

ECM SUBMISSION GUIDELINES

PUB
Catchments & Waterways Department



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SUBMISSION REQUIREMENTS – REPORT

1 (a). Cover Page

- i. BCA Project title & Project Reference
- ii. Subtitle on detailed scope of works E.g. Demolition works, road works etc.
- iii. Cover page to be duly endorsed by QECP.

SAMPLE COVER PAGE

<p style="text-align: center;">BCA PROJECT TITLE DEMOLITION OF EXISTING XX BLOCK OF XX STOREY WITH XX STOREY APARTMENT ON LOT XXXX, TS/MKXX AT XX ROAD</p> <p style="text-align: center;">PROPOSED EARTH CONTROL MEASURES</p> <p style="text-align: center;">NAME AND ADDRESS OF OCCUPIER</p> <p style="text-align: center;">PREPARED BY: NAME AND ADDRESS OF QECP</p> <p style="text-align: center;">Date (MM/YYYY)</p>

SUBMISSION REQUIREMENTS – REPORT

1 (b). Contact Information List

- i. Contract period – *State the start & end date*
- ii. Contact information of stakeholder listed.
 - i. *Contractor*
 - ii. *Developer/ Owner*
 - iii. *QECP*
 - iv. *Architect*
- iii. The following information to be provided for the above:
 - i. *Name*
 - ii. *Company & Company Address (Provide Unit No. if any)*
 - iii. *Contact Number, Fax and Email*
- iv. This page to be duly endorsed by QECP.

SUBMISSION REQUIREMENTS – REPORT

1 (c). Content Page

- i. Brief introduction of the projects
- ii. Construction sequence- *(e.g. different phases, if any)*.
- iii. Sub-catchment calculation to be included for different storage ponds on site
- iv. Design capacity of holding pond and cut-off drain
- v. ECM design calculation for Total Suspended Solids (TSS) yield calculation.- *Before & After erosion control*
- vi. Summary Table- *Refer to Slide No. 6 for details to be included.*
- vii. Inspection, Monitoring, Maintenance and Review plan

SUBMISSION REQUIREMENTS – REPORT

1 (c) vi. Summary Table

Summary of Total Runoff & Water Treatment Capacity (For All phases if any)

Phase 1

Area	Total Site Area (ha)	Max Exposed Area (ha)	Total Runoff Vol. (m ³)	Storage Tank Vol. (m ³)	Cut-off Drain vol. (m ³)	Total Storage Vol.(m ³)	Water Treatment plant provided (m ³ /h)
Area 1	0.24	0.12	62.00	33.00	30.00	63.00	10.00
Area xx	xx	xx	xx	xx	xx	xx	xx

Phase xx

Area	Total Site Area (ha)	Max Exposed Area (ha)	Total Runoff Vol. (m ³)	Storage Tank Vol. (m ³)	Cut-off Drain vol. (m ³)	Total Storage Vol.(m ³)	Water Treatment plant provided (m ³ /h)
Area 1	xx	xx	xx	xx	xx	xx	xx
Area xx	xx	xx	xx	xx	xx	xx	xx

SUBMISSION REQUIREMENTS – REPORT

1 (d). Appendix

- i. Soil Investigation report. QECs shall only submit relevant sections of the SI report.
 - i. Limited to 4 Boring logs (up to 20m depth) at various location on site*
- ii. Silty water treatment system catalogue - *Limit to 1 page*

SUBMISSION REQUIREMENTS – DRAWINGS

2 (a). Site Plan

- i. Title block drawing name format: “ECM Site Plan – Location”
- ii. Location map of proposed works. - *Showing at least two road/street names.*
- iii. For specific works that are part of a larger project (*e.g. MRT/ NSC projects*) and spilt into different contracts/parts- *An overall master plan showing extent of contract to be included.*
- iv. For Sub-catchment plans, QECP is to indicate how the silty runoff will be channelled to storage pond.
- v. At least **5 spot levels** (in SHD) to indicate the profile terrain of the development site. One level should be near the holding pond.
- vi. Drawing scale, general notes, legends & summary table.
- vii. Drawings shall be submitted in colour.**
- viii. To be duly endorsed by QECP.

