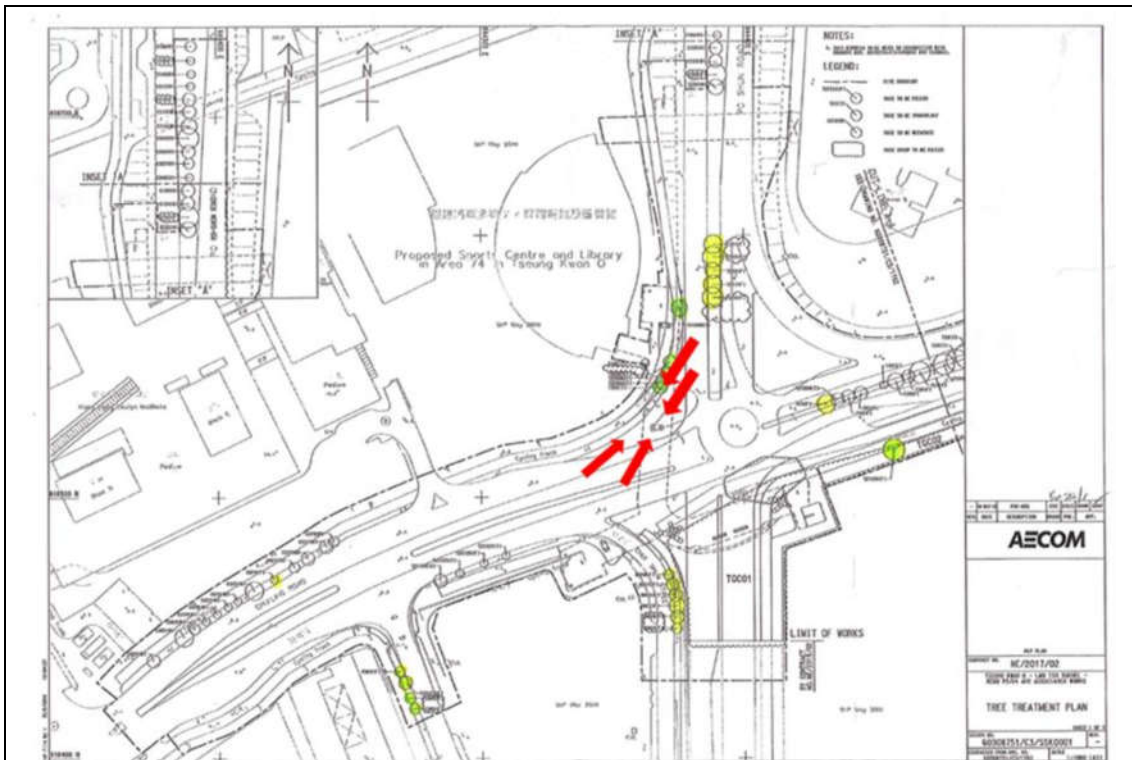
Bunding





Surface runoff collection





Height difference between the road and site area to form a natural flow. Sump pit was provided for wastewater collection.



Gully Protection

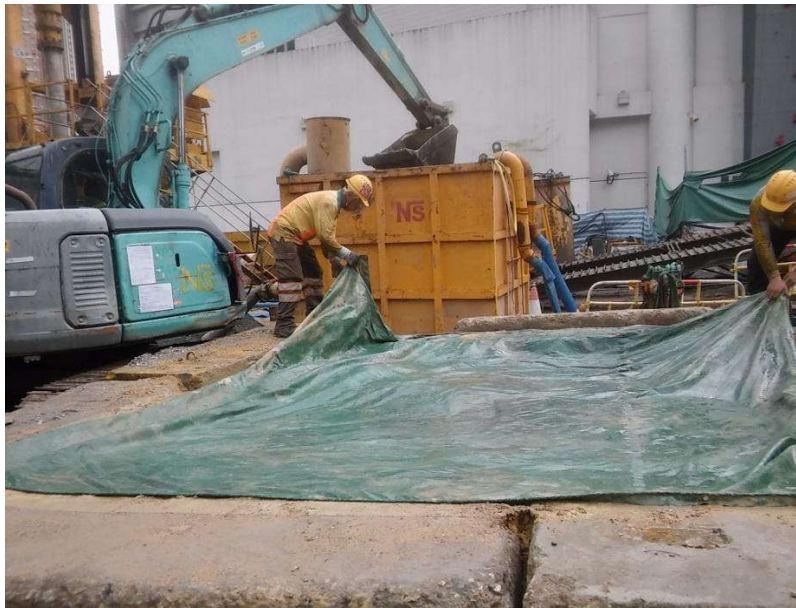


Gully were protected and covered by geotextile.



