



Lam Geotechnics Limited

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Ref : G1001/CS/L285/FEP-01/356/2009
Date : 14 February 2011

**China Harbour Engineering Company – China Road and Bridge Corporation Joint
Venture**

19/F China Harbour Building,
370-374 King's Road,
North Point, Hong Kong

Attn: Mr. Cheung Fuk Hing, Daniel – Site Agent

Dear Sir,

**FEP-01/356/2009
Contract No. HY/2009/11
Central- Wan Chi Bypass – North Point Reclamation
Noise Management Plan (Rev. 5)**

Referring to your submission of the captioned plan through email on 14 February 2011, we have reviewed your submitted details and hereby certify this submission in accordance with Condition 2.16 of Further Environmental Permit no. FEP-01/356/2009.

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

Yours faithfully,

Raymond Dai
Environmental Team Leader

c.c.

CEDD	- Mr. Patrick Keung	(By Fax)
HyD	- Mr. Jones Lai	(By Fax)
AECOM(CWB)	- Mr. David Kwan	(By Fax)
AECOM(WDII)	- Mr. Frankie Fan	(By Fax)
ENVIRON	- Mr. David Yeung	(By Fax)

ENVIRON

Ref.: AACWBIECEM00_0_0970L.11

15 February 2011

China Harbour Engineering Company Ltd.–
China Road and Bridge Corporation Joint Venture
19/F, China Harbour Building
370-374 King's Road
North Point,
Hong Kong

By Fax (3157 1085) & Post

Attention: Mr. Daniel Cheung

Dear Mr. Cheung,

**Re: FEP-01/356/2009
Contract No. HY/2009/11
Central – Wan Chai Bypass – North Point Reclamation
Revised Noise Management Plan (Rev. 5)**

Reference is made to CHEC-CRBC Joint Venture's submission of Revised Noise Management Plan (Rev. 5) for the captioned by E-mail on 14 February 2011 for our review and comment.

Please be informed that we have no adverse comments on the captioned submission. We write to verify the captioned submission in accordance with Condition 2.16 of FEP-01/356/2009.

Thank you for your kind attention.

Yours sincerely,



David Yeung
Independent Environmental Checker

c.c.	CEDD	Mr. Patrick Keung	by fax: 2577 5040
	HyD	Mr. Jones Lai	by fax: 2714 5289
	AECOM (site)	Mr. Terry Siu	by fax: 3529 2829
	AECOM	Mr. Kelvin Cheng	by fax: 2691 2649
	LAM	Mr. Raymond Dai	by fax: 2882 3331

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Contract No.: HY/2009/11
Central – Wanchai Bypass, North Point Reclamation

REVISED NOISE MANAGEMENT PLAN


	Name	Signature
Prepared by:	China Harbour Engineering Co., Ltd. – China Road and Bridge Corporation Joint Venture	

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- B Open Channel T – Blockwork Wall Layout
- C Open Channel U – Blockwork Wall Layout
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- E Seawall Layout & Setting Out Plan
- F Dredging Layout
- G Noise Sensitive Receiver (NSRs)
- H Construction Schedule

1.0 Introduction

Under the requirement of Condition 2.16 of the Further Environmental Permit No. FEP- 01/356/2009 for the Project “Wan Chai Development Phase II and Central-Wan Chai Bypass - North Point Reclamation”, China Harbour Engineering Company Limited – China Road and Bridge Corporation Joint Venture (the Contractor) has submitted Noise Management Plan to EPD for deposited on 1st March 2010

The abovementioned contract entitled “North Point Reclamation” (Contract No. HY/2009/11) – as a part of the “permanent and temporary reclamation works including associated dredging and backfilling works in Wan Chai Development Phase II (WDII) area” which is covered by in the Environmental Permit No. EP-356/2009. China Harbour Engineering Company Limited – China Road and Bridge Corporation Joint Venture (CHEC-CRBC JV, hereafter JV) grants a further environmental permit (No. FEP-01/356/2009). Under the Part C of the FEP, JV prepares a noise management plan in order to fulfill the FEP condition. This NMP provide an evaluation of the potential noise impacts arising during construction and operation phases. The construction noise levels have been predicted based on the estimate of the construction plants used and assessed against the EIAO-TM noise criteria. Appropriate mitigation measures have been recommended where adverse impacts are predicted. *Please refer to the general layout plan on Appendix A.*

2.0 Environmental Legislation, Policies, Plans, Standards and Criteria

Noise impacts were assessed in accordance with the criteria and methodology given in the Technical Memoranda made under the Noise Control Ordinance (NCO), and EIAO-TM.

- 2.1 The NCO provides the statutory framework for noise control. This defines statutory limits applicable to equipment used during the construction and operation phases of the Project. The NCO invokes four Technical Memoranda, which define the technical means for noise assessment
- 2.2 Technical Memorandum on Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM)
- 2.3 Technical Memorandum on Noise from Construction Work in Designated Areas (DA-TM) and
- 2.4 Technical Memorandum on Noise from Construction Work other than Percussive Piling (GW-TM).

The NCO and the accompanying Technical Memoranda provide a mechanism for assessing noise levels and provide the statutory power to control noise

- 2.5 The NCO provides the statutory framework for noise control of construction work other than percussive piling using powered mechanical equipment (PME)

between the hours of 1900 and 0700 or at any time on Sundays and a general holiday (that is, restricted hours). Noise control on construction activities taking place at other times is subject to the Criteria for Evaluating Noise Impact stated in Table 1B of Annex 5 in the EIAO-TM. The noise limit is 75 dB(A) $L_{eq(30\text{ minutes})}$ at the facades of dwellings and 70 dB(A) $L_{eq(30\text{ minutes})}$ at the facades of schools (65 dB(A) during examinations). The construction noise criteria are summarised in Table 1.

Table 1 - Daytime Construction Noise Criteria

Uses	Noise Level in $L_{eq(30\text{-minutes})}$, dB(A)
Domestic premises	75
Educational Institution	70
Educational Institution (during examination)	65

2.6 Between 1900 and 0700 hours and all day on Sundays and public holidays, activities involving the use of powered mechanical equipment (PME) for the purpose of carrying out construction work is prohibited unless a Construction Noise Permit (CNP) has been obtained. A CNP may be granted provided that the Acceptable Noise Level (ANL) for the noise sensitive receivers (NSRs) can be complied with. ANLs are assigned depending upon the Area Sensitivity Ratings (ASRs). The corresponding basic noise levels (BNLs) for evening and night time periods are given in Table 2.

Table 2 - Construction Noise Criteria for Activity other than Percussive Piling

Time Period	Basic Noise Level (BNLs)		
	ASR A	ASR B	ASR C
Evening (1900 to 2300 hours) (1)	60	65	70
Night (2300 to 0700 hours)	45	50	55

2.7 With regard to the assessments of the construction noise impact during restricted hours and operation noise impact, the NCO designates acceptable noise levels for Noise Sensitive Receivers (NSRs) on the basis of an Area Sensitivity Rating (ASR), based on the characteristics of the area within which they are located such as rural, village, low-density residential, or urban (see Table 1). Within these areas, the presence of "influencing factors" (such as the presence of industrial activities or major roads) can further affect the ASR and hence the acceptable noise level.

Table 3 Area Sensitivity Ratings (ASRs)

Type of Area Containing NSR	Degree to which NSR is affected by Influencing Factor		
	Not Affected	Indirectly Affected	Directly Affected
Rural Area	A	B	B
Urban Area	B	C	C
Low density residential area consisting of low-rise or isolated high-rise developments	A	B	C
Area other than those above	B	B	C

3.0 Noise Sensitive Receivers

In order to evaluate the construction and operational noise impacts from the Project alignments, representative existing and planned noise sensitive receivers (NSRs) within 300m from the boundary of the Project (Study Area) are identified for assessment. NSRs have been identified for assessment because it would provide acoustic shielding to those receivers at further distance behind. As the centrally air-conditioned buildings do not rely on opened windows for ventilation, the noise standard as stipulated in Table 1 of EIAO-TM would not be applicable, and hence these buildings have not been identified for noise impact assessment. The locations of those NSRs were listed in *Appendix G*.

Table 4 Noise Sensitive Receiver(s) NSRs within site area.

Noise Sensitive Receiver(s) NSRs	Section	Location	Use
N16	Tin Hau	Victoria Centre	Residential
N17	Tin Hau	Harbour Heights	Residential
N18	North Point	City Garden, Block 10	Residential

4.0 Identification of Major Construction Activities

Based on the section 4.7 and 4.8 of the EIA report and the following construction activities of the captioned Project are considered needing further noise mitigation and there are:

- 4.1 Temporary seawall construction, filling behind seawall for whole of WDII construction and
- 4.2 Drainage culverts construction.

