

Appendix II
Traffic Management Plan

**Concrete Batching Plant at Tsing Yi - Renewal
Application A/TY/136**

TRAFFIC MANAGEMENT PLAN

March 2024



CTA Consultants Limited

志達顧問有限公司



1. INTRODUCTION

1.1 Background

1.1.1 The captioned Planning Approval was granted in 2019 and will expire on 2 Aug 2024.

1.1.2 The location of the Application Site is shown in **Figure 1.1**. This paper is prepared to update the approved traffic management in response to the Planning Conditions imposed under the TPB approval letter ref TPB/A/TY/136 dated 16/8/2019 as follows:

Condition (a) the submission of a traffic management plan including details of fleet management and monitoring / auditing mechanism, restrictions of vehicles at critical junctions and a transportation plan before commencement of the operation of the proposed development to the satisfaction of the Commissioner for Transport or of the TPB

1.2 Objectives

1.2.1 The objective of this paper is to prepare the Traffic Management Plan, including details of fleet management as required in the planning condition (a) as stipulated above.

1.2.2 The main scopes of this Transport Plan are as follows:

- Based on the machinery and equipment requirements, and the layout arrangement of the plant, to identify the management / mechanism of the concrete trucks within the Plant;

1.3 Reference

1.3.1 Reference should be made to the **Approved Marshalling Plan** given in **Appendix I**.

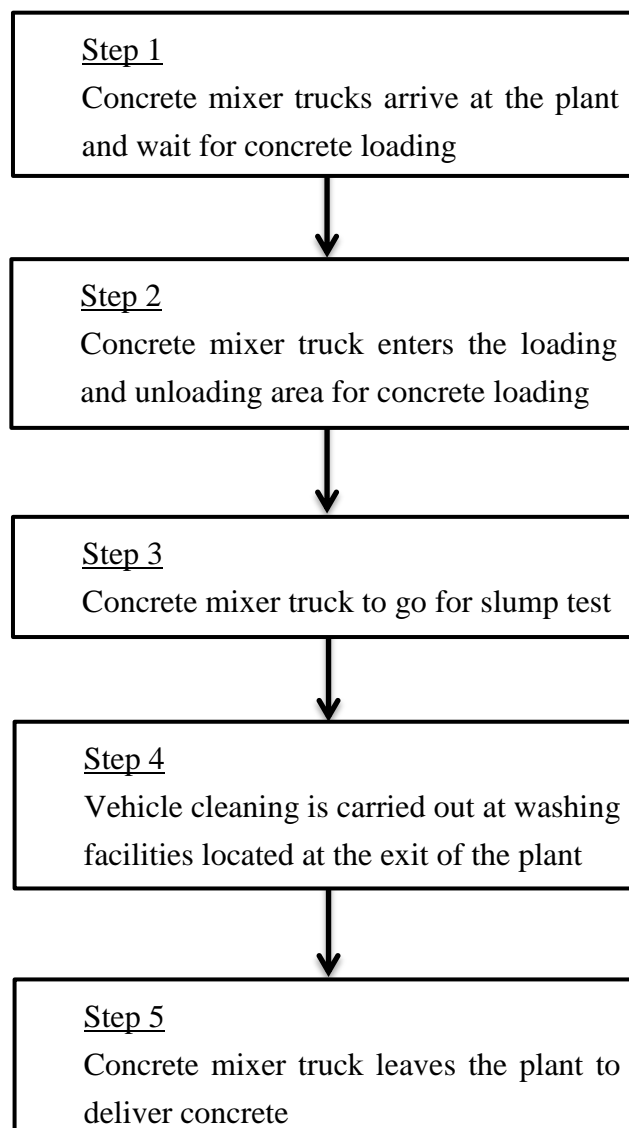
2. THE TRANSPORT MANAGEMENT PLAN

2.1 General Mechanism within the Plant

2.1.1 The layout showing the internal transport facilities of the plant is shown in **Figure 2.1**.

2.1.2 The key procedures of the loading/unloading activities and operation for the Concrete Batching Plant is shown in **Figure 2.2** and illustrated in the flow chart (**Graph 1**) below:

Graph 1 Plant Operation Flowcharts





- i) Step 1 - Concrete mixer trucks arrive at the plant and wait for concrete loading at the waiting space by their assigned schedule/appointment in advance. They are all equipped with walkie-talkie system to ensure good communication between the management of the plant and drivers of concrete mixer trucks;
- ii) Step 2 - Concrete mixer truck enters the loading and unloading area for concrete loading. Loading of concrete from the silo to concrete mixer truck at the loading/unloading space;
- iii) Step 3 - Vehicle cleaning is carried out at washing facilities within the plant before leaving the plant; and
- iv) Step 4 - Concrete mixer truck to go for slump test;
- v) Step 5 - Concrete mixer trucks depart from the plant to deliver concrete to the construction sites.