Stockpile Cover





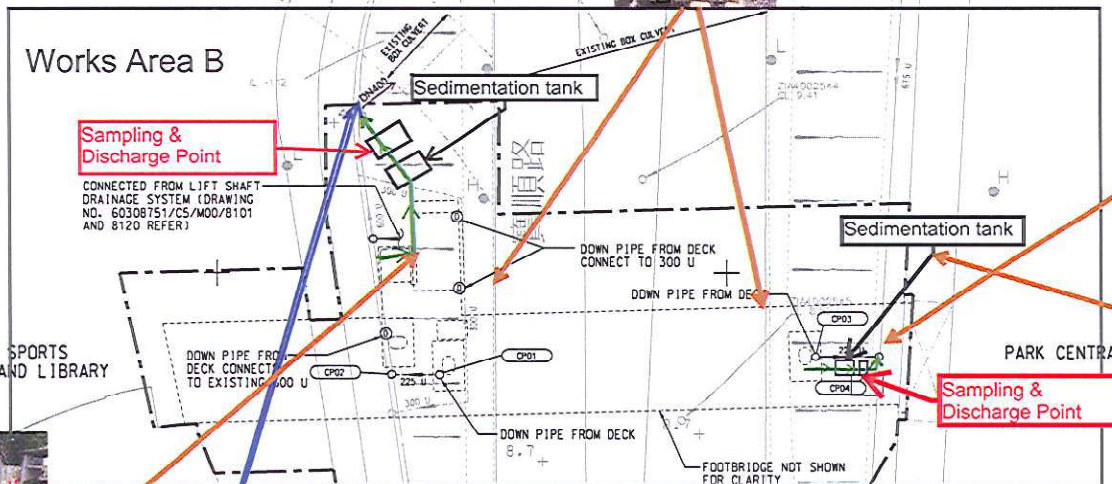
Stockpile Should be proper cover with tarpaulin.

CATCHPIT SCHEDULE

U/S ID	D/S ID	U/S G.L. (mPD)	D/S G.L. (mPD)	LENGTH (m)	GRADIENT 1 IN	U/S I.L. (mPD)	D/S I.L. (mPD)	UC SIZE (mm)	U/S ID TYPE	UC MATERIAL	BEDDING
CP01	CP02	6.50	6.50	6	100	6.275	6.219	225	CATCHPIT	CONCRETE	B
CP03	CP04	8.00	5.50	6	2	7.775	5.342	225	CATCHPIT	CONCRETE	B

- Water Flow
- Precautionary measures
- Silt Measurement
- Sedimentation tank
- Sampling Point

Geotextiles are on the top of gully cover along the site as a filter to avoid any muddy water discharge directly into the drainage system.



Exposed slope is covered by taupaulin



Manhole Inspection for Silt measurement, we have regular cleaning the channel weekly or in an emergency

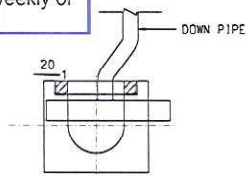


Sandbag is placed along the water barrier boundary to avoid the surface runoff.

Manhole Inspection for Silt measurement, we have regular cleaning the channel weekly or in an emergency



DN400 ID culvert



DETAILS CONNECTION OF DOWNPIPE TO U-CHANNEL WITH GRATING



PROJECT
TSEUNG KWAN O - LAM TIN TUNNEL

CONTRACT TITLE
TSEUNG KWAN O - LAM TIN TUNNEL
NORTHERN FOOTBRIDGE

CLIENT
CEDD
Civil Engineering and
Development Department

CONSULTANT
AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK
1	AUG 16	TENDER DRAWING	AMH