According to the construction activities listed in 4.1 & 4.2, the details of breakdown of abovementioned construction activities as the follow:

- a) Dredging for reclamation areas and seawalls;

- b) Seawall Construction
- c) Installation of Caisson Seawall (Construction of Caisson which is precast in Panyu of mainland China;
- d) Filling behind Seawall and
- e) Drainage Culvert Construction Works.

The details of the drainage culvert construction works:

- Open Channel T – Blockwork Wall Layout, please refer to the **Appendix B**,
- Open Channel U – Blockwork Wall Layout, please refer to the **Appendix C**,
- Open Channel V – Blockwork Wall Layout, please refer to the Appendix D,
- Seawall Layout & Setting Out Plan, please refer to the Appendix E and
- Dredging Layout, please refer to the **Appendix F** for details

5.0 Predication and Evaluation of Environmental Impacts

For Based on the EIA report, the construction works carried out of the project during normal daytime working hours by the North Point Reclamation (HY/2009/11) had been listed above. All of the works conducted beyond daytime, (i.e. restricted hour) will further apply Construction Noise Permit (CNP) individually from EPD and will not mention in this management plan.

Details prediction of noise level refers to the EIA report, section 4.7 – 4.8.

Elaboration of the plants list for individual construction activities will specify through the submission of Method Statement (hereafter MS) to the Engineer Representative (ER) Office, Environmental Team (ET) and Independent Environmental Checker (IEC) for further approval and endorsement before carrying out works. The construction schedule showed in **Appendix H**.

6.0 Mitigation of Environmental Impacts

- i) CHEC-CRBC JV will take all possible preventive measures on site in order to minimize the probably noise nuisance arising from the construction activities.
- ii) Construction of caisson seawall in Panyu of mainland China and minimize the chance on – site casting on – site. In addition, lower the usage of the concrete concrete lorry mixer and poker vibrator.
- iii) Modification of the construction procedures. Approval was made by ER that the construction of the culvert will precast in the mainland China and replace casting on – site. In addition, lower the usage of the concrete concrete lorry mixer and poker vibrator.

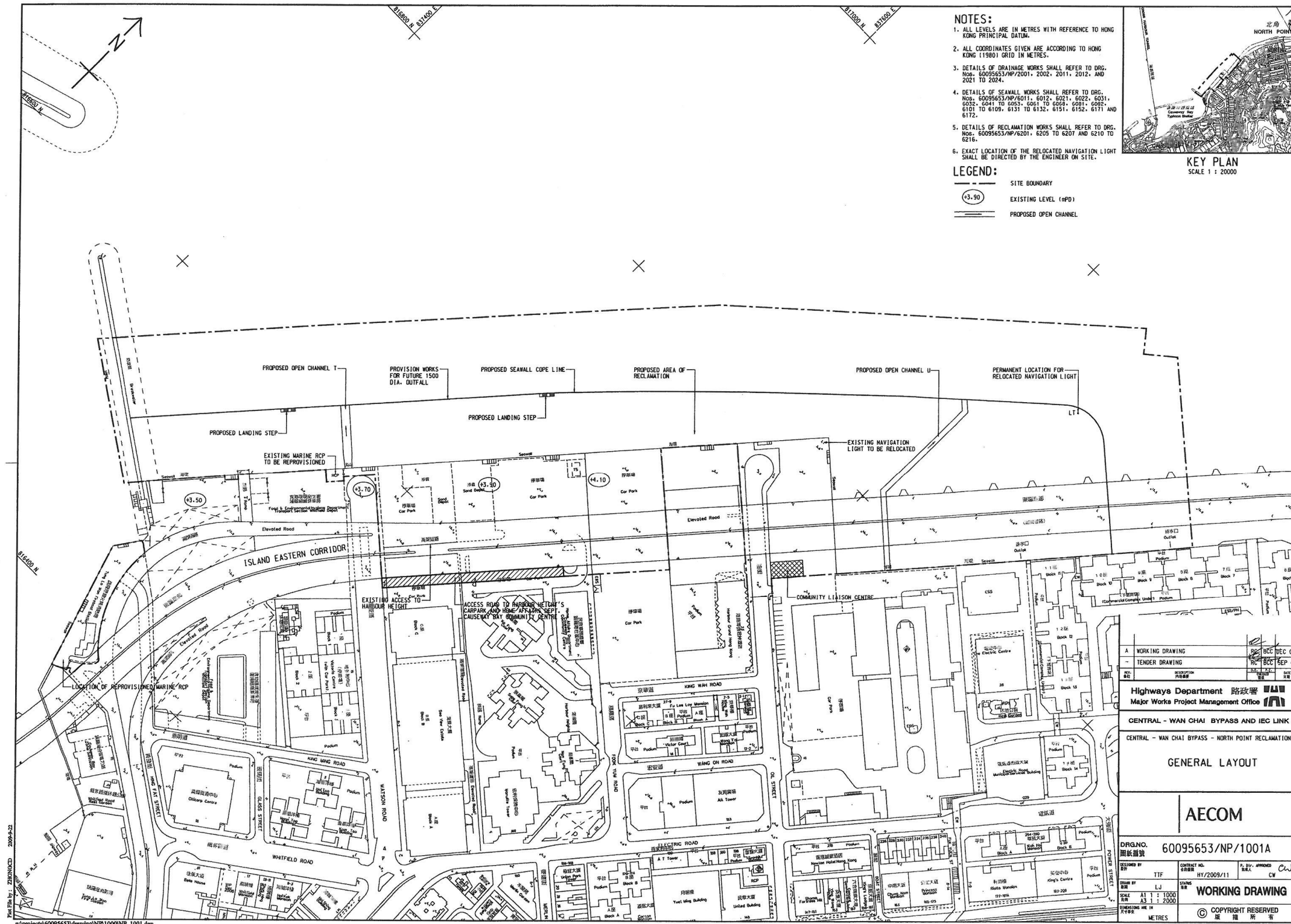
- iv) Shipment of the caisson seawall via the marine – based journey in order to lower the generation of noise from a long vehicles and minimize the chance of traffic congestion and far away from the public.
- v) The construction plants and equipment use on –site will shut down / turn off when not in use. All cover panel, hoods and covers of the construction plant such as air compressor and generator during in use.
- vi) The construction plants and equipment use on –site will be check and maintain in a good condition in order to minimize the noise generation during operation of the powered mechanical equipment.
- vii) The construction plants and equipment use on – site will far away from the noise sensitive receiver in order to lower the noise impact from the operation of the power mechanical equipment.

Whole contract of North Point Reclamation split into several stages in order to shorten the period of construction and minimize the noise effect o the neighborhood resident and education institution.