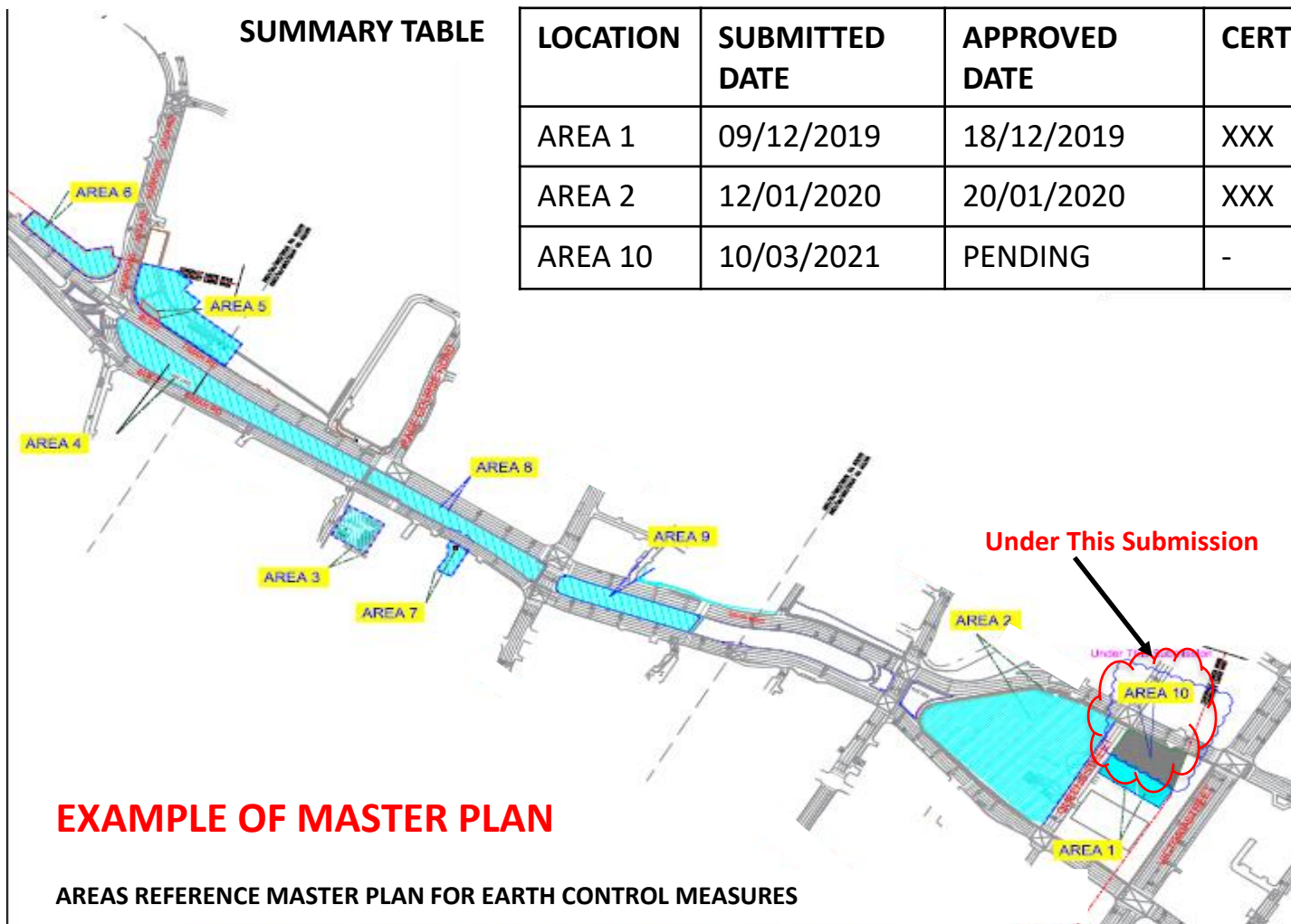
The Layout View of the CAD drawings recommended to be presented in scale of: **1: 100, 1:500 or 1:1000** Whichever is appropriate

SUBMISSION REQUIREMENTS – DRAWINGS

2 (a) iii. Site Plan – Master Plan

SUMMARY TABLE

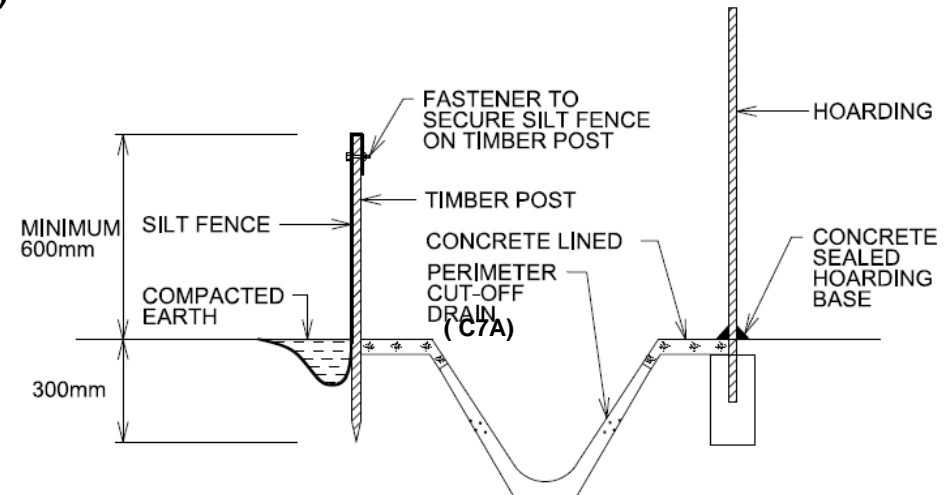
LOCATION	SUBMITTED DATE	APPROVED DATE	CERTIFICATE NO.
AREA 1	09/12/2019	18/12/2019	XXX
AREA 2	12/01/2020	20/01/2020	XXX
AREA 10	10/03/2021	PENDING	-



