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A-1 調査団員リスト

添付-1 調査団員リスト

(1) 第一次現地調査（概略設計調査）

No.	氏名	担当業務	所属
1	上石 博人	総括	JICA 産業開発・公共政策部 資源・エネルギーグループ第二チーム 課長
2	森本 泰介	計画管理	JICA 産業開発・公共政策部 資源・エネルギーグループ第二チーム 調査役
3	不二葦 教治	業務主任/変電計画	八千代エンジニアリング株式会社
4	藤田 和夫	変電設備	八千代エンジニアリング株式会社
5	木下 信行	系統計画/保護制御	八千代エンジニアリング株式会社
6	玉井 昌幸	据付計画	八千代エンジニアリング株式会社
7	宍戸 智	調達計画/積算	八千代エンジニアリング株式会社
8	車田 輝雄	施設計画	八千代エンジニアリング株式会社
9	小田 幸司	施設計画 (2)	八千代エンジニアリング株式会社

(2) 第二次現地調査（協力準備調査報告書の説明及び協議）

No.	氏名	担当業務	所属
3	不二葦 教治	業務主任/変電計画	八千代エンジニアリング株式会社
4	藤田 和夫	変電設備	八千代エンジニアリング株式会社
6	玉井 昌幸	据付計画	八千代エンジニアリング株式会社
7	宍戸 智	調達計画/積算	八千代エンジニアリング株式会社

A-2 調査行程

添付-2 調査行程

第1次現地調査日程

No.	月日 (曜日)	調査内容				宿泊地
		官ベース	コンサルタント			
		上石/森本	不二葦	木下	玉井/藤田/宍戸	
1	7月30日 (日)		移動 {アデイス-アブジャ}		移動 {東京-ロンドン}	アブジャ (不二葦) 機内
2	7月31日 (月)		① 表敬訪問 JICA ナイジェリア 事務所		移動 {ロンドン-アブジャ} ① 表敬訪問 JICA ナイ ジェリア事務 所	アブジャ
3	8月1日 (火)		① 表敬訪問 ナイジェリア送電 公社(TCN)・本 社、連邦電力・公 共事業住宅省 (FMPWH) ● 要請内容の確認 並びに無償資金協 力の仕組みの確認 ● 質問票の提出と 説明及び便宜供与 に係る協議 ● 他ドナーの支援 状況の確認 ● 上位開発計画		同左	アブジャ
4	8月2日 (水)		① 現地再委託先 との協議 ② TCN との協議 ● 質問票の提出と 説明及び便宜供与 に係る協議 ● 需要予測調査 ● コンポーネント と仕様 ● 移動式変電氏及 び鉄道公社敷地の 借用 移動 {アブジャ-ラゴ ス}		同左	ラゴス
5	8月3日 (木)		① 表敬訪問 TCN ラゴス支店 ● 要請内容の確認 並びに無償資金協 力の仕組みの確認 ● 質問票の提出と 説明及び便宜供与 に係る協議 ② アカンバ変電所		同左	ラゴス

No.	月日 (曜日)	調査内容				宿泊地	
		官ベース	コンサルタント				
		上石/森本	不二葦	木下	玉井/藤田/穴戸		小田/車田
			調査 ● 既設設備、仕様 ● 用地 ● 据付計画 ● 需要予測調査 ③ アパパロード変電所調査 ● 既設設備、仕様 ● 用地 ● 据付計画				
6	8月4日 (金)		① TV会議 ● 積算ガイダンス ② 概算事業費の積算		同左		ヲコス
7	8月5日 (土)		① アパパロード変電所調査継続 ② アパパロード変電所の配置検討		同左		ヲコス
8	8月6日 (日)		① 現地調査結果の作成	移動 {東京-ロンドン}	① 現地調査結果の作成		機内(木下) ヲコス
9	8月7日 (月)		① アパパロード変電所調査継続	移動 {ロンドン-ヲコス}	① アパパロード変電所調査継続		ヲコス
10	8月8日 (火)		① アカンバ変電所調査継続	同左	同左		ヲコス
11	8月9日 (水)		① アパパロード変電所調査継続	同左	同左		ヲコス
12	8月10日 (木)		① TV会議 ● 対処方針会議 ② 食料品工場 ● 電力需給調査	① TV会議 ● 対処方針会議 ② アパパロード変電所調査継続	同左		ヲコス
13	8月11日 (金)		① 現地調査結果の作成 ② EKEDC 訪問 ③ JETRO 訪問	① アジャ変電所調査 ② EKEDC 訪問 ③ JETRO 訪問	同左		ヲコス
14	8月12日		① アパパロード変	同左	同左	移動(東)	ヲコス

No.	月日 (曜日)	調査内容				宿泊地	
		官ベース	コンサルタント				
		上石/森本	不二葦	木下	玉井/藤田/穴戸		小田/車田
	日 (土)		変電所調査継続 ② アカンバ変電所調査継続			京ート ^ハ イ	機内 (小田/車田)
15	8月13日 (日)	移動 (東京-アブダビ)	① 現地調査結果概要の作成	同左	同左	移動(ト ^ハ イー ^ラ ゴス)	機内 (上石/森本) ラゴス
16	8月14日 (月)	移動 (アブダビ-ラゴス) ① アカンバ変電所調査 ② アパパロード変電所調査	①アカンバ変電所調査継続 ②アパパロード変電所調査継続	同左	同左	同左	ラゴス
17	8月15日 (火)	移動 (ラゴス-アブジャ) ① FMPWH表敬訪問 ② 連邦予算国家計画省表敬訪問	同左	同左	① 再委託先との協議・現場確認 (測量、地質調査)	同左	アブジャ (上石/森本/不二葦/木下) ラゴス
18	8月16日 (水)	① 協議議事録 (案) に係る協議	同左	同左	①海軍基地訪問 ●電力需給調査 ②製粉工場訪問 ●電力需給調査	再委託先と価格交渉	同上
19	8月17日 (木)	① 協議議事録 (案) に係る協議	同左	同左	①港湾局訪問 ●電力需給調査	再委託先と価格交渉後契約	同上
20	8月18日 (金)	① 協議議事録署名 移動 (アブジャ-フランクフルト)	同左	同左	①ティンカンアイランド訪問 ●電力需給調査	①アパパロード及びアカンバ変電所調査継続	機内 (上石/森本) アブジャ (不二葦/木下) ラゴス
21	8月19日 (土)	移動 {フランクフルト-東京}	① 現地調査結果概要の作成	同左	①現地調査結果概要の作成	同左	帰国 (上石/森本) アブジャ (不二葦/木下) ラゴス
22	8月20日 (日)		① 現地調査結果概要の作成	同左	移動(ラゴス-アブジャ)	移動(アブジャ-ト ^ハ イ)	帰国 (上石/森本) アブジャ 機内 (小田/車)

No.	月日 (曜日)	調査内容				宿泊地	
		官ベース	コンサルタント				
		上石/森本	不二葦	木下	玉井/藤田/宍戸		小田/車田
						田)	
23	8月21日 (月)		① フィールドレポートの作成	同左	同左	移動 {トハイー東京}	アブジャ 帰国 (小田/車田)
24	8月22日 (火)		① フィールドレポートの作成	同左	同左		アブジャ
25	8月23日 (水)		① TCN とフィールドレポートの協議	同左	同左		アブジャ
26	8月24日 (木)		① TCN とフィールドレポートの協議	同左	同左		アブジャ
27	8月25日 (金)		① TCN とフィールドレポートの調印 ② 帰国挨拶 (JICA ナイジェリア事務所、連邦電力・公共事業・住宅省(FMPWH)、ナイジェリア送電公社(TCN)・本社)	同左	同左		アブジャ
28	8月26日 (土)		移動 {アブジャ-パリ}	① 収集資料の整理	同左		機内 (不二葦) アブジャ
29	8月27日 (日)		移動 {パリ-東京}	移動 {アブジャ-ロンドン}	同左		機内
30	8月28日 (月)		移動 (パリ-東京)	移動 {ロンドン-東京}	同左		帰国

追加現地調査 1 (税調査) 日程

No.	月日(曜日)	調査内容		宿泊地
		官ベース	コンサルタント	
			不二葦	
1	9月19日(火)		移動 {パリ-ラゴス}	ラゴス
2	9月20日(水)		① 税調査	ラゴス
3	9月21日(木)		② 税調査	ラゴス
4	9月22日(金)		① 税調査	ラゴス
15	9月23日(土)		移動 {ラゴス-フリータウン}	フリータウン

追加現地調査 2（税調査）日程

No.	月日(曜日)	調査内容		宿泊地
		官ベース	コンサルタント	
			不二葦	
1	11月18日(土)		移動 {ダカール-ロメ-ラゴス}	ラゴス
2	11月19日(日)		① 税調査	ラゴス
3	11月20日(月)		① 税調査 移動 {ラゴス-パリ}	機内
4	11月21日(火)		移動 {ラゴス-パリ} 移動 {パリ-東京}	機内
15	11月22日(水)		移動 {パリ-東京}	帰国

第二次現地調査（ドラフト説明調査）日程

No.	月日(曜日)	調査内容		宿泊地
		官ベース	コンサルタント	
			不二葦、藤田、玉井、宍戸	
1	12月3日(日)		移動 {東京-ロンドン} 移動 {ロンドン-アブジャ}	アブジャ
2	12月4日(月)		移動 {アブジャ着} ① 表敬訪問（JICA ナイジェリア事務所、連邦電力・公共事業・住宅省(FMPWH)、ナイジェリア送電公社(TCN)・本社） ② TCN へ協力準備調査報告書(案)、機材仕様書(案)を提出・説明	アブジャ
3	12月5日(火)		① 表敬訪問（連邦予算国家計画省（FMBNP）、連邦外務省（FMFA）） ② TCN へ協力準備調査報告書(案)、機材仕様書(案)を説明	アブジャ
4	12月6日(水)		① TCN へ協力準備調査報告書(案)、機材仕様書(案)を説明 ② MD の協議（先方負事項）	アブジャ
5	12月7日(木)		① TCN へ協力準備調査報告書(案)、機材仕様書(案)を説明 ② MD の協議（免税手続き）	アブジャ
6	12月8日(金)		① TCN へ協力準備調査報告書(案)、機材仕様書(案)を説明 ② MD 協議・署名 ③ 在ナイジェリア日本大使館への報告 ④ JICA ナイジェリア事務所への報告	アブジャ
7	12月9日(土)		移動 {アブジャ-ラゴス}	官：機内 ラゴス
8	12月10日(日)		資料整理	ラゴス
9	12月11日(月)		① プロジェクトサイトの現況確認（アパパロード変電所、移動式変電所設置予定地）	ラゴス
10	12月12日(火)		① プロジェクトサイトの現況確認（アカンバ変電所、資機材置場） ② 新規案件候補サイトの調査	ラゴス
11	12月13日(水)		① 新規案件候補サイトの調査 移動 {ラゴス-アブジャ}	アブジャ
12	12月14日		① 帰国挨拶（JICA ナイジェリア事務所、連邦電力・	アブジャ

No.	月日(曜日)	調査内容		宿泊地
		官ベース	コンサルタント 不二葦、藤田、玉井、宍戸	
	日(木)		公共事業・住宅省(FMPWH)、ナイジェリア送電公社(TCN)・本社	
13	12月15日(金)		移動 {アブジャ-ロンドン}	ロンドン
14	12月16日(土)		移動 {ロンドン-東京}	機内
15	12月17日(日)		移動 {・-東京}	帰国

A-3 関係者（面会者）リスト

添付-3 関係者(面会者)リスト

<u>所属及び氏名</u>	<u>職位</u>
連邦予算・国家計画省	
Federal Ministry of Budget and National Planning	
Mr. Lanre Adekanye	Deputy Director
連邦電力・公共事業・住宅省	
Federal Ministry of Power, Works and Housing (FMPWH)	
Mr. Louis O. N. Edozien	Permanent Secretary (Power)
Engr. Katampe Sarah	Assistant director, Transmission Service Department
Engr. Philip Okpanafe	Chief Engineer, Power
ナイジェリア送電会社 (本社)	
Transmission Company of Nigeria (Corporate Headquarters)	
Mr. Usman Gur Muhammed	Interim MD/CEO
Engr. T. O. Uwah	Head, Transmission Service provider
Engr. Adewumi G. Victor	General Manager (Maintenance &Field Service)
Engr. Shehu Abba Aliyu	General Manager (System Planning & Development)
Mr. J. I. Dodo	Head (Legal)
Engr. Adekola Mathew Ajibade	Manager (JICA Project)
ナイジェリア送電会社 (アカンバ変電所)	
Transmission Company of Nigeria (Akangba substation)	
Engr. A. O. Dim	Assistant General Manager
Engr. Tony Dim	Manager
EKO 配電会社	
EKO Electricity Distribution PLC	
Engr. Ovie O. Adjekpiyede	H.O.G (Network Planning Group)
Engr. Ashok Saraf	Chief Tech. Off.
ナイジェリア港湾局	
Nigeria Ports Authority	
Engr. G.S. Kefas	Chief Port Engineer
Engr. R. A. Danbatta	Chief Port Engineer

製粉工場

Flour Mills of Nigeria Plc

Engr. Festus Omotoyinbo

Head, Technical Division

日本貿易振興機構（ラゴス事務所）

Japan External Trade Organization (JETRO)

宮崎 拓

所長

山村 千晴

所員

在ナイジェリア日本大使館

Embassy of Japan in Nigeria

Mr. Mitsuhiro INAMURA

Head of Development Cooperation, First Secretary

Mr. Hiroki OGAWA

First Secretary

JICA ナイジェリア事務所

JICA Nigeria Office

中村 浩孝

所長

奥村 真紀子

次長

小出 拓己

企画調査員

A-4 討議議事録 (M/D)

(1) 第1次現地調査 M/D

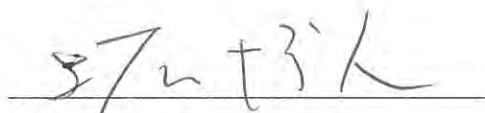
(2) 第2次現地調査 M/D

(1) 第1次現地調査 M/D

Minutes of Discussions
on the Preparatory Survey for the Project for
Emergency Rehabilitation of Lagos Transmission Substation

In response to the request from the Government of Federal Republic of Nigeria (hereinafter referred to as “Nigeria”), Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched the Preparatory Survey Team for the Outline Design (hereinafter referred to as “the Team”) of the Project for Emergency Rehabilitation of Lagos Transmission Substation (hereinafter referred to as “the Project”) to Nigeria, headed by Hiroto KAMIISHI, Director of Energy and Mining Group, Industrial Development and Public Policy Department, JICA, from 14th to 18th, August 2017. The Team held a series of discussions with the officials of the Government of Nigeria and conducted a field survey. In the course of the discussions, both sides have confirmed the main items described in the attached sheets.

Abuja, 18th August, 2017



Hiroto Kamiishi

Leader

Preparatory Survey Team

Japan International Cooperation Agency

Japan



Afolabi John Oladele

Director

Transmission Services

The Federal Ministry of Power, Works and
Housing

Nigeria



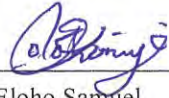
Usman Gur Mohammed

Interim Managing Director / CEO

Transmission Company of Nigeria

Nigeria

Witness



Eloho Samuel

Director

International Cooperation Department

Ministry of Budget and National Planning

Nigeria



ATTACHMENT

1. Objective of the Project

The objective of the Project is to achieve reliable and stable supply of the electricity by rehabilitation and reinforcement of the substation in Lagos, thereby contributing economic growth in Lagos.

2. Title of the Preparatory Survey

Both sides confirmed the title of the Preparatory Survey as “the Preparatory Survey for the Project for Emergency Rehabilitation of Lagos Transmission Substation”.

3. Project site

Both sides confirmed that the site of the Project is in Lagos, which is shown in Annex 1.

4. Responsible authority for the Project

Both sides confirmed the authorities responsible for the Project are as follows:

4-1. The Transmission Company of Nigeria will be the executing agency for the Project (hereinafter referred to as “the Executing Agency”). The Executing Agency shall coordinate with all the relevant authorities to ensure smooth implementation of the Project and ensure that the undertakings for the Project shall be managed by relevant authorities properly and on time. The organization chart is shown in Annex 2.

4-2. The line ministry of the Executing Agency is the Federal Ministry of Power, Works and Housing. The Federal Ministry of Power, Works and Housing shall be responsible for supervising the Executing Agency on behalf of the Government of Nigeria.

5. Items requested by the Government of Nigeria

5-1. As a result of discussions, both sides confirmed that the main items requested by the Government of Nigeria are as follows:

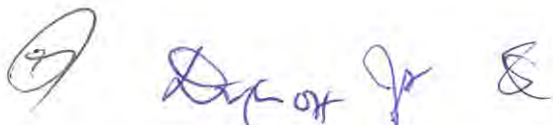
(A) Procurement and Installation

132kV GIS

33kV GIS

Control panels

Transformers



Ground transformers
Capacitor bank
Low voltage facilities
Substation grounding facility

(B) Procurement

Maintenance Tools for the Equipment to be installed

Spare parts for the Equipment to be installed

(C) Training

Basic training of operation and maintenance on installed equipment

5-2. JICA will assess the feasibility of the above requested items through the survey and will report the findings to the Government of Japan. The final scope of the Project will be decided by the Government of Japan.

6. Procedures and Basic Principles of Japanese Grant

6-1. The Nigeria side agreed that the procedures and basic principles of Japanese Grant as described in Annex 3 shall be applied to the Project.

As for the monitoring of the implementation of the Project, JICA requires Nigeria side to submit the Project Monitoring Report, the form of which is attached as Annex 4.

6-2. The Nigeria side agreed to take the necessary measures, as described in Annex 5, for smooth implementation of the Project. The contents of the Annex 5 will be elaborated and refined during the Preparatory Survey and be agreed in the mission dispatched for explanation of the Draft Preparatory Survey Report.

The contents of Annex 5 will be updated as the Preparatory Survey progresses, and eventually, will be used as an attachment to the Grant Agreement.

7. Schedule of the Survey

7-1. The Team will proceed with further survey in Nigeria until 27th August.

7-2. JICA will prepare a draft Preparatory Survey Report in English and dispatch a mission to Nigeria in order to explain its contents around early December 2017.

7-3. If the contents of the draft Preparatory Survey Report is accepted and the undertakings for the Project are fully agreed by the Nigeria side, JICA will finalize the Preparatory Survey Report and send it to Nigeria around February 2018.

7-4. The above schedule is tentative and subject to change.



8. Environmental and Social Considerations

8-1. The Nigeria side confirmed to give due environmental and social considerations before and during implementation, and after completion of the Project, in accordance with the JICA Guidelines for Environmental and Social Considerations (April, 2010).

8-2. The Project is categorized as "C" from the following considerations:

The project is likely to have minimal adverse impact on the environment under the JICA guidelines for environmental and social considerations (April 2010).

8-3. For the Project that will result in involuntary resettlement, the Nigeria side confirmed to prepare a Resettlement Action Plan (RAP)/Abbreviated Resettlement Action Plan (ARAP) and make it available to the public. In addition, the Nigeria side confirmed to provide the affected people with sufficient compensation and/or support in accordance with RAP/ARAP, which is consistent with JICA Guidelines for Environmental and Social Considerations (April, 2010), in a timely manner.

9. Other Relevant Issues

9.1 Status of the Survey

The Team explained that the purpose of the Survey is to collect necessary information for evaluating the relevance, appropriateness and urgency of the Project and for analyzing power system in Lagos, and also to identify the issues to be cleared for implementation of the Project. The Nigeria side has agreed to share all necessary information and data with the Team.

9.2 Counterpart Personnel

The Team requested for the Nigeria side that necessary number of counterpart personnel shall be assigned to the Team and necessary arrangements with related organizations be made during the Survey and implementation stage in Nigeria. The Nigeria side has agreed to it.

9.3 Office Space

The Team requested the Nigeria side that necessary arrangement of office space for the Team during the Survey in Nigeria. The Nigeria side agreed to arrange it.

9.4 Questionnaire

The Nigeria side shall answer to the Questionnaire submitted by the Team in English with relevant documents by 18th August.

9.5 Safety Consideration during the Project

The Team requested the Nigeria side to make the necessary arrangements to secure

① Defect W E

the safety of persons concerned with the project at the project sites. The Nigeria side agreed to it.

9.6 Exemption of customs duties, internal taxes and other fiscal levies

Both sides confirmed that customs duties, internal taxes and other fiscal levies which may be imposed in Nigeria with respect to the purchase of the products and/or the services be exempted. Both sides also confirmed that the tax exemption procedure in Nigeria as Annex 6 as recognition at the present moment.

The contents of Annex 6 will be updated as the Preparatory Survey progresses, and eventually will be used in the implementation stage.

9.7 Tentative Schedule of the Project

The Team explained to the Nigeria side that the tentative schedule of the Project is as attached as Annex 7.

9.8 Components of the Project

Nigeria side requested that capacity of transformers installed in Apapa Road substation should cover the future demand in the area. The team explained the installation of capacitor bank may be less needed referring the fact that the power factor observed in Apapa Road substation has been within the appropriate range. The team explained an initial technical finding that the activation of the second circuit of Akangba – Apapa Road transmission line, by “T-off” connecting with the second Akangaba – Ojo transmission line, may improve the reliability of the power system. Both sides confirmed that components of the Project will be examined and discussed during the Preparatory Survey.

9.9 Securing mobile transformer(s)

The team, recognizing the importance of shortening the power outage time in the Apapa Road area, requested Nigeria side to install the mobile transformer(s) by Nigeria side during the construction period. Nigeria side confirmed they will secure the transformer(s) which is/are owned by TCN. Nigeria side also confirmed they will consult to Nigeria Railway Corporation (hereinafter referred to as “NRC”) to secure the land owned by NRC to install the mobile transformer(s) during the implementation stage.

9.10 Budgetary measures of Nigeria side

The team explained the estimated cost covered by Nigeria side will be notified in the 2nd Preparatory Survey which is scheduled around early December 2017. Nigeria side confirmed they will secure the necessary budget accordingly.

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Annex 1 Project Site

Annex 2 Organization Chart of Transmission Company of Nigeria

Annex 3 Japanese Grant

Annex 4 Project Monitoring Report

Annex 5 Major Undertakings to be taken by the Government of Nigeria

Annex 6 Tax exemption procedures in Nigeria

Annex 7 Tentative Schedule of the Project

⑤ Deputy J. E.

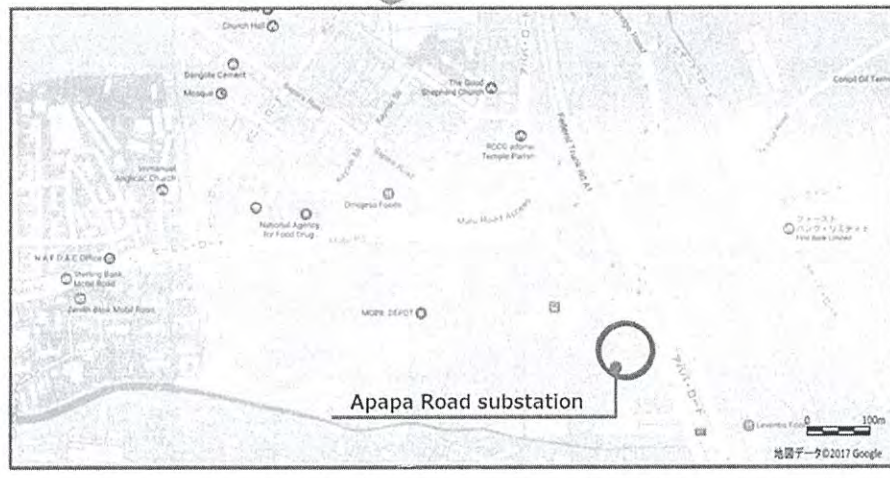
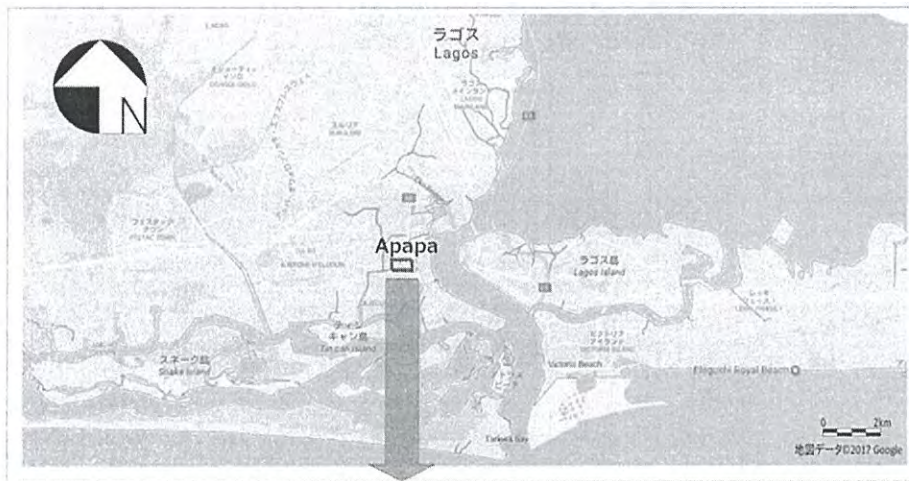
Annex 1 Project Site



■ Nigeria map



■ Africa map

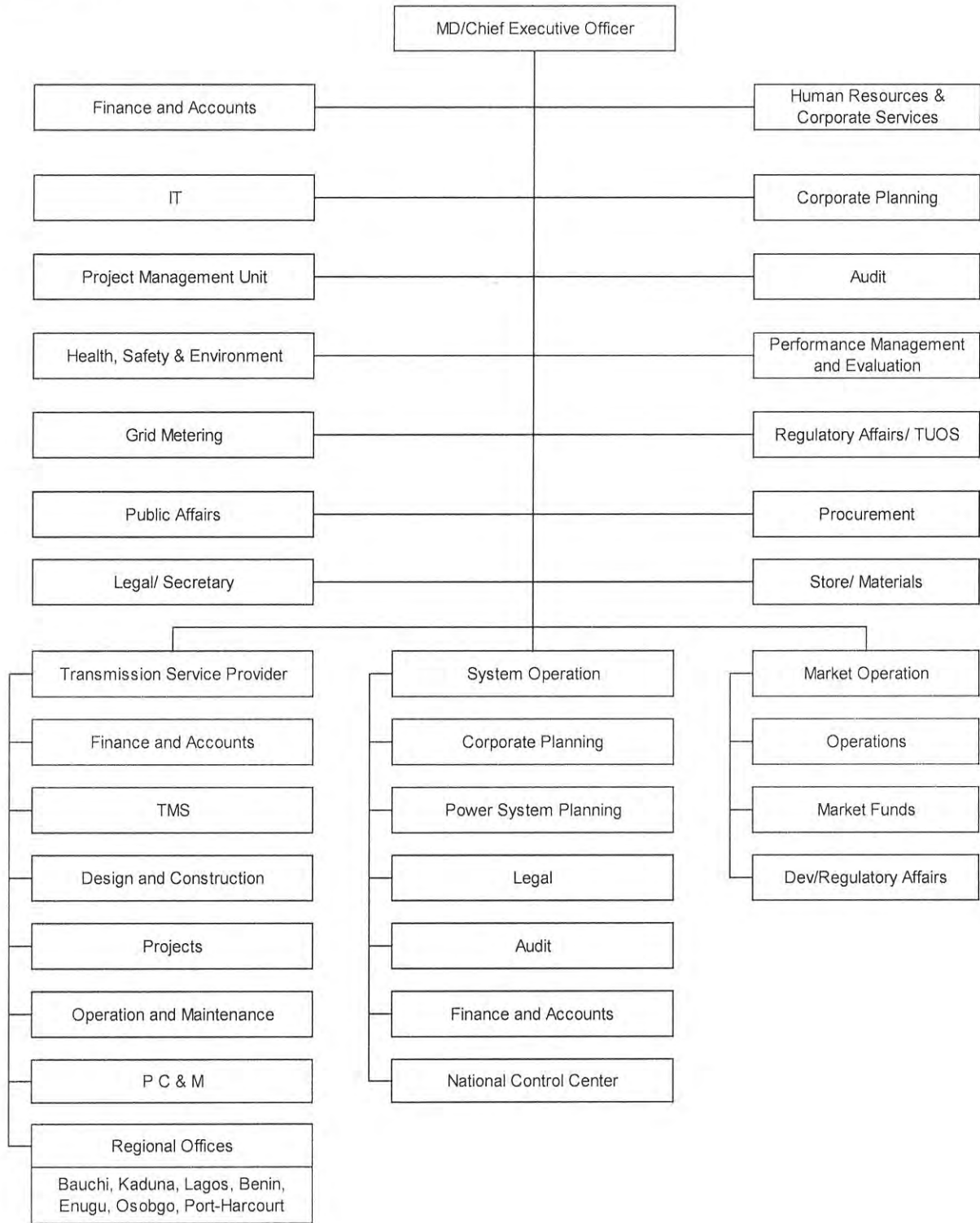


■ Project site

Location map of project site

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Annex 2 Organization Chart of Transmission Company of Nigeria



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JAPANESE GRANT

The Japanese Grant is non-reimbursable fund provided to a recipient country (hereinafter referred to as “the Recipient”) to purchase the products and/or services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. Followings are the basic features of the project grants operated by JICA (hereinafter referred to as “Project Grants”).

1. Procedures of Project Grants

Project Grants are conducted through following procedures (See “PROCEDURES OF JAPANESE GRANT” for details):

(1) Preparation

- The Preparatory Survey (hereinafter referred to as “the Survey”) conducted by JICA

(2) Appraisal

-Appraisal by the government of Japan (hereinafter referred to as “GOJ”) and JICA, and Approval by the Japanese Cabinet

(3) Implementation

Exchange of Notes

-The Notes exchanged between the GOJ and the government of the Recipient

Grant Agreement (hereinafter referred to as “the G/A”)

-Agreement concluded between JICA and the Recipient

Banking Arrangement (hereinafter referred to as “the B/A”)

-Opening of bank account by the Recipient in a bank in Japan (hereinafter referred to as “the Bank”) to receive the grant.

Construction works/procurement

-Implementation of the project (hereinafter referred to as “the Project”) on the basis of the G/A

(4) Ex-post Monitoring and Evaluation

-Monitoring and evaluation at post-implementation stage

2. Preparatory Survey

(1) Contents of the Survey

The aim of the Survey is to provide basic documents necessary for the appraisal of the the Project made by the GOJ and JICA. The contents of the Survey are as follows:



- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the Recipient necessary for the implementation of the Project.
- Evaluation of the feasibility of the Project to be implemented under the Japanese Grant from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of an outline design of the Project.
- Estimation of costs of the Project.
- Confirmation of Environmental and Social Considerations

The contents of the original request by the Recipient are not necessarily approved in their initial form. The Outline Design of the Project is confirmed based on the guidelines of the Japanese Grant.

JICA requests the Recipient to take measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the executing agency of the Project. Therefore, the contents of the Project are confirmed by all relevant organizations of the Recipient based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA contracts with (a) consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the feasibility of the Project.

3. Basic Principles of Project Grants

(1) Implementation Stage

1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes (hereinafter referred to as "the E/N") will



be signed between the GOJ and the Government of the Recipient to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Recipient to define the necessary articles, in accordance with the E/N, to implement the Project, such as conditions of disbursement, responsibilities of the Recipient, and procurement conditions. The terms and conditions generally applicable to the Japanese Grant are stipulated in the "General Terms and Conditions for Japanese Grant (January 2016)."

2) Banking Arrangements (B/A) (See "Financial Flow of Japanese Grant (A/P Type)" for details)

a) The Recipient shall open an account or shall cause its designated authority to open an account under the name of the Recipient in the Bank, in principle. JICA will disburse the Japanese Grant in Japanese yen for the Recipient to cover the obligations incurred by the Recipient under the verified contracts.

b) The Japanese Grant will be disbursed when payment requests are submitted by the Bank to JICA under an Authorization to Pay (A/P) issued by the Recipient.

3) Procurement Procedure

The products and/or services necessary for the implementation of the Project shall be procured in accordance with JICA's procurement guidelines as stipulated in the G/A.

4) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the Recipient to continue to work on the Project's implementation after the E/N and G/A.

5) Eligible source country

In using the Japanese Grant disbursed by JICA for the purchase of products and/or services, the eligible source countries of such products and/or services shall be Japan and/or the Recipient. The Japanese Grant may be used for the purchase of the products and/or services of a third country as eligible, if necessary, taking into account the quality, competitiveness and economic rationality of products and/or services necessary for achieving the objective of the Project. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm, which enter into contracts with the Recipient, are limited to "Japanese nationals", in principle.

6) Contracts and Concurrence by JICA

The Recipient will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be concurred by JICA in order to be verified as eligible for using the Japanese Grant.

7) Monitoring

The Recipient is required to take their initiative to carefully monitor the progress of the Project in order to ensure its smooth implementation as part of their responsibility in the G/A, and to regularly report to JICA about its status by



using the Project Monitoring Report (PMR).

8) Safety Measures

The Recipient must ensure that the safety is highly observed during the implementation of the Project.

9) Construction Quality Control Meeting

Construction Quality Control Meeting (hereinafter referred to as the "Meeting") will be held for quality assurance and smooth implementation of the Works at each stage of the Works. The member of the Meeting will be composed by the Recipient (or executing agency), the Consultant, the Contractor and JICA. The functions of the Meeting are as followings:

- a) Sharing information on the objective, concept and conditions of design from the Contractor, before start of construction.
- b) Discussing the issues affecting the Works such as modification of the design, test, inspection, safety control and the Client's obligation, during of construction.

(2) Ex-post Monitoring and Evaluation Stage

- 1) After the project completion, JICA will continue to keep in close contact with the Recipient in order to monitor that the outputs of the Project is used and maintained properly to attain its expected outcomes.
- 2) In principle, JICA will conduct ex-post evaluation of the Project after three years from the completion. It is required for the Recipient to furnish any necessary information as JICA may reasonably request.

(3) Others

1) Environmental and Social Considerations

The Recipient shall carefully consider environmental and social impacts by the Project and must comply with the environmental regulations of the Recipient and JICA Guidelines for Environmental and Social Considerations (April, 2010).



2) Major undertakings to be taken by the Government of the Recipient

For the smooth and proper implementation of the Project, the Recipient is required to undertake necessary measures including land acquisition, and bear an advising commission of the A/P and payment commissions paid to the Bank as agreed with the GOJ and/or JICA. The Government of the Recipient shall ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the Recipient with respect to the purchase of the Products and/or the Services be exempted or be borne by its designated authority without using the Grant and its accrued interest, since the grant fund comes from the Japanese taxpayers.

3) Proper Use

The Recipient is required to maintain and use properly and effectively the products and/or services under the Project (including the facilities constructed and the equipment purchased), to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Japanese Grant.

4) Export and Re-export

The products purchased under the Japanese Grant should not be exported or re-exported from the Recipient.

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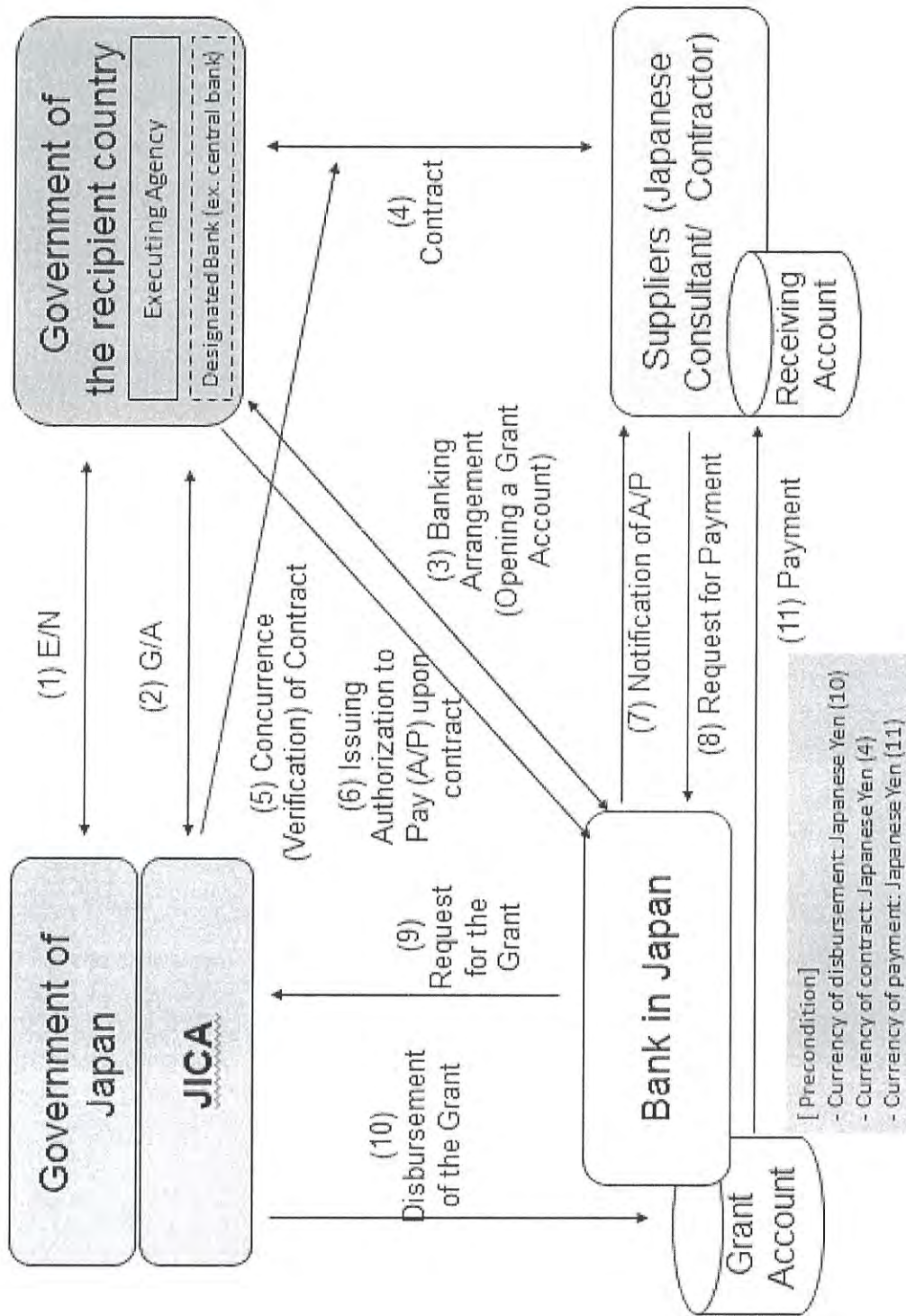
PROCEDURES OF JAPANESE GRANT

Stage	Procedures	Remarks	Recipient Government	Japanese Government	JICA	Consultants	Contractors	Agent Bank
Official Request	Request for grants through diplomatic channel	Request shall be submitted before appraisal stage.	x	x				
1. Preparation	(1) Preparatory Survey Preparation of outline design and cost estimate		x		x	x		
2. Appraisal	(2) Preparatory Survey Explanation of draft outline design, including cost estimate, undertakings, etc.		x		x	x		
	(3) Agreement on conditions for implementation	Conditions will be explained with the draft notes (E/N) and Grant Agreement (G/A) which will be signed before approval by Japanese government.	x	x (E/N)	x (G/A)			
	(4) Approval by the Japanese cabinet			x				
3. Implementation	(5) Exchange of Notes (E/N)		x	x				
	(6) Signing of Grant Agreement (G/A)		x		x			
	(7) Banking Arrangement (B/A)	Need to be informed to JICA	x					x
	(8) Contracting with consultant and issuance of Authorization to Pay (A/P)	Concurrence by JICA is required	x			x		x
	(9) Detail design (D/D)		x			x		
	(10) Preparation of bidding documents	Concurrence by JICA is required	x			x		
	(11) Bidding	Concurrence by JICA is required	x			x	x	
	(12) Contracting with contractor/supplier and issuance of A/P	Concurrence by JICA is required	x				x	x
4. Ex-post monitoring & evaluation	(13) Construction works/procurement	Concurrence by JICA is required for major modification of design and amendment of contracts.	x			x	x	
	(14) Completion certificate		x			x	x	
	(15) Ex-post monitoring	To be implemented generally after 1, 3, 10 years of completion, subject to change	x		x			
	(16) Ex-post evaluation	To be implemented basically after 3 years of completion	x		x			

notes:

1. Project Monitoring Report and Report for Project Completion shall be submitted to JICA as agreed in the G/A.
2. Concurrence by JICA is required for allocation of grant for remaining amount and/or contingencies as agreed in the G/A.

Financial Flow of Japanese Grant (A/P Type)



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Project Monitoring Report
on
Project Name
Grant Agreement No. XXXXXXXX
20XX, Month

Organizational Information

Signer of the G/A (Recipient)	_____ Person in Charge (Designation) _____ _____ Contacts Address: _____ Phone/FAX: _____ Email: _____
Executing Agency	_____ Person in Charge (Designation) _____ _____ Contacts Address: _____ Phone/FAX: _____ Email: _____
Line Ministry	_____ Person in Charge (Designation) _____ _____ Contacts Address: _____ Phone/FAX: _____ Email: _____

General Information:

Project Title	_____
E/N	Signed date: _____ Duration: _____
G/A	Signed date: _____ Duration: _____
Source of Finance	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____

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1: Project Description	
-------------------------------	--

1-1 Project Objective

1-2 Project Rationale

- Higher-level objectives to which the project contributes (national/regional/sectoral policies and strategies)
- Situation of the target groups to which the project addresses

1-3 Indicators for measurement of "Effectiveness"

Quantitative indicators to measure the attainment of project objectives		
Indicators	Original (Yr)	Target (Yr)
Qualitative indicators to measure the attainment of project objectives		

2: Details of the Project

2-1 Location

Components	Original <i>(proposed in the outline design)</i>	Actual
1.		

2-2 Scope of the work

Components	Original* <i>(proposed in the outline design)</i>	Actual*
1.		

Reasons for modification of scope (if any).

(PMR)

2-3 Implementation Schedule

Items	Original		Actual
	<i>(proposed in the outline design)</i>	<i>(at the time of signing the Grant Agreement)</i>	

Reasons for any changes of the schedule, and their effects on the project (if any)

2-4 Obligations by the Recipient

2-4-1 Progress of Specific Obligations

See Attachment 2.

2-4-2 Activities

See Attachment 3.

2-4-3 Report on RD

See Attachment 11.

2-5 Project Cost

2-5-1 Cost borne by the Grant(Confidential until the Bidding)

Components			Cost (Million Yen)	
	Original <i>(proposed in the outline design)</i>	Actual <i>(in case of any modification)</i>	Original ^{1),2)} <i>(proposed in the outline design)</i>	Actual
	1.			
Total				

Note: 1) Date of estimation:

2) Exchange rate: 1 US Dollar = Yen

2-5-2 Cost borne by the Recipient

Components			Cost (1,000 Taka)	
	Original <i>(proposed in the outline design)</i>	Actual <i>(in case of any modification)</i>	Original ^{1),2)} <i>(proposed in the outline design)</i>	Actual

	1.			

Note: 1) Date of estimation:
 2) Exchange rate: 1 US Dollar =

Reasons for the remarkable gaps between the original and actual cost, and the countermeasures (if any)

(PMR)

2-6 Executing Agency

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

Original (at the time of outline design)
 name:
 role:
 financial situation:
 institutional and organizational arrangement (organogram):
 human resources (number and ability of staff):

Actual (PMR)

2-7 Environmental and Social Impacts

- The results of environmental monitoring based on Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- The results of social monitoring based on in Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- Disclosed information related to results of environmental and social monitoring to local stakeholders (whenever applicable).