~ END ~

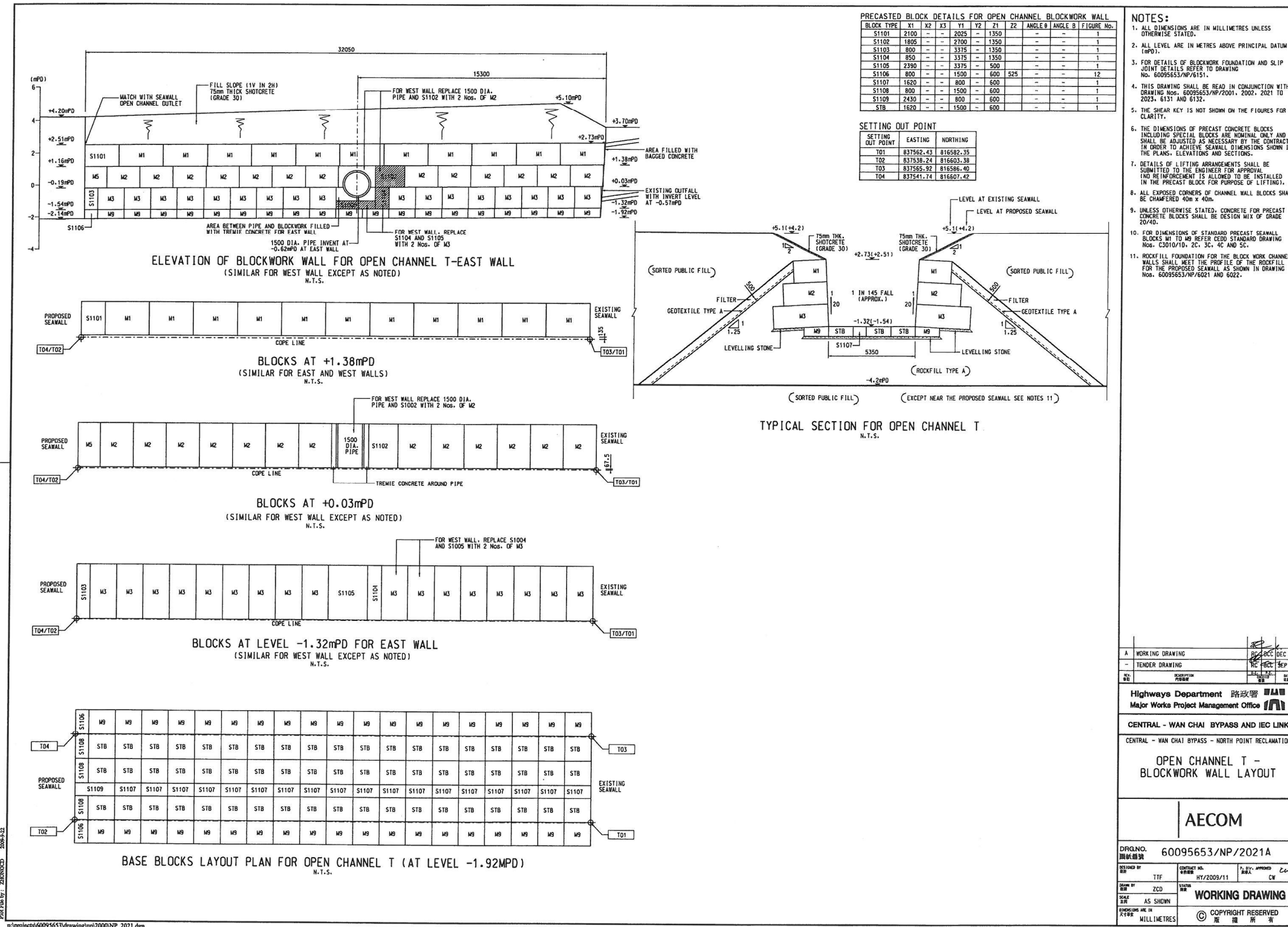
APPENDIX A

LAYOUT PLAN



APPENDIX B

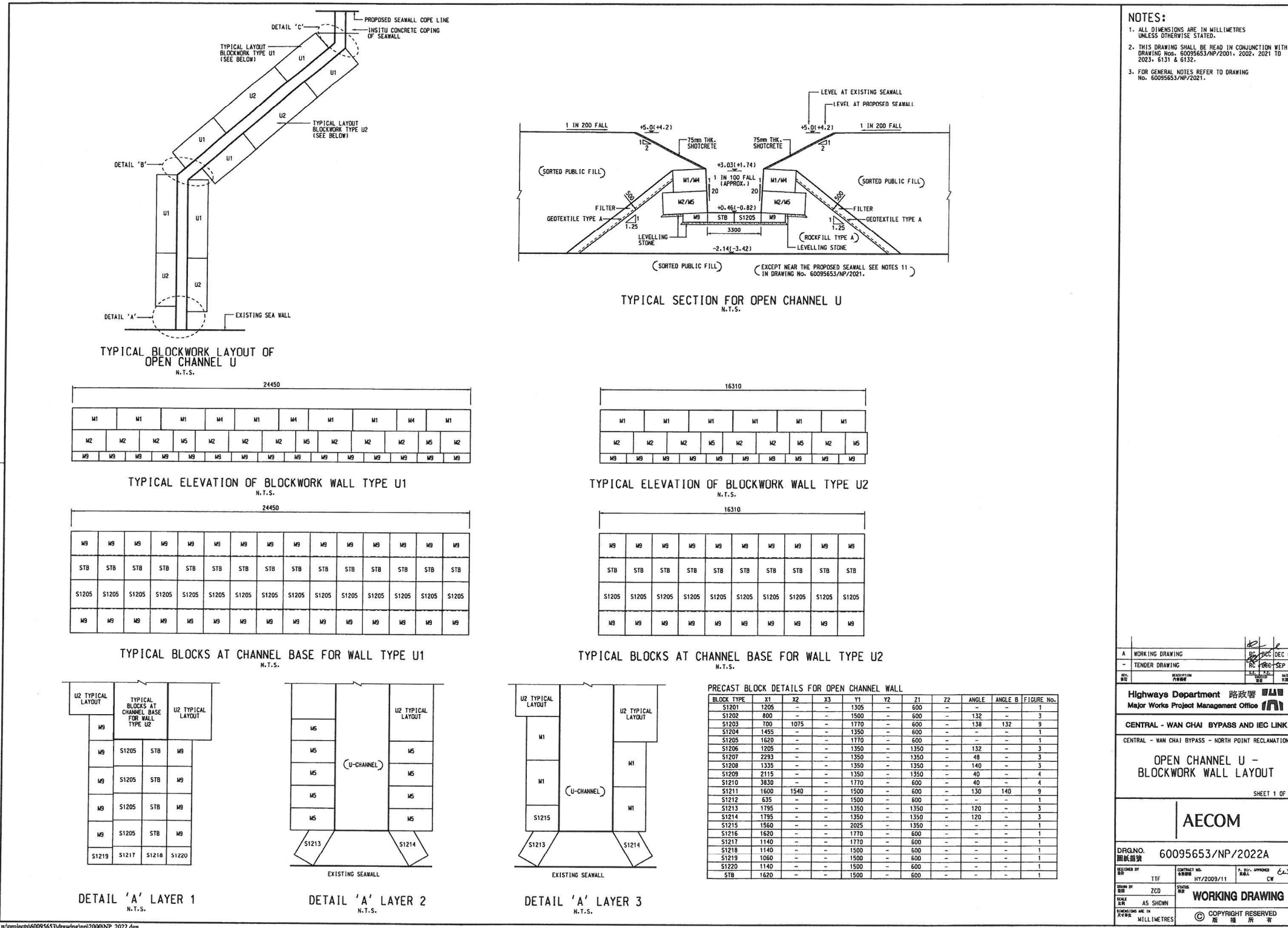
OPEN CHANNEL T – BLOCKWORK WALL LAYOUT



A	WORKING DRAWING	DEC 09
-	TENDER DRAWING	SEP 09
Highways Department 路政署 Major Works Project Management Office		
CENTRAL - WAN CHAI BYPASS AND IEC LINK		
CENTRAL - WAN CHAI BYPASS - NORTH POINT RECLAMATION		
OPEN CHANNEL T - BLOCKWORK WALL LAYOUT		
AECOM		
DRGNO.	60095653/NP/2021A	
DESIGNED BY	TTF	HY/2009/11
CHECKED BY	ZCD	CW
SCALE	AS SHOWN	
WORKING DRAWING	COPYRIGHT RESERVED	

APPENDIX C

OPEN CHANNEL U – BLOCKWORK WALL LAYOUT



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING Nos. 60095653/NP/2001, 2002, 2021 TO 2023, S131 & S132.
3. FOR GENERAL NOTES REFER TO DRAWING No. 60095653/NP/2021.