SUBMISSION REQUIREMENTS – DRAWINGS

2 (b). Cross Sections

- Cross-sectional details for the key design elements as shown below shall be provided. Please note that this list is not exhaustive and the QECP is to also include any other relevant details.
- Cross sectional details listed:-
 - Cut off drain, silt fence and hoarding;
 - Silt traps
 - Concrete hump, sand bags
 - Holding pond/Storage tank
- To be duly endorsed by QECP.



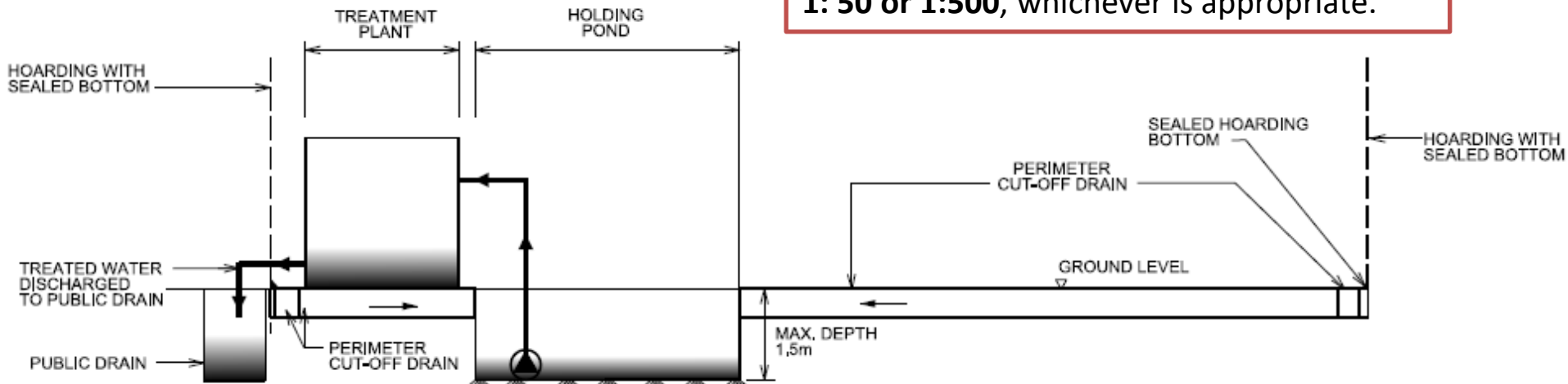
EXAMPLE CROSS SECTION DETAIL OF PERIMETER CUT-OFF DRAIN, SILT FENCE AND HOARDING

SUBMISSION REQUIREMENTS – DRAWINGS

2 (c). Longitudinal Sections

- Longitudinal section details should include:
 - Cut off drain flow, Holding pond, treatment plant and connection to public drain
- To be duly endorsed by QECP.

The Layout View of the CAD drawings recommended to be presented in scale of: **1: 50 or 1:500**, whichever is appropriate.



EXAMPLE LONGITUDINAL SECTION




NAMING OF TITLE BLOCK & DRAWINGS

- If section details are included in the same drawing sheet as Site Plan, section details shall be annotated clearly in the drawing for example “Cross Section A-A”; “Longitudinal Section B-B” etc. The Drawing sheet Title Block shall be labelled as “ ECM Site Plan & Sections – Location”.
- If section details are in separate drawing sheets, the drawing sheet title block to be labelled clearly as “ECM Cross Section – Location”; “ECM Longitudinal Section – Location” etc.
- For ECM works that are proposed in multiple phases drawn in the same sheet, each phase shall be clearly annotated as follows: “Site Plan (Phase xx) ”, where xx is the phase number. If each phase provided in different drawing sheets, the sheet title block to be labelled as “ ECM Site Plan (Phase xx) – Location”

Drawing Title Block Name:

- ECM Site Plan- Location
- ECM Cross Section A-A – Location
- ECM Longitudinal Section B-B- Location

NAMING OF SUBMISSION DOCUMENTS

<p>ECM Report - 1 PDF File</p> <p>PDF File Name: “ECM Report – Location”</p>	 <p>ECM Report- 13 Yarwood Ave</p>
<p>Drawings – 1 PDF File</p> <p>PDF File Name: “ECM Drawings – Location”</p>	 <p>ECM Drawings- 13 Yarwood Ave</p>
<p>ECM Report & Drawings shall be submitted in a zip-file:</p> <p>Zip folder name: “ECM – Location”</p>	 <p>ECM- 13 Yarwood Ave</p>