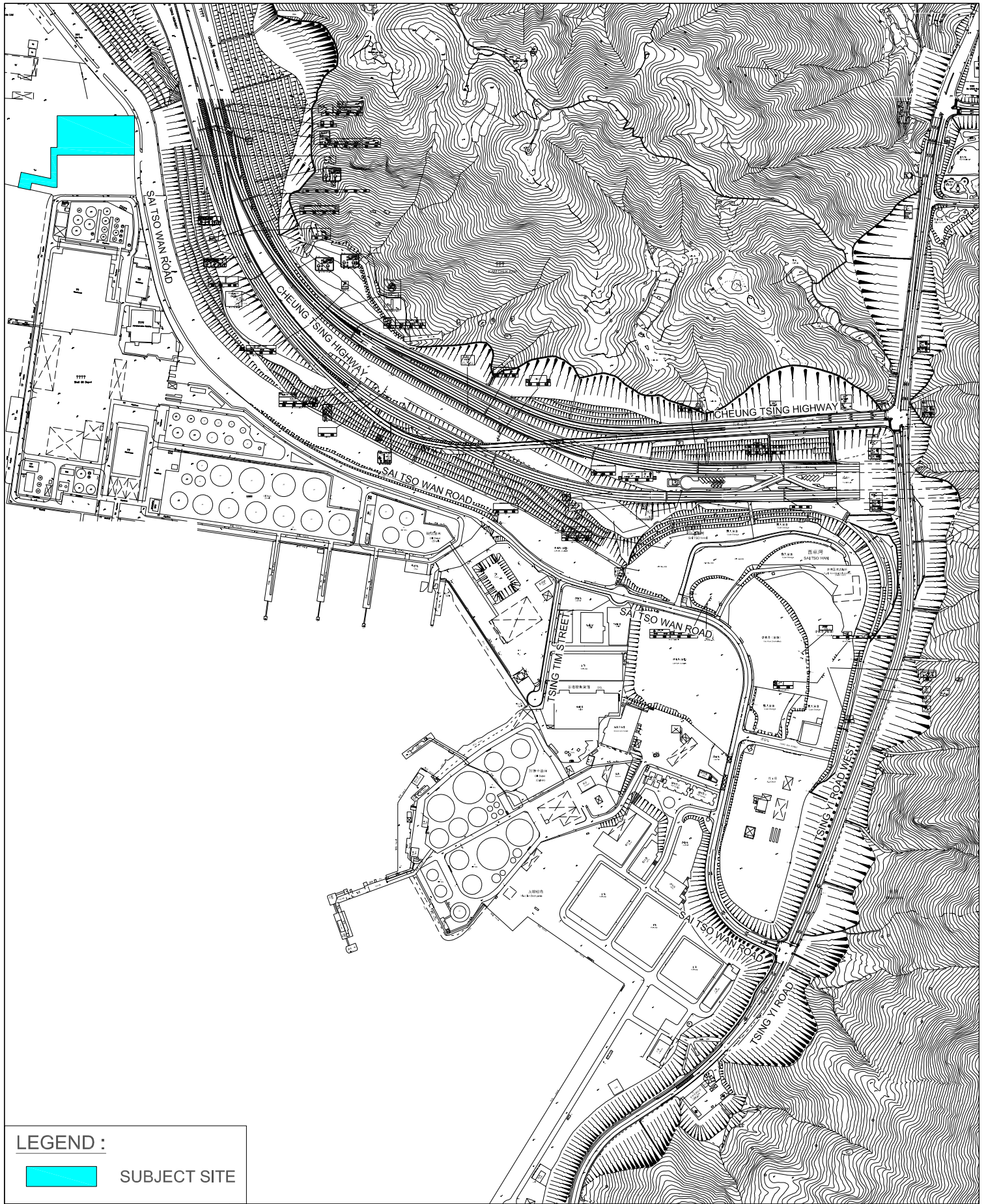
2.1.3 The Transport Plan consists of 2 different Operating Scenarios:

- i) Normal Operation
- ii) Contingency Situation when the Plant is Suspended
 - (a) Scheduled Suspension
 - (b) Unscheduled Suspension

(Please refer to the Approved Marshalling Plan given in Appendix I.)

2.2 Removal of Restrictions of Vehicles at Critical Junctions and related Monitoring/Auditing

2.2.1 As mentioned in the TIA report, there are sufficient spare spaces for the critical junctions even the plant is now under operating. Therefore, under this renewal application, it is proposed to **remove** all the traffic restrictions on critical junctions and related Monitoring/Auditing required by the previous approval.



LEGEND :

 SUBJECT SITE

FIGURE NO.: 1.1		PROJECT TITLE: Concrete Batching Plant at Tsing Yi - Renewal Application A/TY/136
PROJECT NO.: 24001HK		DRAWING TITLE: LOCATION PLAN
SCALE: 1 : 7000 (IN A4 SIZE)	DATE: 22 FEB 2024	