3: Operation and Maintenance (O&M)

3-1 Physical Arrangement

- Plan for O&M (number and skills of the staff in the responsible division or section, availability of manuals and guidelines, availability of spareparts, etc.)

Original (at the time of outline design)

Actual (PMR)

3-2 Budgetary Arrangement
 - Required O&M cost and actual budget allocation for O&M

Original (at the time of outline design)

Actual (PMR)

4: Potential Risks and Mitigation Measures

- Potential risks which may affect the project implementation, attainment of objectives, sustainability
- Mitigation measures corresponding to the potential risks

Assessment of Potential Risks (at the time of outline design)

Potential Risks	Assessment
1. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
2. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
3. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low

	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
	Contingency Plan (if applicable):
Actual Situation and Countermeasures	
(PMR)	

5: Evaluation and Monitoring Plan (after the work completion)

5-1 Overall evaluation

Please describe your overall evaluation on the project.

5-2 Lessons Learnt and Recommendations

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

5-3 Monitoring Plan of the Indicators for Post-Evaluation

Please describe monitoring methods, section(s)/department(s) in charge of monitoring, frequency, the term to monitor the indicators stipulated in 1-3.



Attachment

1. Project Location Map
 2. Specific obligations of the Recipient which will not be funded with the Grant
 3. Monthly Report submitted by the Consultant
- Appendix - Photocopy of Contractor's Progress Report (if any)
- Consultant Member List
 - Contractor's Main Staff List
4. Check list for the Contract (including Record of Amendment of the Contract/ Agreement and Schedule of Payment)
 5. Environmental Monitoring Form / Social Monitoring Form
 6. Monitoring sheet on price of specified materials (Quarterly)
 7. Report on Proportion of Procurement (Recipient Country, Japan and Third Countries) (PMR (final) only)
 8. Pictures (by JPEG style by CD-R) (PMR (final) only)
 9. Equipment List (PMR (final) only)
 10. Drawing (PMR (final) only)
 11. Report on RD (After project)



Annex 5

Major Undertakings to be taken by the Government of Nigeria

1. Specific obligations of the Government of Nigeria which will not be funded with the Grant

(1) Before the Tender

NO	Items	Deadline	In charge	Estimated Cost*	Ref.
1	To open bank account (B/A)	within 1 month after the signing of the G/A	MBNP		
2	To issue A/P to a bank in Japan (the Agent Bank) for the payment to the consultant	within 1 month after the signing of the contract	MBNP		
3	To secure necessary budget for the removal and demolition of existing equipment and facilities at Apapa Road substation	Before the signing of E/A	TCN		
4	To secure a mobile substation in working condition	before notice of the bidding document	TCN		
5	To secure and clear the following lands 1) project sites (Apapa Road Substation)	before notice of the bidding document	TCN		
6	To obtain the planning, zoning, building permit	before notice of the bidding document	TCN		
7	To clear, level and reclaim the following sites 1) leveling and reclaiming the sites (Apapa Road Substation)	before notice of the bidding document	TCN		
8	To submit Project Monitoring Report (with the result of Detail Design)	before preparation of bidding documents	TCN		

(B/A: Banking Arrangement, A/P: Authorization to pay, MBNP: Ministry of Budget and National Planning Finance)

(2) During the Project Implementation

NO	Items	Deadline	In charge	Estimated Cost*	Ref.
1	To issue A/P to a bank in Japan (the Agent Bank) for the payment to the Supplier(s)	within 1 month after the signing of the contract(s)	MBNP		
2	To bear the following commissions to a bank in Japan for the banking services based upon the B/A 1) Advising commission of A/P 2) Payment commission for A/P	within 1 month after the signing of the contract(s) every payment	MBNP MBNP		
3	To ensure prompt unloading and customs clearance at ports of disembarkation in recipient country and to assist the Supplier(s) with internal transportation therein	during the Project	TCN		
4	To accord Japanese nationals and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the country of the Recipient and stay therein for the performance of their work	during the Project	TCN		
5	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect	during the Project	FMF		

M. Dept of J & S

	to the purchase of the products and/or the services be exempted				
6	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project	during the Project	TCN		
7	1) To submit Project Monitoring Report after each work under the contract(s) such as shipping, hand over, installation and operational training	within one month after completion of each work	TCN		
	2) To submit Project Monitoring Report (final)	within one month after signing of Certificate of Completion for the works under the contract(s)	TCN		
8	To submit a report concerning completion of the Project	within six months after completion of the Project	TCN		
9	To take necessary measure for safety construction - traffic control - rope off	during the construction	TCN		

(FMF:Federal Ministry of Finance)

(3) After the Project

NO	Items	Deadline	In charge	Estimated Cost*	Ref.
1	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid 1) Allocation of maintenance cost 2) Operation and maintenance structure 3) Routine check/Periodic inspection	After completion of the construction	TCN		

* The Estimated Cost will be discussed in the next survey scheduled in December 2017.

10) *[Handwritten signature]*

(1) Fiscal levies and taxes with respect to the corporate income (Corporate tax)

A. Tax Basic Information (name, percentage, how to calculate, basis law)

(1) Corporate Income Tax

1) Tax rate and calculation method

(a) There shall be levied and paid for each year of assessment in respect of total profits of every company, tax at the rate of thirty kobo for every naira in case of "Standard Profit".

➤ Definition of Standard Profit

Standard Profit means - in the case of every company other than a Nigerian company and as respects any year of assessment commencing on 1st January 1989,

- (i) the amount of fifteen per cent of the turnover of the company for that year being turnover attributed to any part of the operations of the company carried out in Nigeria; or
- (ii) the amount of six million naira, whichever is greater.

(b) There shall, as from the assessment year commencing on 1st January, 1989 be levied and paid a special levy of fifteen per cent on excess profits of every company including banks and for the purpose of this section.

➤ Definition of Excess Profit

"Excess profits" means the difference between total profits as computed in accordance with section 31 of this Act and standard profits as calculated in accordance with the provisions of (a) (i) or (ii) of this section.

2) Basis law

Companies Income Tax Act CAP.60 LFN:1990

B Tax Exemption Procedure(procedure, application authority, required time)

To be filled out later (survey in progress)

C Other remarks

(2) Fiscal levies and taxes on their personal income (Personal income tax)

A. Tax Basic Information (name, percentage, how to calculate, basis law)

(1) Personal Income Tax

1) Tax rate and calculation method

0.5% of taxable income

2) Basis law

Personal Income Tax Act No.104,1993

B Tax Exemption Procedure(procedure, application authority, required time)

To be filled out later (survey in progress)

C Other remarks

(3) Indirect taxes such as Value added tax (VAT)

A. Tax Basic Information (name, percentage, how to calculate, basis law)

(1) Value Added Tax

1) Tax rate and calculation method

5% of taxable value

2) Basis law

Value Added Tax Act 1993 No.102,1993

B Tax Exemption Procedure(procedure, application authority, required time)

To be filled out later (survey in progress)

C Other remarks

(4) Duties and related fiscal charges with respect to the import and/or re-export of materials and equipment (Customs)

A. Tax Basic Information (name, percentage, how to calculate, basis law)

(1) Customs duties and excise duties imposed by Nigeria

1) Rate of tax

As shown in the attachment "CET_tariff"

2) Basis law

Customs and Excise Management Act,CAP84,1990

(2) Other duties and fiscal levies

1) Port Development Levy : 7% of the duties payable

2) ECOWAS Community Levy : 0.5%

3) Comprehensive Import Supervision Scheme Charge : 1% of the F.O.B value of imports

4) Statistical Tax : 1%

B Tax Exemption Procedure(procedure, application authority, required time)

To be filled out later (survey in progress)

C Other remarks

(5) Other taxes

A. Tax Basic Information (name, parentage, how to calculate)

B Tax Exemption Procedure(procedure, application authority, required time)

C Other remarks



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Annex 7
Tentative Schedule of the Project

Steps	Year																							
	2017			2018						2019			2020		2021									
	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	...	12	1	...	12	
1st Preparatory Survey (Present Stage)	△																							
Examination (Developing outline design, Estimation, Undertakings etc.)																								
2nd Preparatory Survey (Explanation of Draft Preparatory Survey Report)					△																			
Cabinet meeting/approval							△																	
E/N, G/A									△															
Construction supervision contract										△														
Detailed design																								
Tender/contract																								
Construction schedule (Procurement, Installation, Test and Inspection)																								

2 or 3 years

Minutes of Discussions
on the Preparatory Survey for the Project
for Emergency Rehabilitation and Reinforcement of
Lagos Transmission Substations
(Explanation on Draft Preparatory Survey Report)

With reference to the minutes of discussions signed between the Federal Ministry of Power, Works and Housing (hereinafter referred to as "FMPWH"), Transmission Company of Nigeria (hereinafter referred to as "TCN") and the Japan International Cooperation Agency (hereinafter referred to as "JICA") on 18th August 2017 and in response to the request from the Government of Federal Republic of Nigeria (hereinafter referred to as "Nigeria") dated 3rd May 2017, JICA dispatched the Preparatory Survey Team (hereinafter referred to as "the Team") for the explanation of Draft Preparatory Survey Report (hereinafter referred to as "the Draft Report") for the Project for Emergency Rehabilitation and Reinforcement of Lagos Transmission Substations (hereinafter referred to as "the Project"), headed by Makiko Okumura, Senior Representative of JICA Nigeria Office from 4th to 8th December 2017.

As a result of the discussions, both sides agreed on the main items described in the attached sheets.

Abuja, 8th December 2017



Makiko Okumura

Leader

Preparatory Survey Team

Japan International Cooperation Agency

Japan



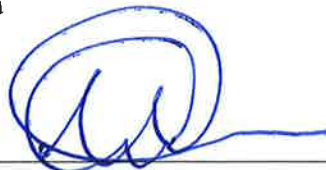
f Anthony Umuenyien

Deputy Director

Transmission Services

The Federal Ministry of Power, Works and
Housing

Nigeria



Usman Gur Mohammed

Interim Managing Director / CEO

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Nigeria

Witness



Eloho Samuel

Director

International Cooperation Department

Ministry of Budget and National Planning

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ATTACHEMENT

1. Objective of the Project

The objective of the Project is to achieve reliable and stable supply of the electricity by rehabilitation and reinforcement of the substations in Lagos, thereby contributing sustainable economic and social development in Lagos.

2. Title of the Preparatory Survey

Both sides confirmed the title of the Preparatory Survey as “the Preparatory Survey for the Project for Emergency Rehabilitation and Reinforcement of Lagos Transmission Substations”.

3. Project site

Both sides confirmed that the sites of the Project are in Lagos, which is shown in Annex 1.

4. Responsible authority for the Project

Both sides confirmed the authorities responsible for the Project are as follows:

- 4-1. TCN will be the executing agency for the Project (hereinafter referred to as “the Executing Agency”). The Executing Agency shall coordinate with all the relevant authorities to ensure smooth implementation of the Project and ensure that the undertakings for the Project shall be taken care by relevant authorities properly and on time. The organization chart is shown in Annex 2.
- 4-2. The line ministry of the Executing Agency is FMPWH. FMPWH shall be responsible for supervising the Executing Agency. FMPWH shall also be responsible for securing exemption of all taxes, customs duties and fiscal levies imposed in Nigeria related to the implementation of the Project.
- 4-3. Ministry of Budget and National Planning is an agency responsible for managing the Japanese Grant Aid Projects.

5. Contents of the Draft Report

After the explanation of the contents of the Draft Report by the Team, the Nigeria side agreed to its contents.

6. Cost estimates

Both sides confirmed that the cost estimates including the contingency described in

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the Draft Report is provisional and will be examined further by the Government of Japan for its approval. The contingency would cover the additional cost against natural disaster, unexpected natural conditions, etc.

7. Confidentiality of the cost estimates and technical specifications

Both sides confirmed that the cost estimates and technical specifications in the Draft Report should never be duplicated or disclosed to any third parties until all the contracts under the Project are concluded.

8. Procedures and Basic Principles of Japanese Grant

The Nigeria side agreed that the procedures and basic principles of Japanese Grant as described in Annex 3 shall be applied to the Project. In addition, the Nigeria side agreed to take necessary measures according to the procedures.

9. Timeline for the project implementation

The Team explained to the Nigeria side that the expected timeline for the project implementation is as attached in Annex 4.

10. Expected outcomes and indicators

Both sides agreed that key indicators for expected outcomes are as follows. The Nigeria side will be responsible for the achievement of agreed key indicators targeted in year 2023 and shall monitor the progress based on those indicators.

[Quantitative indicators]

Indicator	Base Value (2017)	Target Value (2024) (3years after commissioning)
Electric energy at receiving end at Apapa Road Substation (GWh)	119	212
Times of power failure per one consumer (times /year)*1	132	80
Accumulated time of power failure per one consumer (time/year)*1	1,228	400

Note: *1 Excluding the causes by upper systems than Akangba Substation (including power shortage of power stations)

[Qualitative indicators]

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Economic and social development is promoted in the surrounding area.

11. Undertakings of the Project

Both sides confirmed the undertakings of the Project as described in Annex 5. Both sides also confirmed that the Annex 5 will be used as an attachment of Grant Agreement (hereinafter referred to as "G/A").

11-1. Exemption of customs duties, internal taxes and other fiscal levies

Such customs duties, internal taxes and other fiscal levies including Value Added Tax (hereinafter referred to as "VAT"), commercial tax, income tax and corporate tax which may be imposed in Nigeria with respect to the purchase of the products and/or the services shall be exempted. FMPWH will take necessary action to ensure the exemption, through sending letters to Federal Ministry of Finance and other relevant authorities to have order(s) on the exemption and instruct all relevant agencies and offices to follow it. Such procedure can start just after the signing of Exchange of Notes (hereinafter referred to as "E/N") and G/A utilizing list(s) of equipment and its cost estimation, instead of actual invoice.

11-2. Budget to be secured by Nigeria side

The Nigeria side assured to take necessary measures and coordination including allocation of necessary budget which are preconditions of implementation of the Project. It is further agreed that the costs are indicative, i.e. at Outline Design level. More accurate costs will be calculated at the Detailed Design stage.

11-3. Safety Consideration during the Project

The Team requested the Nigeria side to make necessary arrangements to secure safety of persons concerned with the Project. Both sides also confirmed the necessary arrangements and estimated cost regarding police officers to be hired by Nigeria side in accordance with the safety regulation of JICA. The Nigeria side agreed with it as Annex 9.

11-4. Securing a mobile transformer

Recognizing importance to shorten the power outage time in the Apapa Road area, the Team requested Nigeria side to install a mobile transformer by Nigeria side during the construction period. Nigeria side confirmed TCN will secure the transformer which is owned by TCN. Nigeria side also confirmed TCN will secure the land to install the mobile transformer during the implementation stage.

12. Monitoring during the implementation

The Project will be monitored by the Executing Agency and reported to JICA by using the form of Project Monitoring Report (hereinafter referred to as "PMR") attached as Annex 6. The timing of submission of the PMR is described in Annex 5.

13. Project completion

Both sides confirmed that the project completes when all the facilities constructed and equipments procured by the grant are in operation. The completion of the Project will be reported to JICA promptly, but in any event not later than six months after completion of the Project.

14. Ex-Post Evaluation

JICA will conduct ex-post evaluation after three (3) years from the project completion, in principle, with respect to five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact, Sustainability). The result of the evaluation will be publicized. The Nigeria side is required to provide necessary support for the data collection.

15. Schedule of the Study

JICA will finalize the Preparatory Survey Report based on the confirmed items. The report will be sent to the Nigeria side around February 2018.

16. Environmental Guidelines and Environmental Category

The Team explained that 'JICA Guidelines for Environmental and Social Considerations (April 2010)' (hereinafter referred to as "the Guidelines") is applicable for the Project. The Project is categorized as C because the Project is likely to have minimal adverse impact on the environment under the Guidelines.

17. Other Relevant Issues

17-1. Disclosure of Information

Both sides confirmed that the Preparatory Survey Report from which project cost is excluded will be disclosed to the public after completion of the Preparatory Survey. The comprehensive report including the project cost will be disclosed to the public after all the contracts under the Project are concluded.

- Annex 1 Project Site
- Annex 2 Organization Chart
- Annex 3 Japanese Grant
- Annex 4 Project Implementation Schedule
- Annex 5 Major Undertakings to be taken by the Government of Nigeria
- Annex 6 Project Monitoring Report (template)
- Annex 7 Budget to be secured by Nigeria side
- Annex 8 Tax Exemption Procedure
- Annex 9 Necessary Arrangements and Estimated Cost regarding Police Officers

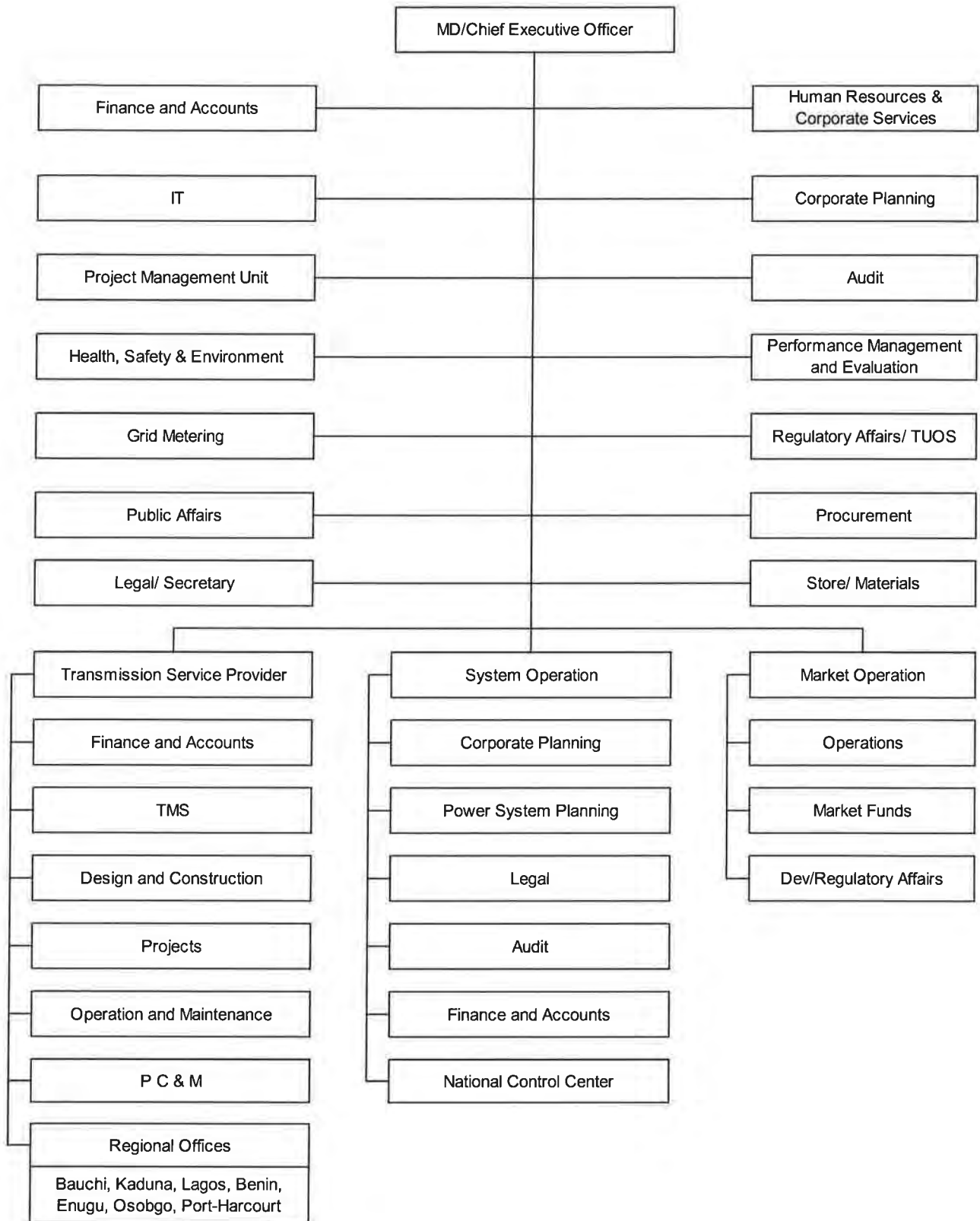
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Annex 1 Project Site



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Annex 2 Organization Chart of Transmission Company of Nigeria



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JAPANESE GRANT

The Japanese Grant is non-reimbursable fund provided to a recipient country (hereinafter referred to as “the Recipient”) to purchase the products and/or services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. Followings are the basic features of the project grants operated by JICA (hereinafter referred to as “Project Grants”).

1. Procedures of Project Grants

Project Grants are conducted through following procedures (See “PROCEDURES OF JAPANESE GRANT” for details):

(1) Preparation

- The Preparatory Survey (hereinafter referred to as “the Survey”) conducted by JICA

(2) Appraisal

-Appraisal by the government of Japan (hereinafter referred to as “GOJ”) and JICA, and Approval by the Japanese Cabinet

(3) Implementation

Exchange of Notes

-The Notes exchanged between the GOJ and the government of the Recipient

Grant Agreement (hereinafter referred to as “the G/A”)

-Agreement concluded between JICA and the Recipient

Banking Arrangement (hereinafter referred to as “the B/A”)

-Opening of bank account by the Recipient in a bank in Japan (hereinafter referred to as "the Bank") to receive the grant

Construction works/procurement

-Implementation of the project (hereinafter referred to as “the Project”) on the basis of the G/A

(4) Ex-post Monitoring and Evaluation

-Monitoring and evaluation at post-implementation stage

2. Preparatory Survey

(1) Contents of the Survey

The aim of the Survey is to provide basic documents necessary for the appraisal of the the Project made by the GOJ and JICA. The contents of the Survey are as follows:

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- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the Recipient necessary for the implementation of the Project.
- Evaluation of the feasibility of the Project to be implemented under the Japanese Grant from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of an outline design of the Project.
- Estimation of costs of the Project.
- Confirmation of Environmental and Social Considerations

The contents of the original request by the Recipient are not necessarily approved in their initial form. The Outline Design of the Project is confirmed based on the guidelines of the Japanese Grant.

JICA requests the Recipient to take measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the executing agency of the Project. Therefore, the contents of the Project are confirmed by all relevant organizations of the Recipient based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA contracts with (a) consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the feasibility of the Project.

3. Basic Principles of Project Grants

(1) Implementation Stage

1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes (hereinafter referred to as "the E/N") will

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be signed between the GOJ and the Government of the Recipient to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Recipient to define the necessary articles, in accordance with the E/N, to implement the Project, such as conditions of disbursement, responsibilities of the Recipient, and procurement conditions. The terms and conditions generally applicable to the Japanese Grant are stipulated in the "General Terms and Conditions for Japanese Grant (January 2016)."

2) Banking Arrangements (B/A) (See "Financial Flow of Japanese Grant (A/P Type)" for details)

a) The Recipient shall open an account or shall cause its designated authority to open an account under the name of the Recipient in the Bank, in principle. JICA will disburse the Japanese Grant in Japanese yen for the Recipient to cover the obligations incurred by the Recipient under the verified contracts.

b) The Japanese Grant will be disbursed when payment requests are submitted by the Bank to JICA under an Authorization to Pay (A/P) issued by the Recipient.

3) Procurement Procedure

The products and/or services necessary for the implementation of the Project shall be procured in accordance with JICA's procurement guidelines as stipulated in the G/A.

4) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the Recipient to continue to work on the Project's implementation after the E/N and G/A.

5) Eligible source country

In using the Japanese Grant disbursed by JICA for the purchase of products and/or services, the eligible source countries of such products and/or services shall be Japan and/or the Recipient. The Japanese Grant may be used for the purchase of the products and/or services of a third country as eligible, if necessary, taking into account the quality, competitiveness and economic rationality of products and/or services necessary for achieving the objective of the Project. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm, which enter into contracts with the Recipient, are limited to "Japanese nationals", in principle.

6) Contracts and Concurrence by JICA

The Recipient will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be concurred by JICA in order to be verified as eligible for using the Japanese Grant.

7) Monitoring

The Recipient is required to take their initiative to carefully monitor the progress of the Project in order to ensure its smooth implementation as part of their responsibility in the G/A, and to regularly report to JICA about its status by



using the Project Monitoring Report (PMR).

8) Safety Measures

The Recipient must ensure that the safety is highly observed during the implementation of the Project.

9) Construction Quality Control Meeting

Construction Quality Control Meeting (hereinafter referred to as the "Meeting") will be held for quality assurance and smooth implementation of the Works at each stage of the Works. The member of the Meeting will be composed by the Recipient (or executing agency), the Consultant, the Contractor and JICA. The functions of the Meeting are as followings:

- a) Sharing information on the objective, concept and conditions of design from the Contractor, before start of construction.
- b) Discussing the issues affecting the Works such as modification of the design, test, inspection, safety control and the Client's obligation, during of construction.

(2) Ex-post Monitoring and Evaluation Stage

- 1) After the project completion, JICA will continue to keep in close contact with the Recipient in order to monitor that the outputs of the Project is used and maintained properly to attain its expected outcomes.
- 2) In principle, JICA will conduct ex-post evaluation of the Project after three years from the completion. It is required for the Recipient to furnish any necessary information as JICA may reasonably request.

(3) Others

1) Environmental and Social Considerations

The Recipient shall carefully consider environmental and social impacts by the Project and must comply with the environmental regulations of the Recipient and JICA Guidelines for Environmental and Social Considerations (April, 2010).

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2) Major undertakings to be taken by the Government of the Recipient

For the smooth and proper implementation of the Project, the Recipient is required to undertake necessary measures including land acquisition, and bear an advising commission of the A/P and payment commissions paid to the Bank as agreed with the GOJ and/or JICA. The Government of the Recipient shall ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the Recipient with respect to the purchase of the Products and/or the Services be exempted or be borne by its designated authority without using the Grant and its accrued interest, since the grant fund comes from the Japanese taxpayers.

3) Proper Use

The Recipient is required to maintain and use properly and effectively the products and/or services under the Project (including the facilities constructed and the equipment purchased), to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Japanese Grant.

4) Export and Re-export

The products purchased under the Japanese Grant should not be exported or re-exported from the Recipient.

Annex 3

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PROCEDURES OF JAPANESE GRANT

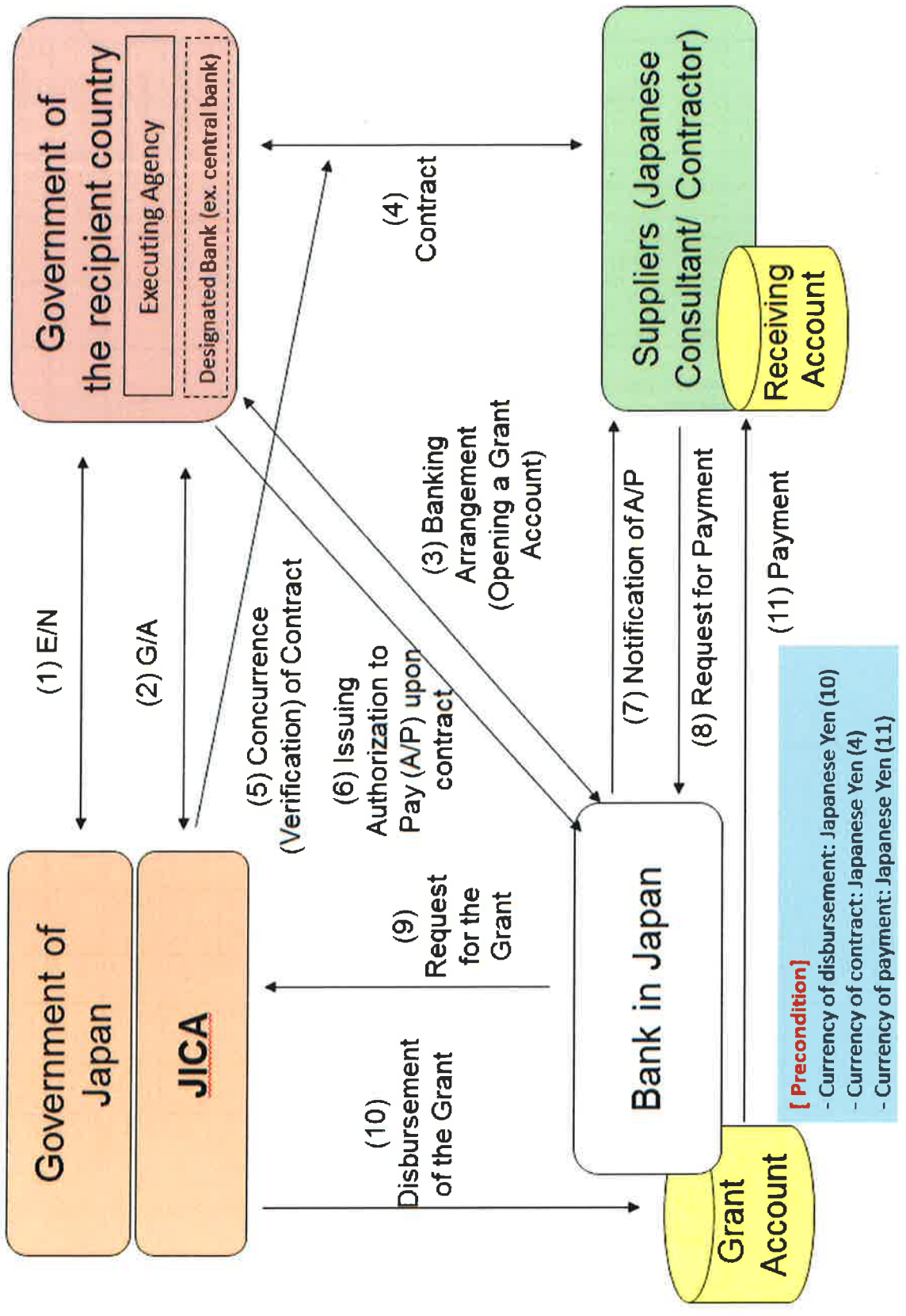
Stage	Procedures	Remarks	Recipient Government	Japanese Government	JICA	Consultants	Contractors	Agent Bank
Official Request	Request for grants through diplomatic channel	Request shall be submitted before appraisal stage.	x	x				
1. Preparation	(1) Preparatory Survey Preparation of outline design and cost estimate		x		x	x		
2. Appraisal	(2) Preparatory Survey Explanation of draft outline design, including cost estimate, undertakings, etc.		x		x	x		
	(3) Agreement on conditions for implementation	Conditions will be explained with the draft notes (E/N) and Grant Agreement (G/A) which will be signed before approval by Japanese government.	x	x (E/N)	x (G/A)			
	(4) Approval by the Japanese cabinet			x				
3. Implementation	(5) Exchange of Notes (E/N)		x	x				
	(6) Signing of Grant Agreement (G/A)		x		x			
	(7) Banking Arrangement (B/A)	Need to be informed to JICA	x					x
	(8) Contracting with consultant and issuance of Authorization to Pay (A/P)	Concurrence by JICA is required	x			x		x
	(9) Detail design (D/D)		x			x		
	(10) Preparation of bidding documents	Concurrence by JICA is required	x			x		
	(11) Bidding	Concurrence by JICA is required	x			x	x	
	(12) Contracting with contractor/supplier and issuance of A/P	Concurrence by JICA is required	x				x	x
	(13) Construction works/procurement	Concurrence by JICA is required for major modification of design and amendment of contracts.	x			x	x	
(14) Completion certificate		x			x	x		
4. Ex-post monitoring & evaluation	(15) Ex-post monitoring	To be implemented generally after 1, 3, 10 years of completion, subject to change	x		x			
	(16) Ex-post evaluation	To be implemented basically after 3 years of completion	x		x			

notes:

1. Project Monitoring Report and Report for Project Completion shall be submitted to JICA as agreed in the G/A.
2. Concurrence by JICA is required for allocation of grant for remaining amount and/or contingencies as agreed in the G/A.




Financial Flow of Japanese Grant (A/P Type)



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Annex 5 Major Undertakings to be taken by the Government of Nigeria

1. Specific obligations of the Government of Nigeria which will not be funded with the Grant

(1) Before the Tender

NO	Items	Deadline	In charge	Estimated Cost (US\$)
1	To open bank account (B/A)	within 1 month after the signing of the G/A	FMPWH	3,000
2	To issue A/P to a bank in Japan (the Agent Bank) for the payment to the consultant	within 1 month after the signing of the contract	FMPWH	3,000
3	To secure land for a mobile substation, demolition of concrete wall next to Apapa Road substation	before preparation of bidding document	TCN	51,000
4	To transport a mobile substation to the premises	before notice of the bidding document	TCN	9,000
5	To remove obstacles inside Apapa Road substation (containers, vehicles, foundations, kiosks, tree, etc.)	before notice of the bidding document	TCN	40,000
6	To obtain the planning, zoning, building permit of the Project	before notice of the bidding document	TCN	
7	To relocate existing 33kV and 11kV cables at Apapa Road substation (Power outage occurs)	before notice of the bidding document	TCN	20,000
8	To secure temporary storage yard in the railway territory next to Apapa Road substation	before notice of the bidding document	TCN	13,000
9	To submit Project Monitoring Report (with the result of Detail Design)	before preparation of bidding documents	TCN	
10	To secure guardsmen for a mobile substation	before notice of the bidding document	TCN	18,000
11	To secure armed police officer to protect Japanese supervisors	whenever Japanese supervisors are in Nigeria	TCN	2,000

(B/A: Banking Arrangement, A/P: Authorization to pay, MBNP: Ministry of Budget and National Planning Finance)

(2) During the Project Implementation

NO	Items	Deadline	In charge	Estimated Cost (US\$)
1	To issue A/P to a bank in Japan (the Agent Bank) for the payment to the Supplier(s)	within 1 month after the signing of the contract(s)	FMPWH	
2	To bear the following commissions to a bank in Japan for the banking services based upon the B/A			24,000
	1) Advising commission of A/P	within 1 month after the signing of the contract(s)	FMPWH	
	2) Payment commission for A/P	every payment	FMPWH	
3	To ensure prompt unloading and customs clearance at ports of disembarkation in recipient country and to assist the Supplier(s)	during the Project	TCN	

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	with internal transportation therein			
4	To accord Japanese nationals and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the country of the Recipient and stay therein for the performance of their work	during the Project	TCN	
5	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the products and/or the services be exempted Federal Ministry of Finance shall issue an order regarding the exemption and instruct all agencies and offices to follow the order	during the Project	FMPWH	
6	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project	during the Project	TCN	
7	1) To submit Project Monitoring Report after each work under the contract(s) such as shipping, hand over, installation and operational training	within one month after completion of each work	TCN	
	2) To submit Project Monitoring Report (final)	within one month after signing of Certificate of Completion for the works under the contract(s)	TCN	
8	To submit a report concerning completion of the Project	within six months after completion of the Project	TCN	
9	Disconnection of 132kV lines (Akangba-Apapa Road and Ijora-Apapa Road) by screwing off the jumper wire (Power outage occurs)	during the Project	TCN	1,000
10	Connection switching and operation from existing substation to a mobile substation at Apapa Road substation (Power outage occurs)	during the Project	TCN	10,000
11	Removal of existing earthing transformers at Apapa Road substation	during the Project	TCN	16,000
12	Removal of existing emergency generator and enclosure at Apapa Road substation	during the Project	TCN	16,000
13	Demolition of concrete fire walls around 132/33kv transformers. Removal of a 132/33kv transformers, temporary 132kv switching equipment, switchgeras and control house at Apapa Road substation	during the Project	TCN	55,000
14	Changing-over from a mobile substation to new facilities of Apapa Road substation in coordination with EKEDC	during the Project	TCN	10,000
15	Transportation of a mobile substation and construction new wall at Apapa Road substation	during the Project	TCN	23,000
16	Procurement of 6 units of Watt-Hour meter for dealing with distribution companies at Apapa Road substation	during the Project	TCN	6,000
17	Procurement and installation of new 33kV cables and cable joints	during the Project	TCN	146,000

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	for the connection of new facilities of Apapa Road substation and distribution substation (EKEDC)			
18	Bush clearing and site levelling at Akangba substation	during the Project	TCN	45,000
19	Changing-over "T" branch of 132kv lines (Akangba-Ojo 1) and connection of 132kv lines conductors at Akangba substation	during the Project	TCN	9,000
20	To secure guardsmen for a mobile substation	before notice of the bidding document	TCN	74,000
21	To secure armed police officer to protect Japanese supervisors	whenever Japanese supervisors are in Nigeria	TCN	87,000
22	To take necessary measure for safety construction - traffic control - rope off	during the construction	TCN	
23	Payment of Taxes (CISS and ETLs)	during the construction	FMPWH	205,000

(FMF: Federal Ministry of Finance)

(3) After the Project

NO	Items	Deadline	In charge	Estimated Cost (US\$)
1	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid 1) Allocation of maintenance cost 2) Operation and maintenance structure 3) Routine check/Periodic inspection	After completion of the construction	TCN	127,000 /year

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2. Other obligations of the Government of Nigeria funded with the Grant

NO	Items	Deadline	Amount (Million Japanese Yen)*
1	To implement detailed design	December 2021	
2	To implement procurement and installation of equipment		
	Total		2,321

* The Amount is provisional. This is subject to the approval of the Government of Japan.

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<p><u>Project Monitoring Report</u> on <u>Project Name</u> <u>Grant Agreement No. XXXXXXXX</u> 20XX, Month</p>

Organizational Information

(Recipient)	Signer of the G/A	_____ Person in Charge (Designation) _____ _____ Contacts Address: _____ Phone/FAX: _____ Email: _____
Executing Agency		_____ Person in Charge (Designation) _____ _____ Contacts Address: _____ Phone/FAX: _____ Email: _____
Line Ministry		_____ Person in Charge (Designation) _____ _____ Contacts Address: _____ Phone/FAX: _____ Email: _____

General Information:

Project Title	
E/N	Signed date: Duration:
G/A	Signed date: Duration:
Source of Finance	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____

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1: Project Description

1-1 Project Objective

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1-2 Project Rationale

- Higher-level objectives to which the project contributes (national/regional/sectoral policies and strategies)
- Situation of the target groups to which the project addresses

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1-3 Indicators for measurement of "Effectiveness"

Quantitative indicators to measure the attainment of project objectives		
Indicators	Original (Yr)	Target (Yr)
Qualitative indicators to measure the attainment of project objectives		

2: Details of the Project

2-1 Location

Components	Original <i>(proposed in the outline design)</i>	Actual
1.		

2-2 Scope of the work

Components	Original* <i>(proposed in the outline design)</i>	Actual*
1.		

Reasons for modification of scope (if any).

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2-3 Implementation Schedule

Items	Original		Actual
	<i>(proposed in the outline design)</i>	<i>(at the time of signing the Grant Agreement)</i>	

Reasons for any changes of the schedule, and their effects on the project (if any)

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2-4 Obligations by the Recipient

2-4-1 Progress of Specific Obligations

See Attachment 2.

2-4-2 Activities

See Attachment 3.

2-4-3 Report on RD

See Attachment 11.

2-5 Project Cost

2-5-1 Cost borne by the Grant (Confidential until the Bidding)

Components			Cost (Million Yen)	
	Original <i>(proposed in the outline design)</i>	Actual <i>(in case of any modification)</i>	Original ^{1,2)} <i>(proposed in the outline design)</i>	Actual
1.				
Total				

Note: 1) Date of estimation:
 2) Exchange rate: 1 US Dollar = Yen

2-5-2 Cost borne by the Recipient

Components			Cost (1,000 Taka)	
	Original <i>(proposed in the outline design)</i>	Actual <i>(in case of any modification)</i>	Original ^{1,2)} <i>(proposed in the outline design)</i>	Actual
1.				

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- Note: 1) Date of estimation:
2) Exchange rate: 1 US Dollar =

Reasons for the remarkable gaps between the original and actual cost, and the countermeasures (if any)

(PMR)

2-6 Executing Agency

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

Original (at the time of outline design)

name:

role:

financial situation:

institutional and organizational arrangement (organogram):

human resources (number and ability of staff):

Actual (PMR)

2-7 Environmental and Social Impacts

- The results of environmental monitoring based on Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- The results of social monitoring based on in Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- Disclosed information related to results of environmental and social monitoring to local stakeholders (whenever applicable).

3: Operation and Maintenance (O&M)

3-1 Physical Arrangement

- Plan for O&M (number and skills of the staff in the responsible division or section, availability of manuals and guidelines, availability of spareparts, etc.)

Original (at the time of outline design)

Actual (PMR)

3-2 Budgetary Arrangement

- Required O&M cost and actual budget allocation for O&M

Original (at the time of outline design)

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Actual (PMR)

4: Potential Risks and Mitigation Measures

- Potential risks which may affect the project implementation, attainment of objectives, sustainability
- Mitigation measures corresponding to the potential risks

Assessment of Potential Risks (at the time of outline design)

Potential Risks	Assessment
1. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
2. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
3. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
Actual Situation and Countermeasures	

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5: Evaluation and Monitoring Plan (after the work completion)

5-1 Overall evaluation

Please describe your overall evaluation on the project.

5-2 Lessons Learnt and Recommendations

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

5-3 Monitoring Plan of the Indicators for Post-Evaluation

Please describe monitoring methods, section(s)/department(s) in charge of monitoring, frequency, the term to monitor the indicators stipulated in 1-3.