SITES WITH MULTIPLE CATCHMENTS

- For sites separated into multiple areas with multiple storage ponds:
 - **Sub-catchment plans of each area must be submitted**, with arrows clearly indicating the flow of water into each storage pond.
 - Physical hump separating the individual catchments to keep the runoff within each catchment shall be provided.
- For Submissions involving multiple catchments(e.g. term contract for cable/water pipe/gas pipe maintenance work), the selected catchment in the E-form shall correspond to the location where works **commence first**.

REVISION TO APPROVED PLAN REQUIREMENTS

The following information shall be provided:

1. Cover letter to explain why the revision to the approved plan is made, the submission number to which the approval was issued and the approval certificate;
2. Proposed revised ECM plan with clear indication on the difference before and the revised plan;
3. Segregation of clean water (completed/unexposed area) and silty water (exposed area/on going area) and discharge outlet shall be indicated on plan;
4. Updated contact particulars list
5. Summary table on the following parameters to compare previous and current ECM:

Summary Table

Item	Design Parameters	Previous Approved ECM	Current Revised ECM
a.	Total Site Area (ha)		
b.	Exposed Area (ha)		
c.	Surface Runoff Volume (m ³)		
d.	Total Storage Volume Provided (m ³)		
e.	Storage Pond Sizes (m ³)		
f.	Treatment Plant Capacity (m ³ /h)		

ECM SITE AUDIT INSPECTION CHECKLIST

Ver: Aug 2021

THE SEWERAGE AND DRAINAGE ACT (CAP 294) SITE AUDIT BY BUILDER AND QUALIFIED EROSION CONTROL PROFESSIONAL ON ECM	
Date	
To	Public Utilities Board 82 Toh Guan Road East #03-08 Singapore 608576 or email to: pub_cwenf@pub.gov.sg
Instruction	
<ul style="list-style-type: none"> This form is to be completed by the Builder and QECP responsible for the implementation and design of Earth Control Measures (ECM) for the project respectively. The builder shall submit to PUB the completed form <u>with site plan and timestamp photos to show that the ECM implementation on site is in accordance with the approved ECM plan</u>, within 2 weeks upon completion of the ECM audit check by the QECP. 	
Particulars of Project	
ECM Certificate No.	
Project Reference No.	
Project Title	

- The ECM Site audit inspection form shall be submitted within 2 weeks upon site audit by QECP and builder to the address or via email: pub_cwenf@pub.gov.sg
- To include photos & site plan

USEFUL RESOURCES ON ECM

For assistance/ enquiry: PUB BPU email PUB_BPU@pub.gov.sg.

BPU Qualified Persons Portal via Singpass Login

The screenshot displays the PUB Qualified Persons Portal interface. At the top, there is a navigation bar with the PUB logo and the text 'SINGAPORE'S NATIONAL WATER AGENCY'. Below this, the page title is 'Qualified Persons Portal'. The main content area is divided into two sections: 'Drainage' and 'Sewerage'. Under 'Drainage', there are three cards for different forms: 'Post-Temporary Occupation Permit (TOP) Occupation on Storm Water Drainage System', 'Works Requiring Earth Control Measures (ECM)', and 'Temporary Works Affecting Drain / Within Drainage Reserve'. Under 'Sewerage', there are four cards for different forms: 'Form B', 'Form G1', 'Form J', and 'Notification for Works Carried out by Licensed Plumber'. Each card provides details about the audience and description of the form.

<https://bpu.pub.gov.sg/Forms/EForms>



PUB Website - ECM For latest circular & references

The screenshot shows the PUB website's 'Earth Control Measures' page. The top navigation bar includes the PUB logo and the text 'SINGAPORE'S NATIONAL WATER AGENCY'. Below this, there is a secondary navigation bar with links for 'Water Supply', 'Drainage', 'Used Water', 'R&D', 'Save Water', 'Coastal Protection', 'Sustainability', 'Compliance', and 'Tenders & Contracts'. The main content area is titled 'Earth Control Measures' and includes an 'Overview' section. The text describes the problem of silty runoff after heavy downpours and mentions PUB's work with stakeholders on education and engagement.

Earth Control Measures

Overview

After a heavy downpour, the waterways often turn brown. This is because silt gets washed down from exposed earth surfaces and construction sites. To tackle the problem of silty discharge, PUB has been working with the stakeholders on education and engagement, technology upgrading, and encouraging good earth control measures (ECM) practices.



Silty runoff will turn the waterways brown and unsightly.



<https://www.pub.gov.sg/drainage/earthcontrolmeasures>



Thank You