A	WORKING DRAWING	DEC 09
-	TENDER DRAWING	SEP 09

Highways Department 路政署
Major Works Project Management Office

CENTRAL - WAN CHAI BYPASS AND IEC LINK
CENTRAL - WAN CHAI BYPASS - NORTH POINT RECLAMATION

OPEN CHANNEL U -
BLOCKWORK WALL LAYOUT

SHEET 1 OF 2

AECOM

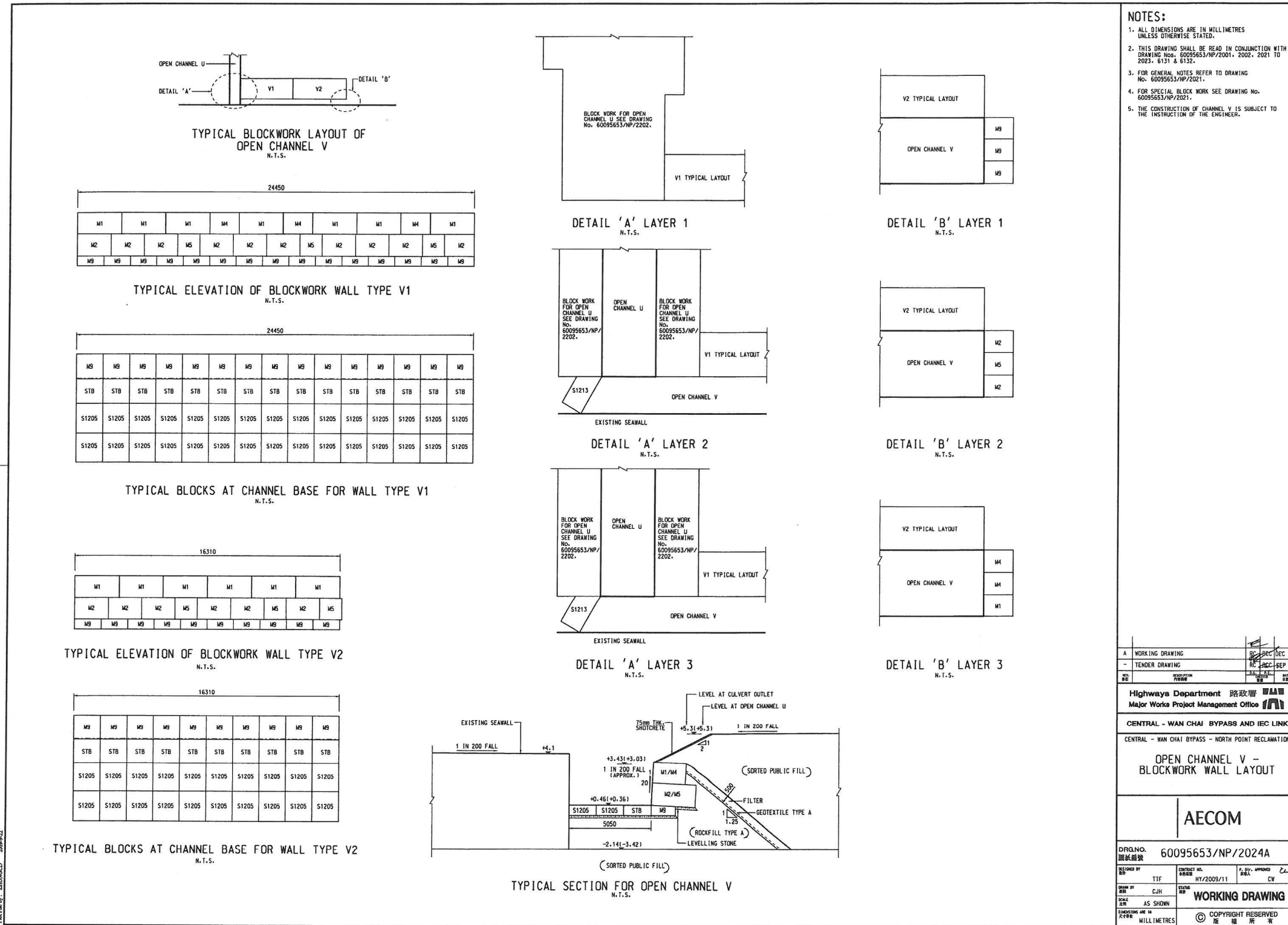
DRGNO. 60095653/NP/2022A

DESIGNED BY	TTF	CHECKED BY	HW/2009/11	APPROVED BY	CW
DRAWN BY	ZCD	SCALE	AS SHOWN	WORKING DRAWING	
SHEETING AND MILLIMETRES					

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APPENDIX D

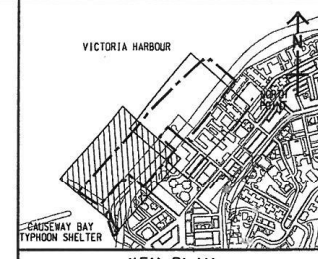
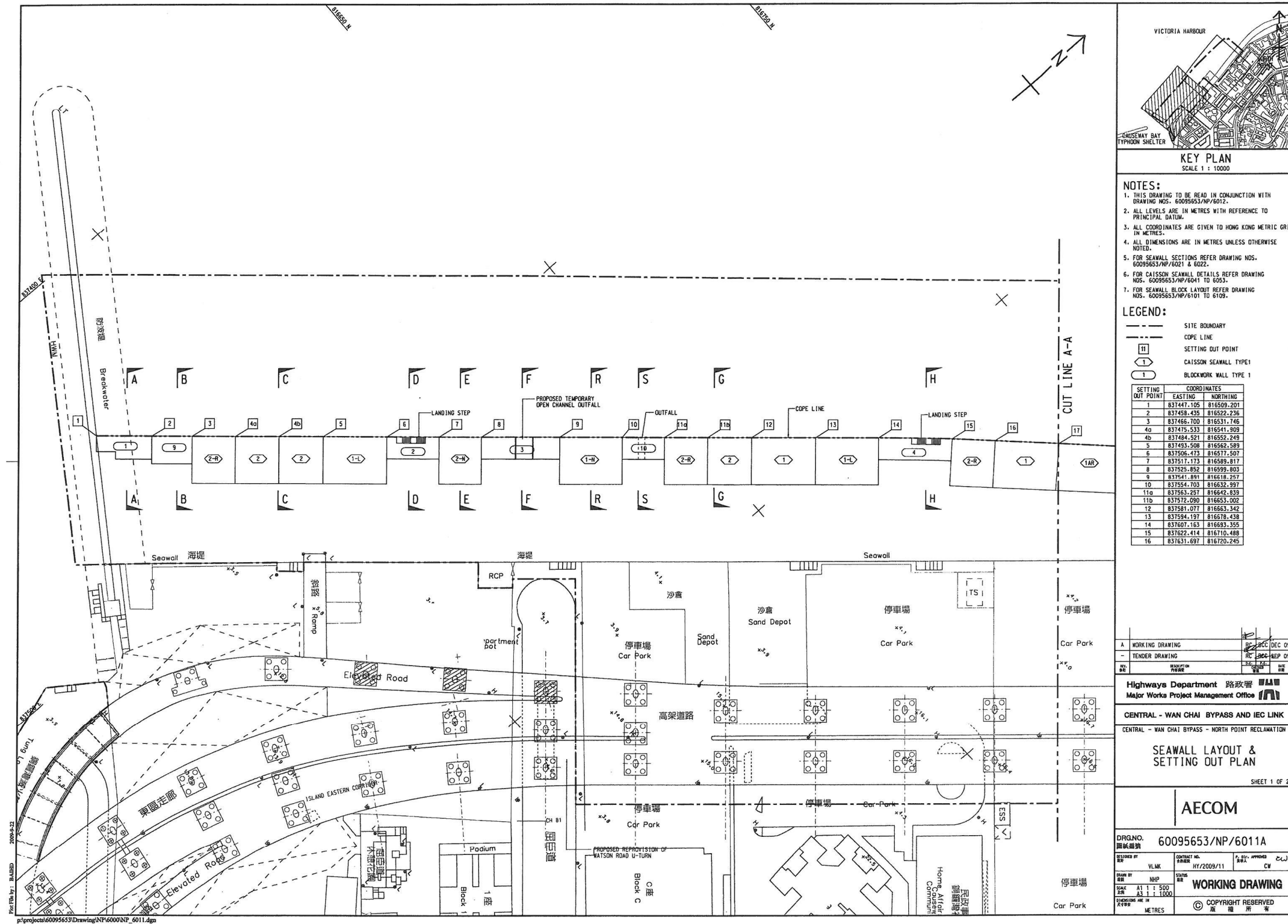
OPEN CHANNEL V – BLOCKWORK WALL LAYOUT



3096-22
 2009-11-11
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APPENDIX E

SEAWALL LAYOUT & SETTING OUT PLAN



KEY PLAN
SCALE 1 : 10000

- NOTES:**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60095653/NP/6012.
 - ALL LEVELS ARE IN METRES WITH REFERENCE TO PRINCIPAL DATUM.
 - ALL COORDINATES ARE GIVEN TO HONG KONG METRIC GRID IN METRES.
 - ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
 - FOR SEAWALL SECTIONS REFER DRAWING NOS. 60095653/NP/6021 & 6022.
 - FOR CAISSON SEAWALL DETAILS REFER DRAWING NOS. 60095653/NP/6041 TO 6053.
 - FOR SEAWALL BLOCK LAYOUT REFER DRAWING NOS. 60095653/NP/6101 TO 6109.