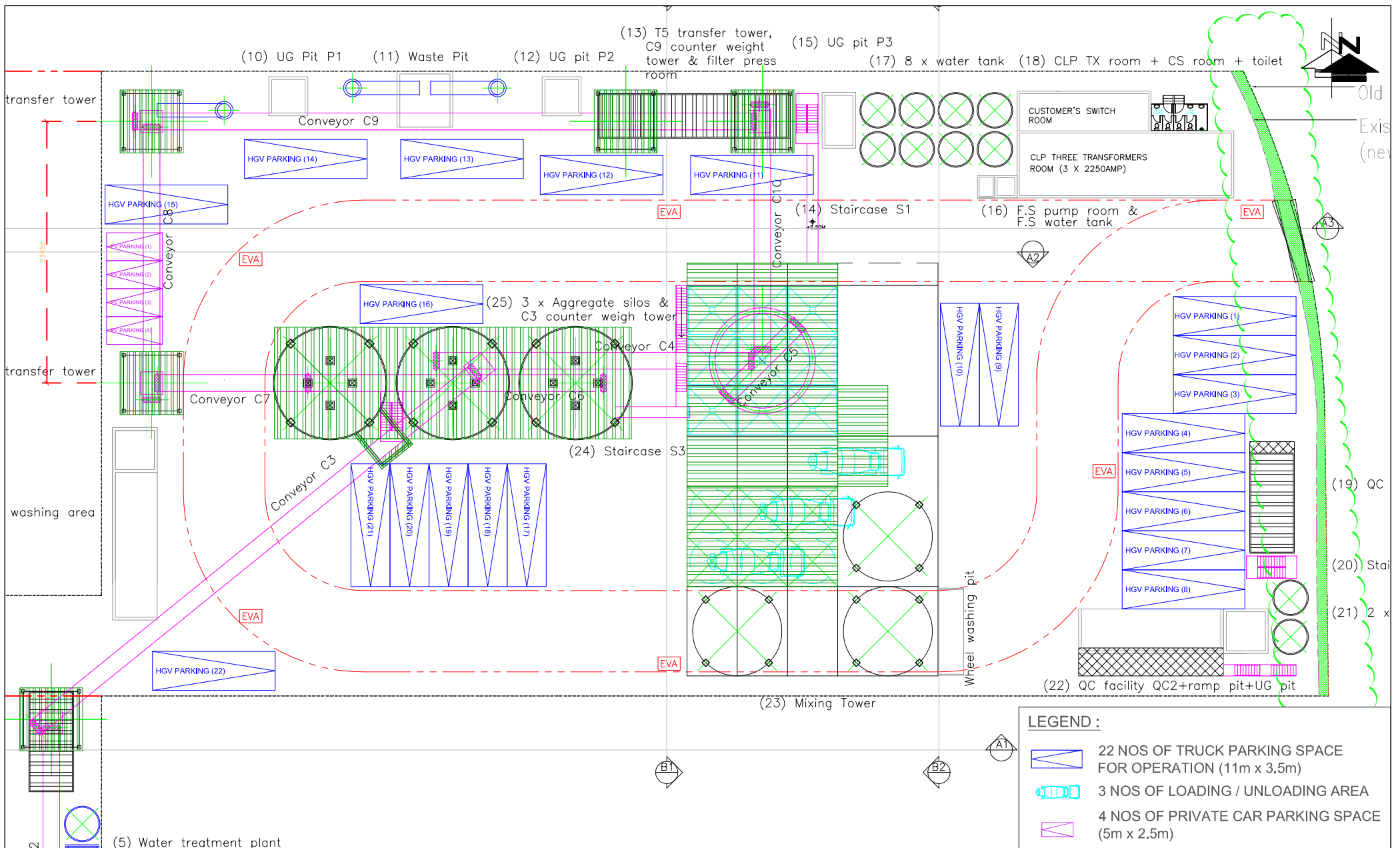
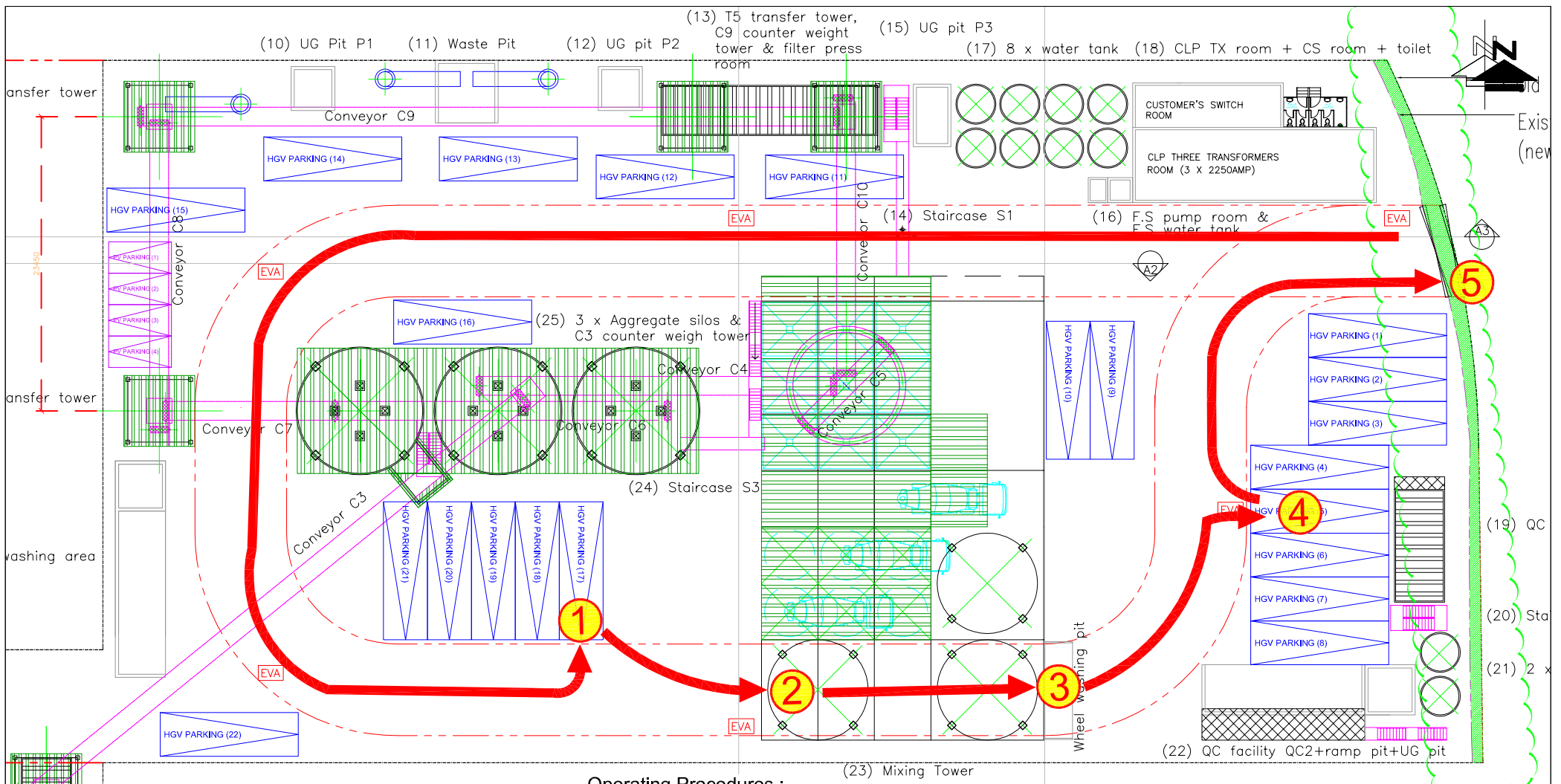


FIGURE NO.:	2.1	PROJECT TITLE:	Concrete Batching Plant at Tsing Yi - Renewal Application A/TY/136
PROJECT NO.:	24001HK	DRAWING TITLE:	THE PRELIMINARY LAYOUT OF THE PROPOSED CONCRETE BATCHING PLANT
SCALE: 1 : 500 (IN A4 SIZE)	DATE: 28 MAR 2024		

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Operating Procedures :

- ① Concrete mixer truck arrives marshalling area and wait for concrete loading.
- ② Concrete mixer truck enters the loading and unloading area for concrete loading.
- ③ Vehicle cleaning is carried out at washing facilities.
- ④ Concrete mixer truck to go for slump test.
- ⑤ Concrete mixer truck leaves the plant for delivery of concrete.