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Attachment

1. Project Location Map
 2. Specific obligations of the Recipient which will not be funded with the Grant
 3. Monthly Report submitted by the Consultant
- Appendix - Photocopy of Contractor's Progress Report (if any)
- Consultant Member List
 - Contractor's Main Staff List
4. Check list for the Contract (including Record of Amendment of the Contract/Agreement and Schedule of Payment)
 5. Environmental Monitoring Form / Social Monitoring Form
 6. Monitoring sheet on price of specified materials (Quarterly)
 7. Report on Proportion of Procurement (Recipient Country, Japan and Third Countries) (PMR (final)only)
 8. Pictures (by JPEG style by CD-R) (PMR (final)only)
 9. Equipment List (PMR (final)only)
 10. Drawing (PMR (final)only)
 11. Report on RD (After project)

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Annex 7

Budget to be secured by Nigeria side

(Tentative Schedule of Expenditure of Major Undertakings to be taken by Nigeria side)

(Unit:US\$)

No.	Item	Total	2018	2019	2020	2021	2022	Term
1	Apapa Road substation							
1)	Secure land for a mobile substation, demolition of concrete wall	51,000	51,000					(1) Before the Tender
2)	Transportation of a mobile substation	9,000	9,000					
3)	Removal of obstacles inside substation (containers, vehicles, foundations, kiosks, tree, etc.)	40,000	40,000					
4)	Relocation of existing 33kv and 11kv cables, it includes outage	20,000	20,000					
5)	Secure temporary storage yard in the railway territory next to ApapaRoad substation	13,000	13,000					
6)	Disconnection of 132kv lines (Akangba-Apapa Road and Ijora-Apapa Road) by screwing off the jumper wire, it includes outage	1,000		500		500		(2) During the Project Implementation
7)	Connection switching and operation from existing substation to a mobile substation, it includes outage	10,000		10,000				
8)	Removal of existing earthing transformers	16,000		16,000				
9)	Removal of existing emergency generator and enclosure	16,000		16,000				
10)	Demolition of concrete fire walls around 132/33kv transformers. Removal of a 132/33kv transformers, temporary 132kv switching equipment, switchgeras and control house	55,000		27,500	27,500			
11)	Changing-over from a mobile substation to new substation	10,000				10,000		
12)	Transportation of a mobile substation and construction new wall	23,000				5,750	17,250	
13)	Procurement of 6 units of Watt-Hour meter for dealing with distribution companies	6,000				6,000		
14)	Procurement and installation of new 33kv cables and cable joints for the connection with distribution substation (EKEDC)	146,000				146,000		
15)	Employment of guardsmen for a mobile substation	92,000	17,800	23,700	23,700	23,700	3,100	(1) Before the Tender & (2) During the Project Implementation
16)	Armed mobile policemen for guard for Japanese supervisors	88,100	1,600	15,000	30,000	39,000	2,500	
2	Akangba Substation							
1)	Bush clearing and site levelling	45,000			45,000			(2) During the Project Implementation
2)	Changing-over "T" branch of 132kv lines (Akangba-Ojo 1) and connection of 132kv lines conductors	9,000			9,000			
3	Payment of commission for Banking Arrangement (B/A) and Authorization to Pay (A/P)	30,000	7,920	7,360	7,360	7,360		(1) Before the Tender & (2) During the Project Implementation
4	Payment of Taxes (CISS and ETLS)	205,000		46,000	112,000	47,000		
Total		885,100	160,320	162,060	254,560	285,310	22,850	

(Note)

Exchange rate: 1US\$=Yen112.83

Annex 8 Tax Exemption Procedure

Sheet 1 Tax with respect to corporate income (Corporate Tax)

Items	Type of exemption	Applicable Law	rate(%)	How to calculate	Necessary Information
Companies income tax (CIT)	Be exempted	Companies Income Tax Act, Cap C21 LFN 2004 (CITA)	30%	<p>For Nigerian companies, tax is levied on all taxable profits of the entity. However, for non-resident companies, tax is levied on the taxable profits attributable to its fixed base in Nigeria. In arriving at the taxable profit, the following should be noted:</p> <ul style="list-style-type: none"> - The entity would be allowed to deduct from its revenue, recurring expenses which were incurred wholly, reasonably, exclusively and necessarily for the purpose of generating its Nigerian revenue. - The losses incurred in prior years as well as capital allowances claimable on the acquisition of capital expenditure may also be claimed. 	<p>Organization in charge : The Presidency ; The Federal Ministry of Finance ; The Federal Inland Revenue Service (FIRS)</p> <p>Procedure : The entity would be required to present a written application to the Presidency through the Federal Ministry of Finance. In the application, the entity would provide:</p> <ul style="list-style-type: none"> - details of the project being undertaken in Nigeria; - specific justification for the exemption; and - any other relevant supporting document. <p>After review of the application, the Presidency would make a decision and communicate same to applying entity</p> <p>Duration : One - six months</p>
Tertiary Education Tax (TET)	Be exempted	Tertiary Education Trust Fund (Establishment, etc.) Act, 2011 (TETFA)	2%	<p>Tertiary education tax is charged at 2% of the assessable profit of a company, as computed under the provisions of Companies Income Tax Act.</p> <p>Assessable profit is the adjustment of accounting profit (PBT) by non-taxable income and disallowable expenses but before adjusting capital allowances and brought forward losses.</p> <p>It should be noted that non-resident companies are ordinarily not liable to TET.</p>	<p>A CIT exemption could be extended to cover TET exemption. However, for purpose of clarity, it is advised that a TET exemption is also requested alongside a CIT exemption.</p>

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Sheet 2 Tax with respect to personal income (Personal Income Tax)

Items	Type of exemption	Applicable Law	rate(%)	How to calculate	Necessary information
Personal income tax	Be exempted	Personal Income Tax Act, Cap P10, LFN 2004, as amended (PITA)	<p>The PIT rate is on a graduated scale. Details of the tax rates and related income tax bands are provided below:</p> <ul style="list-style-type: none"> - First NGN 300,000 @ 7% - Next NGN 300,000 @ 11% - Next NGN 500,000 @ 15% - Next NGN 500,000 @ 19% - Next NGN 1,600,000 @ 21% - Above NGN 3,200,000 @ 24% 	<p>In arriving at the taxable income of an taxable individual, PITA grants Consolidated Relief Allowances (CRA) before arriving at the taxable income subjected to the applicable tax rates.</p> <p>The CRA is dependent on the annual income level of the tax payer. It is defined as the higher of N200,000 or 1% of gross income, plus 20% of gross income. This implies that employees with annual emolument of NGN 20million or less will have a CRA equal to NGN 200,000 plus 20% of gross income while those individuals with annual income above NGN 20,000,000 have CRA equal to 21% of their gross income.</p> <p>In addition to the CRA, the following social contributions are exempted from personal income tax in arriving at the taxable income of individuals:</p> <ul style="list-style-type: none"> - Pension contributions to a Nigerian pension scheme; - National Housing Fund contributions; - National Health Insurance Scheme contributions; - Premiums paid for life assurance; and - Interest paid on mortgage loan. 	<p>Organization in charge : The Federal Ministry of finance ; The relevant SBIR (States Board of Internal Revenue) at the states where the employees would be tax resident</p> <p>Procedure : The entity would be required to write to the Minister of Finance with details of the project being undertaken in Nigeria and specific justification for the exemption of the employees from personal income tax</p> <p>Duration : One to six months</p>

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(Sheet3) indirect tax etc (such as VAT, Commercial Tax)

Items	Type of exemption	Applicable Law	rate(%)	How to calculate	Necessary Information
Value Added Tax to be paid by entity on its purchases (input VAT)	Be exempted or reimbursed in case exemption process is delayed	Value Added Tax Act, Cap V1, LFN 2004, as amended (VATA)	5%	VAT is chargeable on the supply of taxable goods and services or importation of all goods and services except those specifically listed in the First Schedule to the VATA i.e. the items listed as exempt or the items listed as zero rated.	<p>Organization in charge : The Federal Ministry of Finance ; The Federal Inland Revenue Service</p> <p>Procedure : The entity could write to the Minister of Finance with details of the project being undertaken in Nigeria and specific justification for the exemption. Where the Minister is of the opinion that the circumstances are such as to render it expedient that such an exemption should be granted, the Minister may exempt the entity from paying VAT on purchases or imports. The Minister is required to ensure the notice for exemption is gazetted.</p> <p>Duration : One - Six months</p>

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(Sheet4) Duties etc.

Items	Type of exemption or reimbursed (in case exemption process is delayed)	Applicable Law	rate (%)	How to calculate	Necessary Information
Import Duty	Be exempted or reimbursed (in case exemption process is delayed)	<ul style="list-style-type: none"> - The 2015 - 2019 ECOWAS Common External Tariff ; - The Customs, Excise, Tariff, etc (Consolidation) Act No 4, 1995, as amended (CETA) 	The rate to be applied is based on tariff classification of item being imported	Rate * CIF value of item being imported	<p>Organization in charge : The Federal Ministry of Finance; The Nigeria Customs Service</p> <p>Procedure :</p> <p>There are 2 ways to obtain duty exemption (1) Under the Temporary importation (TI) regime or (2) Under the total duty exemption regime</p> <p>o Temporary importation:</p> <p>Under the TI regime, an entity, directly or via a 3PL could apply to the NCS (Nigeria Customs Service) to import goods into the country under the temporary import procedure. In this case, entity or the 3PL would require the following documents whilst declaring the items for import (i.e. before beginning importation of the item):</p> <ul style="list-style-type: none"> - A bank guarantee from a reputable bank - Hire agreement or evidence of ownership - Details of project where items would be deployed - Technical manuals describing the items to be imported - Covering Letter to NCS applying for TI approval - A copy of the entity's and/or 3PL's tax clearance certificate (or exemption status) for the past 3 years <p>Under the TI regime, items may remain in the country for a maximum of two years (i.e. an initial period of one year and two possible extensions for six months each), after which the guarantee would be released</p> <p>o Total exemption</p> <p>An entity engaged in power transmission could apply for duty exemption pursuant to the provisions of CETA (Customs, Excise, Tariff etc (Consolidation) Act) and the concessions provided under the 2016 FPM (Fiscal Policy Measures)</p> <p>The entity would be required to submit a formal application to the Minister of Finance vide the ministry relevant to the item being imported to benefit from the concessions. The following are the documents required for a duty waiver application:</p> <ul style="list-style-type: none"> - Evidence of Registration with the Corporate Affairs Commission (Where applicable) - Memorandum of Understanding duty signed by the Minister of Finance or Minister of state for Budget and National planning between the donor agency and the Federal Government of Nigeria - A proforma invoice indicating the value of imported items - Other supporting documents which may be requested by the Ministry of finance <p>Where the Minister is of the opinion that the circumstances are such as to render it expedient that such an exemption should be granted, the Minister would exempt JCo (Japanese Company) from import duties on items related to the project.</p> <p>Notwithstanding the foregoing, items imported from the ECOWAS region under the aegis of the ETLs shall be duty and quota free. The supplier would need to ensure it has obtained the relevant ETLs certificate (supporting the claim that the items have originated from the ECOWAS region) for the items being imported</p> <p>Duration : Three - Twelve months</p>
Port development levy (Surcharges)	Be exempted or reimbursed (in case exemption process is delayed)	General Nigerian import guidelines	7%	Rate * import duty	<p>Organization in charge : The Nigeria Customs Service</p> <p>Procedure :</p> <p>Please refer to our comments around the temporary import regime in the procedure section of the import duty coloumn</p> <p>Under the TI regime, it is common practice for the Nigeria Customs Service to grant full exemption from surcharge payments. However, there are occasions where the Nigeria Customs Service excludes the surcharge (port charges) on the basis that the amount relates to a service charge for activities carried out on imported items and not actual taxes or levies. Either of these possibilities may be encountered in practice and may vary in application from one Nigeria Customs Service office to another. Meanwhile, please note that companies intending to claim this exemption are required to obtain a bank guarantee from a local bank and there would be ancillary bank charges for obtaining a bank guarantee from a local bank and these charges vary from bank to bank.</p> <p>Under the total exemption regime, the entity is required to submit a formal request to the responsible Ministry of the Project together with a proforma invoice indicating the value of imported items for the payment of CISS instead of the entity</p> <p>Duration : One - three months</p>

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Comprehensive Import Supervision Scheme (CISS)	To be paid by responsible Ministry or Agency directly implementing Agency directly	General Nigerian import guidelines	1%	Rate * FOB value of imported item	<p>Organization in charge : The Nigeria Customs Service</p> <p>Procedure : Please refer to our comments around the temporary import regime in the procedure section of the import duty column</p> <p>Under the TI regime, it is common practice for the Nigeria Customs Service to grant full exemption from CISS fees. However, there are occasions where the Nigeria Customs Service excludes the CISS fees on the basis that the amount relates to a service charge for activities carried out on imported items and not actual taxes or levies. Either of these possibilities may be encountered in practice and may vary in application from one Nigeria Customs Service office to another. Meanwhile, please note that companies intending to claim this exemption are required to obtain a bank guarantee from a local bank and there would be ancillary bank charges for obtaining a bank guarantee from a local bank and these charges vary from bank to bank</p> <p>Under the total exemption regime, the entity is required to submit a formal request to the responsible Ministry of the Project together with a proforma invoice indicating the value of imported items for the payment of CISS instead of the entity</p> <p>Duration : One - three months</p>
ECOWAS Trade Liberalisation Scheme (ETLS) levy	To be paid by responsible Ministry or Agency directly implementing Agency directly	ECOWAS Regulations	0.5%	Rate * CIF value of imported item	<p>Organization in charge : The Nigeria Customs Service</p> <p>Procedure : Under the TI regime, it is common practice for the Nigeria Customs Service to grant full exemption from ETLS fees. However, please note that companies intending to claim this exemption are required to obtain a bank guarantee from a local bank and there would be ancillary bank charges for obtaining a bank guarantee from a local bank and these charges vary from bank to bank</p> <p>Under the total exemption regime, the entity is required to submit a formal request to the responsible Ministry of the Project together with a proforma invoice indicating the value of imported items for the payment of ETLS instead of the entity</p> <p>Duration : N/A</p>
VAT	Be exempted or reimbursed in case exemption process is delayed	Value Added Tax Act, Cap V1, LFN 2004, as amended (VATA)	5%	Rate * summation of the CIF value of imported item, and all taxes, duties and levies paid/payable outside or by reason of importation into Nigeria	<p>Organization in charge The Federal Ministry of Finance ; The Federal Inland Revenue Service</p> <p>Procedure : The entity could write to the Minister of Finance with details of the project being undertaken in Nigeria and specific justification for the exemption. Where the Minister is of the opinion that the circumstances are such as to render it expedient that such an exemption should be granted, the Minister may exempt the entity from paying VAT on imports. The Minister is required to ensure the notice for exemption is gazetted</p> <p>Duration : One - Six months</p>

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(Sheet 5) Other taxes and levies

Items	Type of exemption	Applicable Law	rate(%)	How to calculate	Necessary Information
Withholding tax deducted from the entity's income	Be exempted	Companies Income Tax Act, Cap C21 LFN 2004 (CITA)	5%	WHT is deducted at the specified rate for payments to vendors or contractors	<p>Organization in charge : The Presidency The Federal Ministry of Finance The Federal Inland Revenue Service</p> <p>Procedure : Companies Income tax exemption automatically exempts an entity from suffering WHT exemption.</p> <p>Duration : One to Six months</p>
Withholding tax to be deducted by entity when paying its suppliers or vendors	Be exempted	Companies Income Tax Act, Cap C21 LFN 2004 (CITA) and the Personal Income Tax Act, Cap P10, LFN 2004, as amended (PITA)	5% or 10%	WHT is computed on the income earned by the supplier.	<p>Organization in charge : The Federal Inland Revenue Service</p> <p>Procedure : There are no specific mechanisms for obtaining exemptions from deducting WHT upon payment to suppliers. However, an entity may write to FIRS (attaching supporting documents of its projects in Nigeria and importantly, an exemption letter from the Presidency from CIT liability) seeking exemptions from WHT obligations.</p> <p>Duration : One to Two months</p>

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Annex 9 Necessary Arrangements and Estimated Cost regarding Police Officers

1. Arrangement of Police officers

1) Arrangement of Police officers for Japanese supplier

TCN shall hire Police officers at his own expense for Japanese supplier during construction. Number of Police officers shall be two at minimum for the escort from one Japanese to four Japanese.

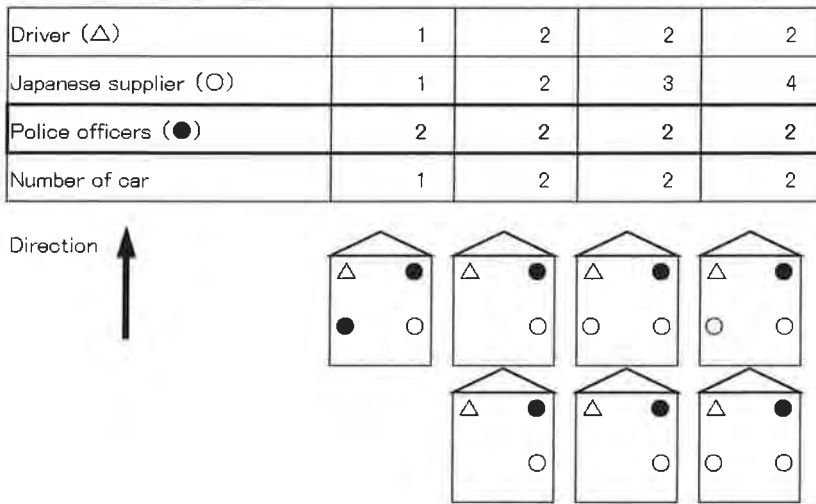


Figure 9-1 Arrangement of Police officers for Japanese supplier

2) Arrangement of Police officers for Japanese consultant

TCN shall hire Police officers at his own expense for Japanese consultant during construction. Number of Police officers shall be two at minimum for the escort from one Japanese to four Japanese.

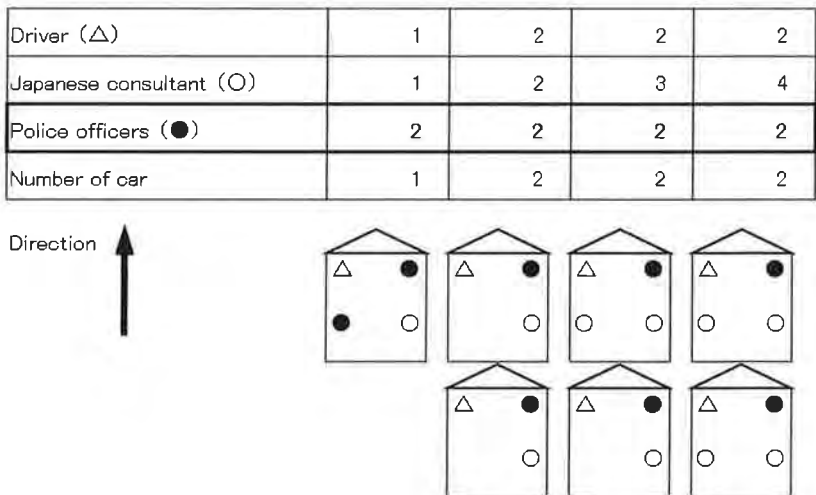


Figure 9-2 Arrangement of Police officers for Japanese consultant

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2. Estimated cost regarding Police Officers

The estimated cost of Police Officers is NGN 26,860,000.

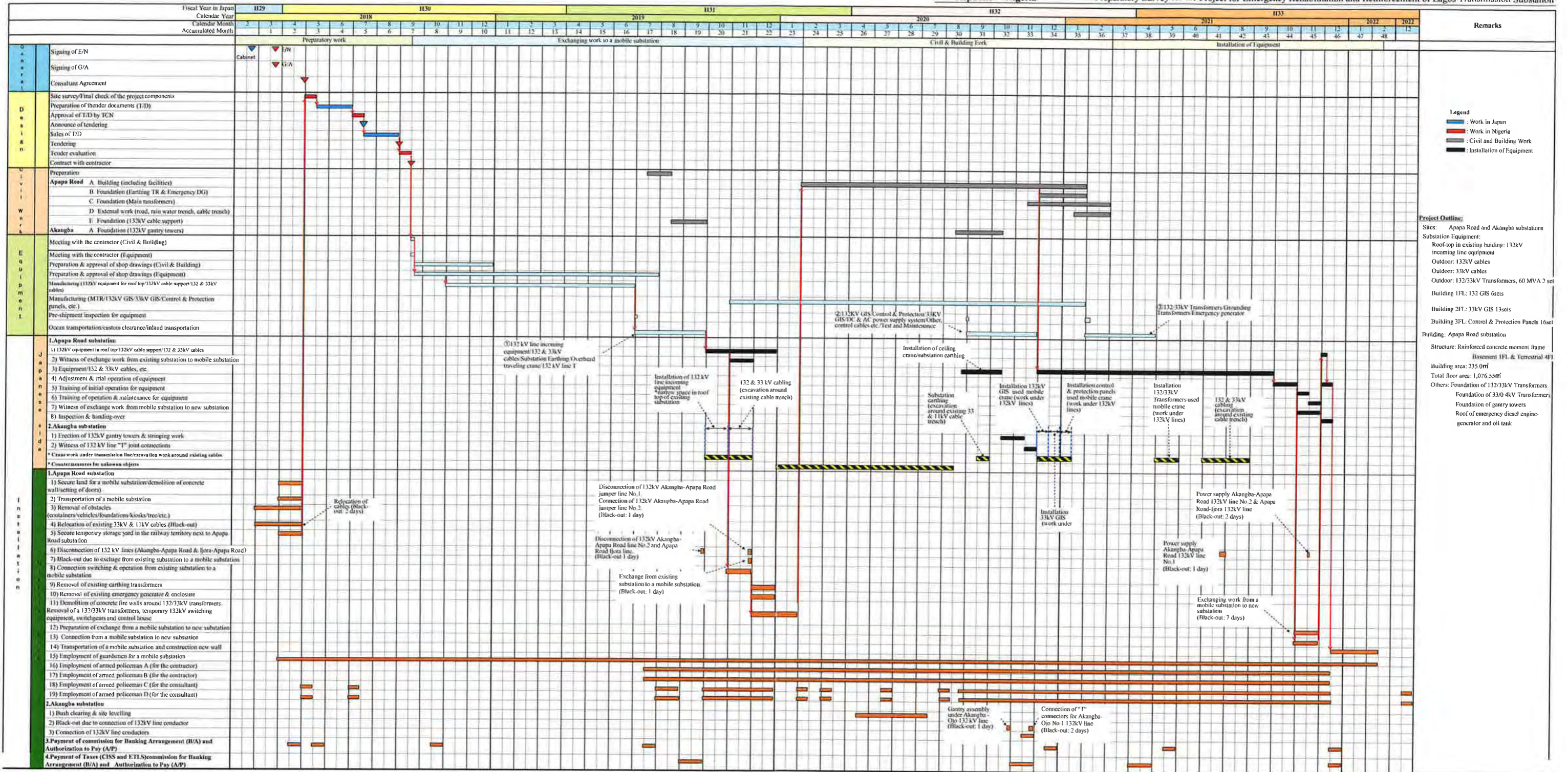
Table 9-1 Estimated cost regarding Police Officers

	Police Officer's Daily Allowance				Administrative Charge			Grand total (NGN)
	Numbers of Police officers	Unit price of Daily allowance (NGN/person)	Days	Subtotal of Daily allowance (NGN)	Unit price (NGN/month)	Months	Subtotal (NGN)	
Japanese supplier	2	5,000	900	9,000,000	200,000	31	6,200,000	
Japanese consultant	2	5,000	666	6,660,000	200,000	25	5,000,000	
Total				15,660,000			11,200,000	26,860,000

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Annex 4 : Project Implementation Schedule

The Republic of Nigeria The Preparatory Survey for the Project for Emergency Rehabilitation and Reinforcement of Lagos Transmission Substation



Note: The above schedule is tentative and subject to change. The schedule will be set after the approval by the Japanese cabinet and signing of E/N and G/A.

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A-5 概略設計図

添付-5. 概略設計図

アパパロード変電所

図面番号	図面名称
AR-01-1	アパパロード変電所 概略配置図
AR-01-2	アパパロード変電所 撤去設備概略配置図
AR-02-1	アパパロード変電所 単線結線図
AR-02-2	アパパロード変電所 単線結線図（変電所補機系統）
AR-03-1	制御棟 1階 132 kV GIS 配置計画図
AR-03-2	制御棟 M1階 天井クレーン配置計画図
AR-03-3	制御棟 2階 33 kV GIS 配置計画図
AR-03-4	制御棟 3階 制御盤配置計画図

アカンバ変電所

図面番号	図面名称
AK-01	アカンバ変電所 概略配置図

建築図

図面番号	図面名称
AR-A01	制御棟 配置図
AR-A02	制御棟 仕上げ表
AR-A03	制御棟 地階平面図
AR-A04	制御棟 1階平面図
AR-A05	制御棟 M1階平面図
AR-A06	制御棟 M階平面図
AR-A07	制御棟 2階平面図
AR-A08	制御棟 3階平面図
AR-A09	制御棟 屋階平面図
AR-A10	制御棟 立面図(1)
AR-A11	制御棟 立面図(2)
AR-A12	制御棟 断面図
AR-A13	制御棟 矩計図(1)
AR-A14	制御棟 矩計図(2)
AR-A15	制御棟 階段平面図
AR-A16	制御棟 階段断面図
AR-A17	制御棟 建具表

構造図

図面番号	図面名称
AR-S01	制御棟 基礎、地階伏図
AR-S02	制御棟 1階伏図
AR-S03	制御棟 M1階伏図(1)
AR-S04	制御棟 M1階伏図(2)
AR-S05	制御棟 M階伏図
AR-S06	制御棟 2階伏図
AR-S07	制御棟 3階伏図
AR-S08	制御棟 屋階伏図
AR-S09	制御棟 軸組図(1)
AR-S10	制御棟 軸組図(2)
AR-S11	制御棟 軸組図(3)
AR-S12	制御棟 基礎梁リスト
AR-S13	制御棟 柱リスト
AR-S14	制御棟 大梁リスト(1)
AR-S15	制御棟 大梁リスト(2)
AR-S16	制御棟 小梁、床、壁リスト
AR-S17	制御棟 雑詳細図
AR-S18	制御棟 ラーメン配筋図

電気建築図

図面番号	図面名称
AR-E01	制御棟 配電計画図
AR-E02	制御棟 地階系統計画図(照明、壁コンセント、防火)
AR-E03	制御棟 1階系統計画図(照明、壁コンセント、防火)
AR-E04	制御棟 M1階系統計画図(照明、壁コンセント、防火)
AR-E05	制御棟 M階系統計画図(照明、壁コンセント、防火)
AR-E06	制御棟 2階系統計画図(照明、壁コンセント、防火)
AR-E07	制御棟 3階系統計画図(照明、壁コンセント、防火)
AR-E08	制御棟 照明計画図(階段、データ通信)
AR-E09	制御棟 階段計画図(照明、防火システム)
AR-E10	制御棟 避雷保護計画図

機械建築図

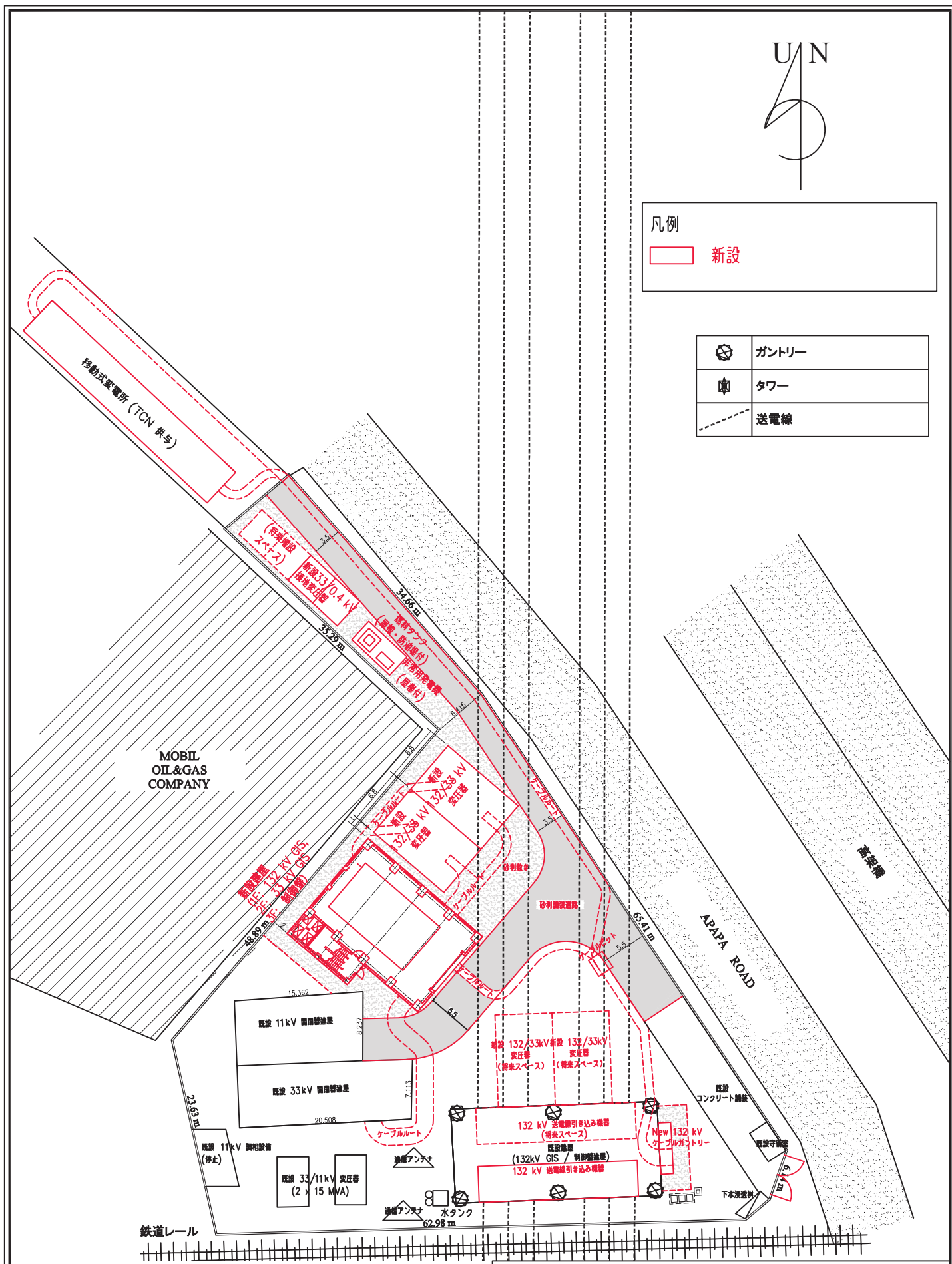
図面番号	図面名称
AR-M01	制御棟 地階排水装置計画図
AR-M02	制御棟 屋外排水装置計画図

図面番号	図面名称
AR-M03	制御棟 2階通風装置計画図
AR-M04	制御棟 3階計画図（冷暖房装置、通風装置）



凡例	
	新設

	ガントリー
	タワー
	送電線



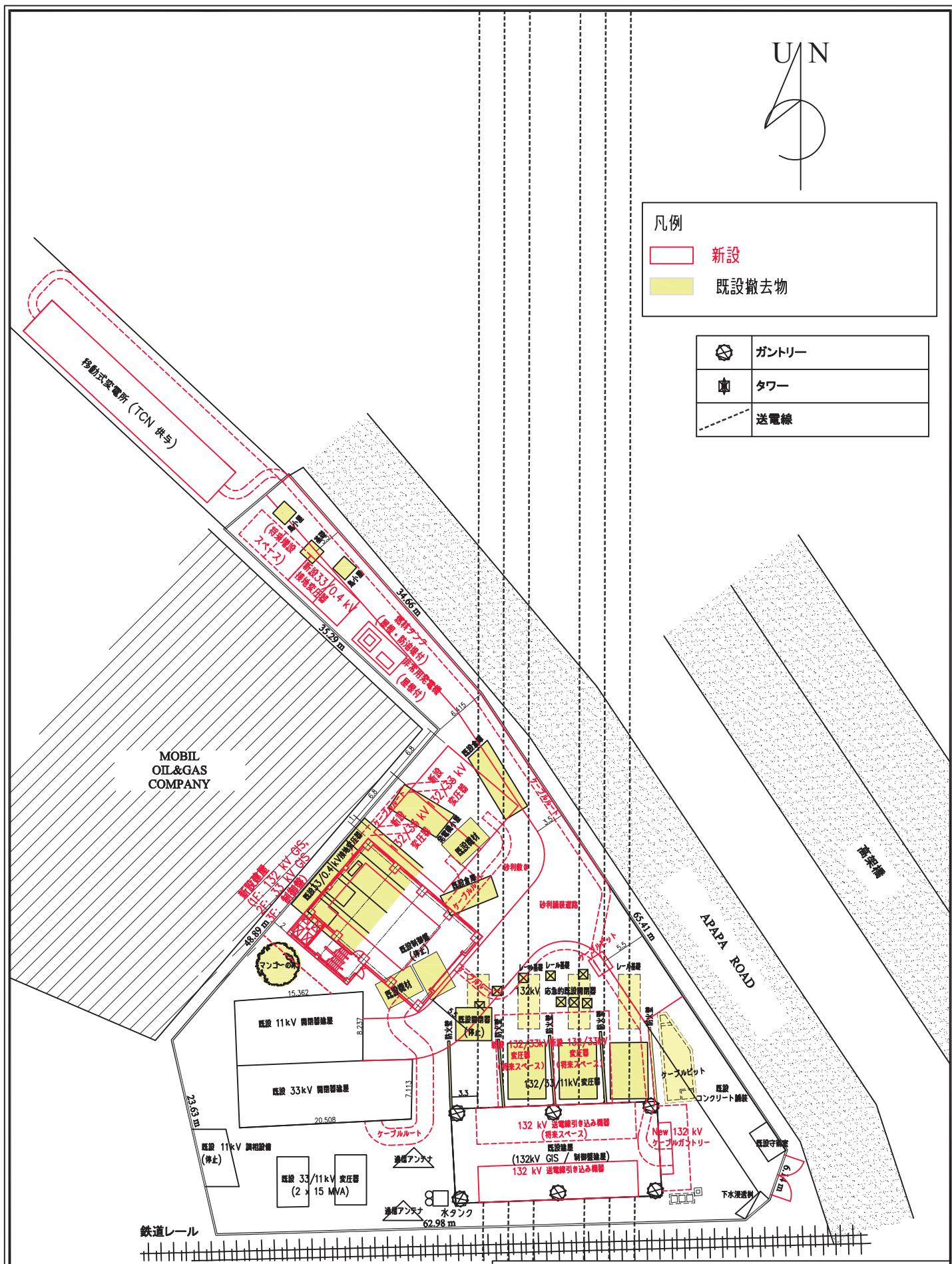
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Apapa Road Substation Plot Plan

PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	APPROVED BY : ****	CHECKED BY : ****	DESIGNED BY : ****	DATE : feb. 2017	DRG NO : AR-01-1
		CONSULTANTS : yoo YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN				SCALE : 1:600 (if only A4)



凡例	
	新設
	既設撤去物

	ガントリー
	タワー
	送電線



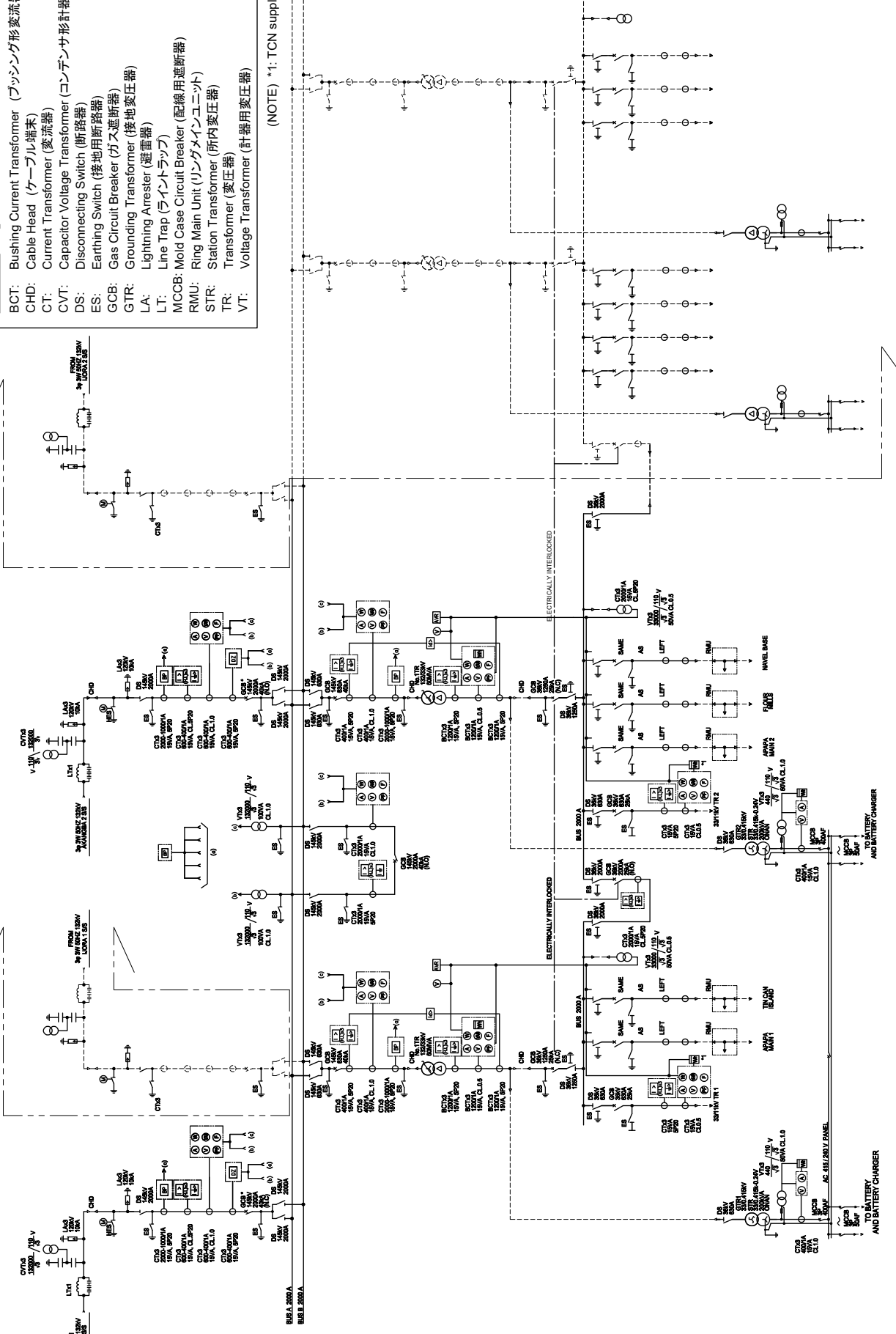
TITLE						
Apapa Road Substation Plot Plan with removed material						
PROJECT	LOCATION	APPROVED BY :	CHECKED BY :	DESIGNED BY :	DATE :	
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	****	****	****	feb. 2017	
		CONSULTANTS :				DRG NO :
		yoo YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN				AR-01-2
					SCALE :	
					1:600	
					(if only A4)	

- LEGEND (凡例)**
- BCT: Bushing Current Transformer (ブッシング形変流器)
 - CHD: Cable Head (ケーブル端末)
 - CT: Current Transformer (変流器)
 - CVT: Capacitor Voltage Transformer (コンデンサ形計器用変圧器)
 - DS: Disconnecting Switch (断路器)
 - ES: Earthing Switch (接地用断路器)
 - GCB: Gas Circuit Breaker (ガス遮断器)
 - GTR: Grounding Transformer (接地変圧器)
 - LA: Lightning Arrester (避雷器)
 - LT: Line Trap (ライントラップ)
 - MCCB: Mold Case Circuit Breaker (配線用遮断器)
 - RMU: Ring Main Unit (リングメインユニット)
 - STR: Station Transformer (所内変圧器)
 - TR: Transformer (変圧器)
 - VT: Voltage Transformer (計器用変圧器)

FUTURE

FUTURE

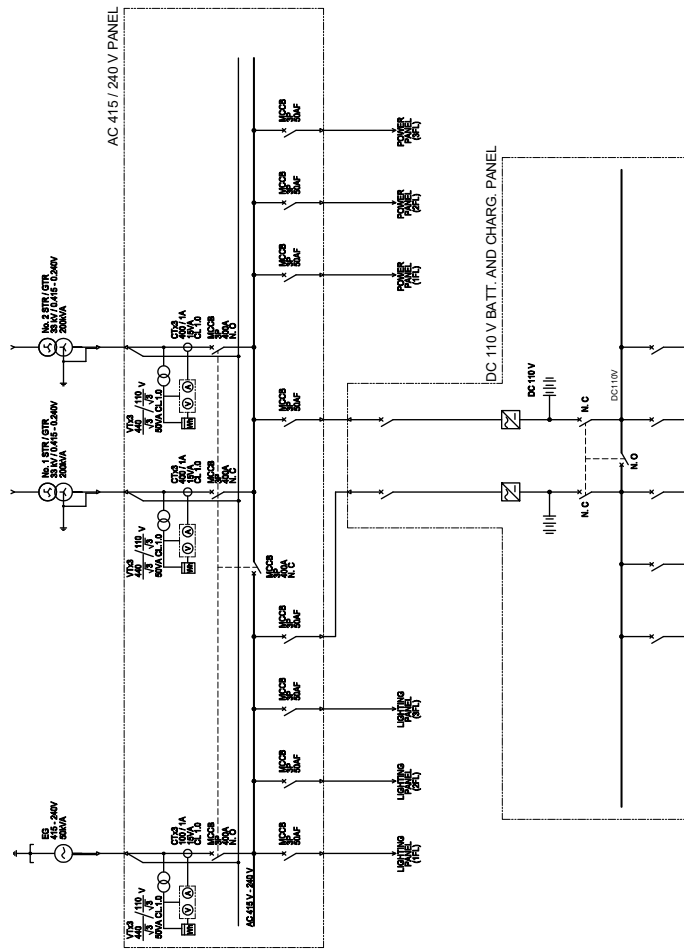
(NOTE) *: TCN supply Wh Meters.