- LEGEND:**
- SITE BOUNDARY
 - - - COPE LINE
 - SETTING OUT POINT
 - CAISSON SEAWALL TYPE1
 - BLOCKWORK WALL TYPE 1

SETTING OUT POINT	COORDINATES	
	EASTING	NORTHING
1	837447.105	816509.201
2	837458.435	816522.236
3	837466.100	816531.746
4a	837475.533	816541.928
4b	837484.521	816552.249
5	837493.508	816562.589
6	837506.473	816577.507
7	837517.173	816589.817
8	837525.852	816599.803
9	837541.891	816618.257
10	837554.703	816632.997
11a	837563.257	816642.839
11b	837572.090	816653.002
12	837581.077	816663.342
13	837594.197	816678.438
14	837607.163	816683.355
15	837622.414	816710.488
16	837631.697	816720.245

REV.	DESCRIPTION	DATE
A	WORKING DRAWING	DEC 09
-	TENDER DRAWING	DEC 09

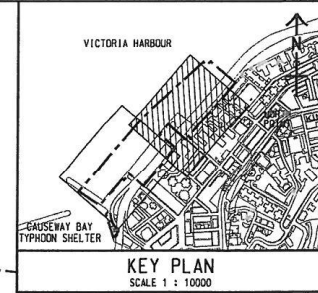
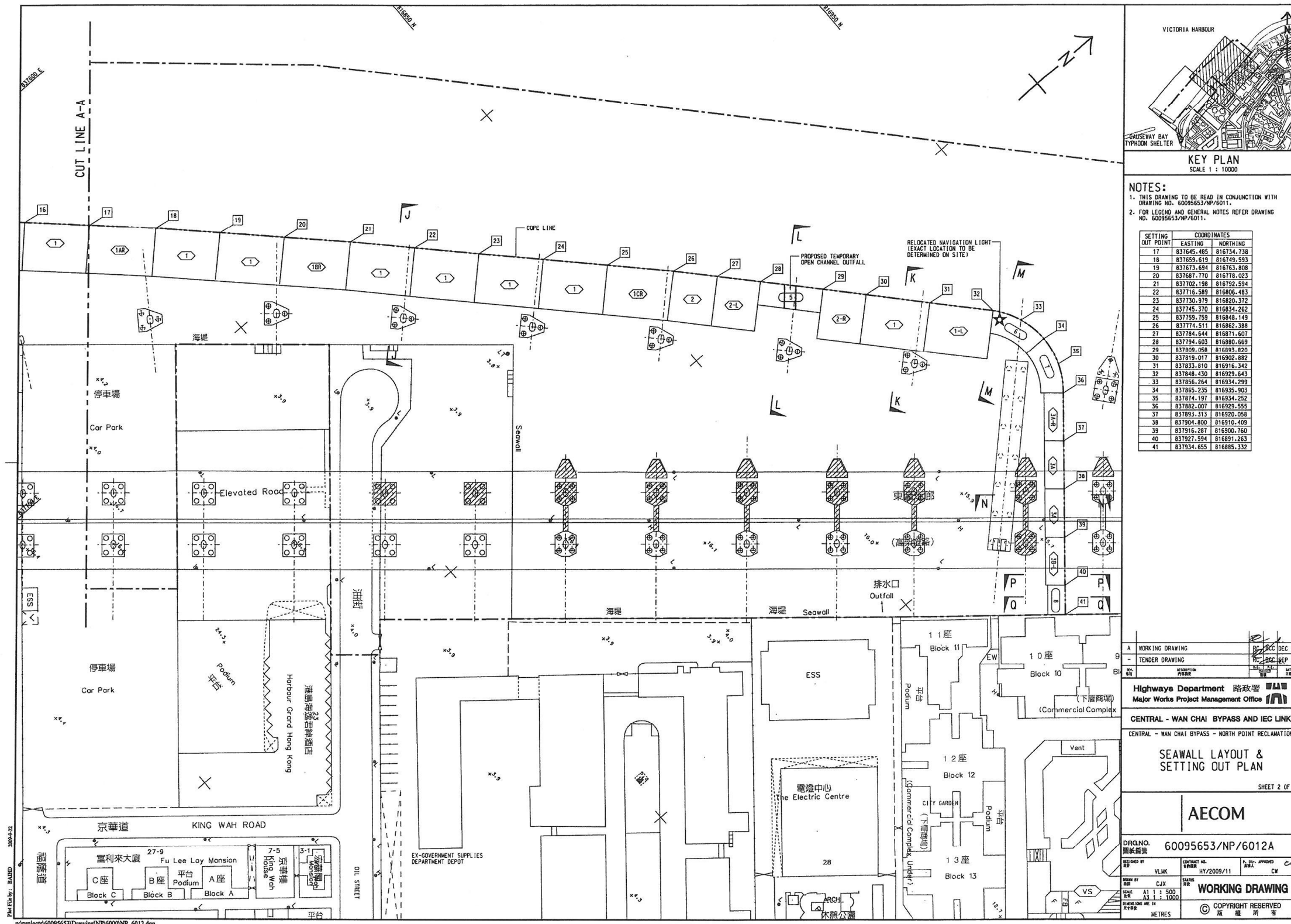
Highways Department 路政署
Major Works Project Management Office

CENTRAL - WAN CHAI BYPASS AND IEC LINK
CENTRAL - WAN CHAI BYPASS - NORTH POINT RECLAMATION

SEAWALL LAYOUT & SETTING OUT PLAN
SHEET 1 OF 2

AECOM

DRG. NO. 圖紙編號	60095653/NP/6011A
DESIGNED BY 設計人	VL/MK
CHECKED BY 校核人	HW/2009/11
DATE 日期	11/2009
SCALE 比例	AS 1 : 500 AS 1 : 1000
STATUS 狀態	WORKING DRAWING
DRAWING AREA IN METRES 圖紙面積	© COPYRIGHT RESERVED 版權所有



NOTES:
 1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NO. 60095653/NP/6011.
 2. FOR LEGEND AND GENERAL NOTES REFER DRAWING NO. 60095653/NP/6011.

SETTING OUT POINT	EASTING	NORTHING
17	837645.485	816734.738
18	837659.619	816749.593
19	837673.654	816763.808
20	837687.770	816778.023
21	837702.198	816792.594
22	837716.589	816806.483
23	837730.979	816820.372
24	837745.370	816834.262
25	837759.759	816848.149
26	837774.511	816862.388
27	837784.644	816871.607
28	837794.603	816880.669
29	837809.098	816893.820
30	837819.017	816902.882
31	837833.810	816916.342
32	837848.430	816929.643
33	837856.264	816934.299
34	837865.235	816935.903
35	837874.197	816934.252
36	837882.007	816928.555
37	837893.313	816920.058
38	837904.800	816910.409
39	837916.287	816900.760
40	837927.594	816891.263
41	837934.655	816885.332

A	WORKING DRAWING	DEC 09
B	TENDER DRAWING	SEP 09
C	PROVISIONAL	SEP 09

Highways Department 路政署
 Major Works Project Management Office

CENTRAL - WAN CHAI BYPASS AND IEC LINK
 CENTRAL - WAN CHAI BYPASS - NORTH POINT RECLAMATION
 SEAWALL LAYOUT & SETTING OUT PLAN
 SHEET 2 OF 2