LEGEND :

- 22 NOS OF TRUCK PARKING SPACE FOR OPERATION (11m x 3.5m)
- 3 NOS OF LOADING / UNLOADING AREA
- 4 NOS OF PRIVATE CAR PARKING SPACE (5m x 2.5m)

FIGURE NO.:	2.2	PROJECT TITLE:	Proposed Concrete Batching Plant at HUD Sai Tso Wan Road, Tsing Yi
PROJECT NO.:	24001HK	DRAWING TITLE:	OPERATION OF THE PROPOSED CONCRETE BATCHING PLANT
SCALE: 1 : 500 (IN A4 SIZE)	DATE: 28 MAR 2024	CTA Consultants Limited 志達顧問有限公司	



Appendix I

Approved Marshalling Plan

(Planning Condition (e) and (f))



Our Ref: 20054HK/LtoTD2020.12.10

(E-mail: jackyng@td.gov.hk)

10th December 2020

Transport Department, NT Regional Office
Traffic Engineering (NTW) Division, Kwai Tsing Section
7/F, Mongkok Government Offices,
30 Luen Wan Street,
Mongkok, Kowloon.

Attn: Mr. NG Ho Leung, Jacky (Engr/Tsing Yi)

Dear Mr. Ng,

Temporary Concrete Batching Plant at Tsing Yi (A/TY/136)
Discharge of Planning Conditions (e and f)

The Application A/TY/136 for a Temporary Concrete Batching Plant at Tsing Yi was approved with conditions to be discharged. Among all the conditions, we would like to discharge the conditions (e) and (f) under the cover of this letter as follows:

- Condition (e) the design of the proposed vehicle marshalling area, as proposed by you, before commencement of the operation of the proposed development to the satisfaction of the C for T or of the TPB*
- Condition (f) in relation to (e) above, the provision of the proposed vehicle marshalling area, as proposed by you, during the operation period of the proposed development to the satisfaction of the C for T or of the TPB*

Please find attached the technical paper that gives the detailed assessment and arrangement for the vehicle marshalling area for your consideration and agreement.

Should you wish to discuss the technical paper further, please do not hesitate to contact the undersigned at 22140849.

Yours faithfully,
For and on behalf of
CTA Consultants Limited

Kelvin Leung
CEO
Enclosure

1. BACKGROUND

1.1 This paper is prepared in response to the Planning Conditions imposed under the TPB approval letter ref TPB/A/TY/136 dated 16/8/2019 as follows:

Condition (e) the design of the proposed vehicle marshalling area, as proposed by you, before commencement of the operation of the proposed development to the satisfaction of the C for T or of the TPB

Condition (f) in relation to (e) above, the provision of the proposed vehicle marshalling area, as proposed by you, during the operation period of the proposed development to the satisfaction of the C for T or of the TPB

1.2 The location of the Site is shown in **Figure MAR-1**.

2. THE OPERATION AND TRANSPORT FACILITIES PROVISION

2.1 The layout of the proposed plant is shown in **Figure MAR-2**.

2.2 The Operation

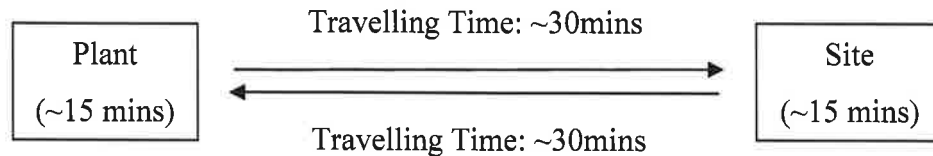
- The operation will last for 12 hours from 7am to 7pm every day, from Mondays to Saturdays and occasionally on Sundays and public holidays. Occasional operation at night will be required.
- 3 loading/unloading areas to be provided and operated by the plant.
- The maximum hourly production capacity of the plant will be 240 m³/hr.
- Assuming each concrete mixer truck will carry 8m³ concrete, it is deduced that the maximum number of trucks generated in an hour will be 240 / 8 = 30 trucks/hr.
- Aggregate, cement and PFA will be transported by barge.

2.3 Transport Facility Provision

- 22 nos. of HGV Waiting Spaces (11m × 3.5m);
- 3 nos. of Loading/Unloading Areas; and
- 4 nos. of Private Car Parking Spaces (5m × 2.5m)
- Maximum 25 truck stacking spaces during contingency situation

2.4 Parameters of the plant

- (a) Approved Maximum Production Rate = 240 m³/hr
- (b) Average Capacity of Concrete Truck = 8 m³
- (c) An estimated round trip for the dump truck:



2.5 The Marshalling of trucks will be required for the operation is under the following situations:

- (a) Normal situation when operated at the Approved Maximum Production Rate
- (b) Contingency situation when the plant production has been temporarily interrupted/suspended.