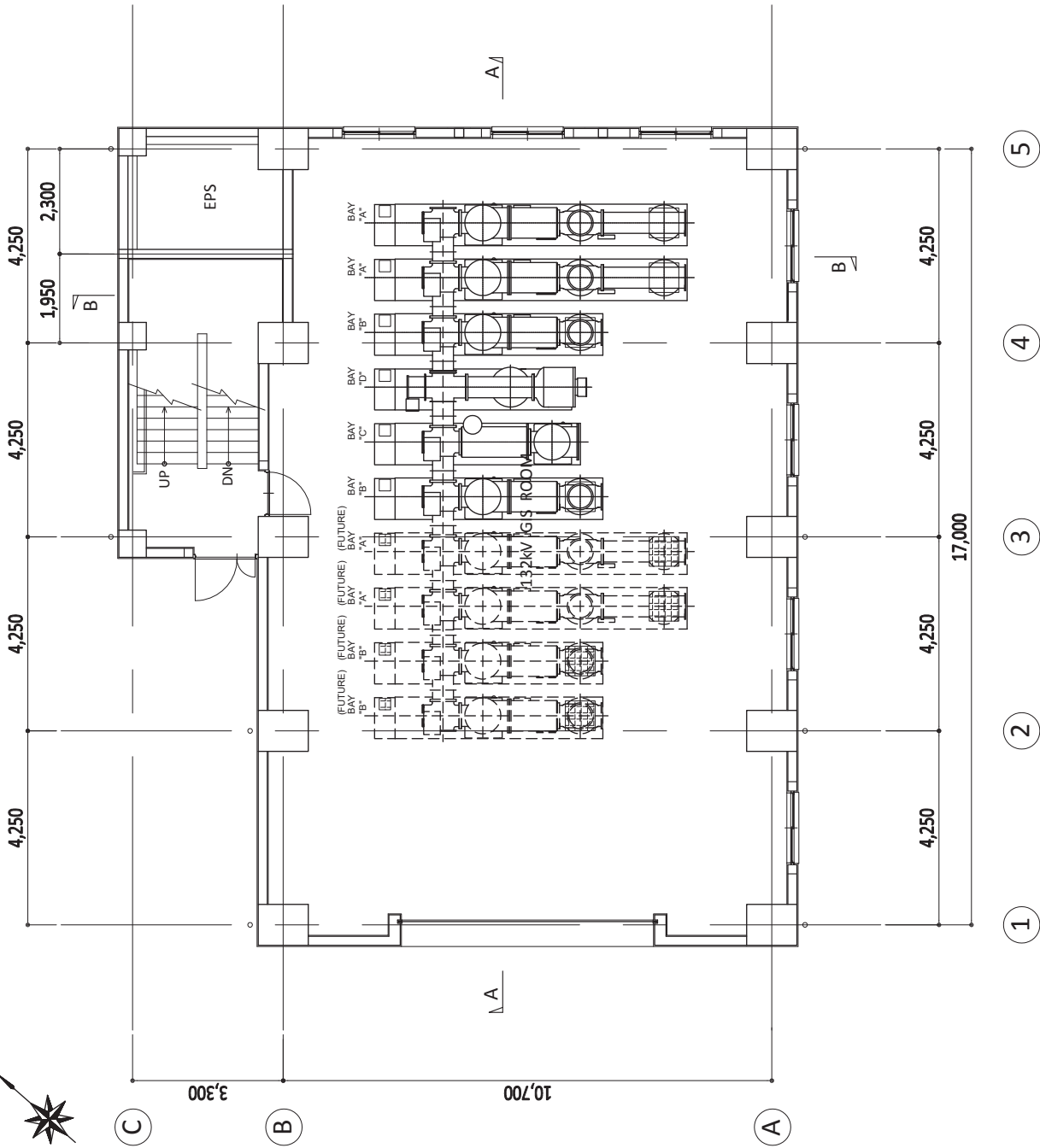
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THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	Apapa Road Substation Single Line Diagram アパパロード変電所単線結線図					AR-02-1
			CONSULTANTS:		SCALE:		
			YEC		YACHYO ENGINEERING CO., LTD. TOKYO, JAPAN (if only A3)		

LEGEND (凡例)

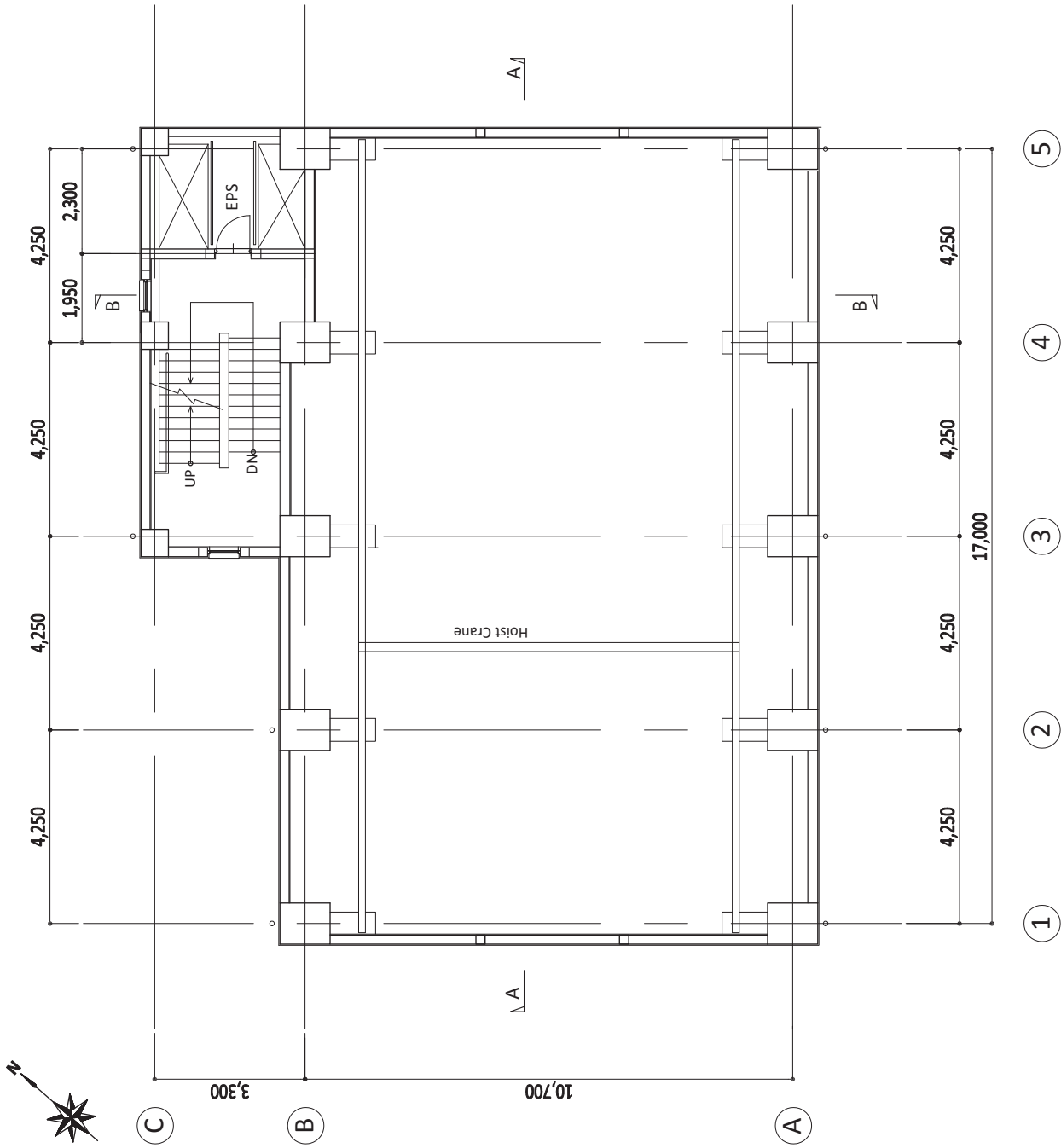
- AC: Alternative Current (交流)
- B/D: Distribution Board (分電盤)
- DC: Direct Current (直流)
- EG: Emergency Generator (非常用発電機)
- GTR: Grounding Transformer (接地変圧器)
- MCCB: Mold Case Circuit Breaker (配線用遮断器)
- NC: Normal Close (常時閉)
- NO: Normal Open (常時開)
- STR: Station Transformer (所内変圧器)



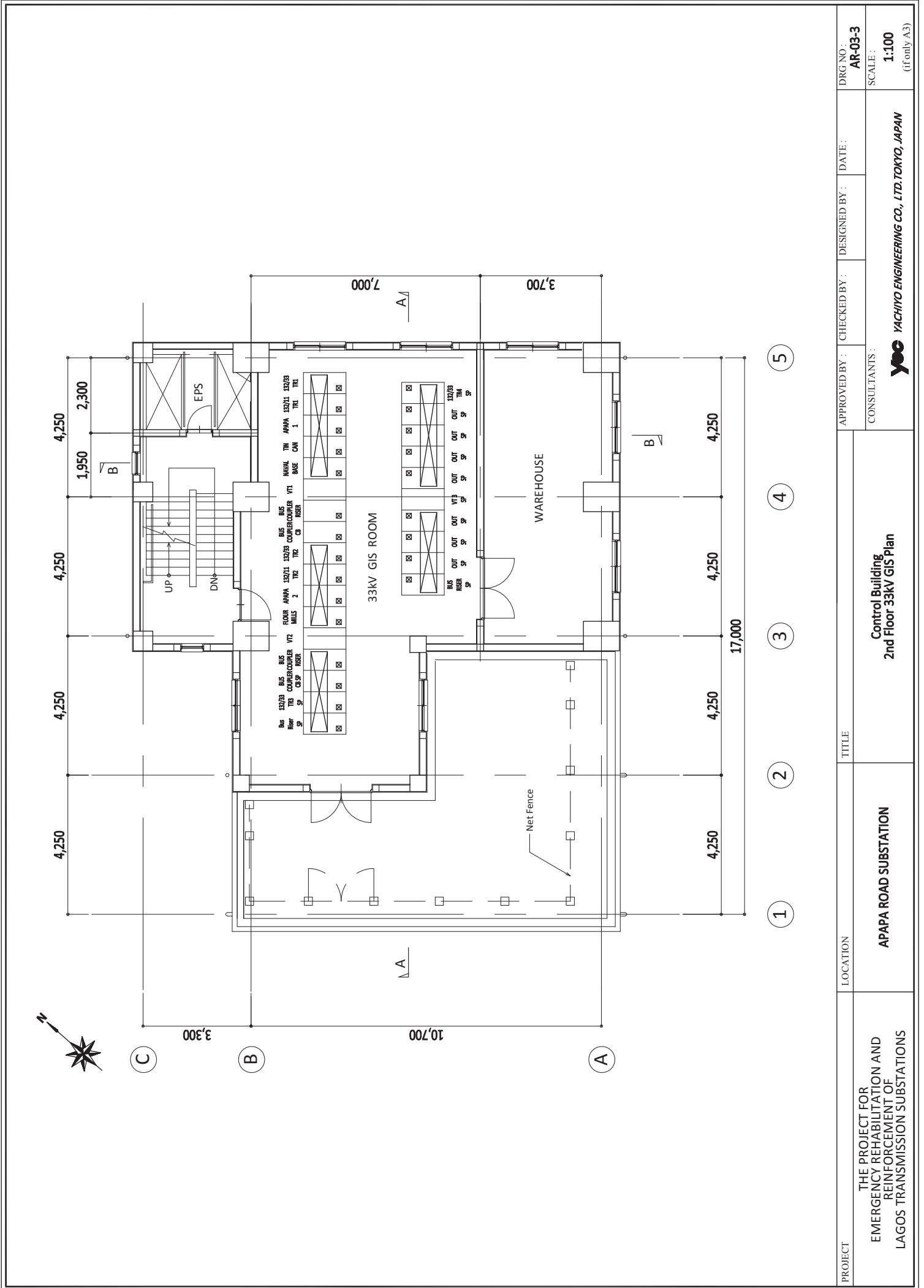
<p>PROJECT</p> <p>THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS</p>	<p>LOCATION</p> <p>APAPA ROAD SUBSTATION</p>	<p>TITLE</p> <p>Apapa Road Substation Single Line Diagram (Station Auxiliary System) アパパロード変電所 単線結線図 (所内)</p>	<p>APPROVED BY :</p>	<p>CHECKED BY :</p>	<p>DESIGNED BY :</p>	<p>DATE :</p>	<p>DRG NO.:</p> <p>AR-02-2</p>
<p>CONSULTANTS :</p> <p>yec YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN</p>							<p>SCALE :</p> <p>(if only A3)</p>



PROJECT	LOCATION	TITLE	APPROVED BY: _____ DESIGNED BY: _____ CHECKED BY: _____ DATE: _____	DRG NO: AR-03-1
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	Control Building 1st Floor 132kV GIS Plan	CONSULTANTS: yec YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN	SCALE: 1:100 (if only A3)

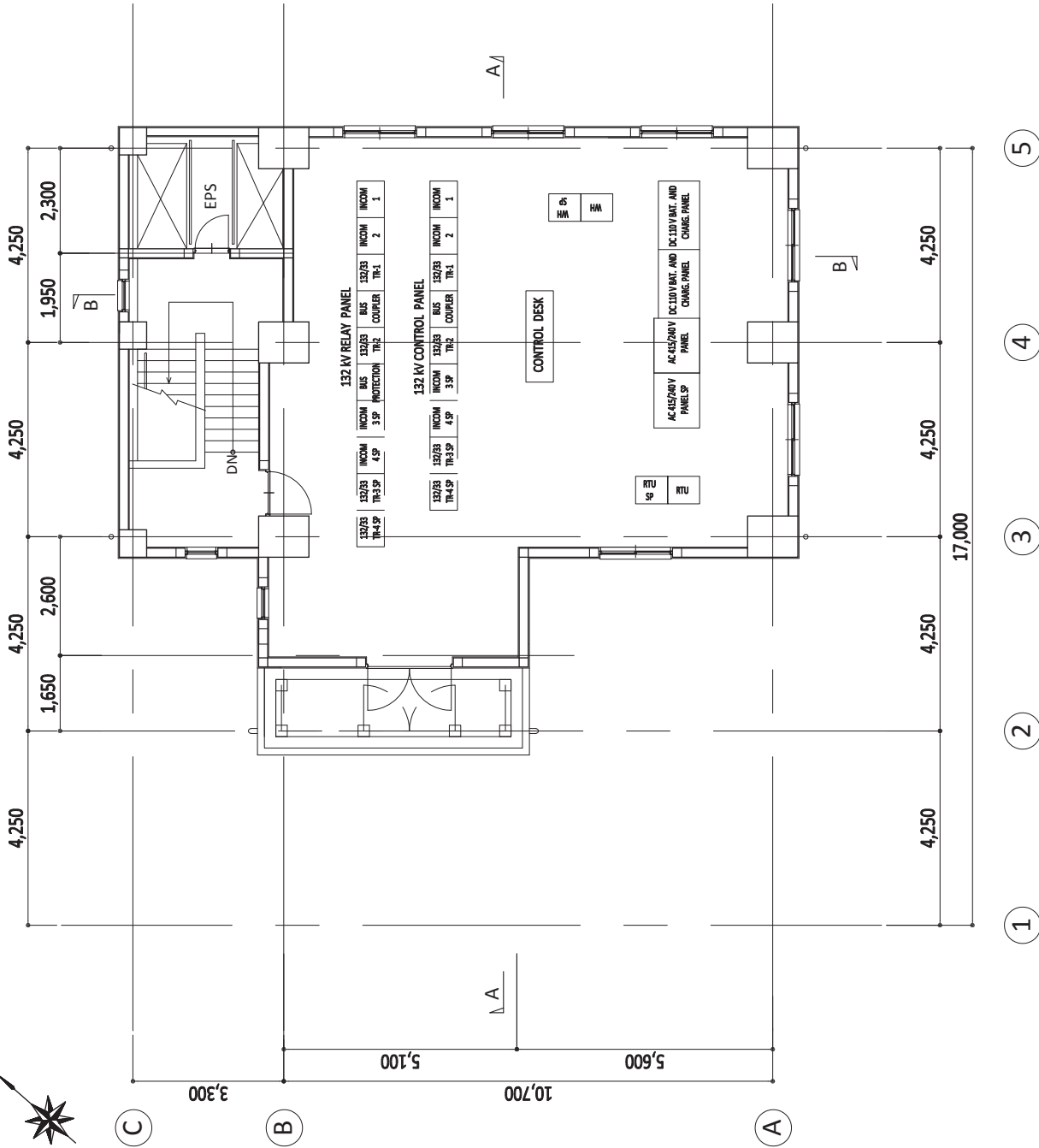


PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE Control Building Middle 1st Floor Overhead Crane Plan	APPROVED BY : CHECKED BY : DESIGNED BY : DATE :	DRG NO. : AR-03-2 SCALE : 1:100 (if only A3)
CONSULTANTS :  YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN				



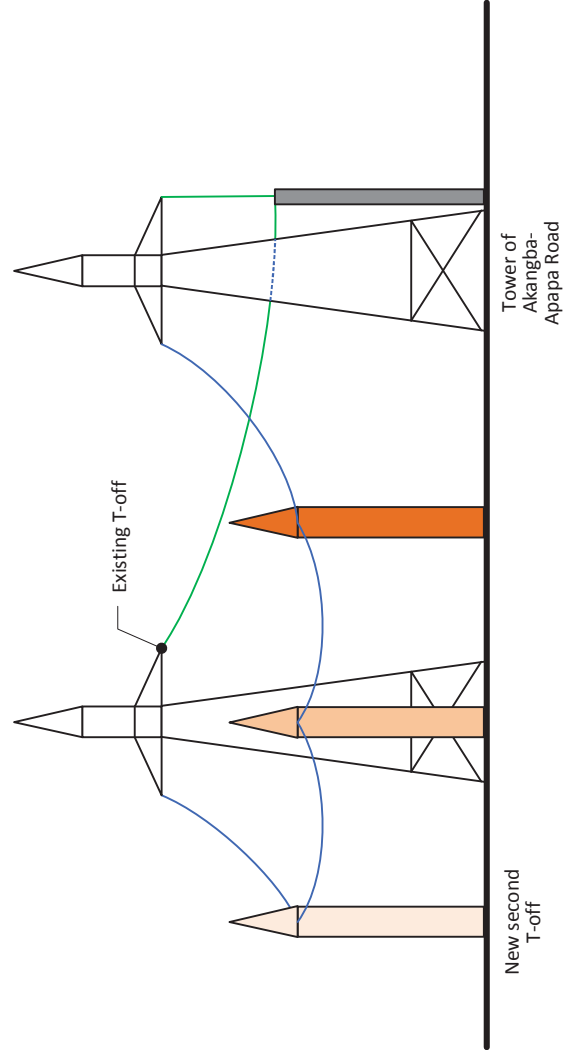
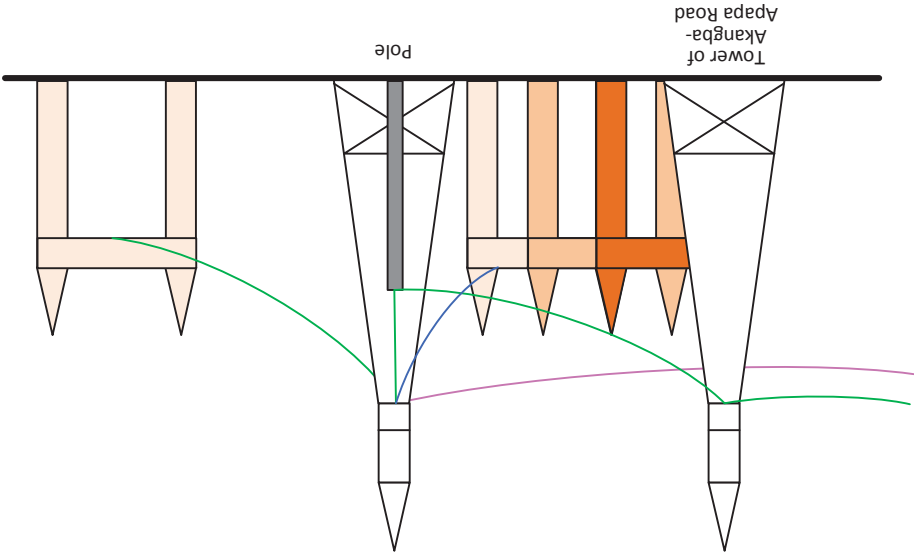
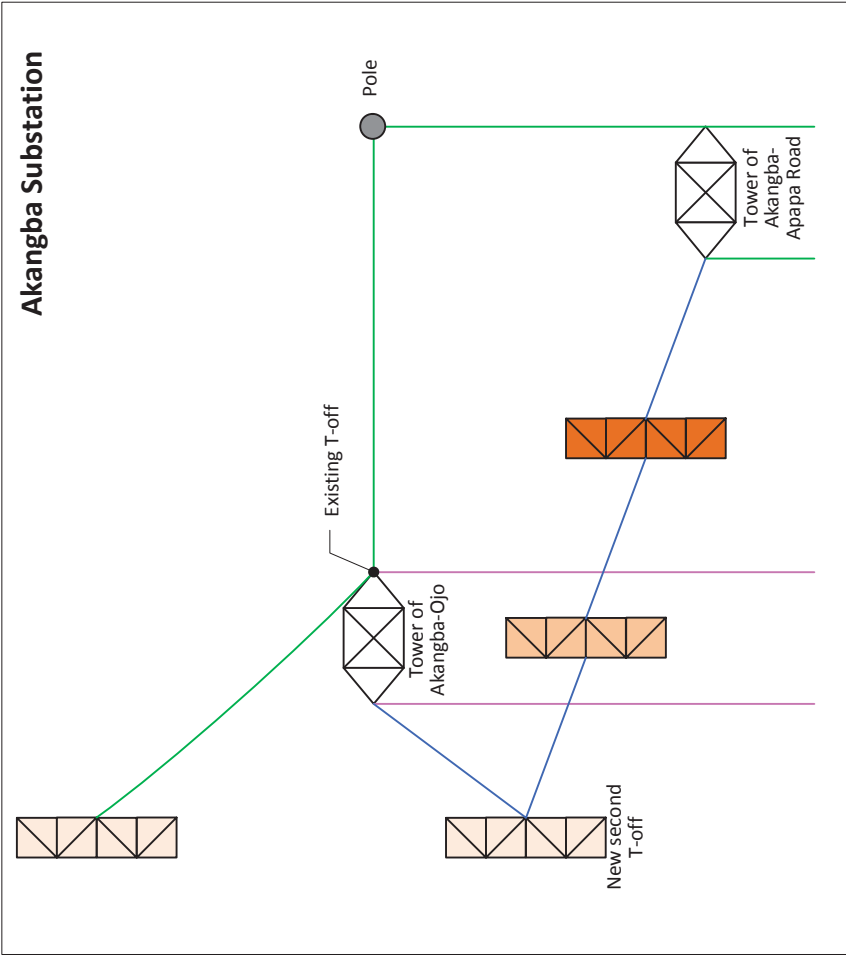
1 2 3 4 5




PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE Control Building, 2nd Floor 33KV GIS Plan	APPROVED BY : YEC YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN CONSULTANTS :	DESIGNED BY :	DATE :	DRG NO : AR-03-3 SCALE : 1:100 (if only A3)
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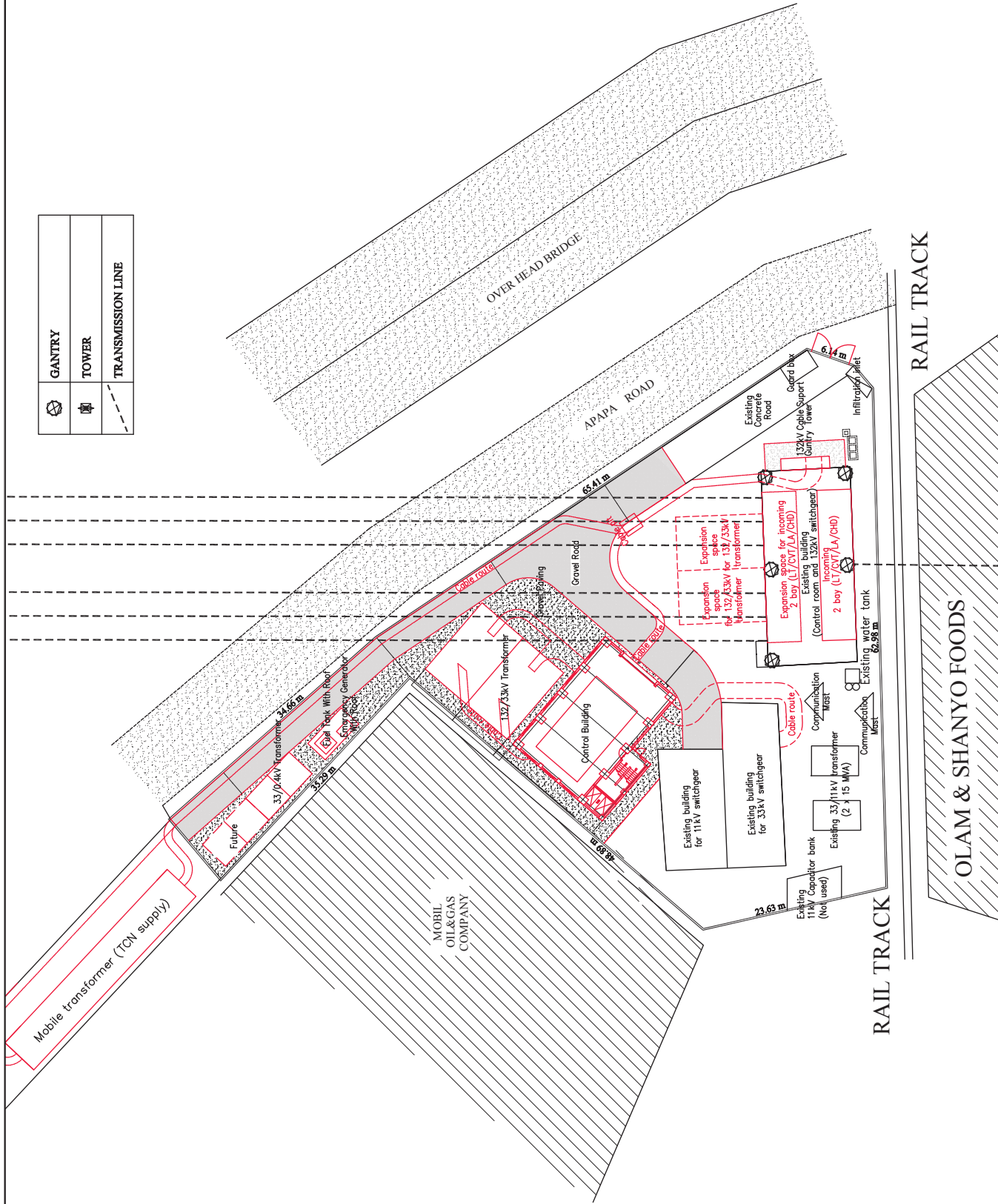


PROJECT	LOCATION	TITLE	APPROVED BY: _____ DESIGNED BY: _____ CHECKED BY: _____ DATE: _____	DRG NO: AR-03-4
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	Control Building, 3rd Floor Control Panel Plan	CONSULTANTS: yec YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN	SCALE: 1:100 (if only A3)

Akangba Substation



	GANTRY
	TOWER
	TRANSMISSION LINE



PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE CONTROL BUILDING SITE PLAN	APPROVED BY: K. FUJII	CHECKED BY: K. ODA	DESIGNED BY: T. KURUMADA	DATE:	DRG NO.: AR-A01
	CONSULTANTS:  YPC YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN						SCALE: 1:100 (if only A3)

EXTERIOR FINISHING SCHEDULE

LOCATION	SPECIFICATION
ROOF	CONCRETE STEEL TROWEL ON PROTECTION CONCRETE WITH WELDED WIRE MESH ASPHALT MEMBRANE WATER PROOFING
WALL	PAINT FINISH (A.E.P) ON 150mm THK CONCRETE BLOCK WITH MORTAR STEEL TROWEL 25mm THK.
COLUMN	FINISH (A.E.P) ON MORTAR STEEL TOROWEL 25mm THK.
BEAM	FINISH (A.E.P) ON MORTAR STEEL TOROWEL 25mm THK.
ROOF DRAIN	CASTIRON φ 100mm
DOWNSPOUT	PVC PIPE φ 100
NET FENCE	H=1100

INTERIOR FINISHING SCHEDULE

ROOM NAME	FLOOR	BASEBOARD	WALL	CEILING	REMARKS
BF 132kV GIS CABLE ROOM	ADDITIONAL CONCRETE t=220 STEEL TROWEL FINISH WITH SLOPE 1/200	—	EXPOSED CONCRETE	EXPOSED CONCRETE	SUMP PIT, DRAINAGE ROOM NAME PLATE
1F 132kV GIS ROOM	DUSTPROOF PAINT ON CONCRETE STEEL TROWEL	MORTAR STEEL TROWEL H=100 ON 200mm THICKNESS CONCRETE BLOCK	PAINT FINISH(E.P) MORTAR STEEL TROWEL 20mm THK ON 200mm THICKNESS CONCRETE BLOCK DITTO	PAINT FINISH(A.E.P) ON EXPOSED CONCRETE	HOIST CRANE 5ton FIRE EXTINGUISHER 2 SET ROOM NAME PLATE
MF 33kV GIS CABLE ROOM	CONCRETE STEEL TROWEL FINISH	DITTO	DITTO	EXPOSED CONCRETE	ROOM NAME PLATE
2F 33kV GIS ROOM	DUSTPROOF PAINT ON CONCRETE STEEL TROWEL	DITTO	DITTO	PAINT FINISH(A.E.P) ON EXPOSED CONCRETE	FIRE EXTINGUISHER 1 SET ROOM NAME PLATE
2F WERAHOUSE	DITTO	DITTO	DITTO	DITTO	FIRE EXTINGUISHER 1 SET ROOM NAME PLATE
3F CONTROL ROOM	FREE ACCESS FLOOR H=500 ANTISTATIC VINYL TAILE FINISH	VINYL TAILE H=60	DITTO	COSMETIC GYPSAM BOARD 9.5mm THK. WITH ALUMINIUM SUSPENDED FRAME	FIRE EXTINGUISHER 2 SET ROOM NAME PLATE
STAIRCASE	MORTAR STEEL TROWEL FINISH STEP & RISE : MORTAR STEEL TROWEL	MORTAR STEEL TROWEL H=100 ON 200mm THICKNESS CONCRETE BLOCK	PAINT FINISH(E.P) MORTAR STEEL TROWEL 20mm THK ON 200mm THICKNESS CONCRETE BLOCK	PAINT FINISH(A.E.P) ON EXPOSED CONCRETE	NON SLIP : STAINLESS W-35
E.P.S	CONCRETE STEEL TROWEL	—	EXPOSED CONCRETE BLOCK	EXPOSED CONCRETE	STEEL HANDRAIL H=1100 ROOM NAME PLATE

PROJECT

THE PROJECT FOR
EMERGENCY REHABILITATION AND
REINFORCEMENT OF
LAGOS TRANSMISSION SUBSTATIONS

LOCATION

APAPA ROAD SUBSTATION

TITLE

CONTROL BUILDING
FINISHING SCHEDULE

APPROVED BY :
K. FUJII

CONSULTANTS :
yoe YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN

CHECKED BY :
K. ODA

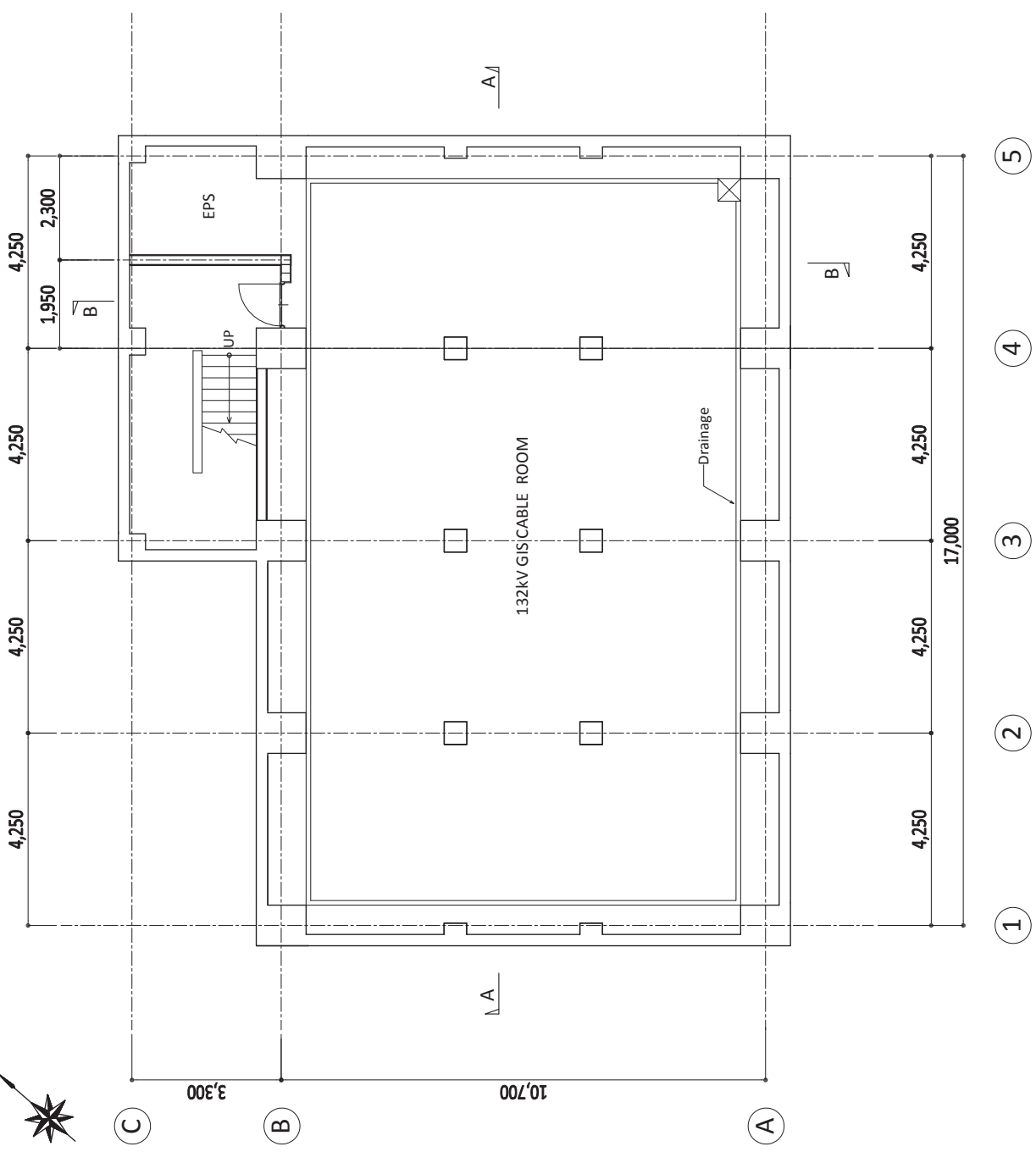
DESIGNED BY :
T. KURUMADA

DATE :

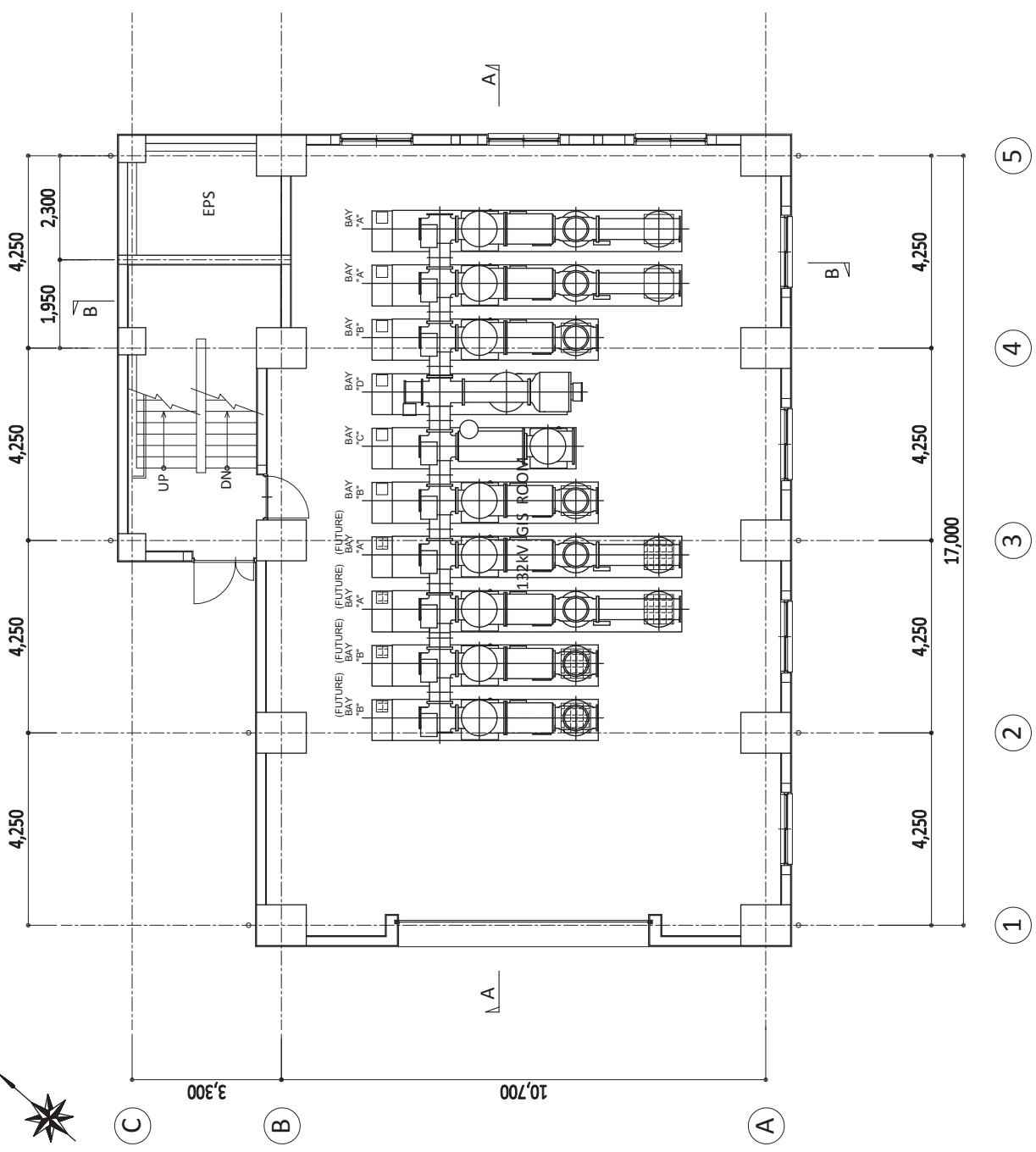
DRG NO :
AR-A02

SCALE :

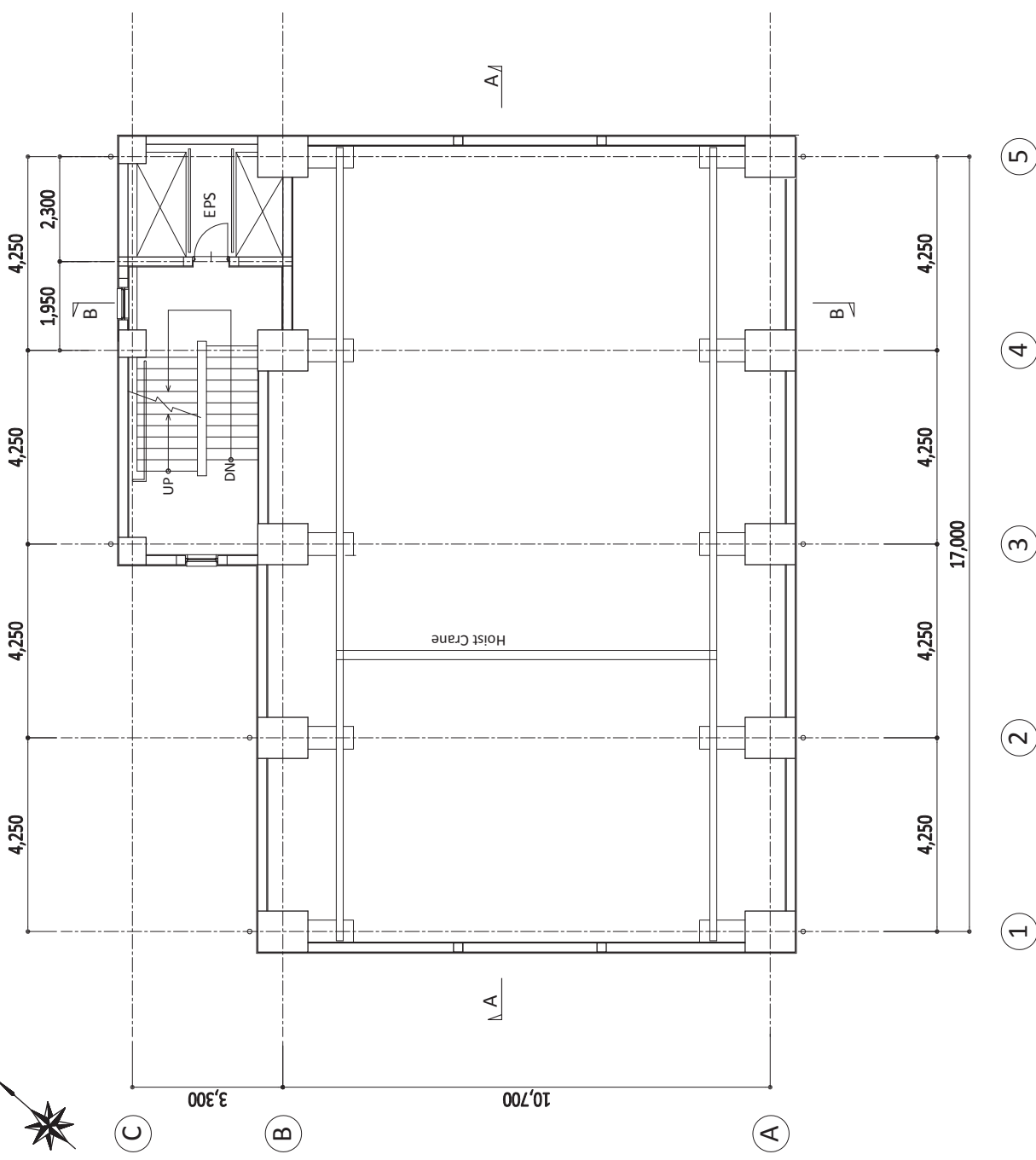
(if only A3)



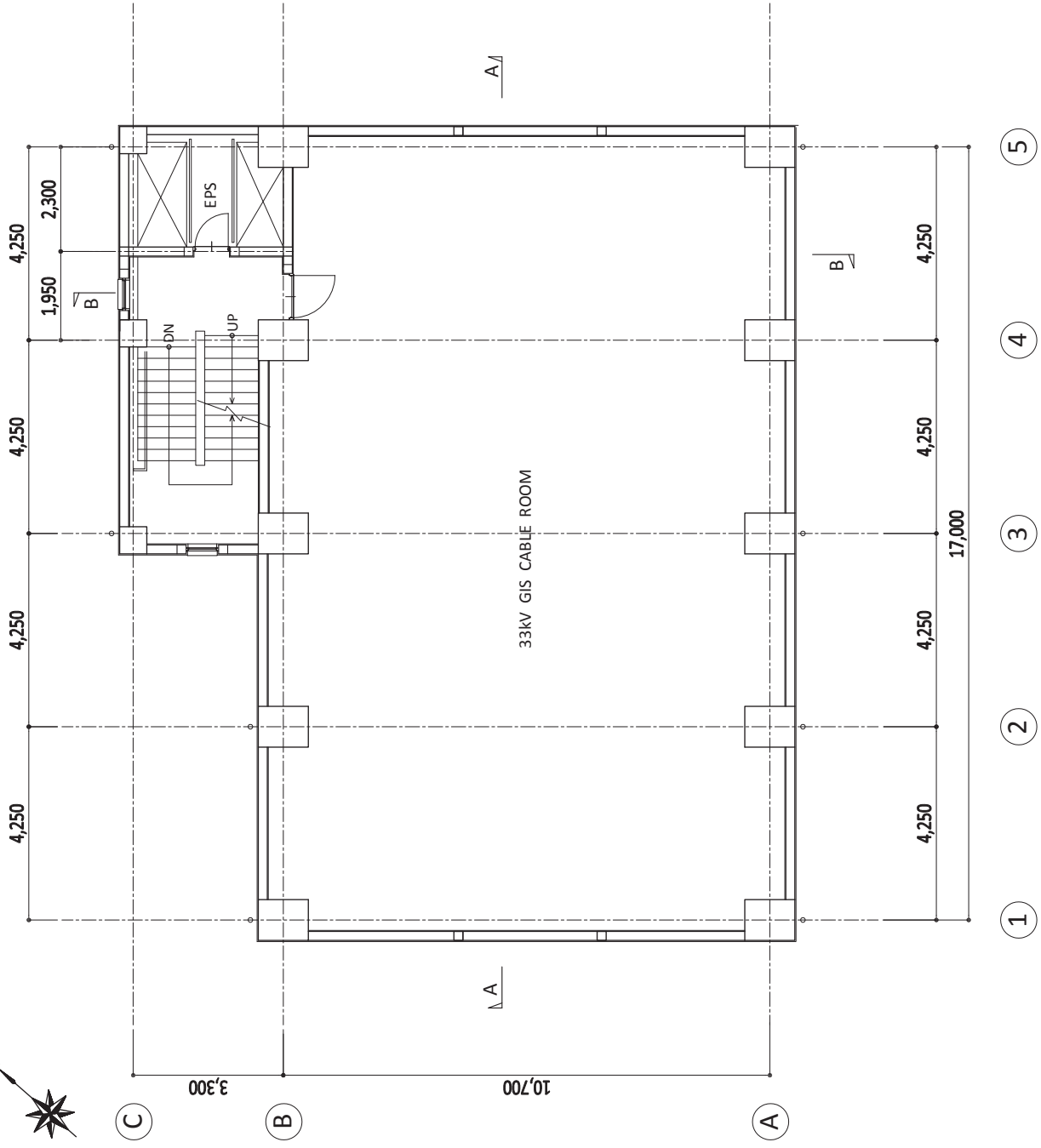
PROJECT	LOCATION	TITLE	APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO : AR-A03
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING BASEMENT FLOOR PLAN	CONSULTANTS :			SCALE :	1:100 (if only A3)