AECOM

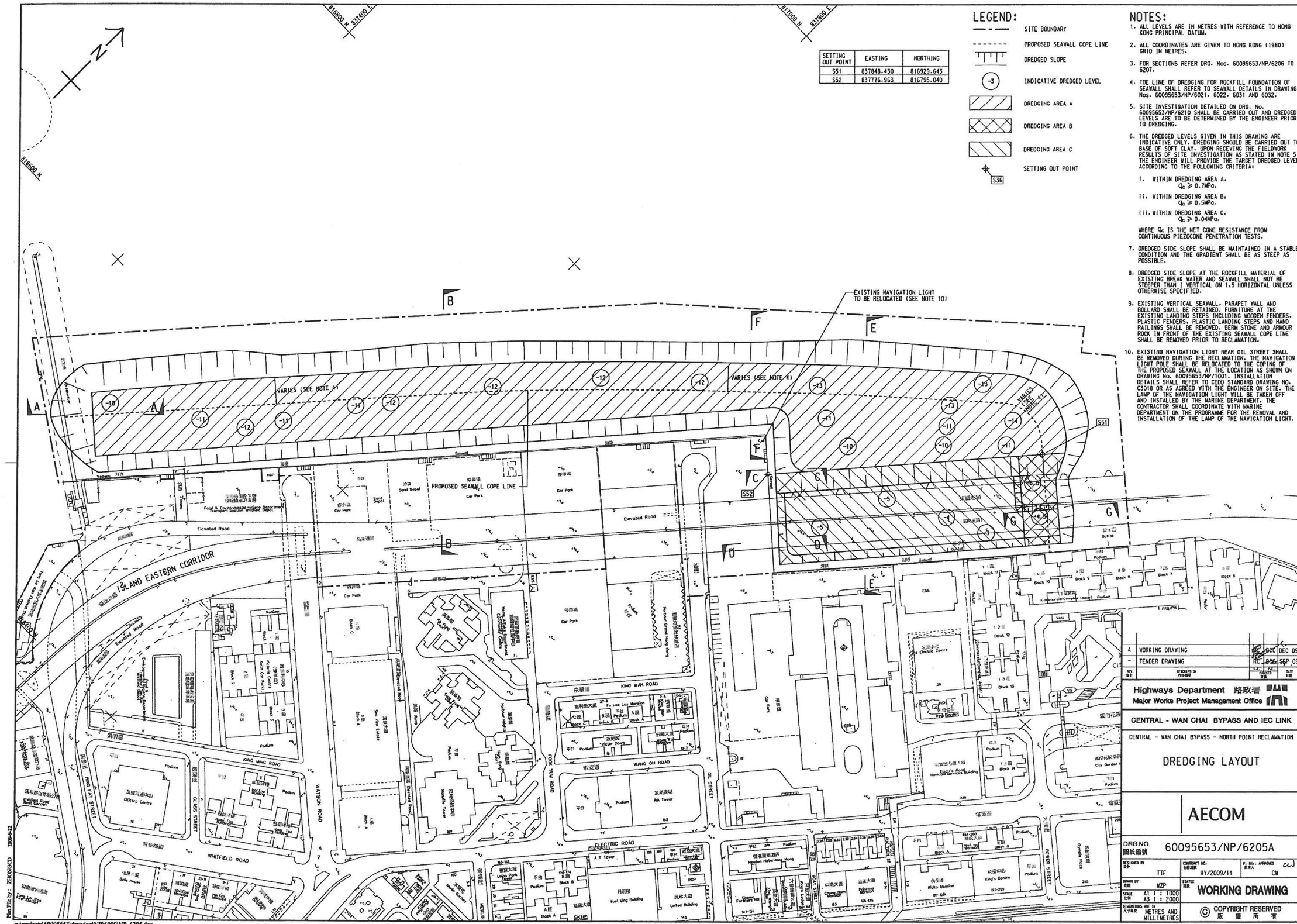
DRG. NO. 60095653/NP/6012A
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DESIGNED BY: VLK
 CHECKED BY: CJK
 SCALE: A1 1:500, A2 1:1000
 DRAWING NO. 60095653/NP/6012A
 METRES

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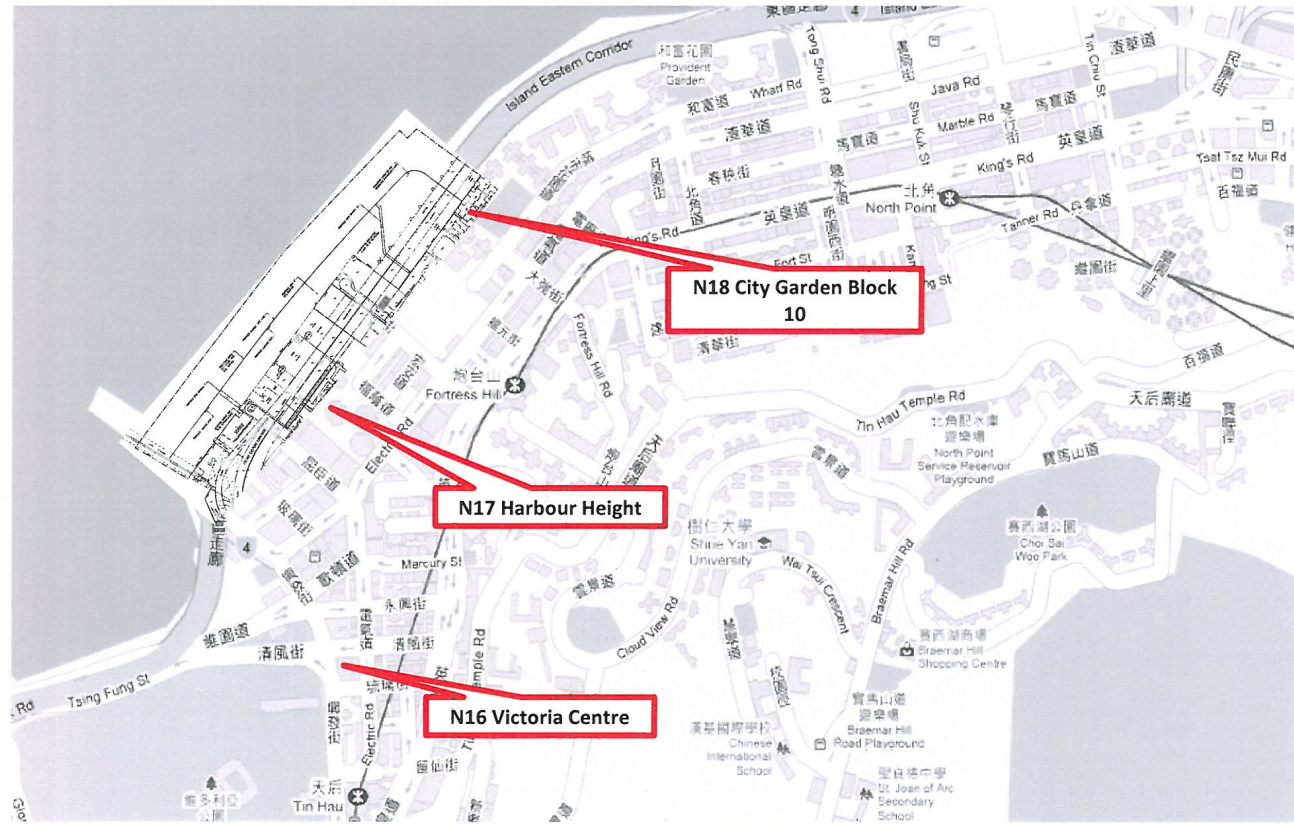
APPENDIX F