3. **NORMAL SITUATION WHEN OPERATED IN APPROVED MAXIMUM PRODUCTION RATE**

3.1 Equating the maximum production rate and the capacity of the cartage truck, it will require 30 no. of trucks per hour

$$= 240 / 8 = 30 \text{ truck/hr}$$

3.2 For a round trip of 90 minutes, it will require a fleet size of **45 trucks** for serving the maximum output of 240 m³ per hour.

$$= 30/60 \times 90 = 45 \text{ trucks}$$

3.3 As advised by the operator, the operator will direct own **a maximum 25 trucks** for this plant. The shortage will be covered by hiring from other parties, which will not stack in the plant beyond the operation period.

3.4 As the truck will stay at the plant for 15 minutes, the queue space required for the dump truck for serving the maximum output will be 7.5 truck (= 45 / 90 x 15) waiting space (say **8 truck waiting space**).

- 3.5 The plant layout as shown in **Figure MAR-2** will give **22 truck spaces** which is more than sufficient to meet the operation need for vehicle marshalling. Therefore, no additional spaces outside the plant are required for meeting the operational need when running at the approved maximum production rate.

4 CONTINGENCY SITUATION WHEN THE PLANT IS SUSPENDED

- 4.1 There are two situations for Plant Suspension (Interruption):

- (a) Scheduled Suspension
- (b) Unscheduled Suspension

4.2 Scheduled Suspension

- (a) When the plant is under scheduled suspension (e.g. maintenance), there will not be any truck arranged to collect concrete.
- (b) Therefore, no gathering of vehicles are expected during scheduled suspension and hence marshalling area is not required.

4.3 Unscheduled Suspension

- (a) When the plant is under unscheduled suspension (e.g. equipment failure), the Emergency Plan of the Concrete Batching Plant will then be activated.
- (b) The Emergency Plan
 - Trucks at the plant will be diverted to go to specified backup concrete batching plant(s) for obtaining the contracted concrete supply and deliver to the work sites.
 - If the plant resumes operational within workable time frame, some trucks may be informed to return to the plant and some may not be, depending on the delivery schedule of the construction sites.
- (c) When all the production legs are suspended, the marshalling spaces within the plant site is able to accommodate **25 truck spaces** as shown in **Figure MAR-3**.



- (d) In case of system failure, the production of the plant will be affected and the fleet size of concrete mixer trucks required will be different. The fleet size of concrete mixer truck required for different cases is shown in **Table 1**.

Case 1: *Failure of 1 Production Leg*

Case 2: *Failure of 2 Production Legs*

Case 3: *Failure of 3 Production Legs*

Table 1 Fleet Size of Concrete Mixer Truck Required for Different Cases

Cases	Production Rate ⁽¹⁾	Fleet Size Required ⁽²⁾
Normal	240 m ³ /hr	(240/8) / 60 x 90 = 45 trucks
1	2x80 m ³ /hr = 160 m ³ /hr	(160/8) / 60 x 90 = 30 trucks
2	1x80 m ³ /hr = 80 m ³ /hr	(80/8) / 60 x 90 = 15 trucks
3	0 m ³ /hr	= 0 trucks

Note: (1) Production rate is based on full operation, as each leg could still produce maximum 80m³/hr without exceed total limited rate (240m³/hr)

(2) Concrete truck with average capacity of 8m³/truck is assumed.

- 4.4 The following plants are owned by the same operator (“Alliance Construction Materials Ltd.”), and these will be easily acting as the back-up plant in case there is any unscheduled suspension required. Their locations are shown in **Figure MAR-4**.
- Batching Plant at Tsing Tim Street
 - Concrete batching plant in HUD site at Sai Tso Wan Road
- 4.5 As advised by the operator, the operator will direct own a **maximum 25 trucks** for this plant. The shortage will be covered by hiring from other parties, which will not stack in the plant beyond the operation period.
- 4.6 The operation details of the proposed plant during different scenarios of contingency are summarized in **Table 2** below.
- 4.7 Based on the operation of the proposed plant for contingency as shown in **Table 2**, it is concluded that the existing provision is able to satisfy the demand for both the Normal Operation and Suspension of the Plant.





Table 2 Proposed Plant Operation under Contingency Plans

Case	Fleet Size Required ⁽²⁾	No. of Spared Trucks	No. of Hired Truck	No. of Waiting Spaces for the Operation	Total no. of Marshalling Trucks Spaces Required
Normal	45 trucks	0 trucks	20 trucks	45 / 90 x 15 = 7.5 trucks = 8 trucks	= 8 trucks < 22 (OK)
1	30 trucks	0 trucks	5 trucks	30 / 90 x 15 = 5 trucks	= 5 trucks < 22 (OK)
2	15 trucks	max 10 trucks	0 trucks	15 / 90 x 15 = 2.5 trucks = 3 trucks	= max 13 trucks < 22 (OK)
3	0 trucks	max 25 trucks	0 trucks	0 trucks	= max 25 trucks ≤ 25 (OK)

Note: (1) Production rate is based on full operation, as each leg could still produce maximum 80m³/hr without exceed total limited rate (240m³/hr)

(2) Concrete truck with average capacity of 8m³/truck is assumed.