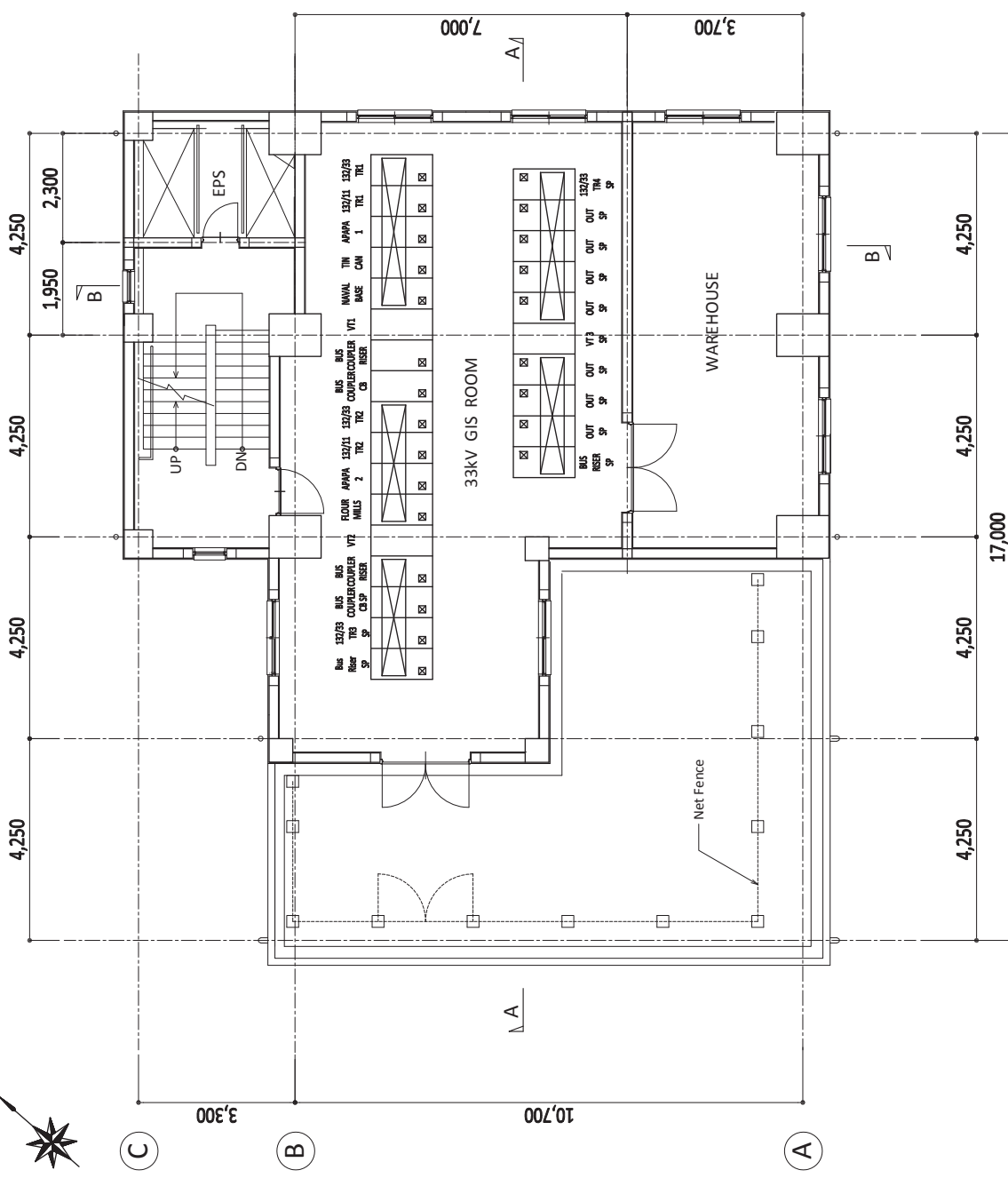
PROJECT	LOCATION	TITLE	APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO : AR-A04
EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING 1st FLOOR PLAN	CONSULTANTS :		YPC YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN	SCALE : 1:100 (if only A3)	



PROJECT	LOCATION	TITLE	APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO : AR-A05
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING MIDDLE 1st FLOOR PLAN	CONSULTANTS :		 YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN	SCALE :	1:100 (if only A3)

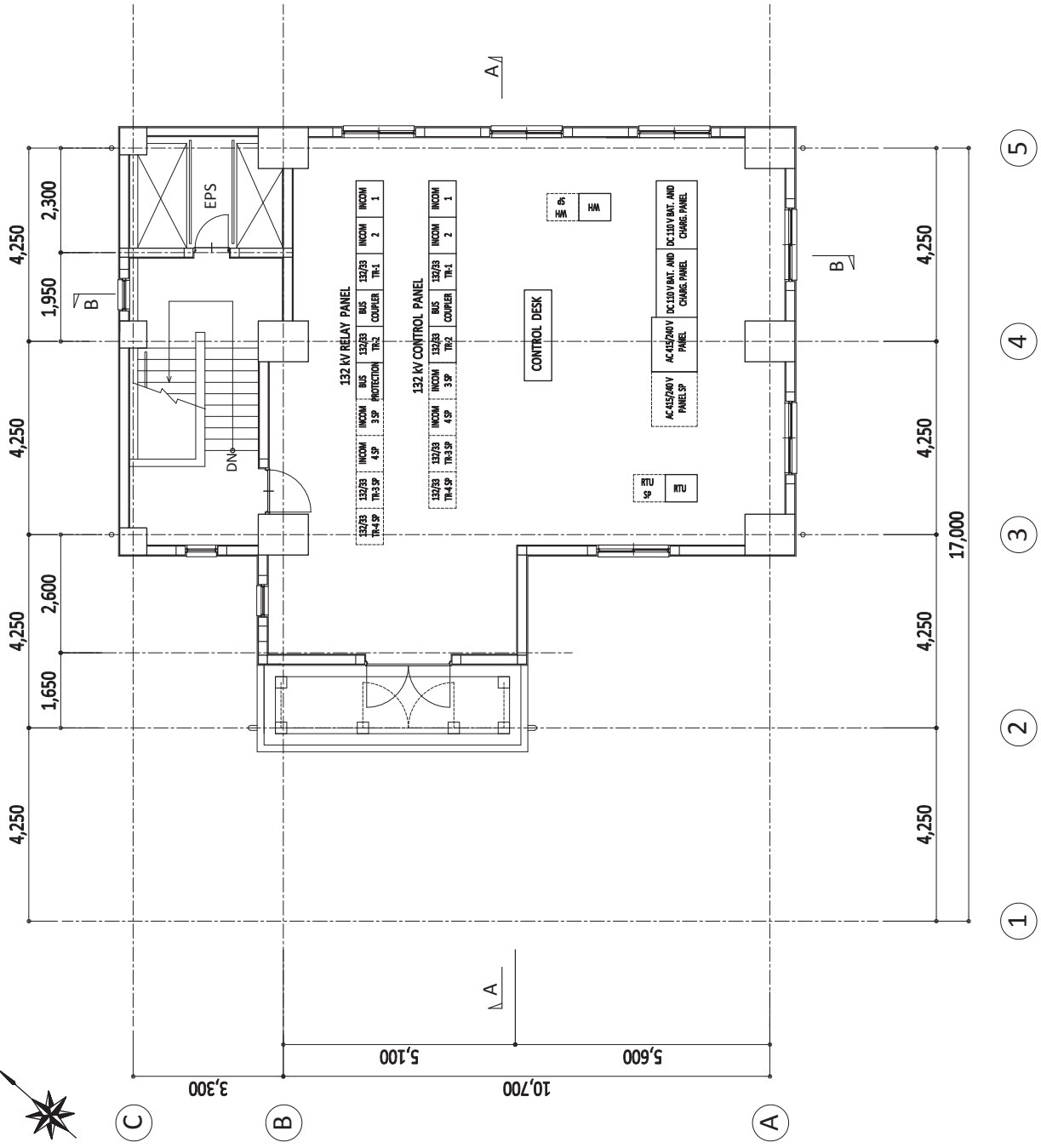


PROJECT	LOCATION	TITLE	APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO : AR-A06
EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING MIDDLE FLOOR PLAN	CONSULTANTS :		YPC	YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN	SCALE : 1:100 (if only A3)

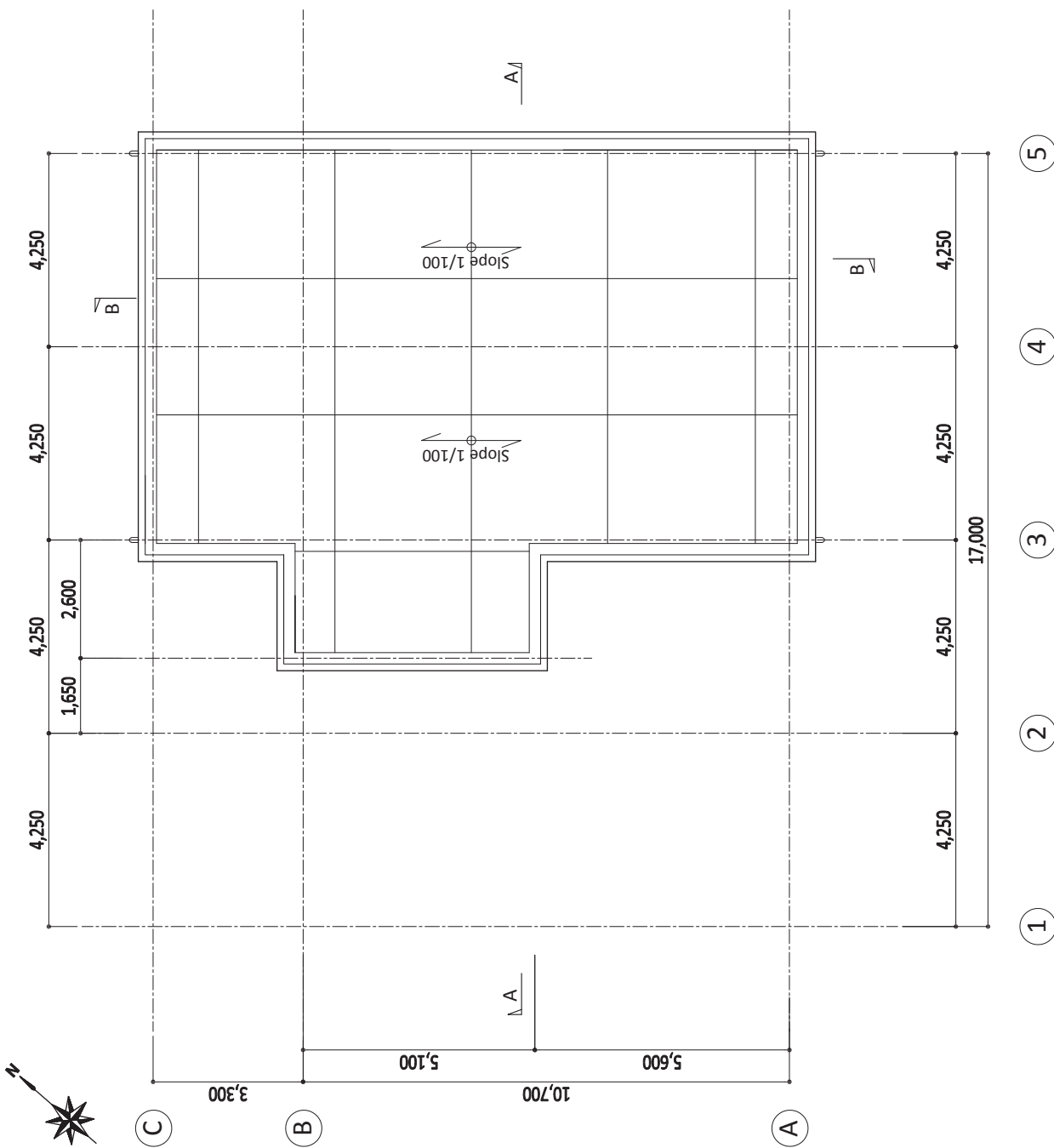


- ①
- ②
- ③
- ④
- ⑤

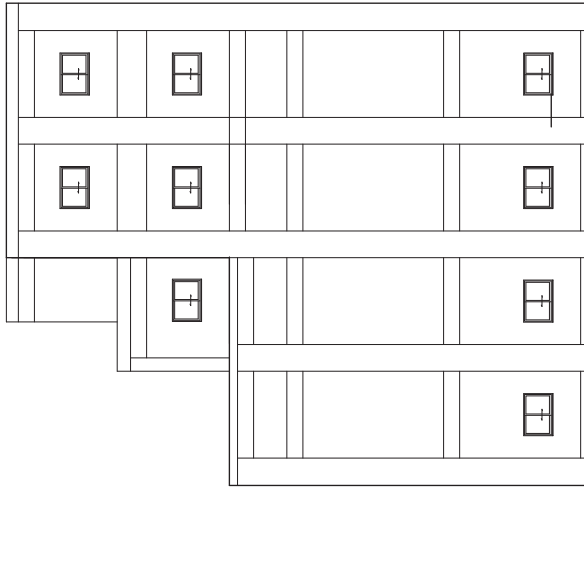
PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE CONTROL BUILDING 2nd FLOOR PLAN			
APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO. : AR-A07	SCALE : 1:100 (if only A3)
CONSULTANTS : YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN					



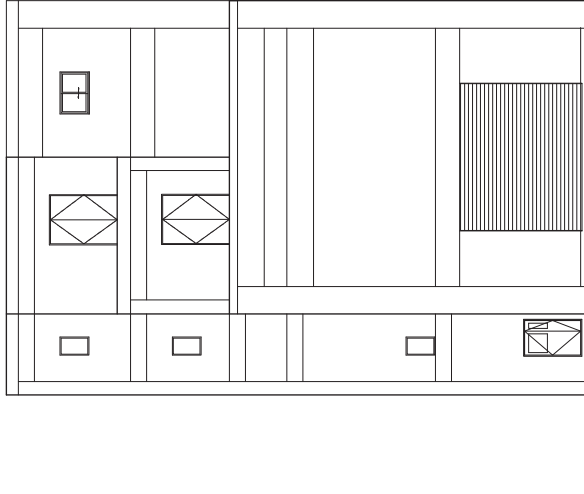
PROJECT	LOCATION	TITLE	APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO : AR-A08
EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING 3rd FLOOR PLAN	CONSULTANTS :		YPC	YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN	SCALE : 1:100 (if only A3)



PROJECT	LOCATION	TITLE	APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO : AR-A09	
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING ROOF PLAN	CONSULTANTS : yoe YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN				SCALE : 1:100 (if only A3)	

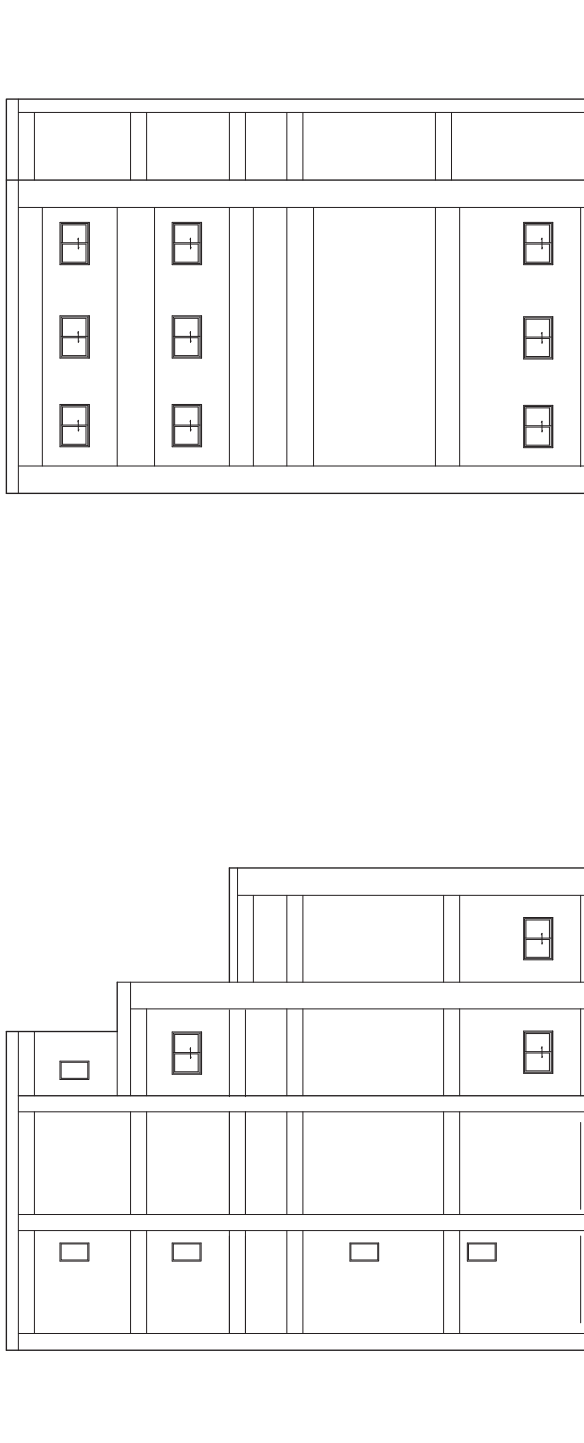


EAST ELEVATION



SOUTH ELEVATION

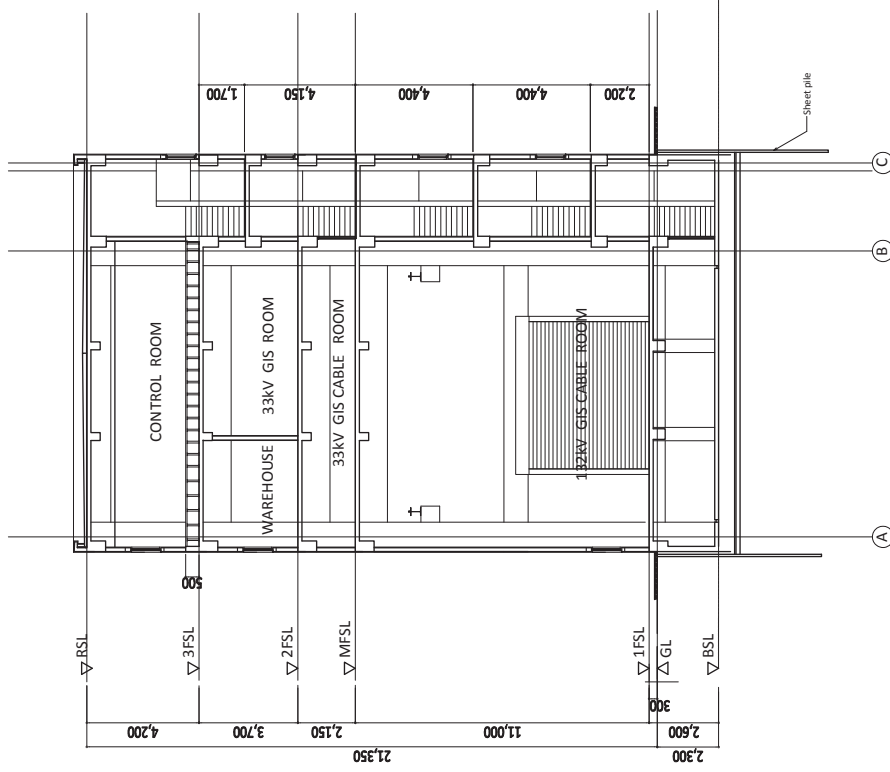
PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE CONTROL BUILDING ELEVATION-1	APPROVED BY : K. FUJII CONSULTANTS :  YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN	DESIGNED BY : T. KURUMADA	DRG NO : AR-A10 SCALE : 1:200 (if only A3)
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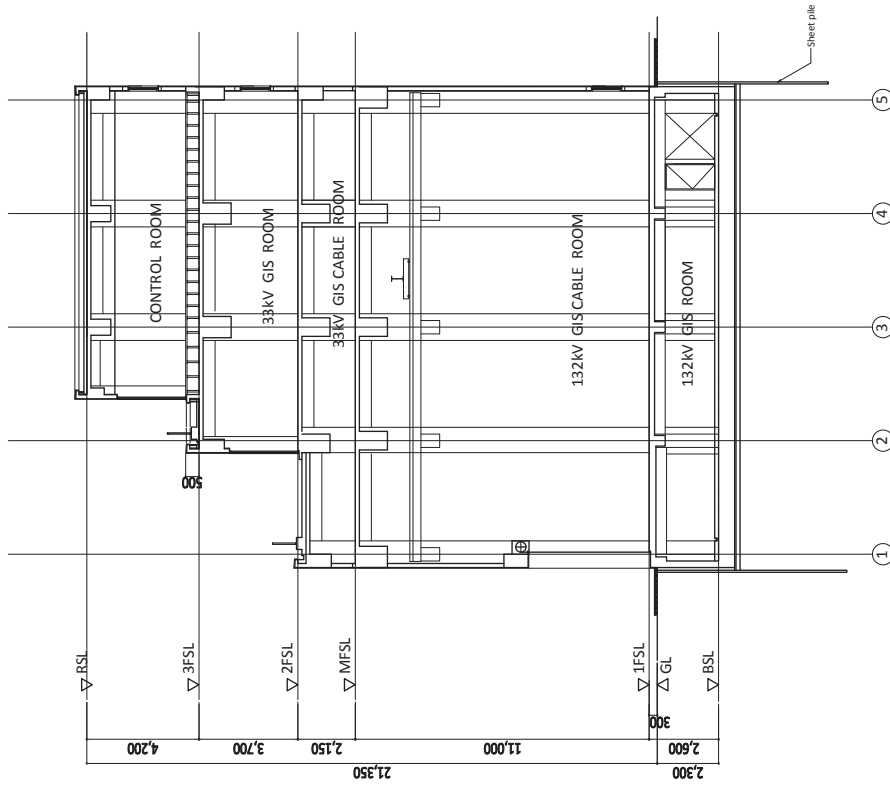
WEST ELEVATION

NORTH ELEVATION


PROJECT	LOCATION	TITLE	APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE:	DRG NO : AR-A11
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING ELEVATION-2	CONSULTANTS :		 YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN		SCALE : 1:200 (if only A3)

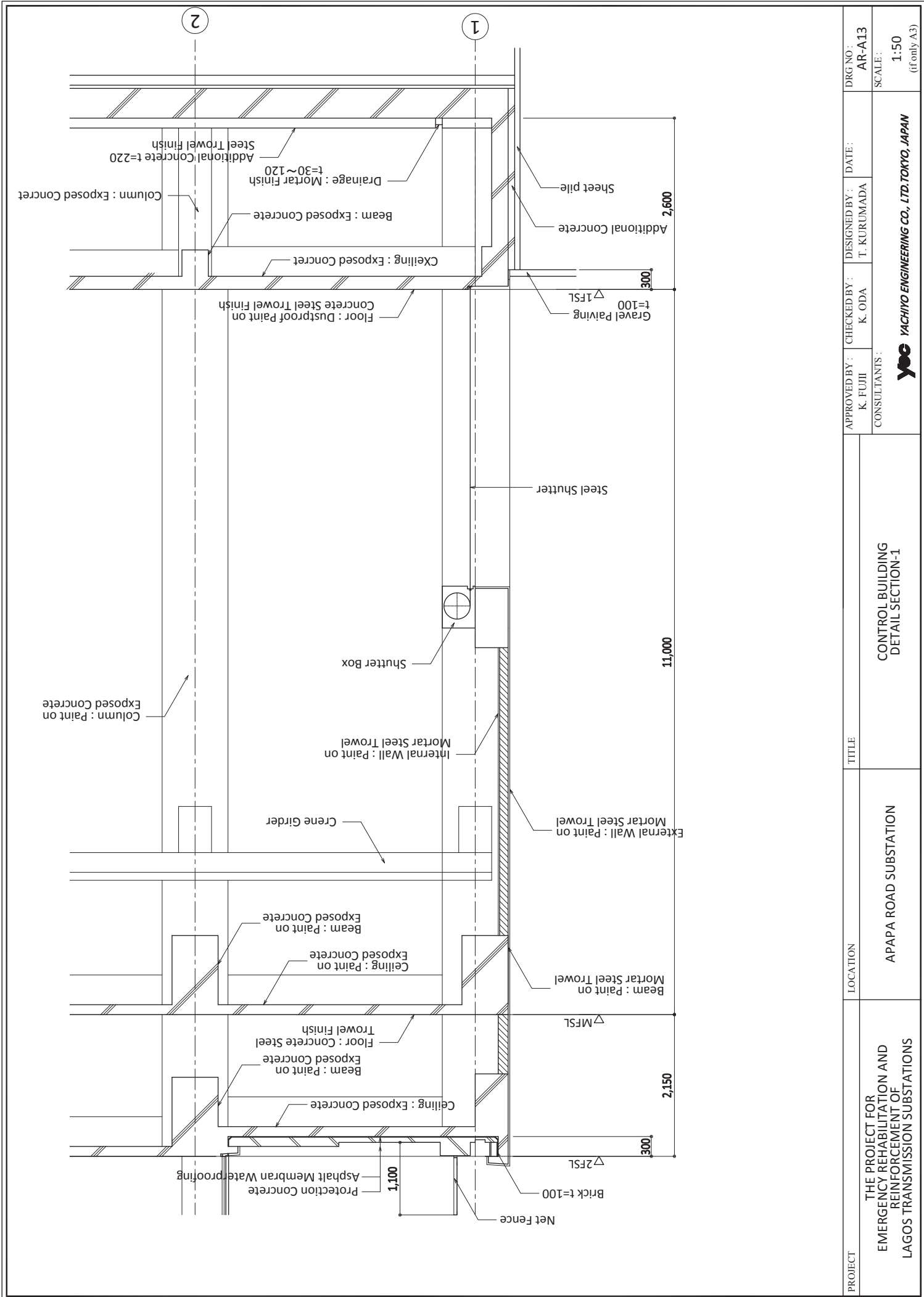


SECTION B - B

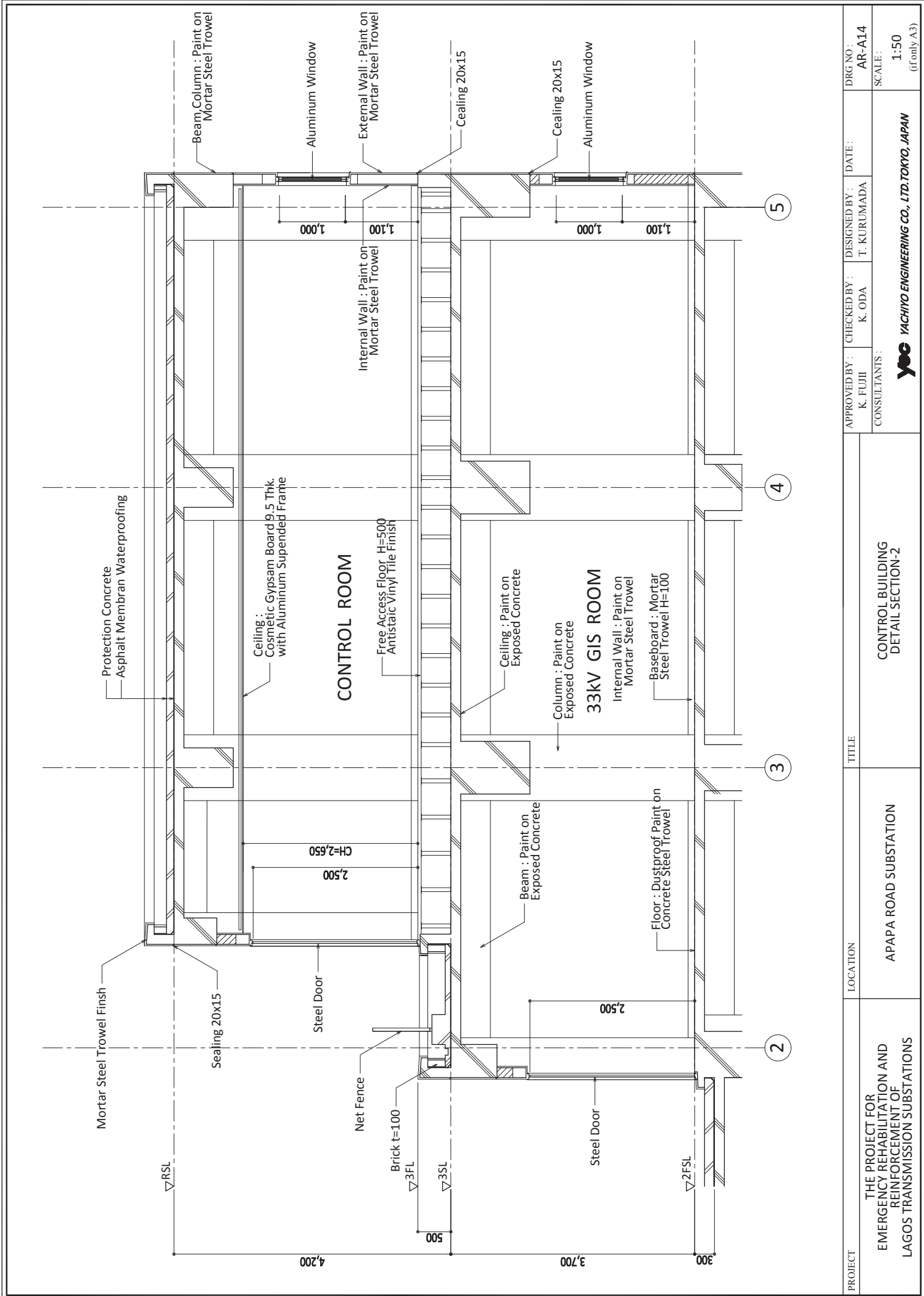


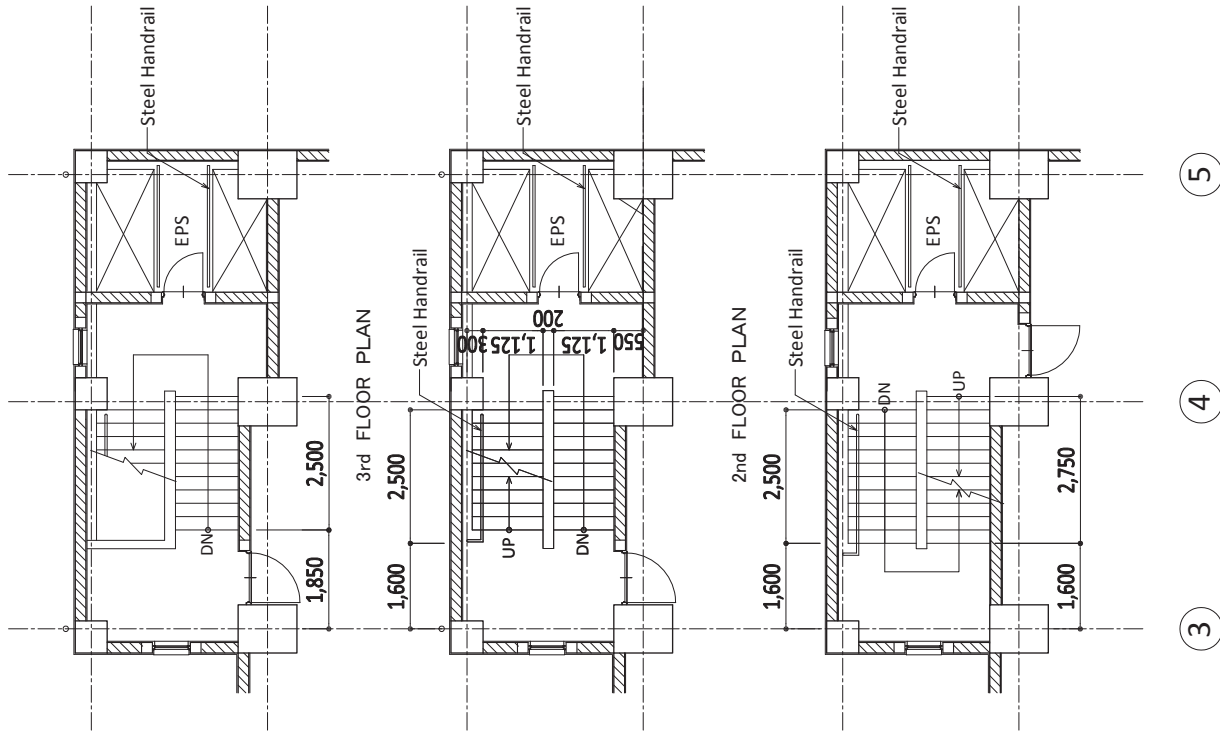
SECTION A - A

PROJECT EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE CONTROL BUILDING SECTION	APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO : AR-A12	
							SCALE : 1:200 (if only A3)	CONSULTANTS :  YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN

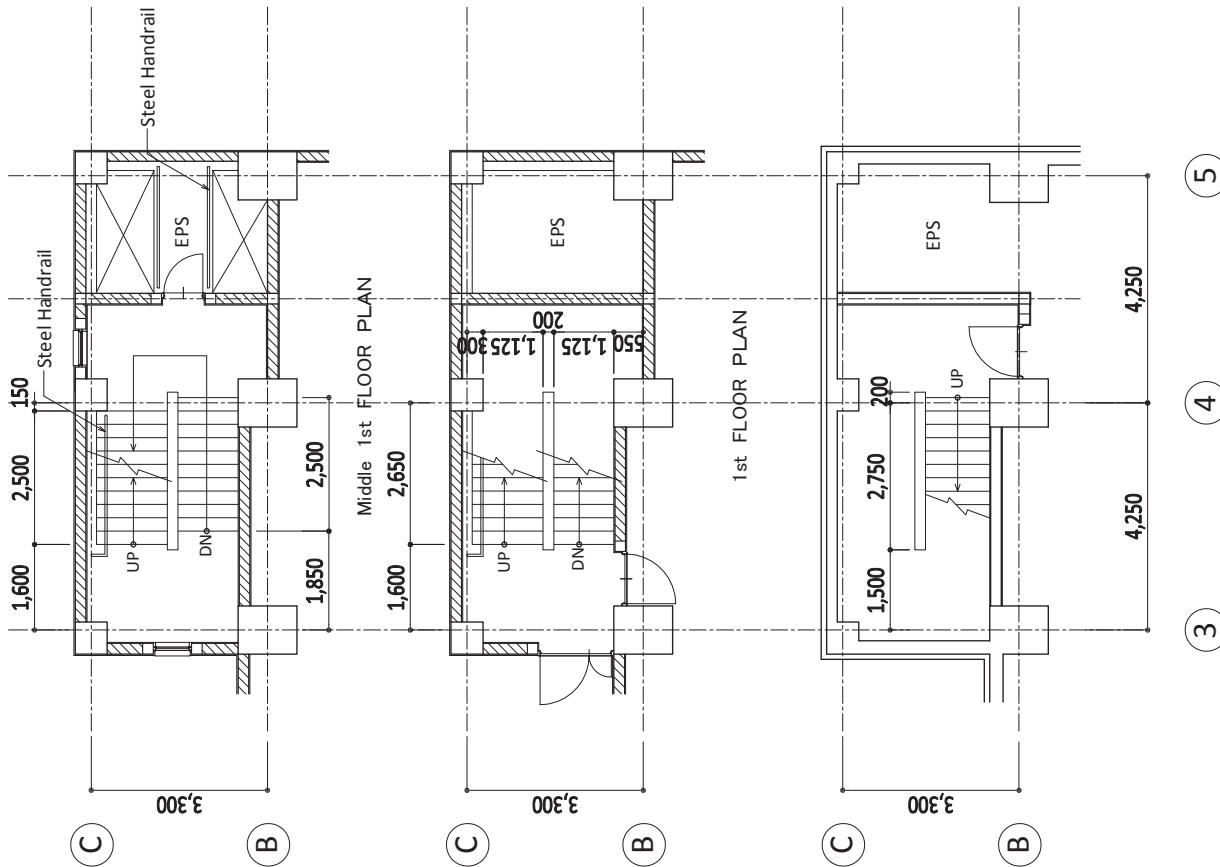


PROJECT	LOCATION	TITLE	APPROVED BY :	CHECKED BY :	DESIGNED BY :	DATE :	DRG NO :
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING DETAIL SECTION-1	K. FUJII	K. ODA	T. KURUMADA		AR-A13
			CONSULTANTS :				SCALE :
			yoe YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN				1:50 (if only A3)



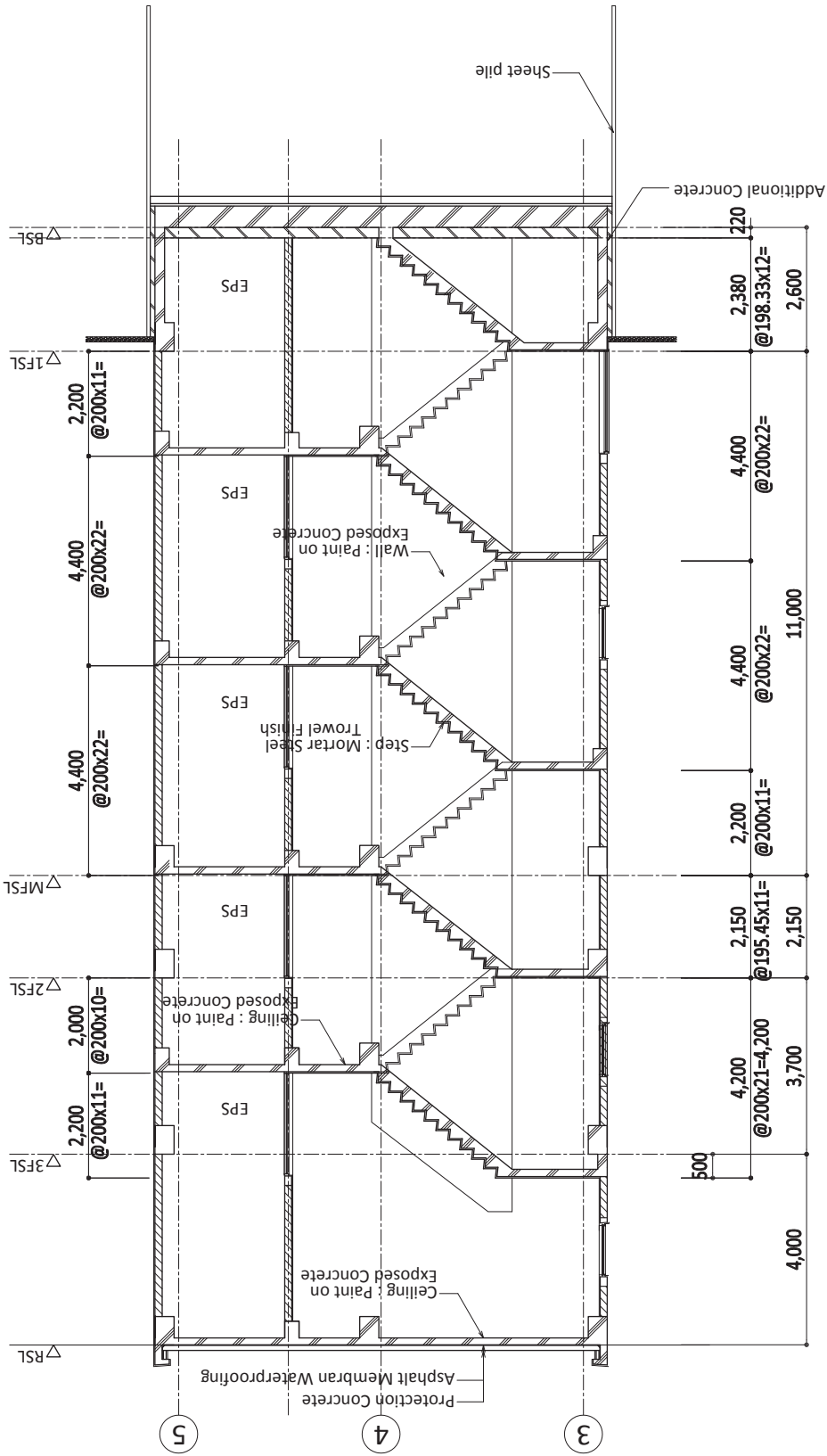


MIDDLE FLOOR PLAN



BASEMENT FLOOR PLAN

PROJECT	THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	TITLE	CONTROL BUILDING STAIR PLAN		APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO : AR-A15
	LOCATION		APAPA ROAD SUBSTATION	CONSULTANTS :		Y&E YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN		SCALE : 1:100 (if only A3)	



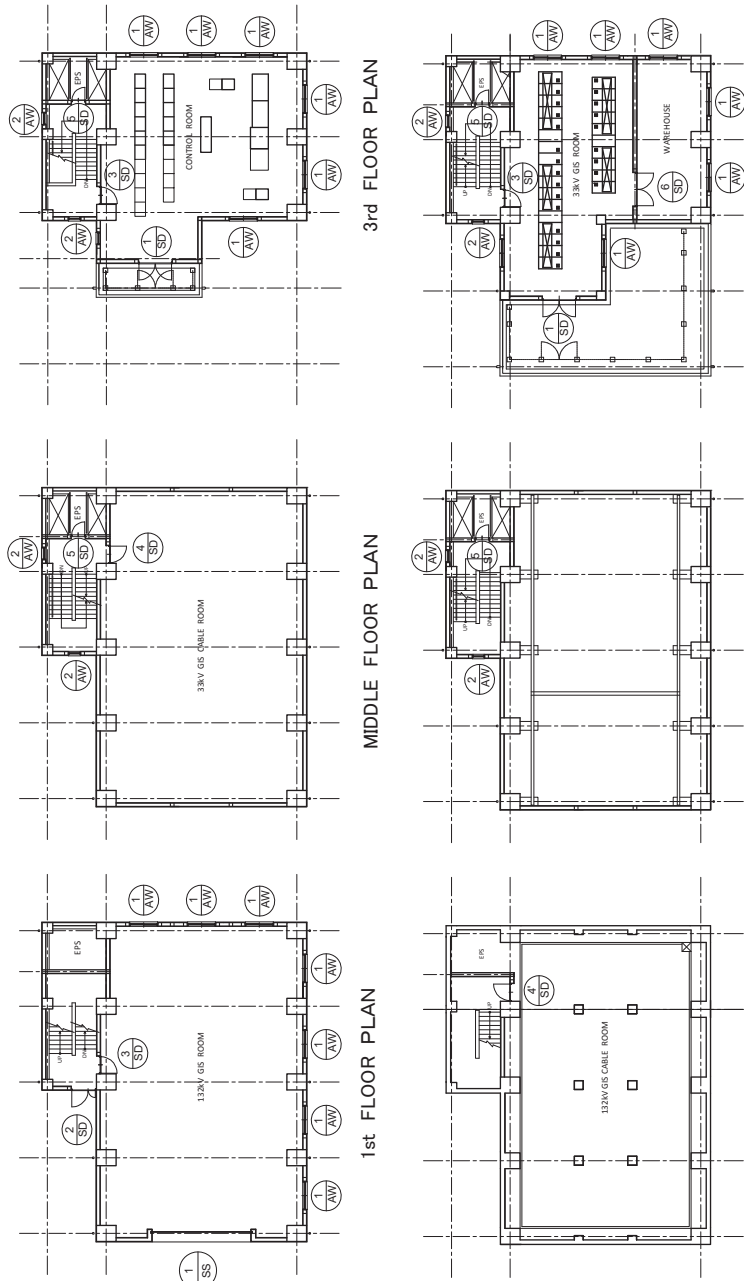
SECTION A - A

PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE CONTROL BUILDING DETAIL SECTION OF STAIR	APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO : AR-A16
			CONSULTANTS : yec YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN			SCALE : 1:100 (if only A3)	