DREDGING LAYOUT



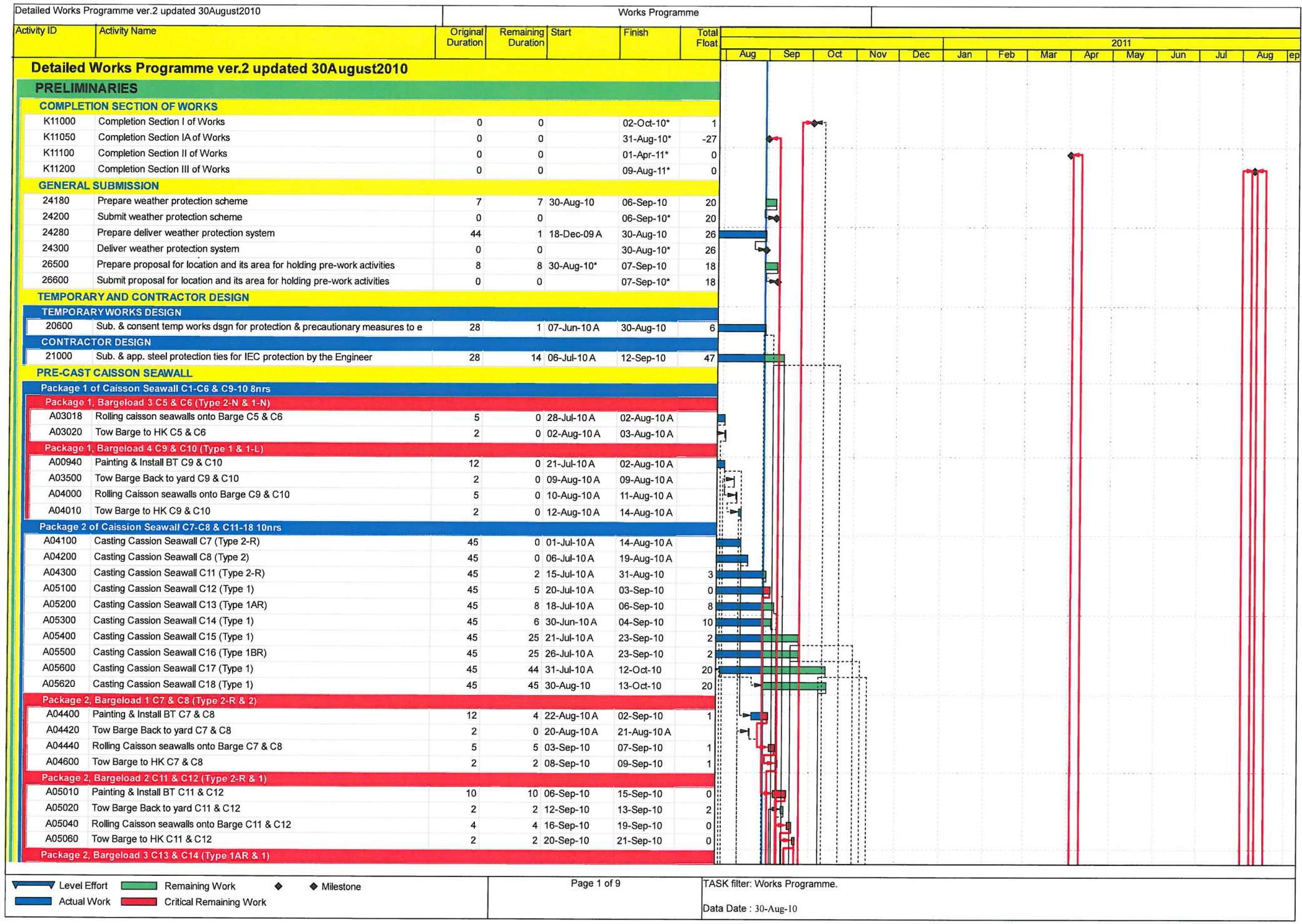
APPENDIX G

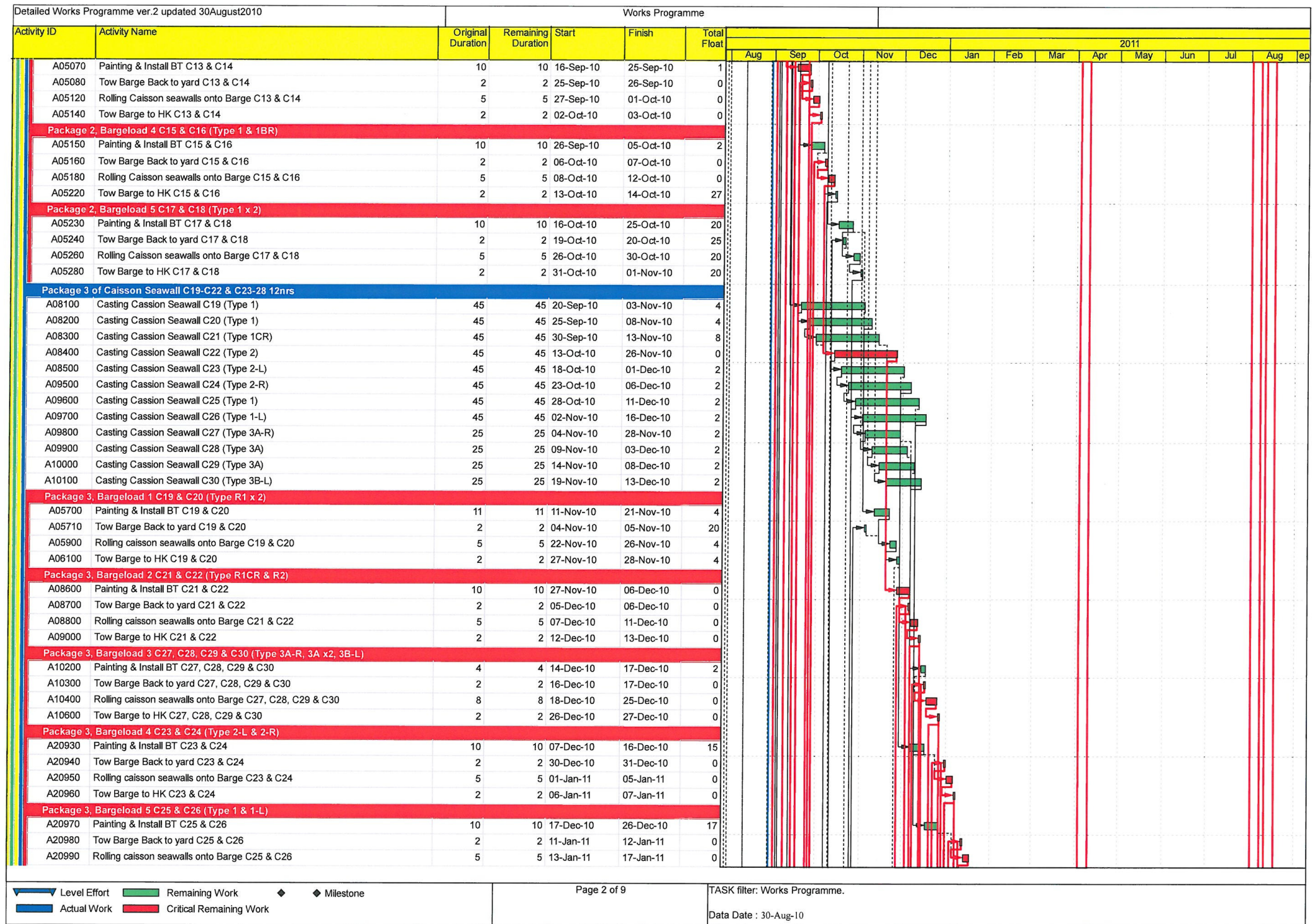
NOISE SENSITIVE RECEIVER (NSRs)