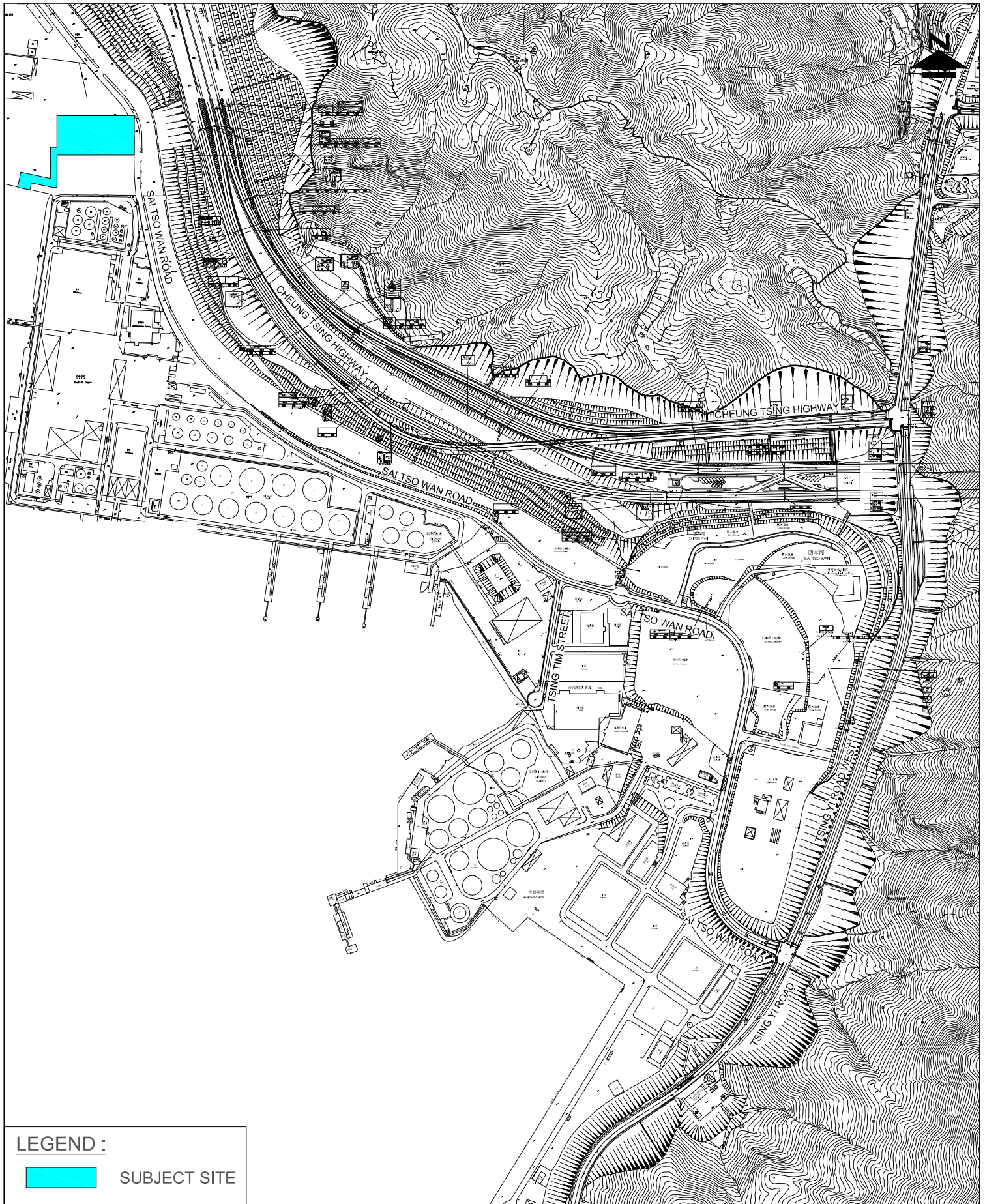
5 CONCLUSION

- 5.1 To meet the operation need of the plant covering the normal operation and the situation under plant suspension, the marshalling requirements for the concrete mixer trucks are shown in **Table 3** below:

Table 3 Marshalling Requirements for the Concrete Mixer Trucks

		Demand	On-site Marshalling Provision	
Normal Operation		8 truck spaces	22 truck spaces	OK
Contingency	Failure of 1 Production Leg	5 truck spaces	22 truck spaces	OK
	Failure of 2 Production Legs	Max 13 truck spaces	22 truck spaces	OK
	Failure of 3 Production Legs	Max 25 truck spaces	25 truck spaces	OK

- 5.2 Therefore, the on-site marshalling provision as shown in **Figure MAR-2** and **Figure MAR-3** is able to meet the requirement for vehicle marshalling.



LEGEND :

 SUBJECT SITE

FIGURE NO.: **MAR-1**

PROJECT TITLE: Proposed Concrete Batching Plant at HUD Sai Tso Wan Road, Tsing Yi