SYMBOL & Qty:	(1) X 2 SD	(2) X 1 SD	(3) X 4 SD	(4) X 1 SD	(4) X 1 SD	(5) X 4 SD	(6) X 1 SD	(1) X 19 AW	(2) X 8 AW
ELEVATION									
TYPE	DOUBLE SWING DOOR	DOUBLE SWING DOOR	SINGLE SWING DOOR	SINGLE SWING DOOR	SINGLE SWING DOOR	SINGLE SWING DOOR	DOUBLE SWING DOOR	SLIDING WINDOW	FIXED WINDOW
MATERIAL & FINISH	STEEL PAINT(OP)	STEEL PAINT(OP)	STEEL PAINT(OP)	STEEL PAINT(OP)	STEEL PAINT(OP)	STEEL PAINT(OP)	STEEL PAINT(OP)	ALUMINUM - ELECTRO COLOR	ALUMINUM - ELECTRO COLOR
GLASS								ALUMINUM - ELECTRO COLOR	ALUMINUM - ELECTRO COLOR
HARDWEAR	HINGE, LEVER HANDLE, STOPPER DOOR CLOSER, CYLINDER LOCK	HINGE, LEVER HANDLE, STOPPER DOOR CLOSER, CYLINDER LOCK	HINGE, LEVER HANDLE, STOPPER DOOR CLOSER, CYLINDER LOCK	HINGE, LEVER HANDLE, STOPPER DOOR CLOSER, CYLINDER LOCK	HINGE, LEVER HANDLE, STOPPER DOOR CLOSER, CYLINDER LOCK	HINGE, LEVER HANDLE, STOPPER DOOR CLOSER, CYLINDER LOCK	HINGE, LEVER HANDLE, STOPPER DOOR CLOSER, CYLINDER LOCK	CLEAR GLASS I-5	CLEAR GLASS I-5
REMARK									

SYMBOL & Qty:	(1) X 1 SS
ELEVATION	
TYPE	STEEL SHUTTER (ELECTRIC)
MATERIAL & FINISH	STEEL PAINT(OP)
GLASS	
HARDWEAR	STAINLESS GUIDE RAIL, STEEL SHUTTER BOX
REMARK	

FITTING KEY PLAN 5-1/200

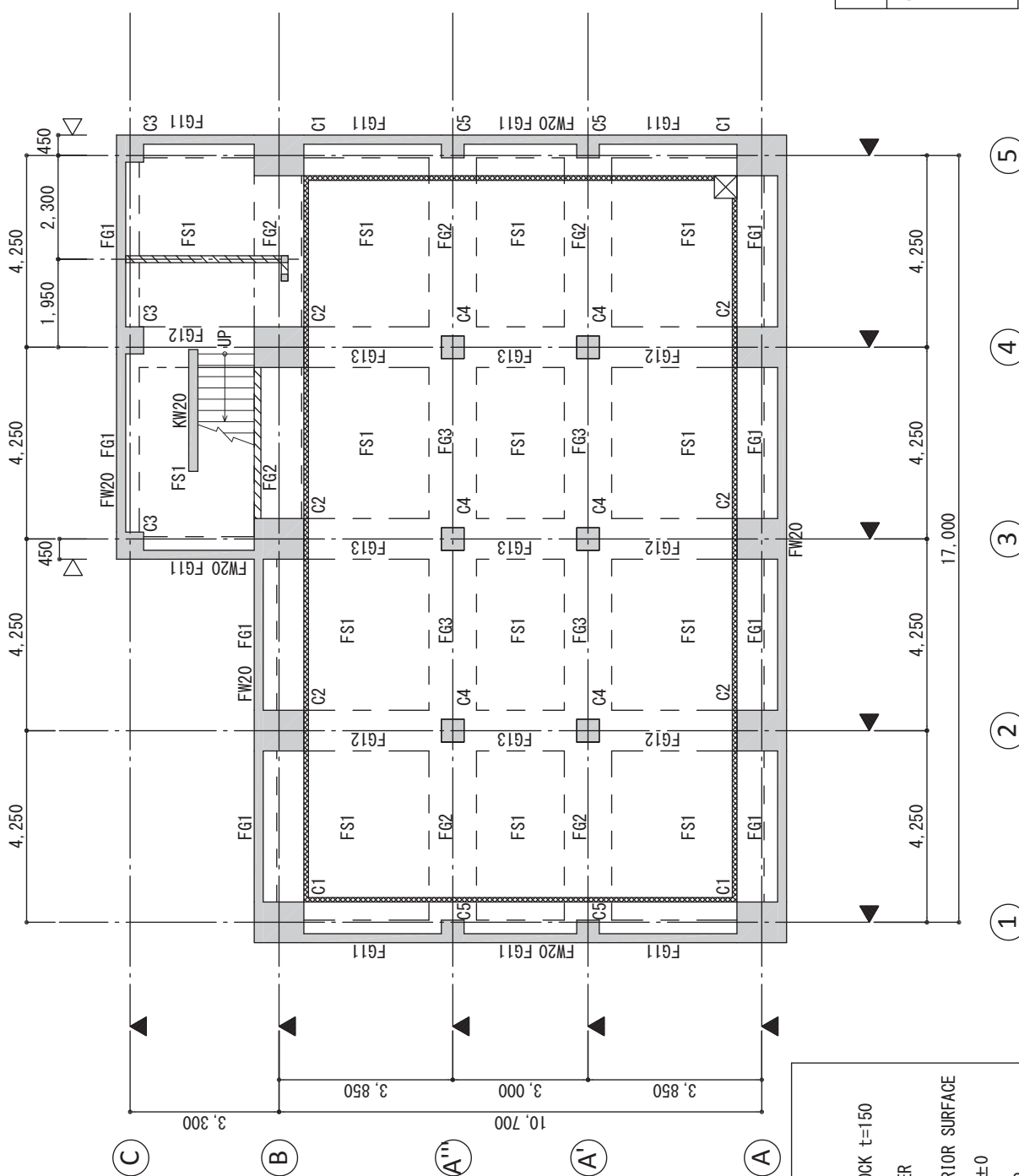


1st FLOOR PLAN

MIDDLE FLOOR PLAN

2nd FLOOR PLAN

PROJECT	THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION	APAPA ROAD SUBSTATION	TITLE	CONTROL BUILDING FITTING SCHEDULE	APPROVED BY:	K. FUJII	CHECKED BY:	K. ODA	DESIGNED BY:	T. KURUMADA	DATE:		DRG NO.:	AR-A17	SCALE:	1:100 (if only A3)
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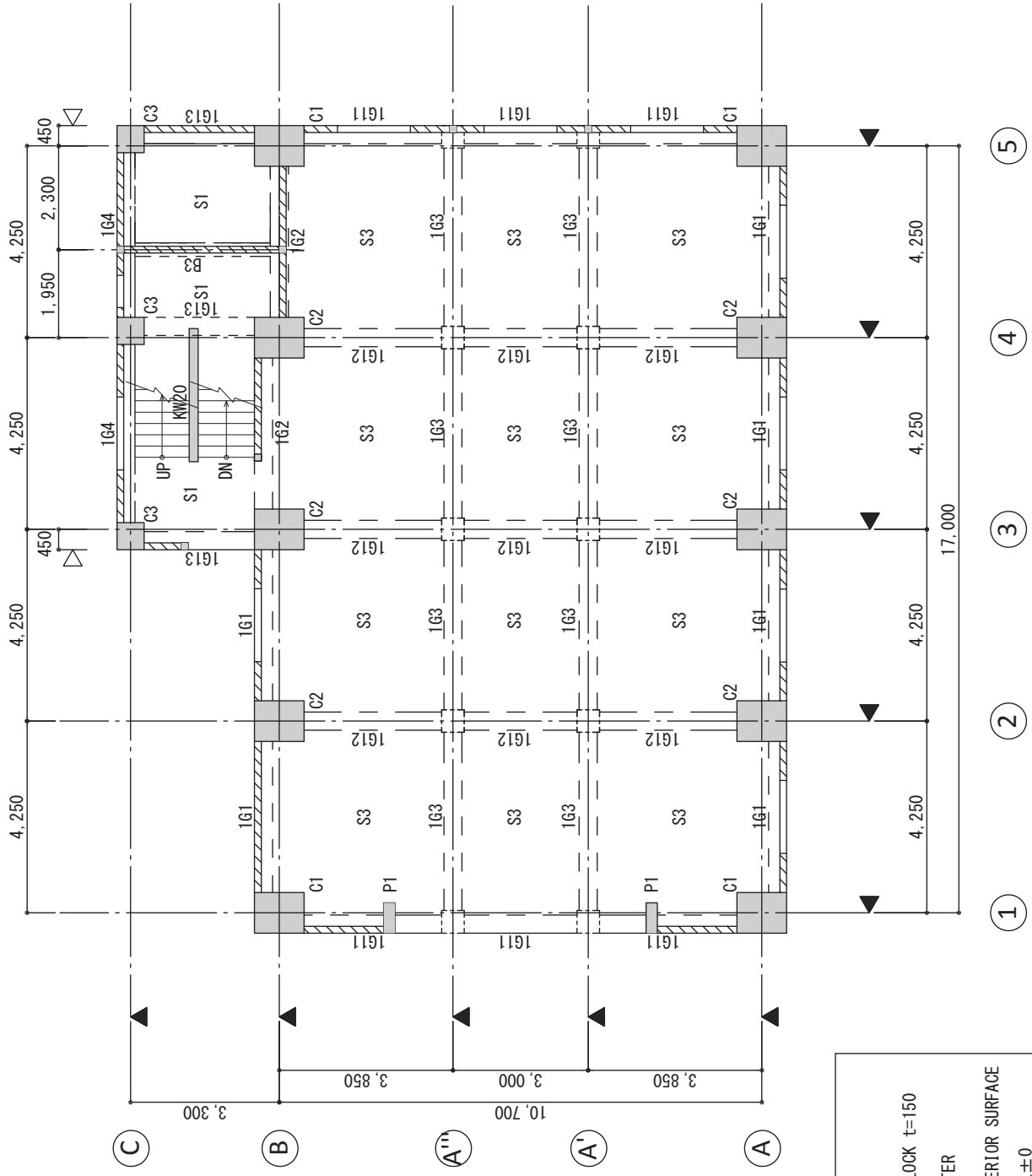


- GENERAL NOTES**
- 1) CONCRETE BLOCK t=150
 - 2) COLUMN CENTER
 - 3) COLUMN EXTERIOR SURFACE
 - 3) SLAB UPPER BED BFSL±0
 - 4) SHALLOW SUMP
 - 5) DRAINAGE

USED MATERIAL	
CONCRETE	Fc24
RE-BAR	SD345 (D19, D22, D25)
	SD295 (D10, D12, D16)

FOUNDATION&UNDERGROUND FLOOR FRAMING PLAN s=1/100

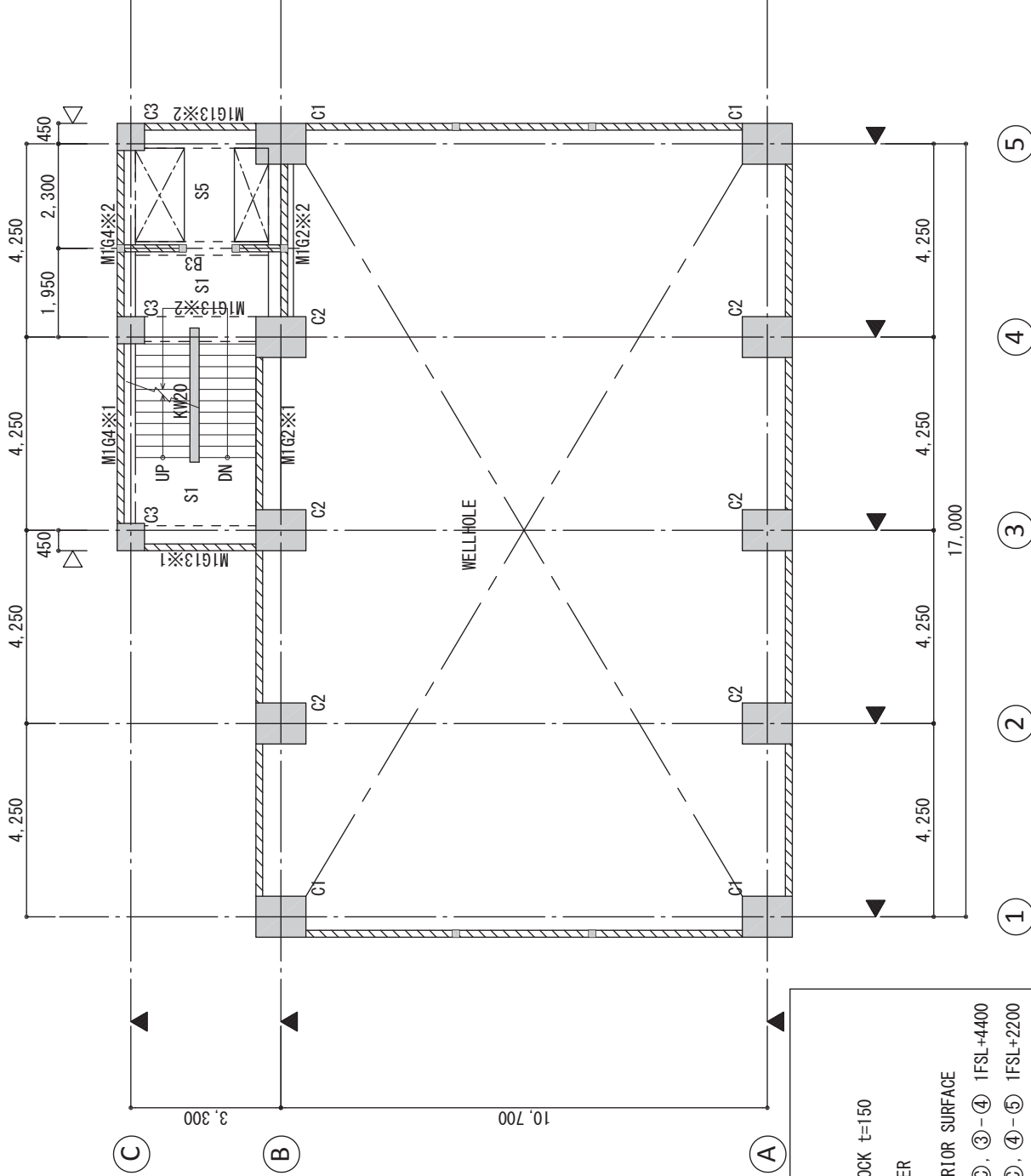
PROJECT	LOCATION	TITLE	DRG NO.:
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING FOUNDATION&UNDERGROUND FLOOR FRAMING PLAN	AR-S01
			SCALE:
			1:100 (if only A3)
			DATE:
			DESIGNED BY:
			T. KURUMADA
			CHECKED BY:
			K. ODA
			APPROVED BY:
			K. FUJII
			CONSULTANTS:
			YEC YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN



- GENERAL NOTES**
- 1) CONCRETE BLOCK t=150
 - 2) COLUMN CENTER
 - 3) SLAB UPPER BED 1FSL±0

1st FLOOR FRAMING PLAN S=1/100

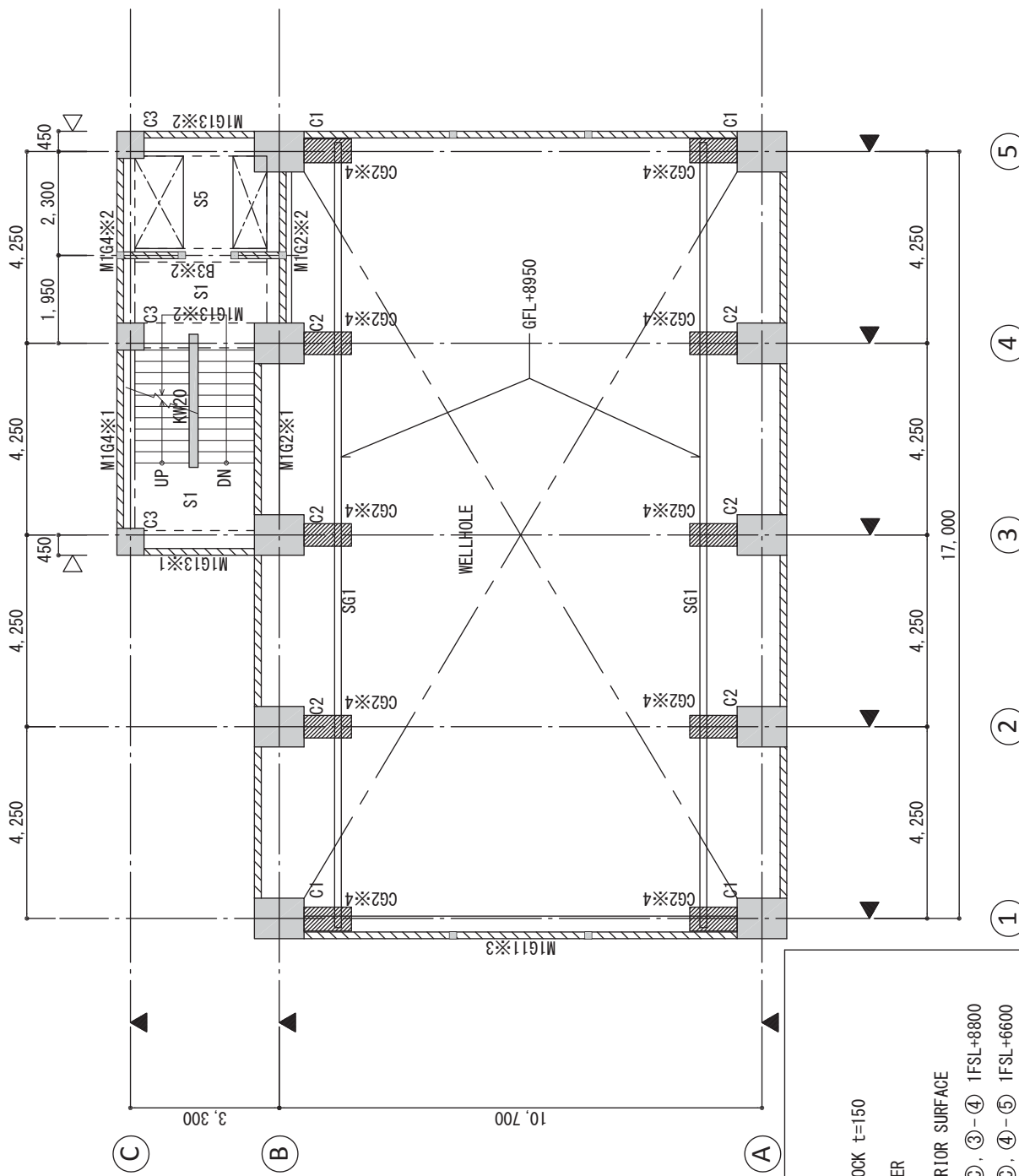
PROJECT	LOCATION	TITLE	DRG NO. : AR-S02
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING 1st FLOOR FRAMING PLAN	DESIGNED BY : T. KURUMADA
			CHECKED BY : K. ODA
			DATE :
			APPROVED BY : K. FUJII
			CONSULTANTS :
			YEC YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN
			SCALE : 1:100 (if only A3)



- GENERAL NOTES**
- 1) CONCRETE BLOCK t=150
 - 2) COLUMN CENTER
 - 3) SLAB UPPER BED ②-③, ③-④ 1FSL+4400
④-⑤, ⑤-⑥ 1FSL+2200
 - 4) FRAME UPPER BED ※1 1FSL+4400
※2 1FSL+2200

MIDDLE 1st FLOOR FRAMING PLAN ⑥-f/100

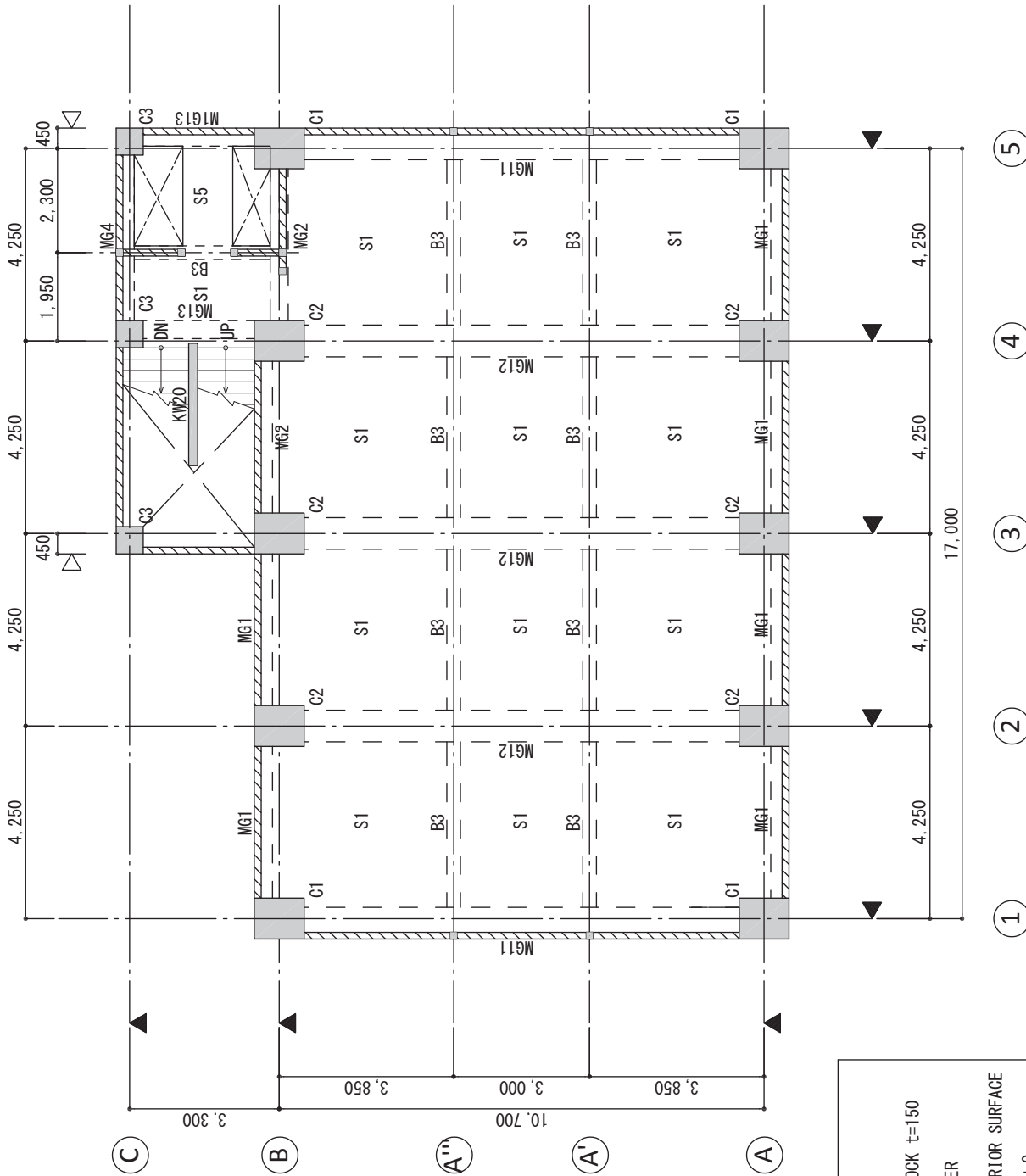
PROJECT	LOCATION	TITLE	DRG NO.:
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING MIDDLE 1st FLOOR FRAMING PLAN	AR-S03
			SCALE:
			1:100 (if only A3)
		APPROVED BY: K. FUJII	DESIGNED BY: T. KURUMADA
		CHECKED BY: K. ODA	DATE:
		CONSULTANTS: YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN	



- GENERAL NOTES**
- 1) ██████████ CONCRETE BLOCK t=150
 - 2) ◀ COLUMN CENTER
◁ COLUMN EXTERIOR SURFACE
 - 3) SLAB UPPER BED ② - ③, ③ - ④ 1FSL+8800
② - ③, ④ - ⑤ 1FSL+6600
 - 4) FRAME UPPER BED ※1 1FSL+8800 ※2 1FSL+6600
※3 1FSL+5100 ※4 1FSL+8500

MIDDLE 1st FLOOR FRAMING PLAN s=1/100

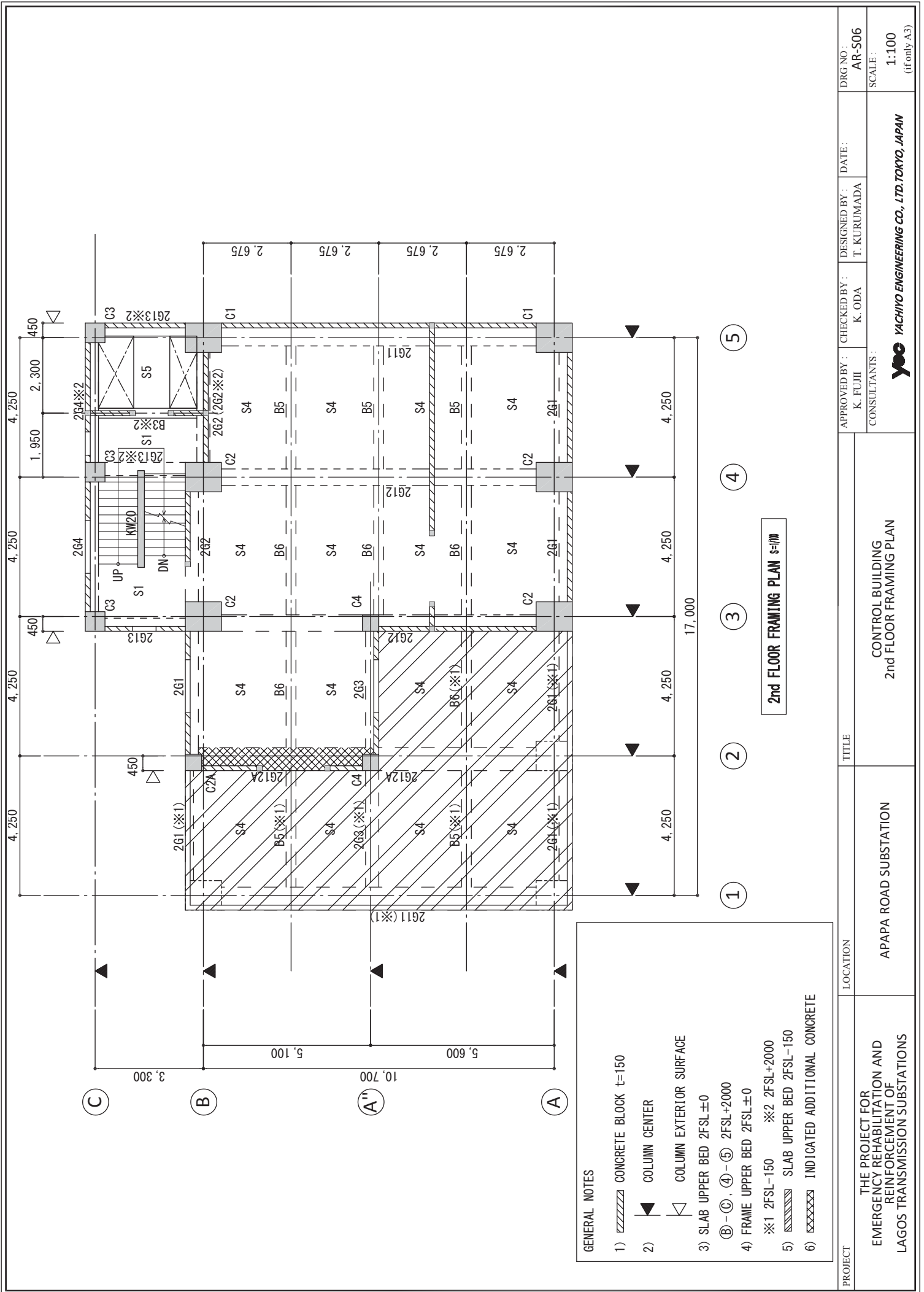
PROJECT	LOCATION	TITLE	DRG NO.:
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING MIDDLE 1st FLOOR FRAMING PLAN	AR-S04
			SCALE:
			1:100 (if only A3)
			DESIGNED BY:
			T. KURUMADA
			CHECKED BY:
			K. ODA
			APPROVED BY:
			K. FUJII
			DATE:
			CONSULTANTS:
			YEC YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN



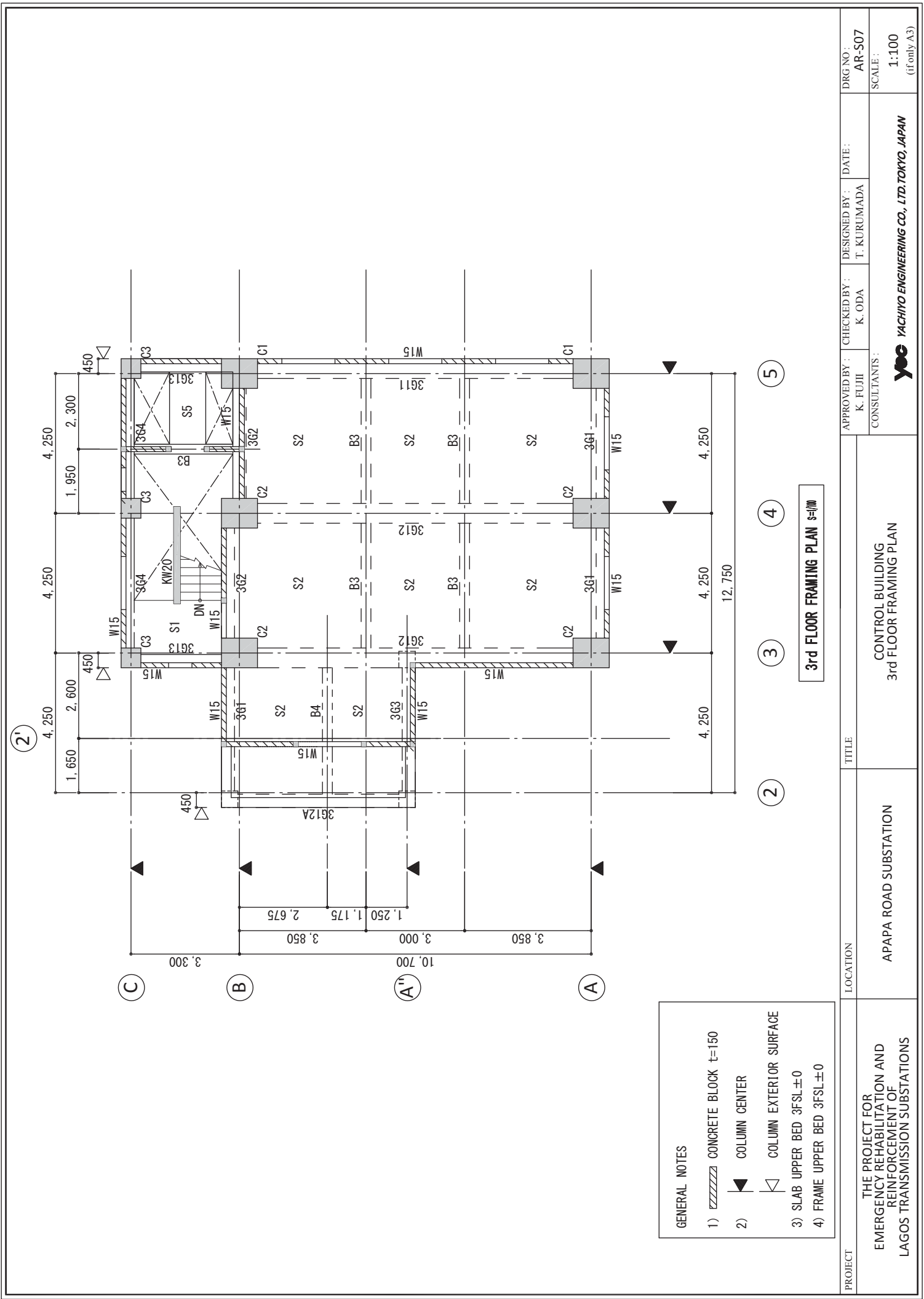
- GENERAL NOTES**
- 1) CONCRETE BLOCK t=150
 - 2) COLUMN CENTER
 - 3) SLAB UPPER BED MFSL±0
 - 4) FRAME UPPER BED MFSL±0

MIDDLE FLOOR FRAMING PLAN 9-f/10

PROJECT	LOCATION	TITLE	DRG NO:
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING MIDDLE FLOOR FRAMING PLAN	AR-S05
			SCALE:
			1:100 (if only A3)
			DESIGNED BY:
			T. KURUMADA
			CHECKED BY:
			K. ODA
			APPROVED BY:
			K. FUJII
			DATE:
			CONSULTANTS:
			YEC YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN



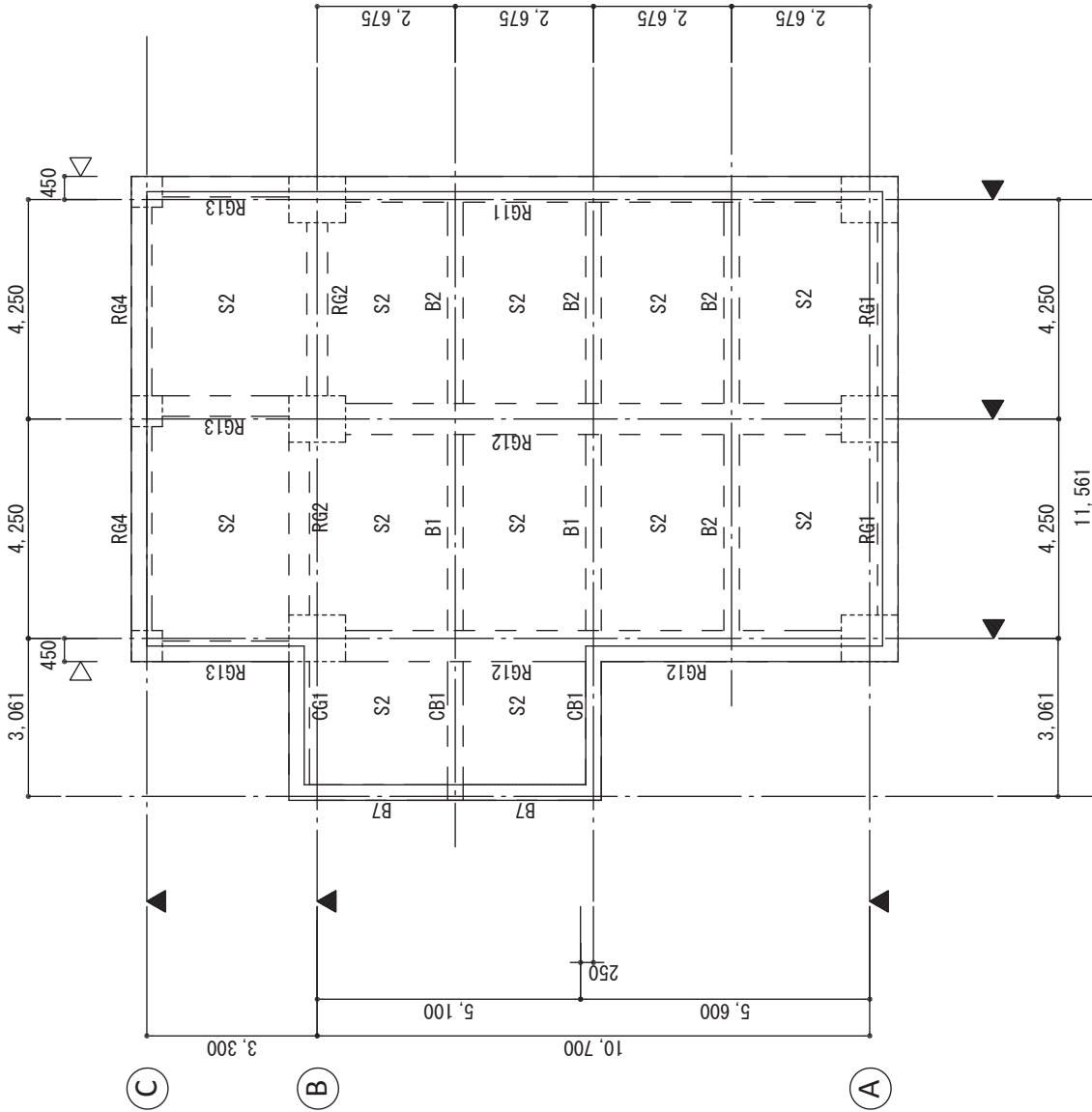
PROJECT	LOCATION	TITLE	DRG NO.:
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING 2nd FLOOR FRAMING PLAN	AR-S06
			SCALE:
			1:100 (if only A3)
			DESIGNED BY:
			T. KURUMADA
			CHECKED BY:
			K. ODA
			APPROVED BY:
			K. FUJII
			DATE:
			CONSULTANTS:
			YEC YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN



3rd FLOOR FRAMING PLAN S=1/100

- GENERAL NOTES**
- 1) [Hatched pattern] CONCRETE BLOCK t=150
 - 2) [Solid black triangle] COLUMN CENTER
 - 3) [Hatched pattern] SLAB UPPER BED 3FSL±0
 - 4) [Hatched pattern] FRAME UPPER BED 3FSL±0

PROJECT	LOCATION	TITLE	DRG NO.:
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING 3rd FLOOR FRAMING PLAN	AR-S07
			SCALE:
			1:100 (if only A3)
			DATE:
			DESIGNED BY:
			T. KURUMADA
			CHECKED BY:
			K. ODA
			APPROVED BY:
			K. FUJII
			CONSULTANTS:
			YEC YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN

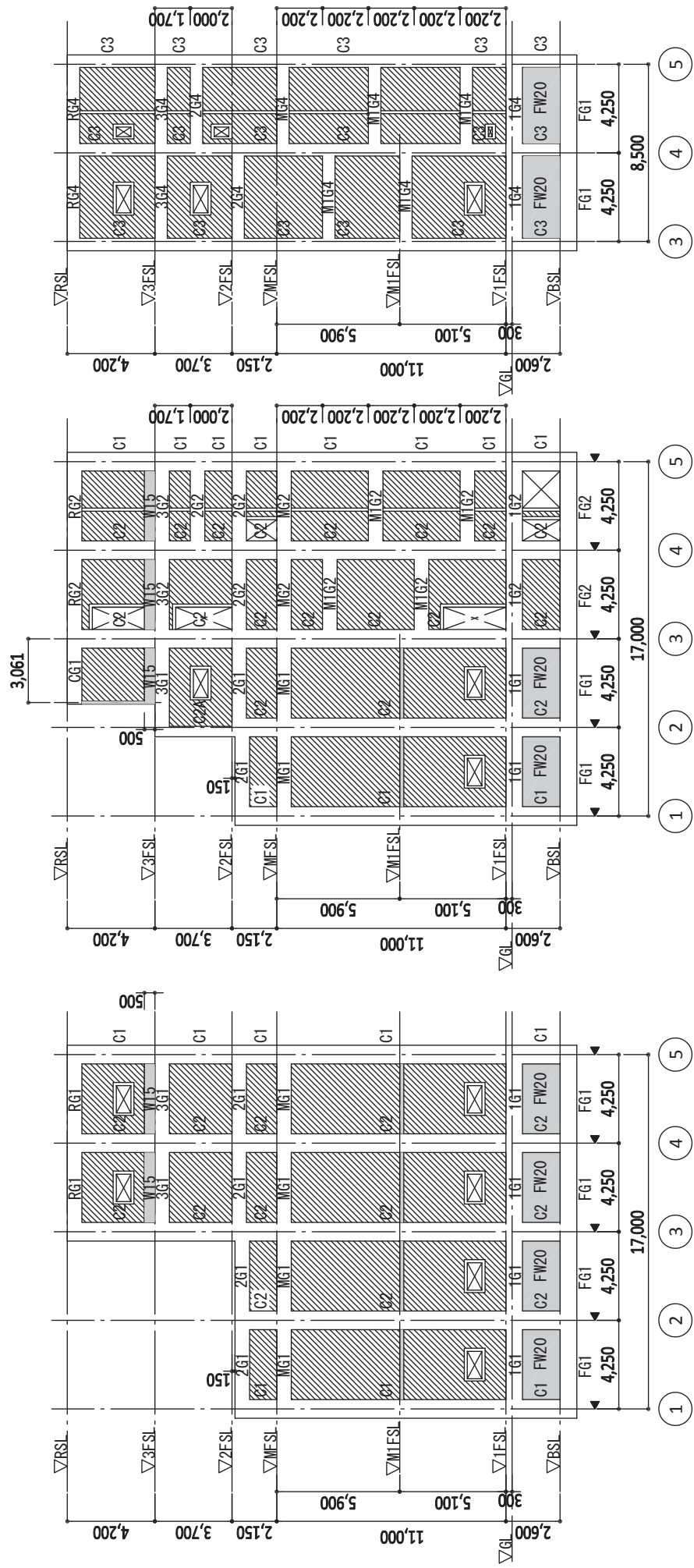


- GENERAL NOTES**
- 1) COLUMN CENTER
 - 2) BEAM UPPER BED RFSL ±0
 - 3) SLAB UPPER BED RFSL ±0

② ③ ④ ⑤

ROOF FLOOR FRAMING PLAN 5=1/100

PROJECT	LOCATION	TITLE	APPROVED BY: K. FUJII	CHECKED BY: K. ODA	DESIGNED BY: T. KURUMADA	DATE:	DRG NO: AR-S08
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS		APAPA ROAD SUBSTATION	CONTROL BUILDING ROOF FLOOR FRAMING PLAN		CONSULTANTS: yec YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN		SCALE: 1:100 (if only A3)