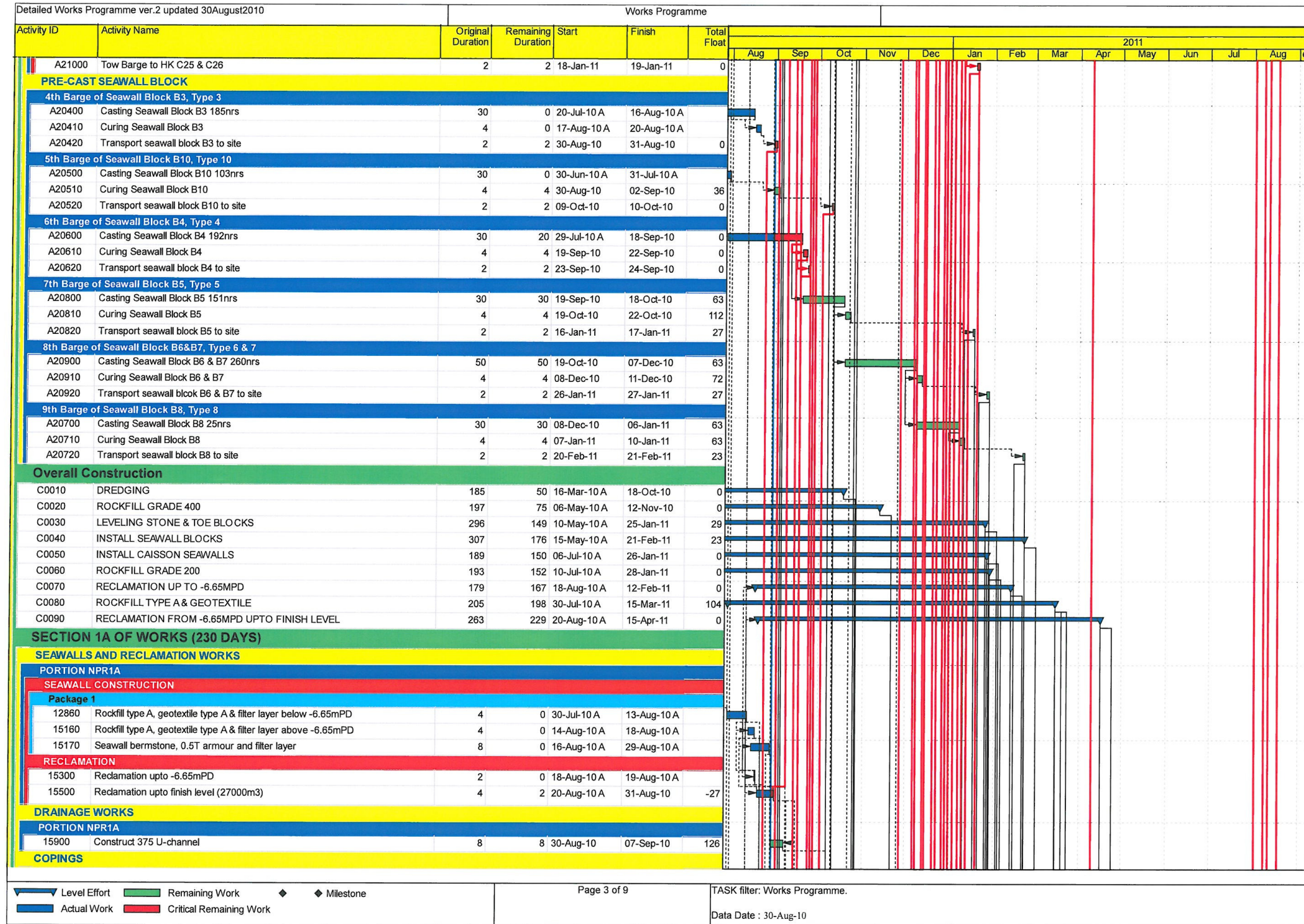


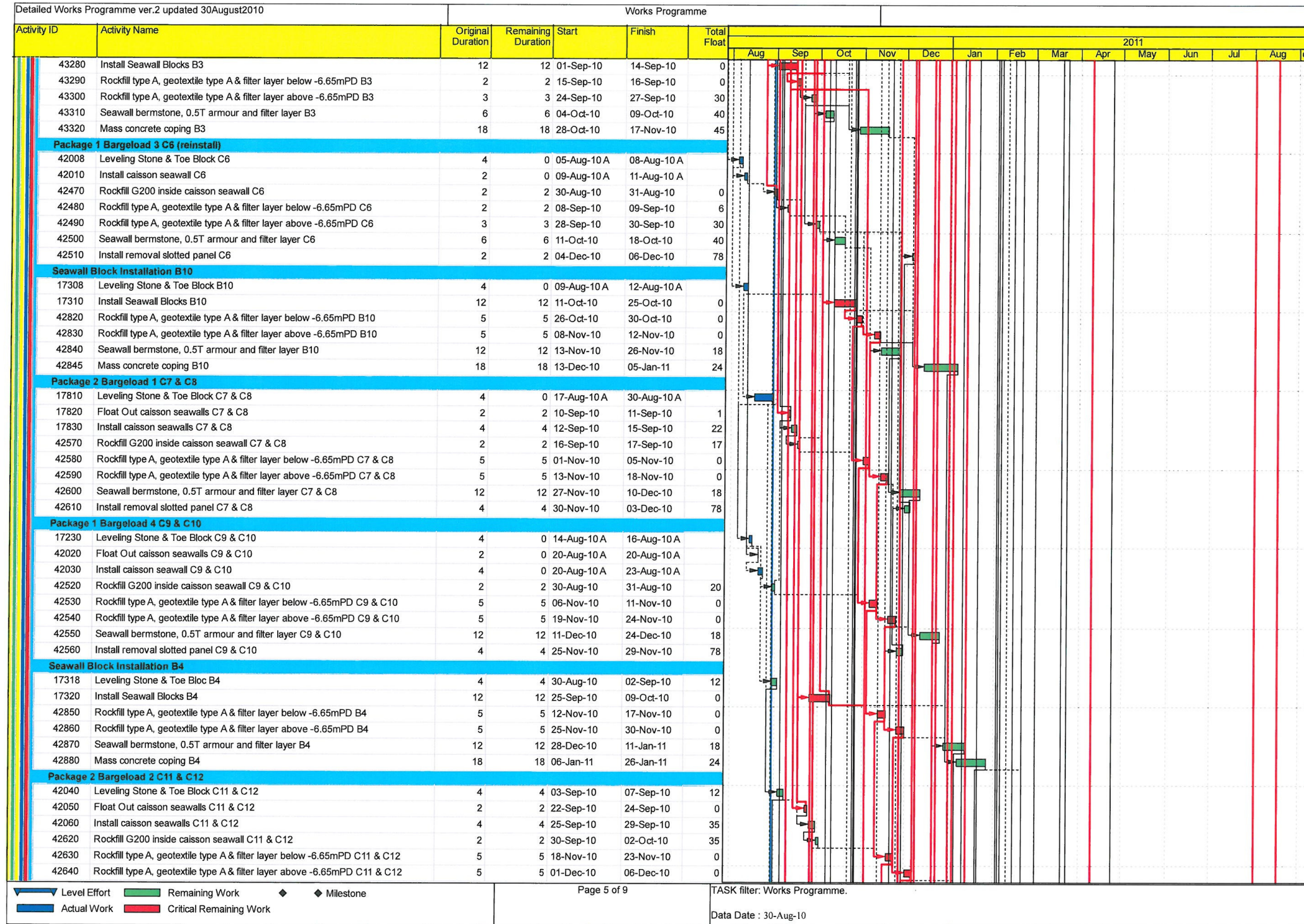
APPENDIX H

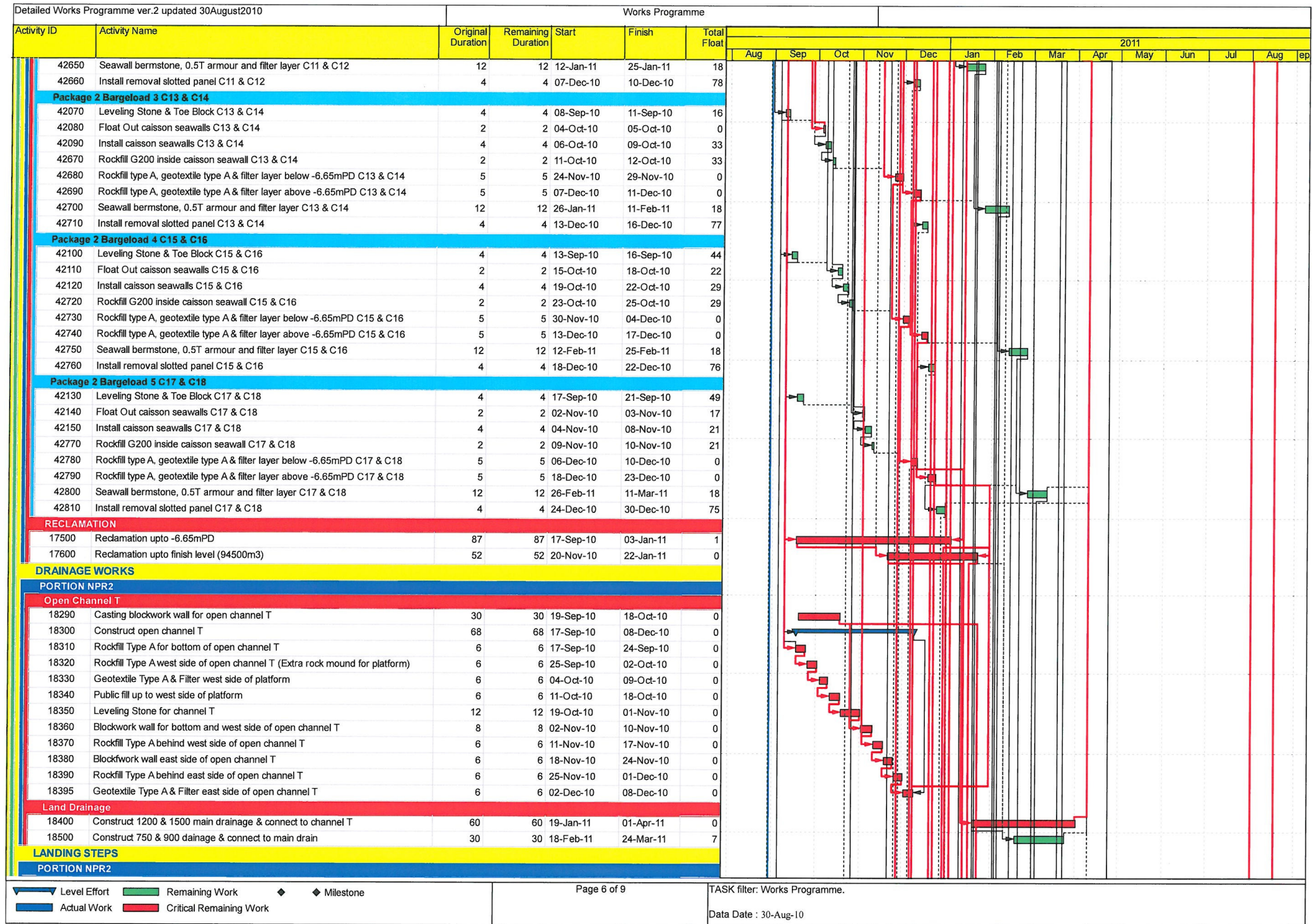
CONSTRUCTION SCHEDULES













Detailed Works Programme ver.2 updated 30August2010		Works Programme					2011													
Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish	Total Float	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
PERMANENT RELOCATION OF NAVIGATION LIGHT																				
21700	Permanent relocation navigation light	12	12	09-Jul-11	22-Jul-11	15														

 Level Effort  Actual Work	 Remaining Work  Critical Remaining Work	 Milestone	Page 9 of 9	TASK filter: Works Programme. Data Date : 30-Aug-10
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