PROJECT NO.: 20054HK

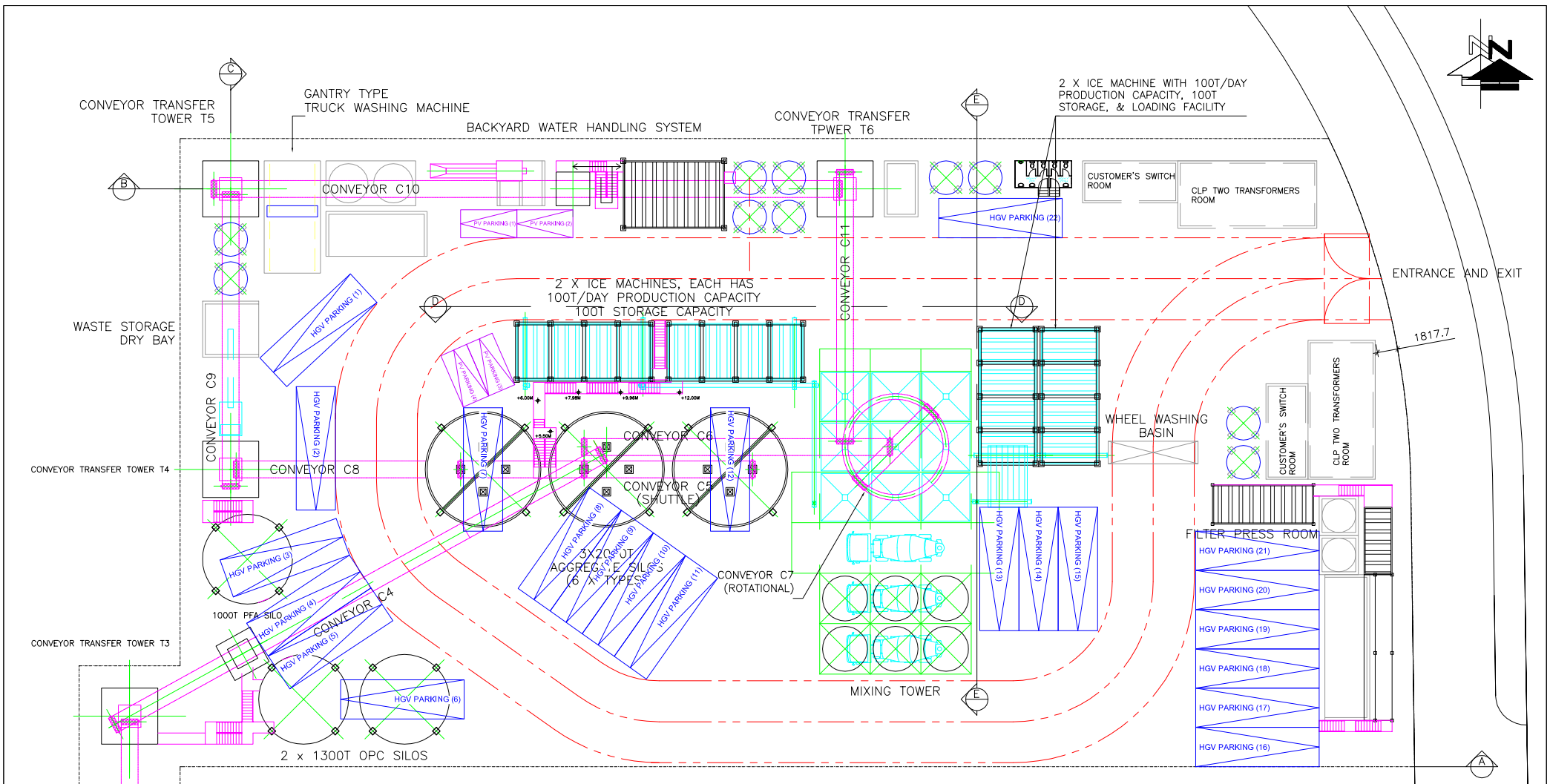
DRAWING TITLE:

LOCATION PLAN

SCALE:
1 : 7000
(IN A4 SIZE)

DATE:
09 DEC 2020

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- LEGEND :**
-  22 NOS OF TRUCK PARKING SPACE FOR OPERATION (11m x 3.5m)
 -  3 NOS OF LOADING / UNLOADING AREA
 -  4 NOS OF PRIVATE CAR PARKING SPACE (5m x 2.5m)

FIGURE NO.: **MAR-2**

PROJECT NO.: 20054HK

SCALE: 1 : 500
(IN A4 SIZE)

DATE: 09 DEC 2020

PROJECT TITLE: Proposed Concrete Batching Plant at HUD Sai Tso Wan Road, Tsing Yi

DRAWING TITLE: **PRELIMINARY LAYOUT OF THE PROPOSED CONCRETE BATCHING PLANT**



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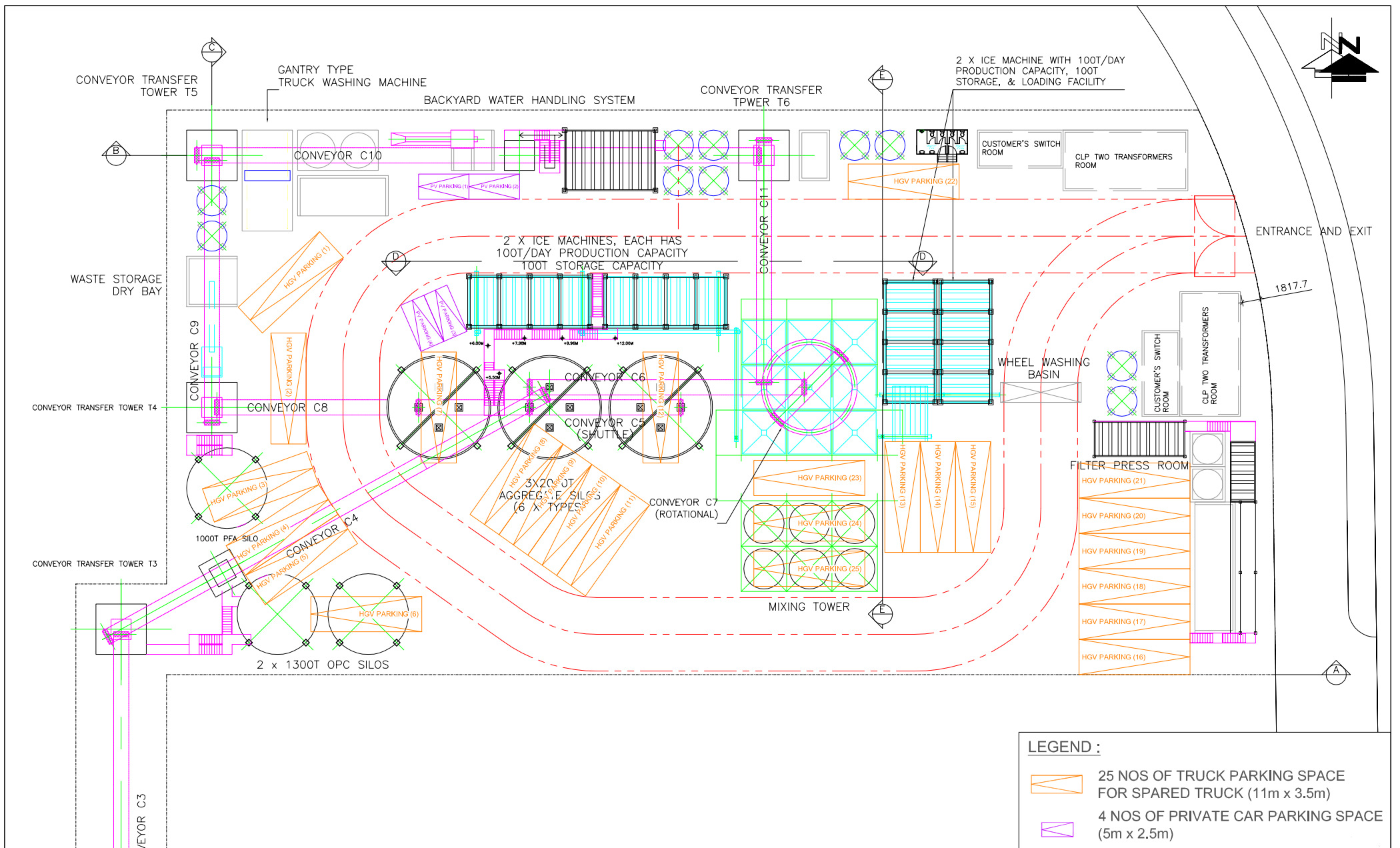