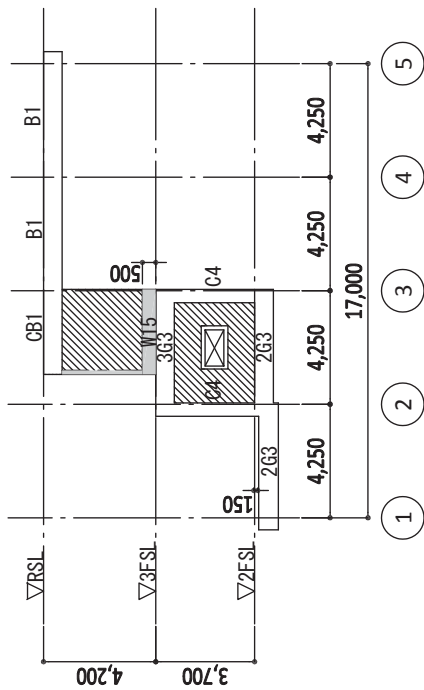
Ⓐ LINE FRAMING ELEVATION s=1/200

Ⓑ LINE FRAMING ELEVATION s=1/200

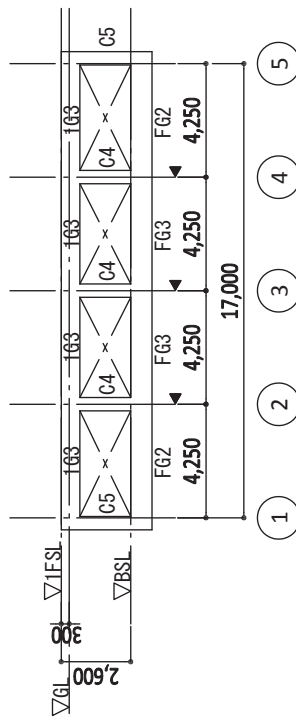
Ⓒ LINE FRAMING ELEVATION s=1/200

GENERAL NOTES
 1) [Hatched Pattern] CONCRETE BLOCK t=150

PROJECT	LOCATION	TITLE	DRG NO.:
EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING FRAMING ELEVATION (1)	AR-S09
		APPROVED BY:	DESIGNED BY:
		K. FUJII	T. KURUMADA
		CHECKED BY:	DATE:
		K. ODA	
		CONSULTANTS:	SCALE:
		YEC YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN	1:200 (if only A3)

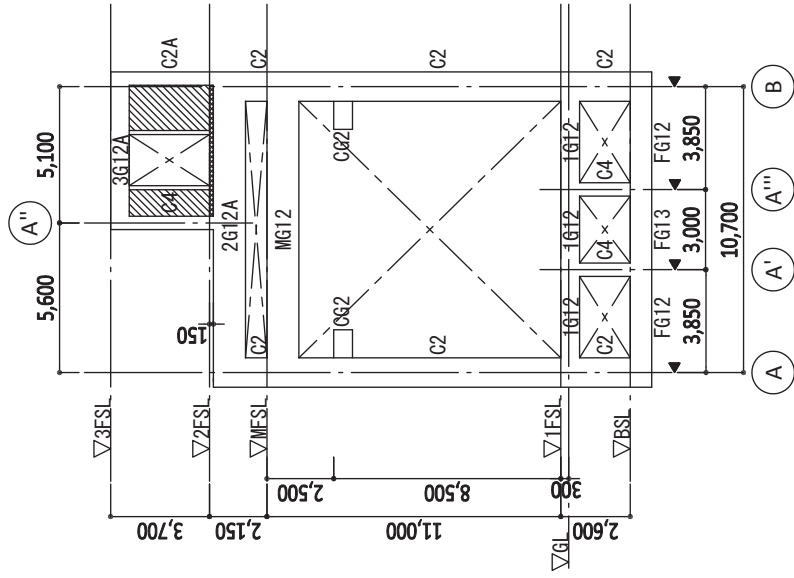


(A-A) LINE FRAMING ELEVATION s=1/200

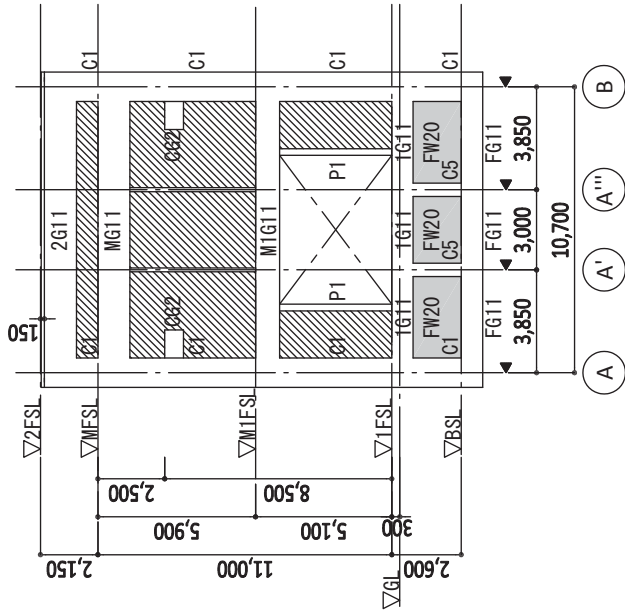


(A-A) LINE FRAMING ELEVATION s=1/200

GENERAL NOTES
 1) [Hatched pattern] CONCRETE BLOCK t=150
 2) [Cross-hatched pattern] INDICATED ADDITIONAL CONCRETE

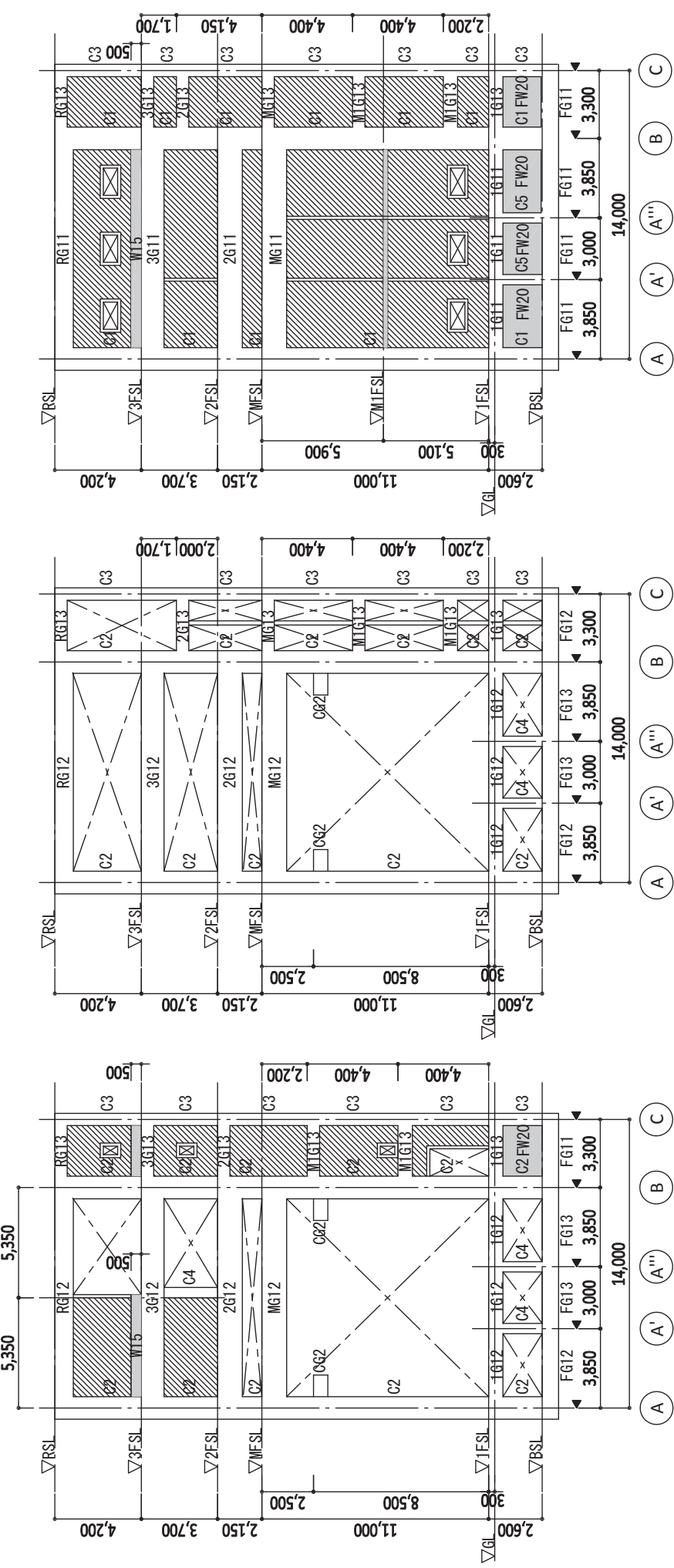


(2) LINE FRAMING ELEVATION s=1/200



(1) LINE FRAMING ELEVATION s=1/200

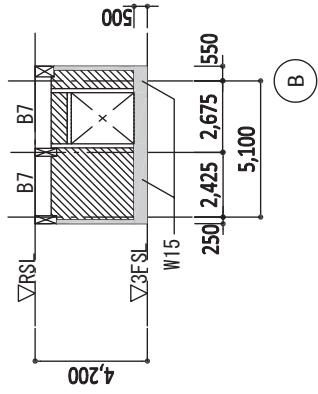
PROJECT	EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION	APAPA ROAD SUBSTATION	TITLE	CONTROL BUILDING FRAMING ELEVATION (2)	APPROVED BY :	K. FUJII	CHECKED BY :	K. ODA	DESIGNED BY :	T. KURUMADA	DATE :	DRG NO. :	AR-S10
CONSULTANTS :														
YPC YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN														
SCALE :														
1:200 (if only A3)														



⑤ LINE FRAMING ELEVATION s=1/200

④ LINE FRAMING ELEVATION s=1/200

③ LINE FRAMING ELEVATION s=1/200



② LINE FRAMING ELEVATION s=1/200

GENERAL NOTES
 1) [Hatched Pattern] CONCRETE BLOCK t=150

PROJECT	LOCATION	TITLE	DRG NO.:
EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING FRAMING ELEVATION (3)	AR-S11
			SCALE:
			1:200 (if only A3)
			DESIGNED BY:
			T. KURUMADA
			CHECKED BY:
			K. ODA
			APPROVED BY:
			K. FUJII
			CONSULTANTS:
			YEC YACHYO ENGINEERING CO., LTD. TOKYO, JAPAN

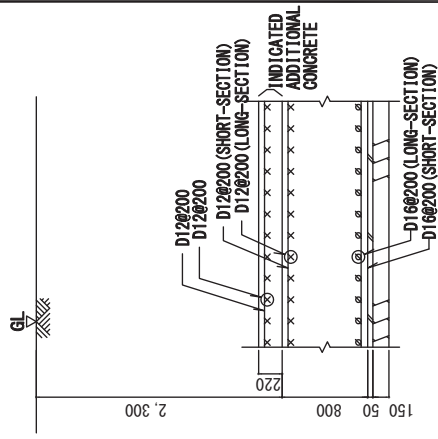
FOUNDATION GIRDER SCHEDULE S-1/50

UNLESS OTHERWISE NOTED
SPREADER D10@1,000

FOUNDATION SCHEDULE S-1/50

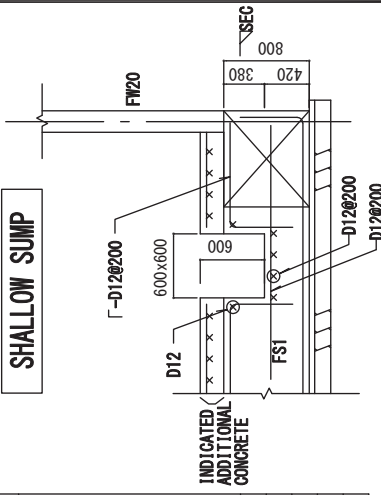
MARK	FG1	FG2	FG3	CENTER	INSIDE END	OUTSIDE END	END	CENTER
SECTION (B1F)								
B x D	500x800	1050x800	1050x800					
TOP BARS	3-D25	8-D25	8-D25	8-D25	8-D25	8-D25	8-D25	8-D25
BOT. BARS	3-D25	6-D25	10-D25	10-D25	10-D25	10-D25	10-D25	6-D25
STIRRUPS	□ -D12-@200	(4) □ -D12-@200	(4) □ -D12-@200	(4) □ -D12-@200	(4) □ -D12-@200	(4) □ -D12-@200	(4) □ -D12-@200	(4) □ -D12-@200
WEB BARS	2-D12	-	-	-	-	-	-	-

FS1

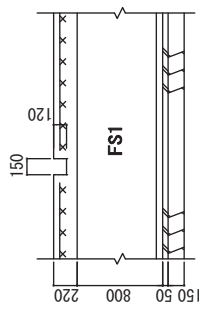


MARK	FG11	FG12	FG13	CENTER	INSIDE END	OUTSIDE END	END	CENTER
SECTION (B1F)								
B x D	500x800	900x800	900x800					
TOP BARS	3-D25	6-D25	6-D25	6-D25	6-D25	6-D25	6-D25	6-D25
BOT. BARS	3-D25	5-D25	8-D25	8-D25	8-D25	8-D25	5-D25	5-D25
STIRRUPS	□ -D12-@200	(4) □ -D12-@200	(4) □ -D12-@200	(4) □ -D12-@200	(4) □ -D12-@200	(4) □ -D12-@200	(5) □ -D12-@200	(5) □ -D12-@200
WEB BARS	2-D12	-	-	-	-	-	-	-

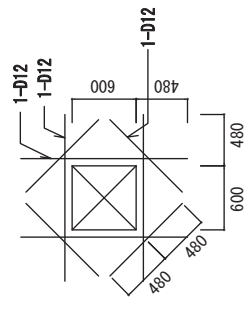
SHALLOW SUMP



DRAINAGE



SEC



PROJECT	LOCATION	TITLE	DESIGNED BY :	CHECKED BY :	APPROVED BY :	DATE :	DRG NO. :
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING FOUNDATION GIRDER SCHEDULE	T. KURUMADA	K. ODA	K. FUJII		AR-S12
CONSULTANTS :							SCALE :
YPC YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN							1:50
							(if only A3)

COLUMN SCHEDULE S=1/50

MARK	C1	C2	C3	C4	C5
SECTION (M1F) Y ↑ X →					
B x D	900x1100	900x1100	600x600		
BARS	16-D25	24-D25	8-D25		
HOOPS	□-D12-@100	□-D12-@100	□-D12-@100		
REMARKS	-	-	-		
SECTION (1F) Y ↑ X →					
B x D	900x1100	900x1100	600x600		
BARS	16-D25	24-D25	8-D25		
HOOPS	□-D12-@100	□-D12-@100	□-D12-@100		
REMARKS	-	-	-		
SECTION (B1F) Y ↑ X →					
B x D	900x1100	900x1100	600x600	500x500	500x500
BARS	16-D25	24-D25	8-D25	8-D25	8-D25
HOOPS	□-D12-@100	□-D12-@100	□-D12-@100	□-D12-@100	□-D12-@100
REMARKS	-	-	-	-	-

MARK	C1	C2	C2A	C3	C4
SECTION (3F) Y ↑ X →					
B x D	900x1100	900x1100		600x600	
BARS	16-D25	16-D25		8-D25	
HOOPS	□-D12-@100	□-D12-@100		□-D12-@100	
REMARKS	-	-		-	
SECTION (2F) Y ↑ X →					
B x D	900x1100	900x1100	500x500	600x600	500x500
BARS	16-D25	20-D25	8-D25	8-D25	8-D25
HOOPS	□-D12-@100	□-D12-@100	□-D12-@100	□-D12-@100	□-D12-@100
REMARKS	-	-	-	-	-
SECTION (M1F) Y ↑ X →					
B x D	900x1100	900x1100		600x600	
BARS	16-D25	24-D25		8-D25	
HOOPS	□-D12-@100	□-D12-@100		□-D12-@100	
REMARKS	-	-		-	

PROJECT

THE PROJECT FOR
EMERGENCY REHABILITATION AND
REINFORCEMENT OF
LAGOS TRANSMISSION SUBSTATIONS

LOCATION

APAPA ROAD SUBSTATION

TITLE

CONTROL BUILDING
COLUMN SCHEDULE

DATE:

DESIGNED BY:
T. KURUMADA

CHECKED BY:
K. ODA

APPROVED BY:
K. FUJII

CONSULTANTS:
yoc YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN

DRG NO.:
AR-S13

SCALE:
1:50
(if only A3)

COLUMN SCHEDULE §=1/50
UNLESS OTHERWISE NOTED
SPREADER D10@1,000

MARK	G1		G2		G3	G4		G11		G12		G13
	END	CENTER	END	CENTER	ALL SEC.	END	CENTER	END	CENTER	END	CENTER	ALL SEC.
SECTION (MF)												
B x D	400x700		400x700			400x600	700x1200	700x1200	700x1200	700x1200	400x600	
TOP BARS	4/1-D25	4-D25	4/2-D25	4-D25		3-D25	7/1-D25	5-D25	7/2-D25	5-D25	3-D25	
BOT. BARS	4-D25	3-D25	4-D25	3-D25		3-D25	6-D25	6-D25	6-D25	7-D25	3-D25	
STIRRUPS	□-D12-@100		□-D12-@100			□-D12-@200	□-D12-@150	□-D12-@150	□-D12-@150	□-D12-@150	□-D12-@200	
WEB BARS	2-D12		2-D12			2-D12	3x2-D12	3x2-D12	3x2-D12	3x2-D12	2-D12	
POSITION	END	CENTER	END	CENTER	END	CENTER	END	CENTER	END	CENTER	END	CENTER
SECTION (MF)												
B x D	550x700		550x700			400x600	500x900	550x700	550x700	550x700		
TOP BARS	5/4-D25	5-D25	5/4-D25	5-D25		4-D25	5-D25	3-D25	5-D25	5-D25		
BOT. BARS	5/4-D25	5-D25	5/4-D25	5-D25		3-D25	5-D25	5-D25	5-D25	5-D25		
STIRRUPS	□-D12-@100		□-D12-@100			□-D12-@100	□-D12-@200	□-D12-@100	□-D12-@100	□-D12-@100		
WEB BARS	2-D12		2-D12			2-D12	2x2-D12	2x2-D12	2x2-D12	2-D12		
POSITION	ALL SEC.	CENTER	END	CENTER	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.		
SECTION (IF)												
B x D	400x700		400x700			400x600	400x700	400x600	400x600	400x600		
TOP BARS	3-D25	3-D25	4-D25	3-D25		3-D25	3-D25	3-D25	3-D25	3-D25		
BOT. BARS	3-D25	3-D25	3-D25	3-D25		3-D25	3-D25	3-D25	3-D25	3-D25		
STIRRUPS	□-D12-@200		□-D12-@150			□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@150		
WEB BARS	2-D12		2-D12			2-D12	2-D12	2-D12	2-D12	2-D12		

PROJECT	LOCATION	TITLE	APPROVED BY :	CHECKED BY :	DESIGNED BY :	DATE :	DRG NO :
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING COLUMN SCHEDULE (1.)	K. FUJII	K. ODA	T. KURUMADA		AR-S14
CONSULTANTS :							SCALE :
YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN							1:50 (if only A3)

UNLESS OTHERWISE NOTED
SPREADER D1001,000

COLUMN SCHEDULE 9-1/50

MARK	G1		G2		G3		G4		G11		G12		G12A		G13	
	POSITION	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	END	CENTER	END	CENTER	END	CENTER	END	CENTER
SECTION (RF)																
B x D	400x700	400x700	400x700	400x700	400x600	400x600	400x600	400x600	500x900	500x900	600x900	600x900	600x900	600x900	400x600	400x600
TOP BARS	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	5/1-D25	4-D25	6/4-D25	5-D25	5-D25	5-D25	3-D25	3-D25
BOT. BARS	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	5-D25	5-D25	6-D25	6-D25	6-D25	6-D25	3-D25	3-D25
STIRRUPS	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@150	□-D12-@150	□-D12-@150	□-D12-@150	□-D12-@150	□-D12-@200	□-D12-@200	□-D12-@200
WEB BARS	2-D12	2-D12	2-D12	2-D12	2-D12	2-D12	2-D12	2-D12	2x2-D12	2x2-D12	2x2-D12	2x2-D12	2x2-D12	2x2-D12	2-D12	2-D12
POSITION	ALL SEC.	ALL SEC.	ALL SEC.	CENTER	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	END	CENTER	END	CENTER	END	CENTER	ALL SEC.	ALL SEC.
SECTION (3F)																
B x D	400x700	400x700	400x700	400x700	400x600	400x600	400x600	400x600	600x1100	600x1100	600x1100	600x1100	600x1100	400x700	400x600	400x600
TOP BARS	3-D25	4-D25	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	6-D25	4-D25	6/3-D25	5-D25	5-D25	3-D25	3-D25	3-D25
BOT. BARS	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	5-D25	5-D25	6-D25	6-D25	6-D25	3-D25	3-D25	3-D25
STIRRUPS	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@150	□-D12-@150	□-D12-@150	□-D12-@150	□-D12-@150	□-D12-@200	□-D12-@200	□-D12-@200
WEB BARS	2-D12	2-D12	2-D12	2-D12	2-D12	2-D12	2-D12	2-D12	2x2-D12	2x2-D12	2x2-D12	2x2-D12	2x2-D12	2-D12	2-D12	2-D12
POSITION	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	END	CENTER	END	CENTER	END	CENTER	ALL SEC.	ALL SEC.
SECTION (2F)																
B x D	400x700	400x700	400x700	400x700	400x600	400x600	400x600	400x600	700x1200	700x1200	500x1200	500x1200	500x1200	700x1200	400x600	400x600
TOP BARS	4-D25	4-D25	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	7/1-D25	5-D25	5/5-D25	5-D25	5-D25	7/5-D25	3-D25	3-D25
BOT. BARS	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	3-D25	5-D25	7-D25	5/2-D25	5/2-D25	5/2-D25	7/3-D25	3-D25	3-D25
STIRRUPS	□-D12-@200	□-D12-@100	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@200	□-D12-@150	□-D12-@150	□-D12-@150	□-D12-@150	□-D12-@150	□-D12-@100	□-D12-@200	□-D12-@200
WEB BARS	2-D12	2-D12	2-D12	2-D12	2-D12	2-D12	2-D12	2-D12	3x2-D12	3x2-D12	3x2-D12	3x2-D12	3x2-D12	3x2-D12	2-D12	2-D12
POSITION	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	ALL SEC.	END	CENTER	END	CENTER	END	CENTER	ALL SEC.	ALL SEC.

PROJECT	LOCATION	TITLE	APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO : AR-S15
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS			CONTROL BUILDING COLUMN SCHEDULE (2)				SCALE : 1:50 (if only A3)
APAPA ROAD SUBSTATION			YPC YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN				

BEAM SCHEDULE

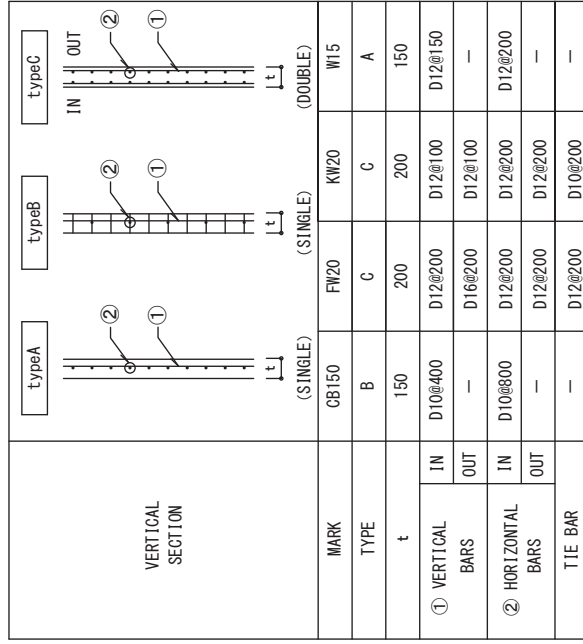
6-1/50

UNLESS OTHERWISE NOTED
SPREADER D10@1000

MARK	B1	B2	B3	B4	B5	B6	B7
POSITION	CB1 SIDE END	CENTER, B2 SIDE END	ALL SEC.	END	CENTER	2, 4SIDE END	CENTER, 1, 5SIDE END
SECTION							
B x D	300x800	300x800	300x500	300x500	300x500	300x500	300x550
TOP BARS	4/2-D22	3-D22	3-D22	3-D22	3-D22	3/2-D22	3-D22
BOT. BARS	3-D22	3-D22	3-D22	4-D22	3-D22	3-D22	3-D22
STIRRUPS	□ -D10-@200	□ -D10-@200	□ -D10-@200	□ -D10-@200	□ -D12-@150	□ -D12-@150	□ -D12-@200
WEB BARS	2-D10	2-D10	-	-	-	-	2-D10

WALL SCHEDULE

MARK	CB1	CG1	CG2
POSITION	ROOT END	TIP END	ROOT END
SECTION			
B x D	300x800	400x700	500x700
TOP BARS	4/2-D22	3-D22	5-D22
BOT. BARS	3-D22	4-D25	3-D22
STIRRUPS	□ -D10-@200	□ -D12-@200	□ -D12-@200
WEB BARS	2-D10	2-D10	2-D10



SLAB SCHEDULE

MARK	t	SHORT-SECTION			LONG-SECTION		
		SIDE AREA	CENTER AREA	SIDE AREA	CENTER AREA	CENTER AREA	
S1	150	TOP BARS	D10@200	↑	D10@200	↑	
		BOT. BARS	D10@200	↑	D10@200	↑	
S2	150	TOP BARS	D10+D12@200	↑	D10@200	↑	
		BOT. BARS	D10+D12@200	↑	D10@200	↑	
S3	150	TOP BARS	D12@200	↑	D12@200	↑	
		BOT. BARS	D10+D12@200	↑	D10+D12@200	↑	
S4	150	TOP BARS	D12@150	↑	D12@200	↑	
		BOT. BARS	D12@150	↑	D12@200	↑	
S5	150	TOP BARS	D12@150	↑	D12@150	↑	
		BOT. BARS	D12@150	↑	D12@150	↑	

PROJECT

THE PROJECT FOR
EMERGENCY REHABILITATION AND
REINFORCEMENT OF
LAGOS TRANSMISSION SUBSTATIONS

LOCATION

APAPA ROAD SUBSTATION

TITLE

CONTROL BUILDING
SLAB, BEAM, WALL SCHEDULE

APPROVED BY :
K. FUJII

CHECKED BY :
K. ODA

DESIGNED BY :
T. KURUMADA

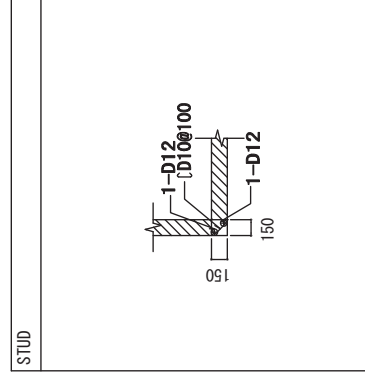
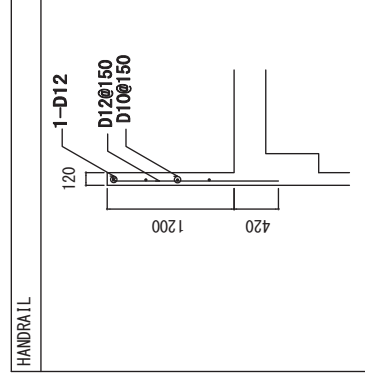
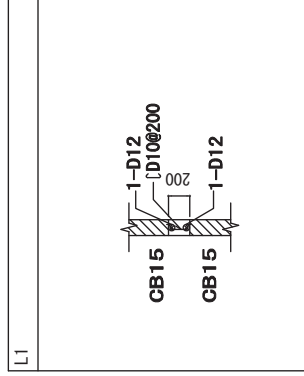
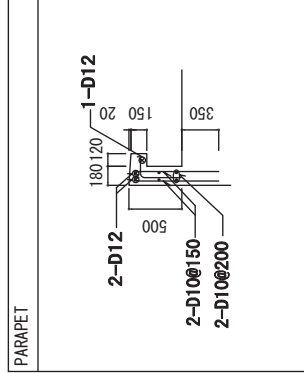
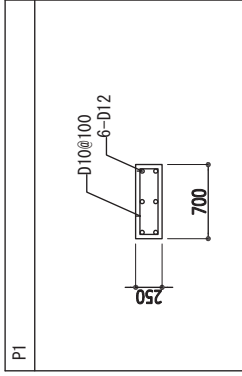
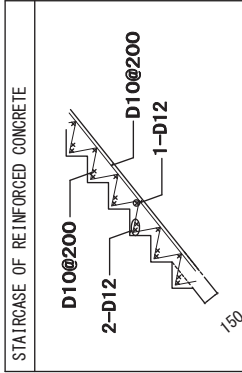
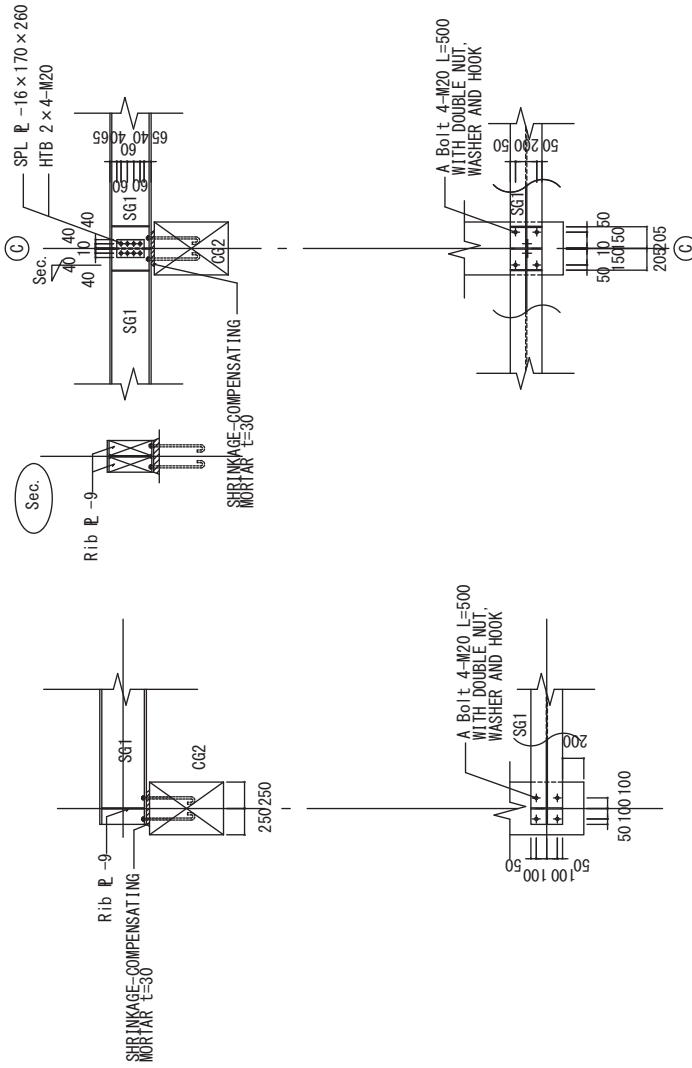
DATE :

DRG NO :
AR-S16

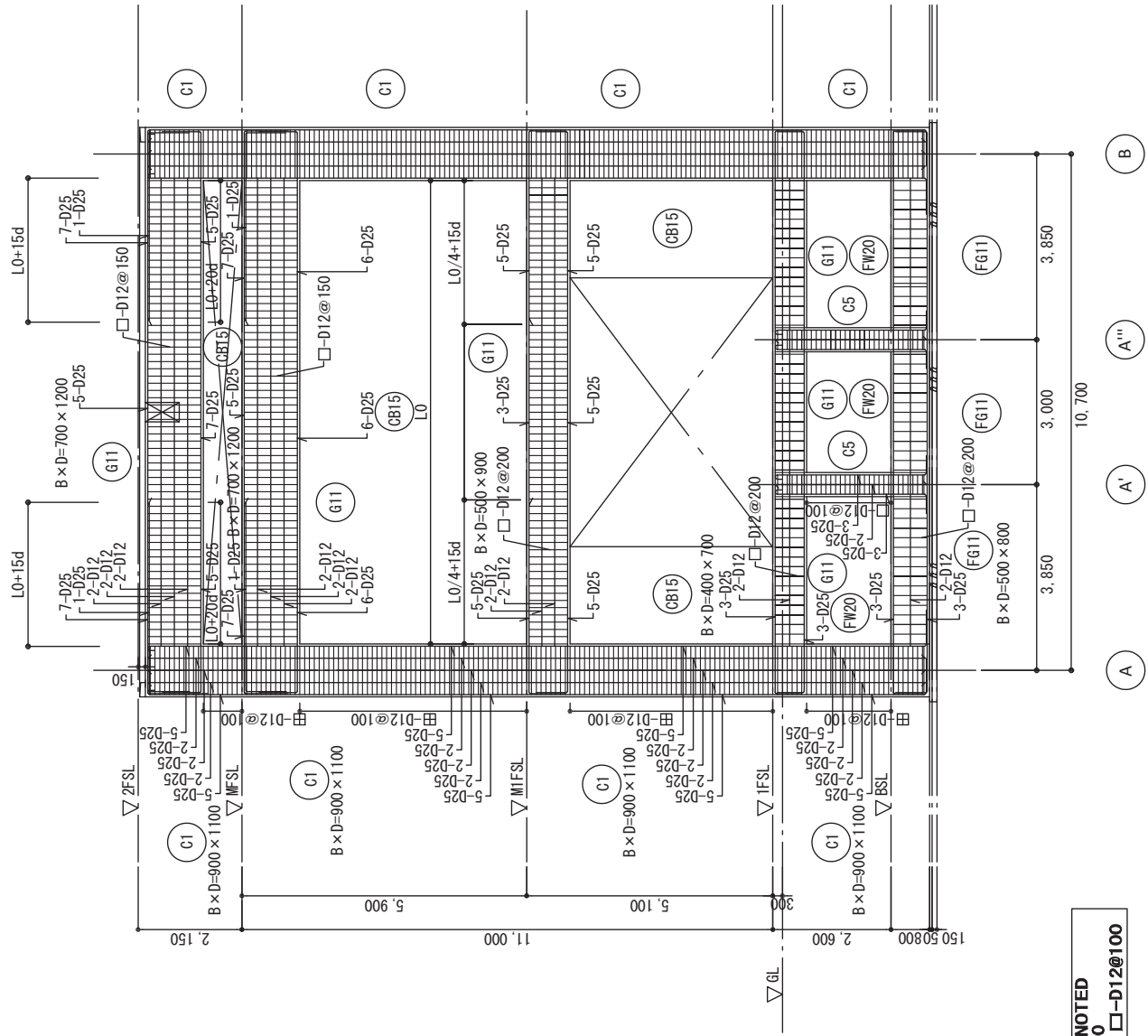
SCALE :
1:50
(if only A3)

YPC YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN

STEEL MEMBER LIST
SG1 H390×300×10×16 (SS400)
Rib phi -9@2000



PROJECT	LOCATION	TITLE	APPROVED BY :	CHECKED BY :	DESIGNED BY :	DATE :	DRG NO :
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING DETAIL OF RUNWAY GIRDER	K. FUJII	K. ODA	T. KURUMADA		AR-S17
CONSULTANTS :							SCALE :
yoc YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN							1:50 (if only A3)










1 LINE FRAMING DETAIL s=1/100

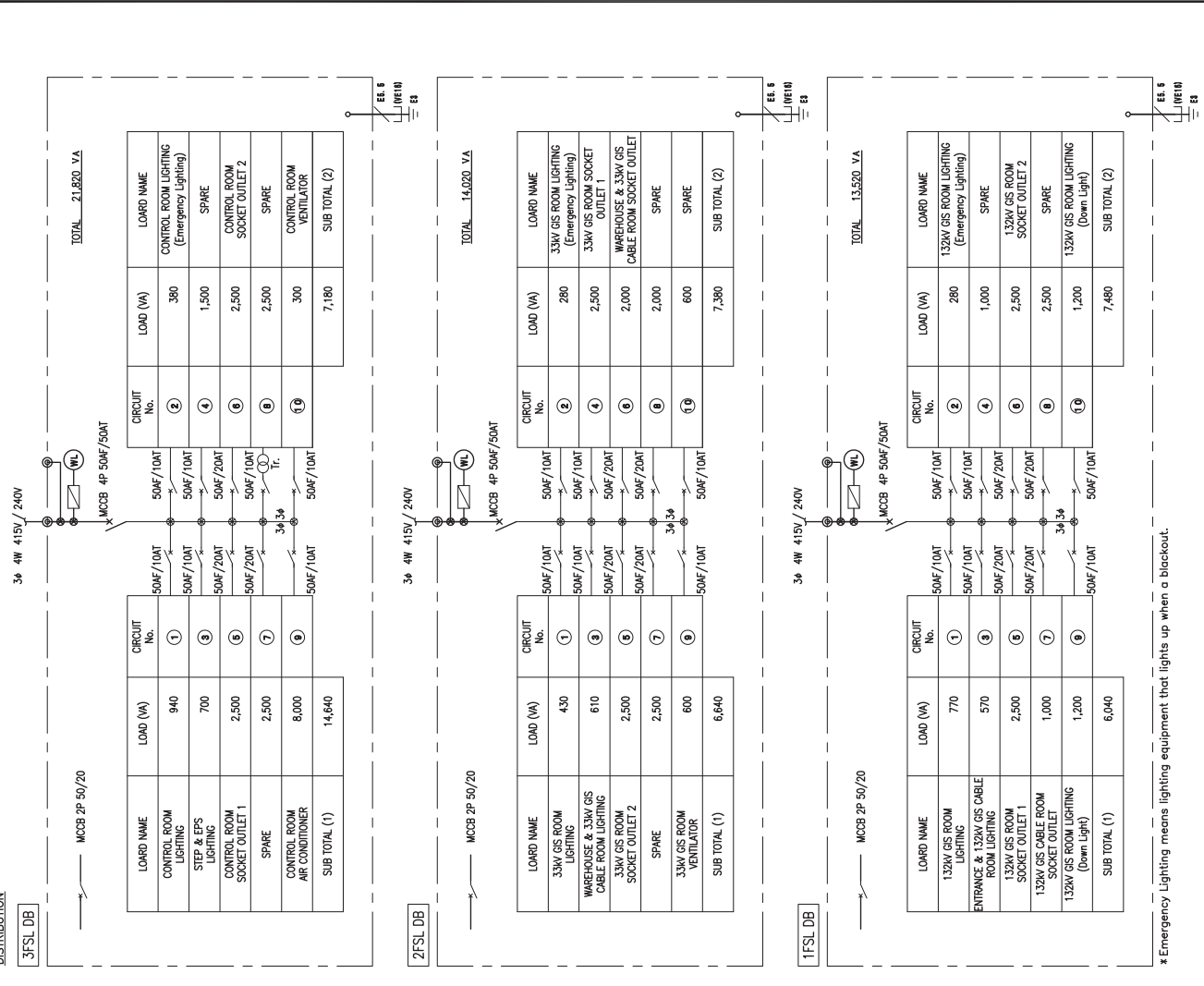
UNLESS OTHERWISE NOTED
1. SPREADER D10@1,000
2. PANEL ZONE HOOP □-D12@100

PROJECT	LOCATION	TITLE	APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO : AR-S18
EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	CONTROL BUILDING 1. LINE FRAMING DETAIL	CONSULTANTS :				SCALE : 1:100 (if only A3)

PROJECT	LOCATION	TITLE
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	Control Building 1st Floor 132KV GIS Plan

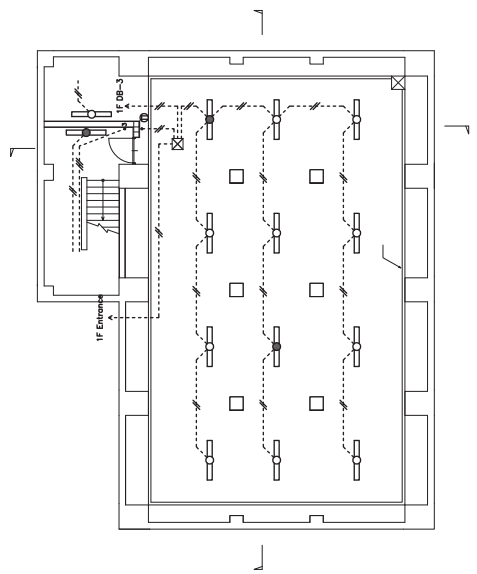
LIGHTING FIXTURE SCHEDULE	
A	SURFACE MOUNT TYPE 40W x 2 
B	CEILING EMBEDDED TYPE 40W x 2 
C	SURFACE MOUNT TYPE 40W x 1 
D	CEILING EMBEDDED TYPE 40W x 1 
E	SURFACE MOUNT TYPE (Water Proof Type) FL20W x 1 
F	400W DOWN LIGHT HID 400W 
G	GUIDE LIGHT 2W 

LEGEND
1. RATED VOLTAGE : 3φ 4W 400V/230V -50Hz
2. STARTER (FLUORESCENT LAMP) : GLOW STARTER
3. POWER FACER : HIGH POWER FACTOR

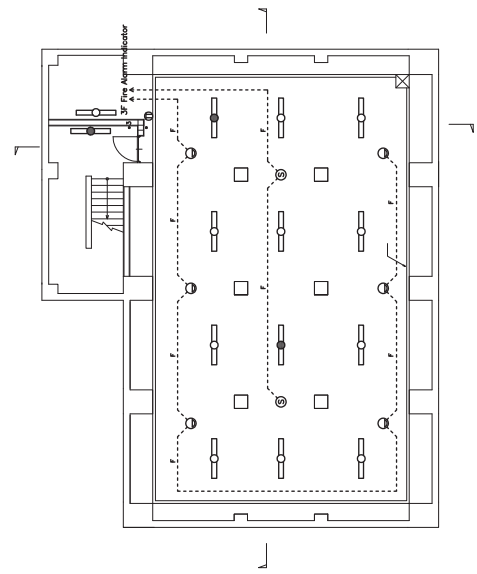


*Emergency Lighting means lighting equipment that lights up when a blackout.