SCALE
A1: 1:250

DIMENSION UNIT
METRES

PROJECT NO.
60308751

CONTRACT NO.
NE/2015/03

SHEET TITLE
DRAINAGE LAYOUT

SHEET NUMBER
60308751/CS/C00/1301

Site Surface Runoff Measures

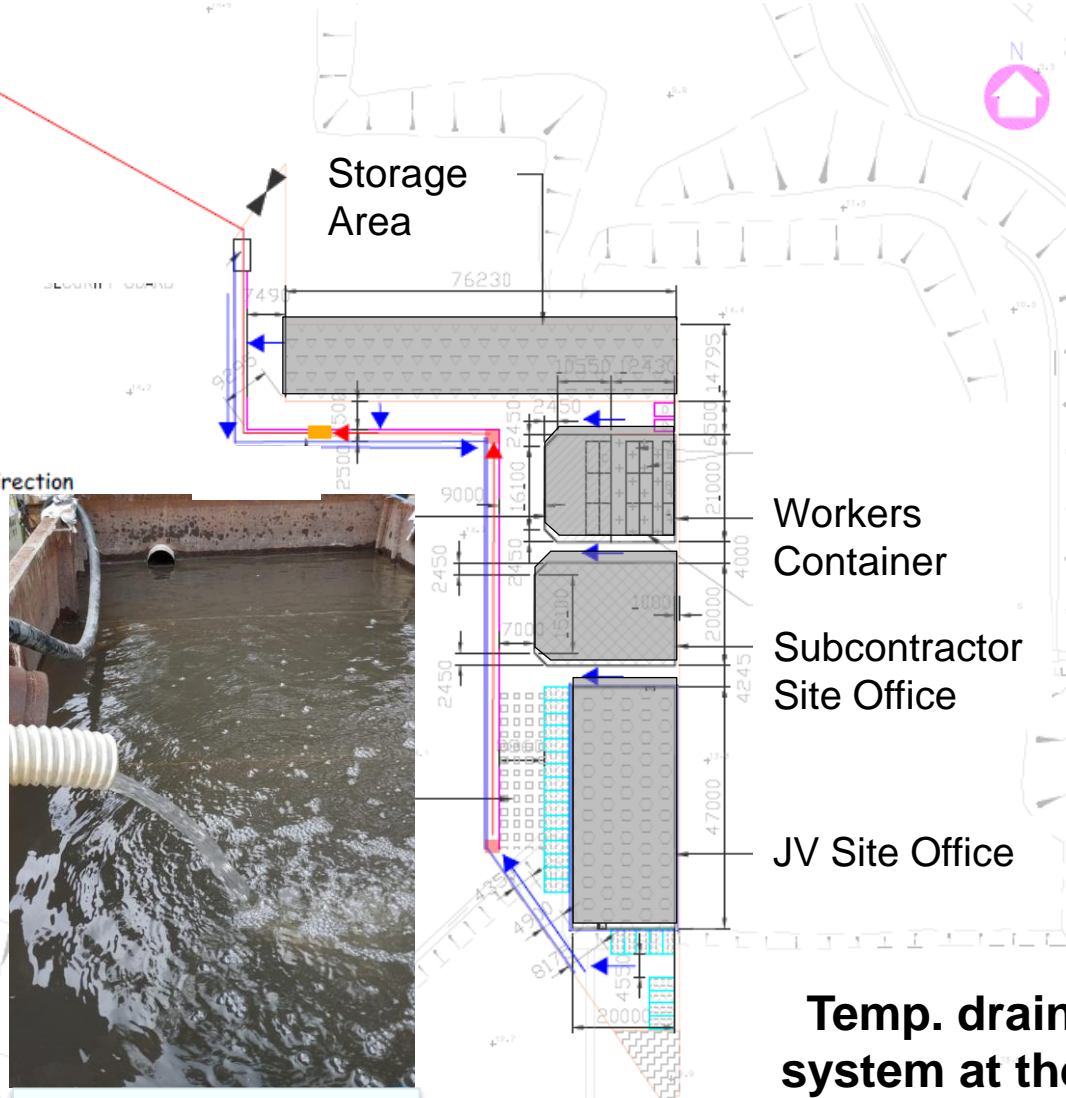
俊和-上隧-中冶聯營
CW - STEC - CMGC JV



Temp. Channel

Discharge to manhole "ZIA 4004921"

- ← channel / surface water flow direction
- ← water pump direction
- sump pit
- sedimentation tank



Sump Pit



Sedimentation Tank

Temp. drainage system at the site office area