FIGURE NO.: **MAR-3**

PROJECT TITLE: Proposed Concrete Batching Plant at HUD Sai Tso Wan Road, Tsing Yi

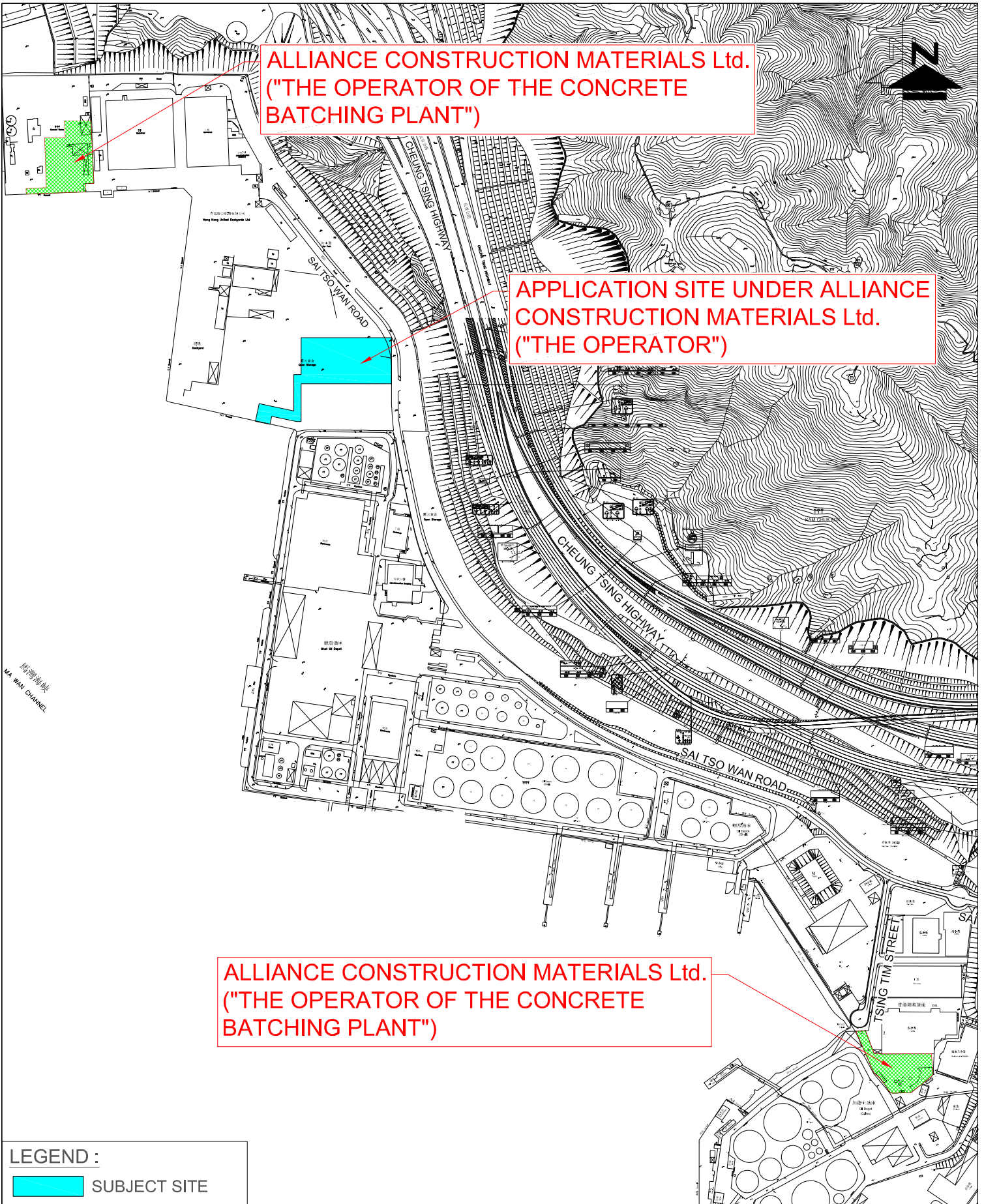
PROJECT NO.: 20054HK

DRAWING TITLE: CONTINGENCY PLAN : FAILURE OF ALL PRODUCTION LEGS

SCALE: 1 : 500 (IN A4 SIZE)

DATE: 09 DEC 2020







LEGEND :	
	SUBJECT SITE

FIGURE NO.: MAR-4		PROJECT TITLE: Proposed Concrete Batching Plant at HUD Sai Tso Wan Road, Tsing Yi
PROJECT NO.: 20054HK		DRAWING TITLE: SHORT TERM TENANCY (SST) MARSHALLING AREA
SCALE: 1 : 6000@A4	DATE: 09 DEC 2020	
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