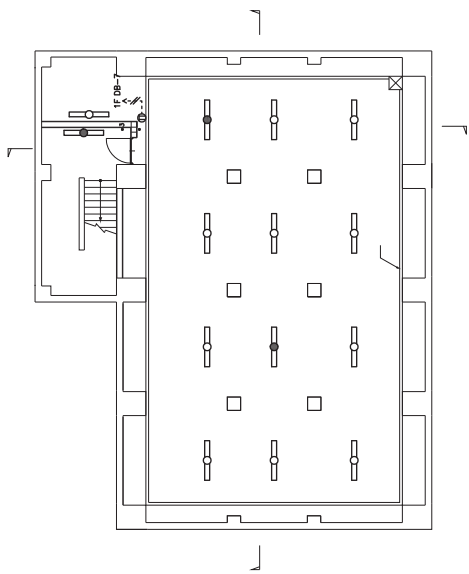
DRG NO :	AR-E01
SCALE :	---
DESIGNED BY :	T. KURUMADA
CHECKED BY :	K. ODA
APPROVED BY :	K. FUJII
DATE :	
CONSULTANTS :	YOE YACHIOYI ENGINEERING CO., LTD. TOKYO, JAPAN



Lighting

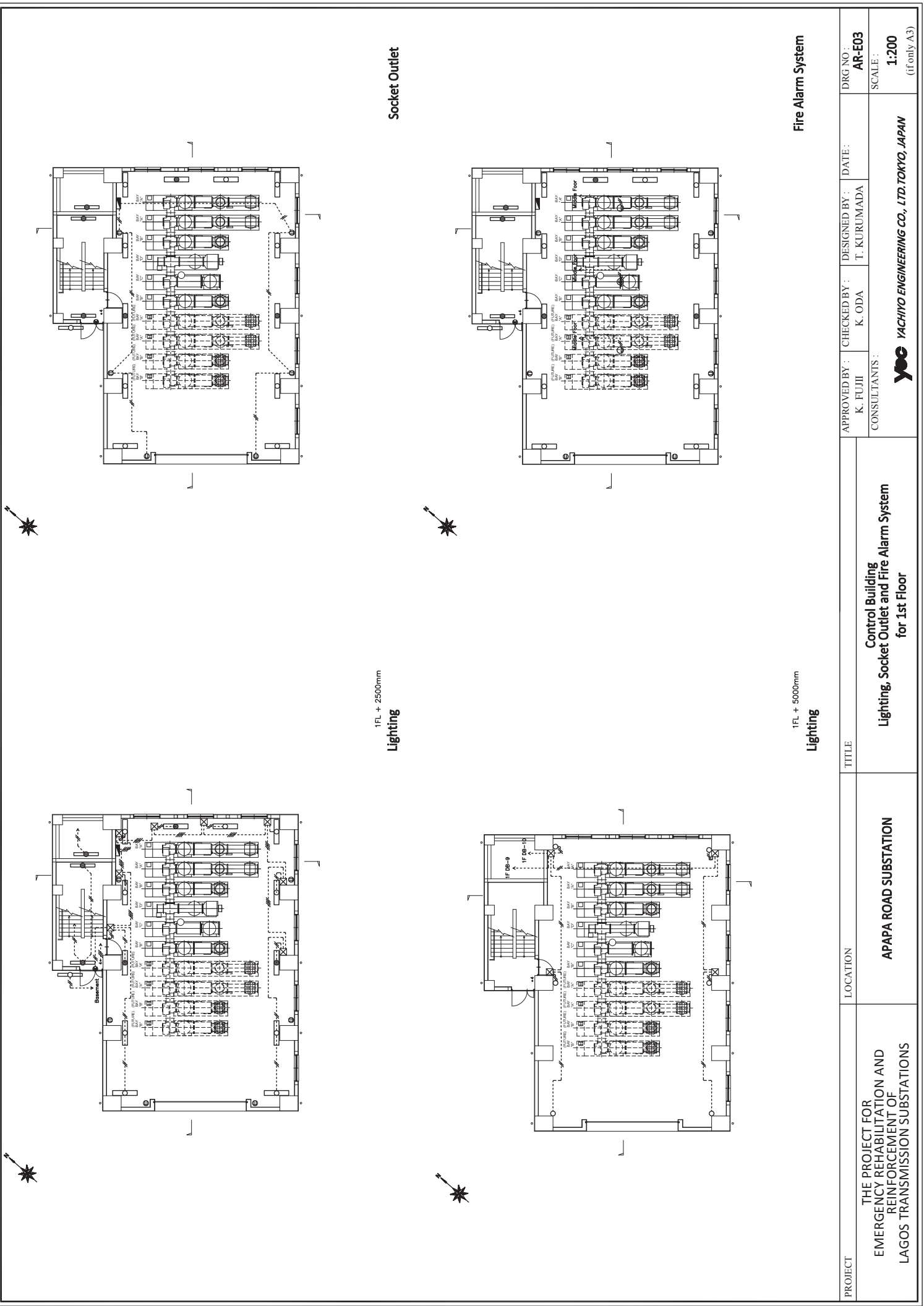


Fire Alarm System



Socket Outlet

PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE Control Building Lighting, Socket Outlet and Fire Alarm System for Basement	APPROVED BY : K. FUJII CHECKED BY : K. ODA DESIGNED BY : T. KURUMADA DATE : DRG NO : AR-E02
CONSULTANTS :  YPC YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN			SCALE : 1:200 (if only A3)



1FL + 2500mm
Lighting

Socket Outlet

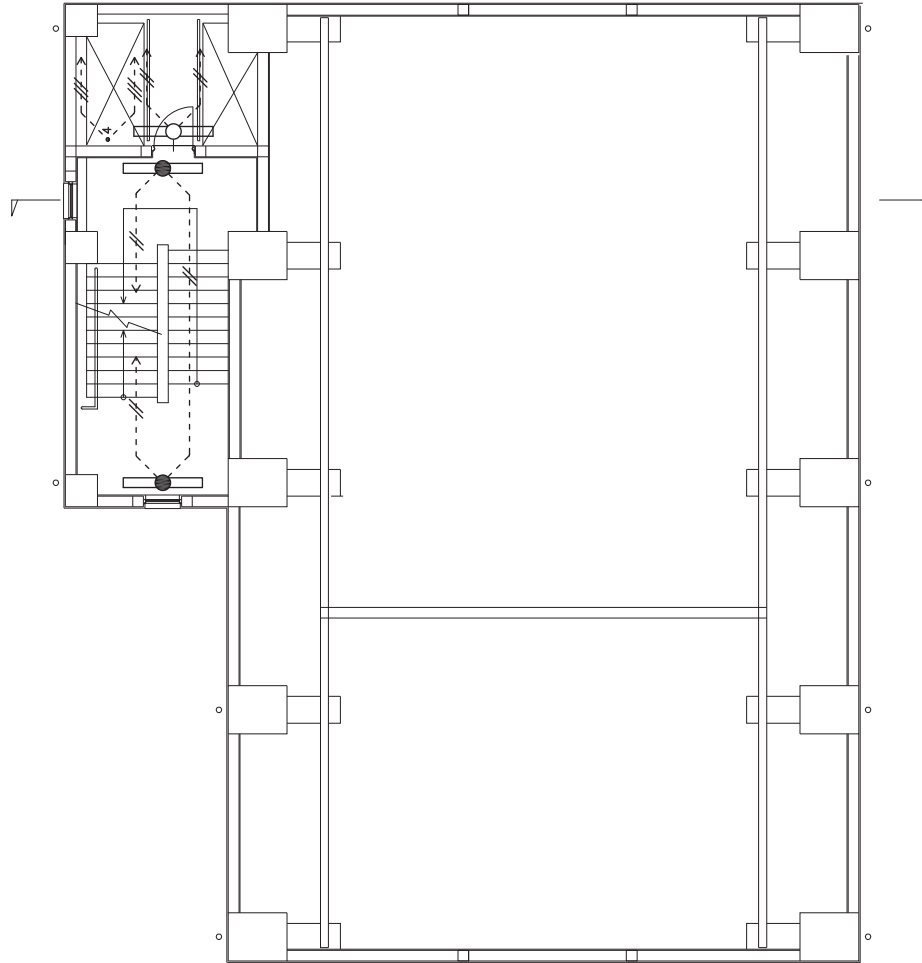
1FL + 5000mm
Lighting

Fire Alarm System

PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE Control Building Lighting, Socket Outlet and Fire Alarm System for 1st Floor	APPROVED BY : K. FUJII CHECKED BY : K. ODA DESIGNED BY : T. KURUMADA DATE : DRG NO. : AR-E03 SCALE : 1:200 (if only A3)
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YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN



PROJECT

THE PROJECT FOR
EMERGENCY REHABILITATION AND
REINFORCEMENT OF
LAGOS TRANSMISSION SUBSTATIONS

LOCATION

APAPA ROAD SUBSTATION

TITLE

Control Building
Lighting for Middle 1st Floor Plan

APPROVED BY :
K. FUJII

CONSULTANTS :



YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN

CHECKED BY :
K. ODA

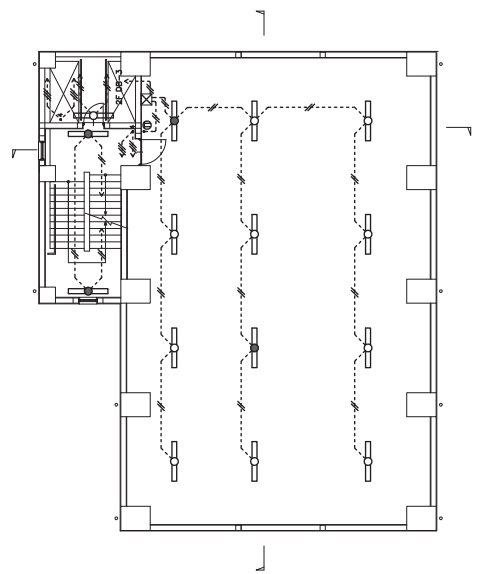
DESIGNED BY :
T. KURUMADA

DATE :

DRG NO :
AR-E04

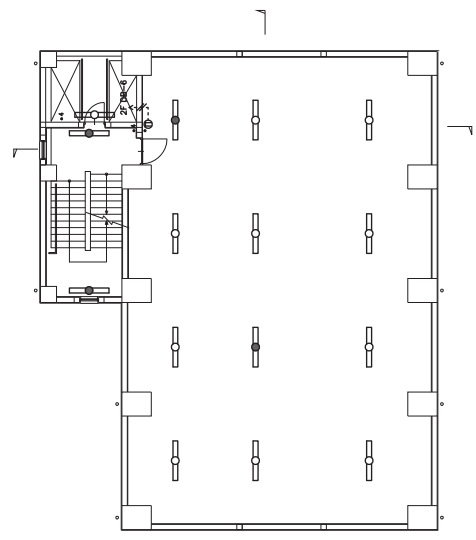
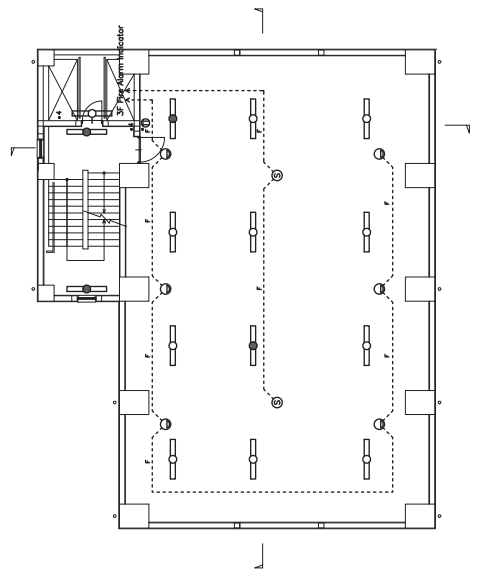
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(if only A3)




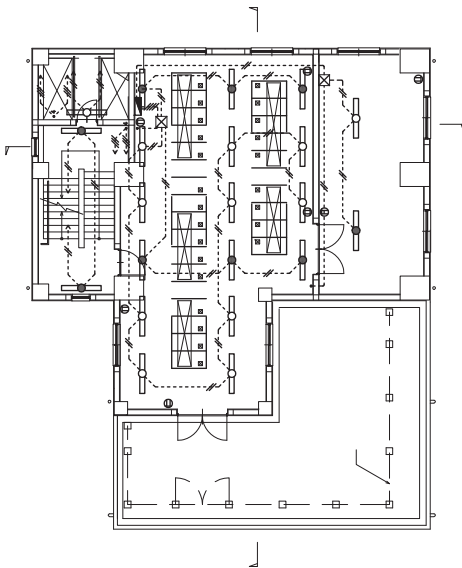
Lighting

Fire Alarm System



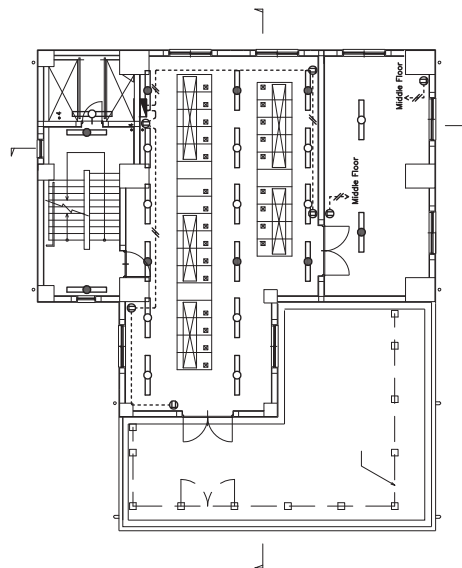
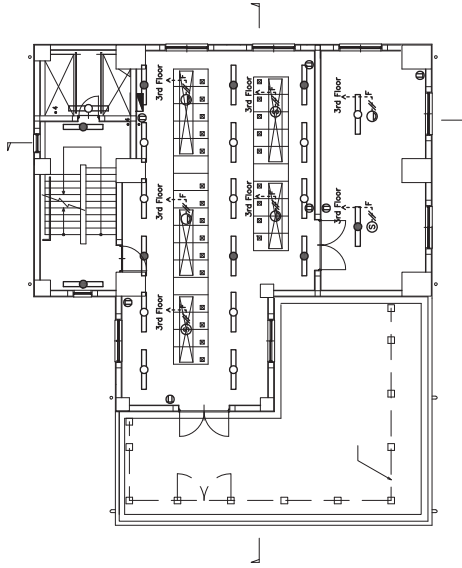
Socket Outlet

PROJECT	LOCATION	TITLE	APPROVED BY : K. FUJII	CHECKED BY : K. ODA	DESIGNED BY : T. KURUMADA	DATE :	DRG NO : AR-E05
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	Control Building Lighting, Socket Outlet and Fire Alarm System for Middle Floor	CONSULTANTS :  YPC YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN		SCALE :	1:200 (if only A3)	



Lighting

Fire Alarm System

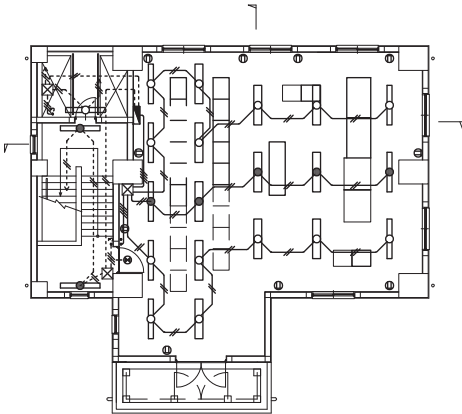


Socket Outlet

PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE Control Building Lighting, Socket Outlet and Fire Alarm System for 2nd Floor	APPROVED BY : K. FUJII CHECKED BY : K. ODA DESIGNED BY : T. KURUMADA DATE : DRG NO. : AR-E06 SCALE : 1:200 (if only A3)
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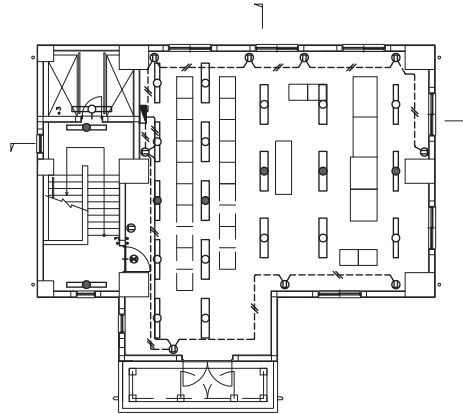
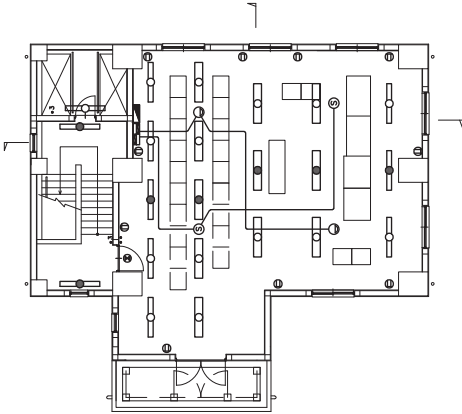


YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN



Lighting

Fire Alarm System

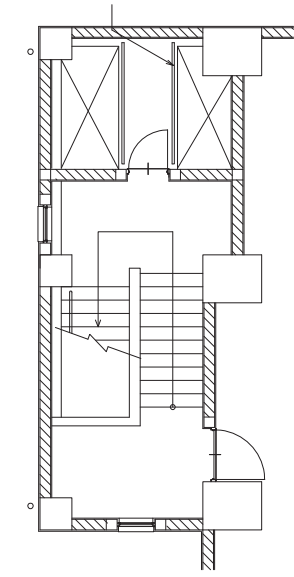


Socket Outlet

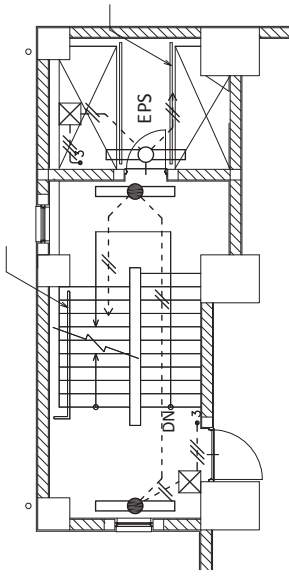
PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE Control Building Lighting, Socket Outlet and Fire Alarm System for 3rd Floor	APPROVED BY : K. FUJII CHECKED BY : K. ODA DESIGNED BY : T. KURUMADA DATE : DRG NO. : AR-E07 SCALE : 1:200 (if only A3)
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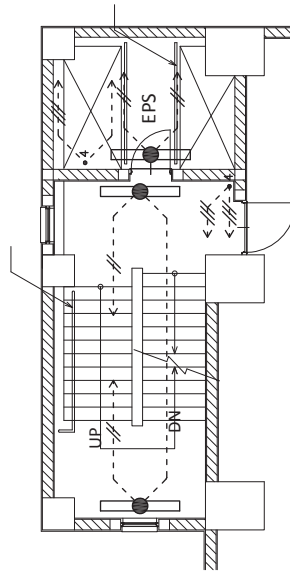
YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN



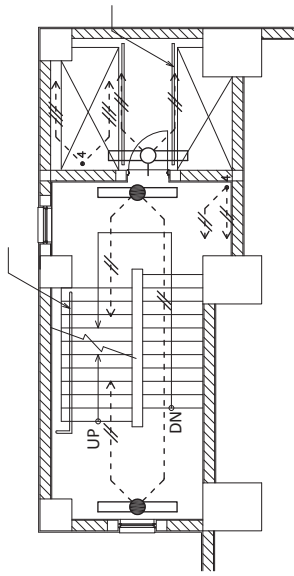
MIDDLE 1st FLOOR PLAN



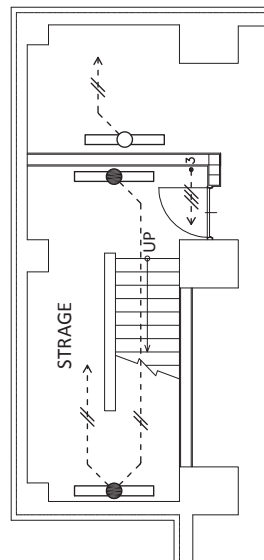
3rd FLOOR PLAN



2nd FLOOR PLAN

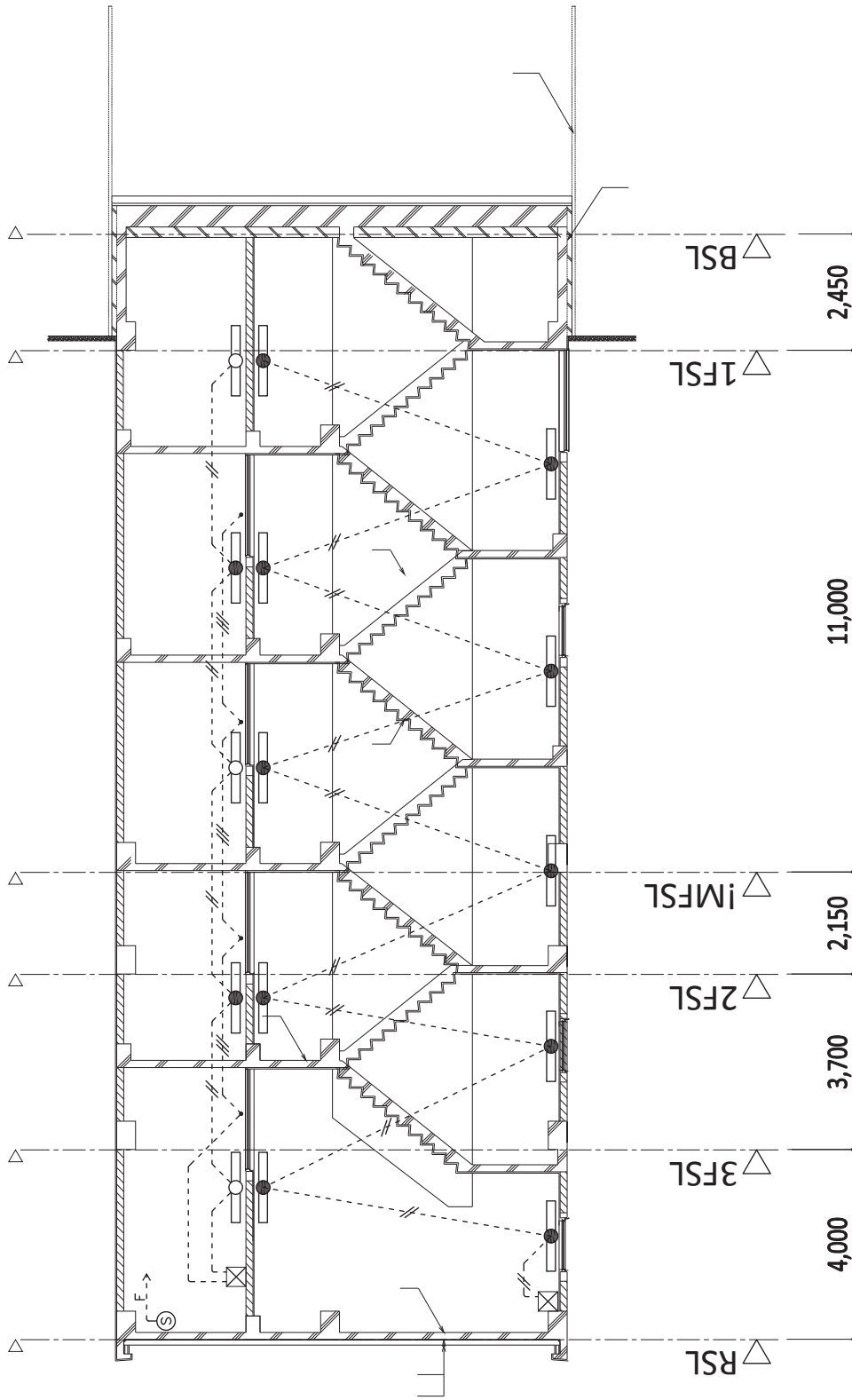


1st FLOOR PLAN

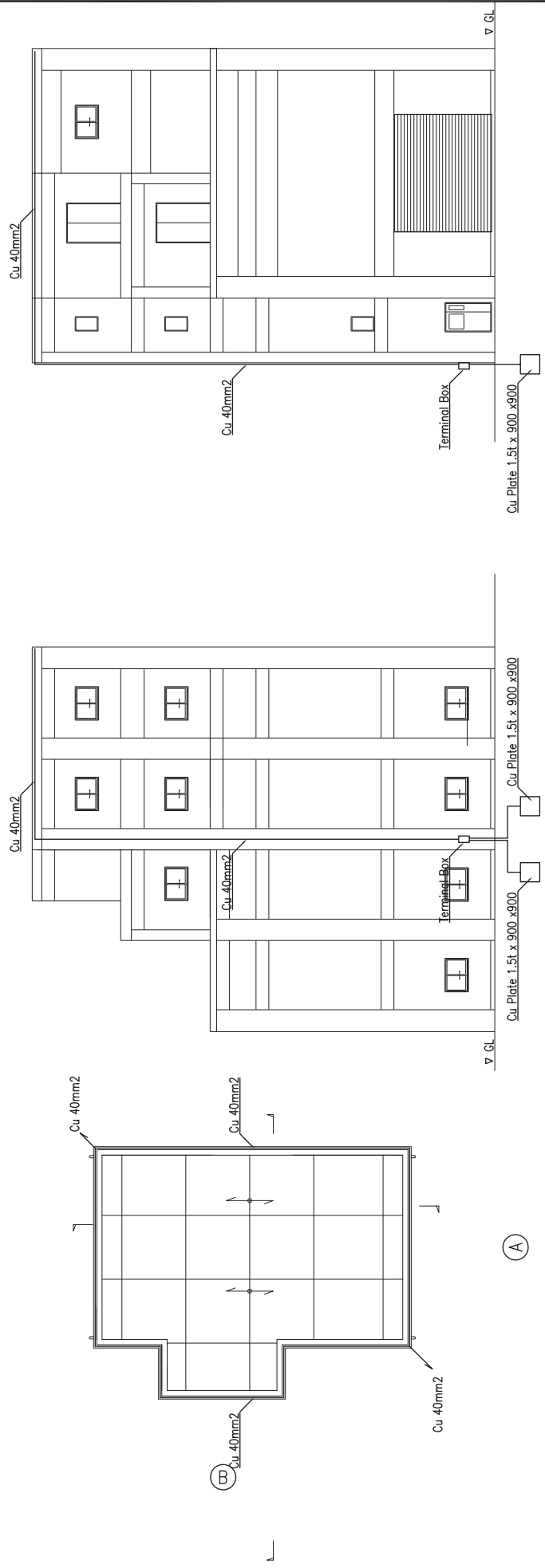


BASEMENT PLAN

<p>PROJECT</p> <p>THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS</p>	<p>LOCATION</p> <p>APAPA ROAD SUBSTATION</p>	<p>TITLE</p> <p>Control Building Lighting for Stair and EPS Plan</p>	<p>APPROVED BY : K. FUJII</p> <p>CHECKED BY : K. ODA</p> <p>DESIGNED BY : T. KURUMADA</p> <p>DATE :</p> <p>DRG NO : AR-E08</p> <p>SCALE : 1:100 (if only A3)</p> <p>CONSULTANTS : YEC YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN</p>
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PROJECT	LOCATION	TITLE	DRG NO : AR-E09
THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	APAPA ROAD SUBSTATION	Control Building Lighting and Fire Alarm System for Stair Plan	DATE :
		YEC YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN	DESIGNED BY : T. KURUMADA
			CHECKED BY : K. ODA
			APPROVED BY : K. FUJII
			CONSULTANTS :
			SCALE : 1:100 (if only A3)

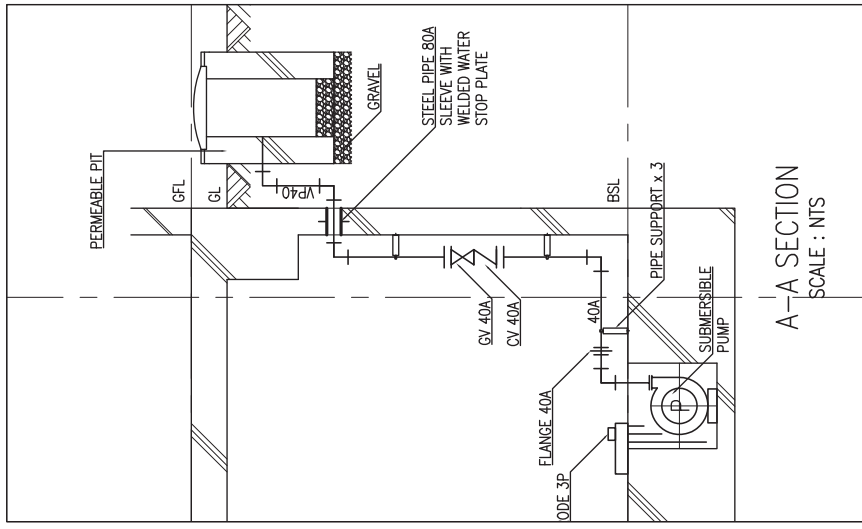
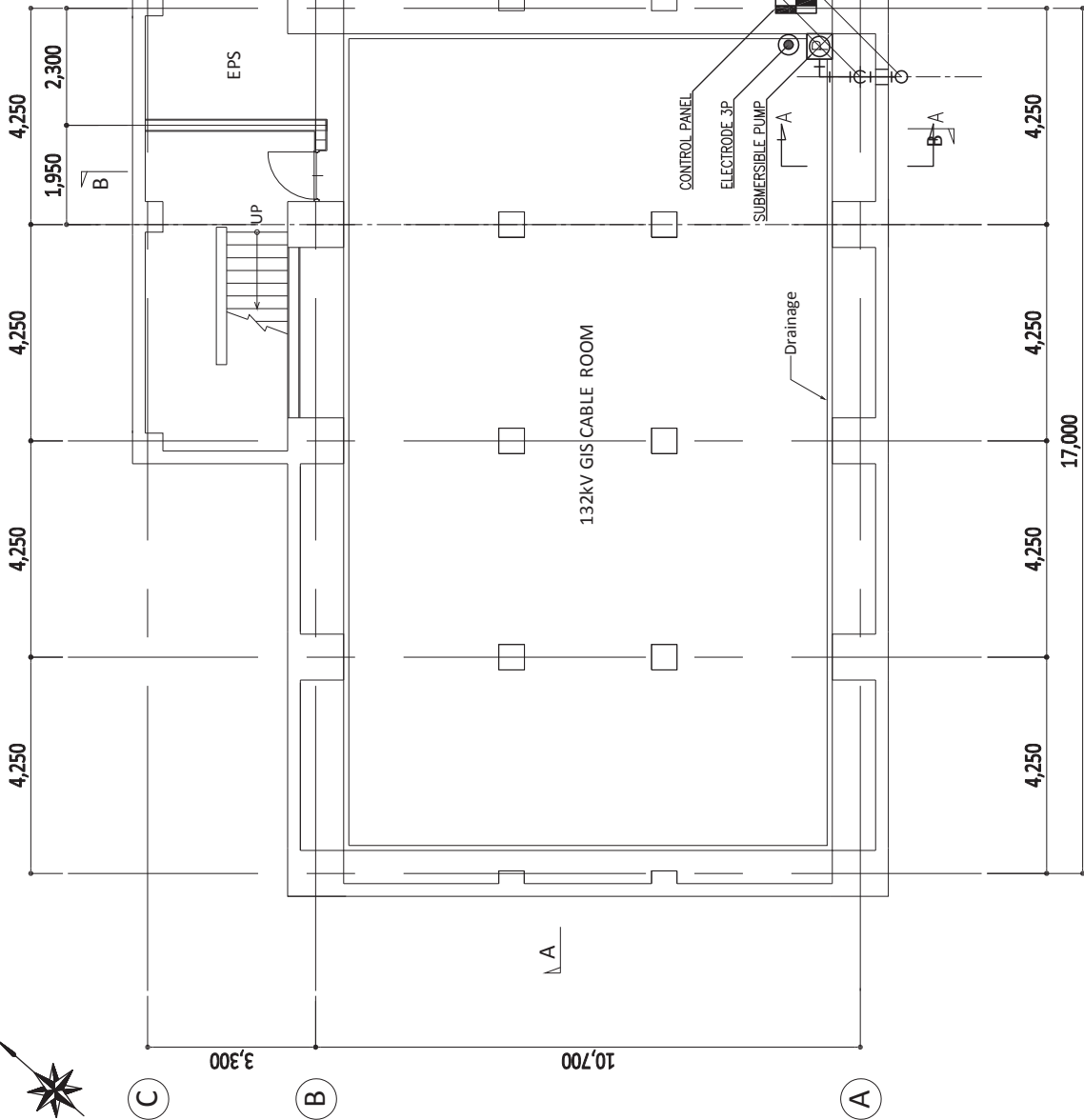


Roof Plan

View A

View B

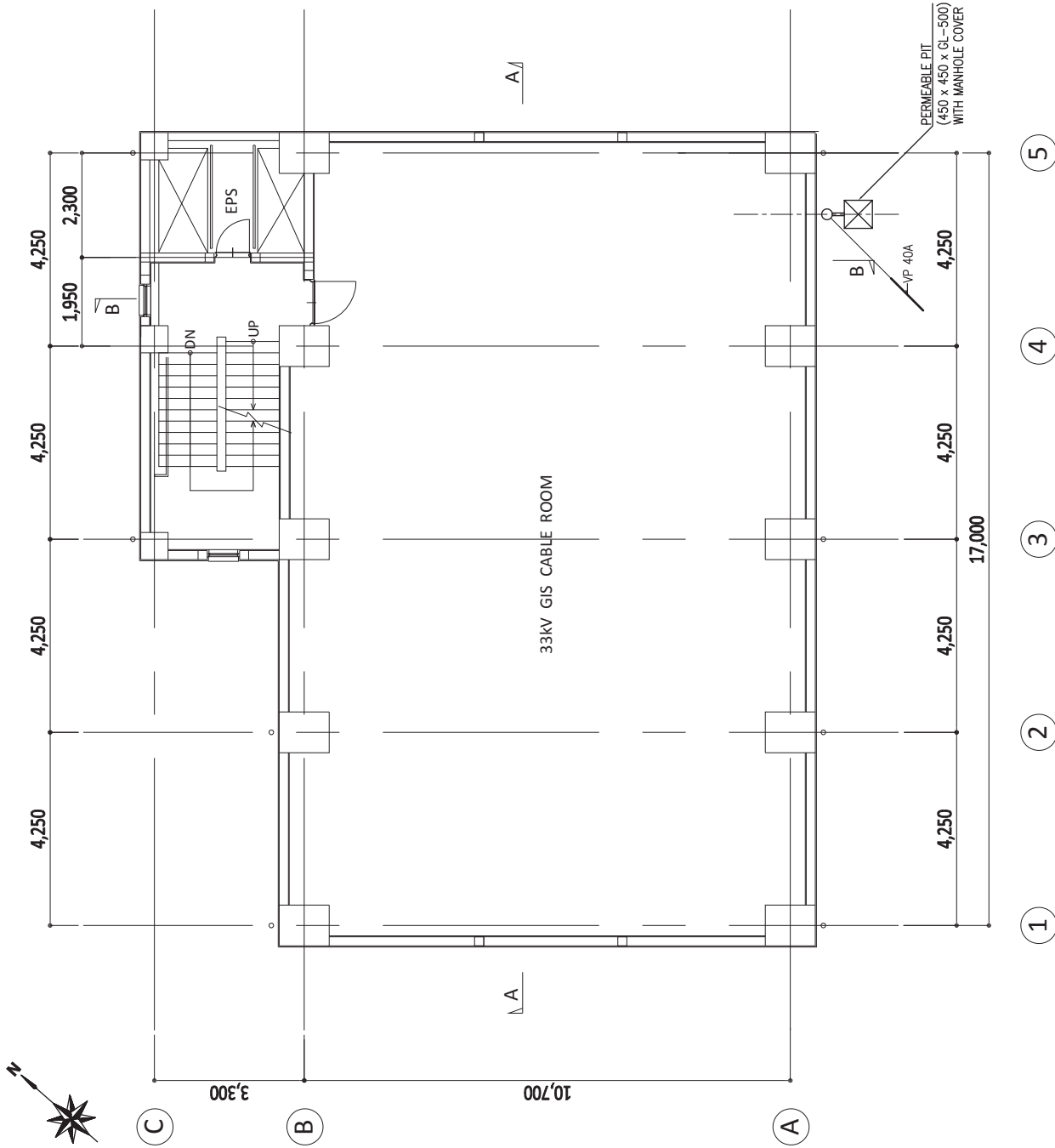
PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE Control Building Lightning Protection	APPROVED BY : K. FUJII CHECKED BY : K. ODA DESIGNED BY : T. KURUMADA DATE : DRG NO. : AR-E10 SCALE : 1:200 (if only A3) CONSULTANTS :  YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN
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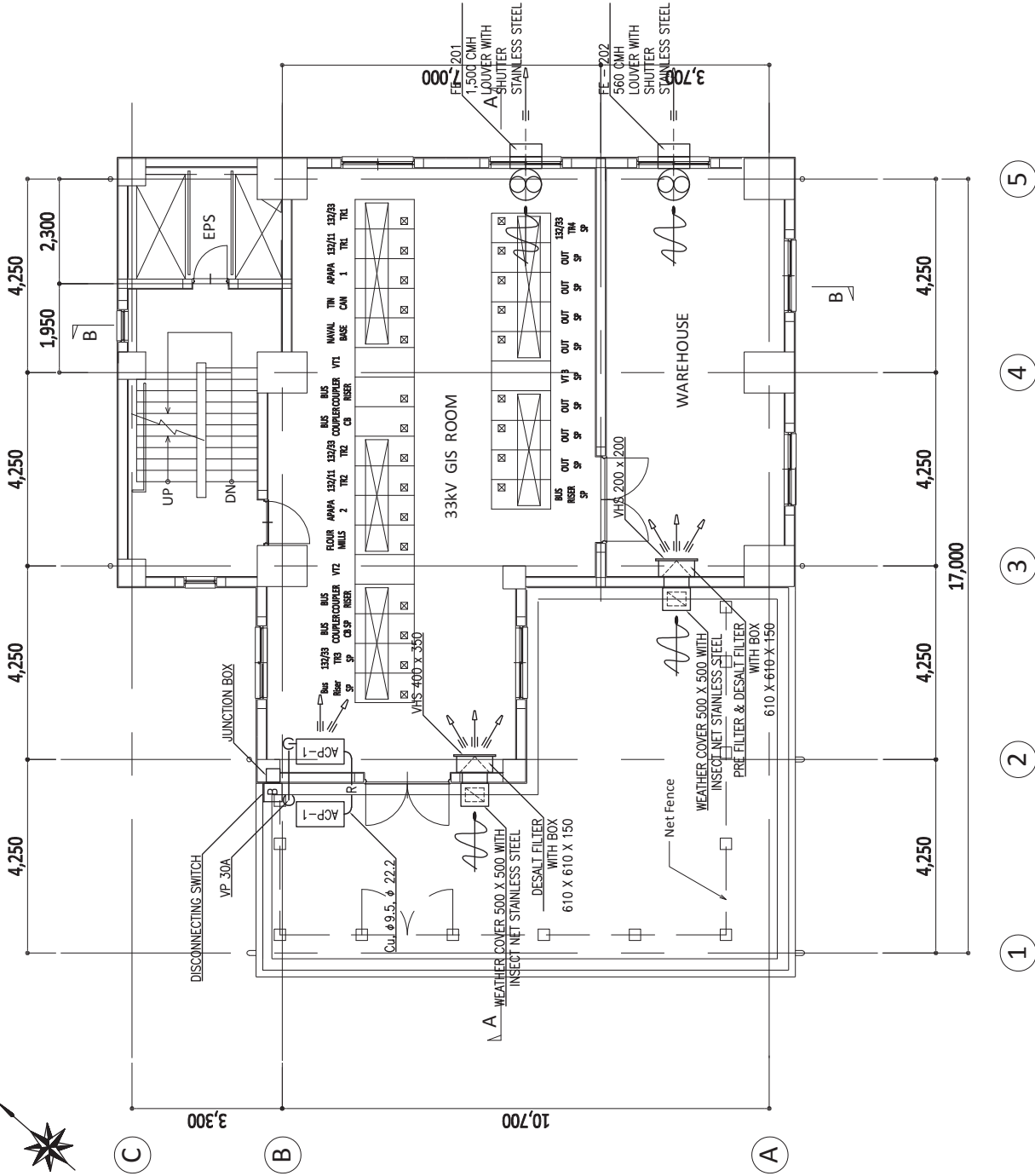
A-A SECTION
SCALE : NTS

- 1
- 2
- 3
- 4
- 5

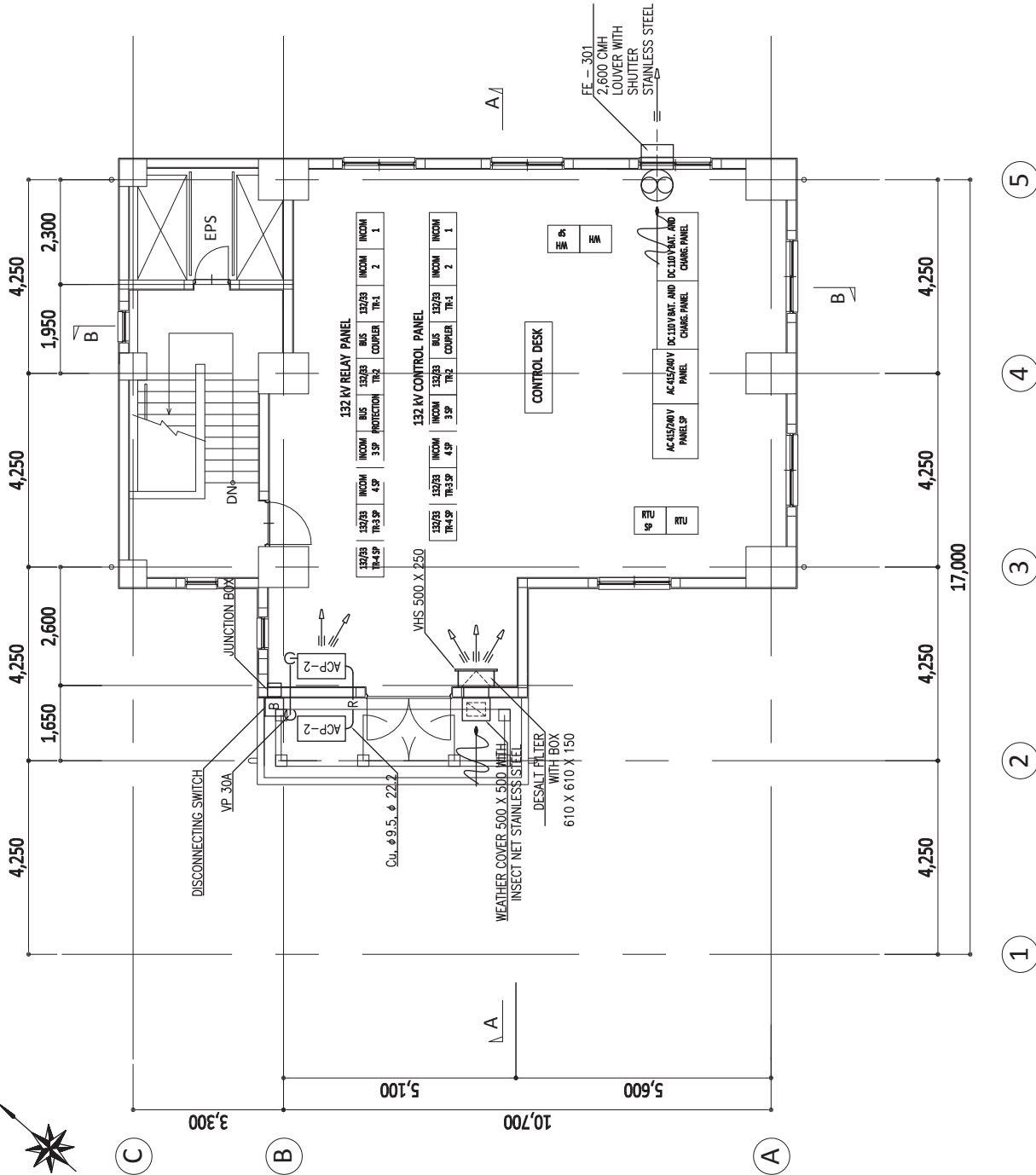
PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE Control Building Drainage System of Basement Plan
APPROVED BY : CONSULTANTS : YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN	CHECKED BY : DESIGNED BY :	DATE : DRG NO. : AR-M01 SCALE : 1:100 (if only A3)



PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE Control Building Drainage System of Outward	APPROVED BY : DESIGNED BY : CHECKED BY :	DATE :	DRG NO.: AR-M02 SCALE : 1:100 (if only A3)
CONSULTANTS :  YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN					



PROJECT EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE Control Building Ventilation System of 2nd Floor	APPROVED BY : CHECKED BY : DESIGNED BY : DATE : DRG NO : AR-M03 SCALE : 1:100 (if only A3) CONSULTANTS : YEC YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN
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- 1
- 2
- 3
- 4
- 5

PROJECT THE PROJECT FOR EMERGENCY REHABILITATION AND REINFORCEMENT OF LAGOS TRANSMISSION SUBSTATIONS	LOCATION APAPA ROAD SUBSTATION	TITLE Control Building Air Condition and Ventilation System of 3rd Floor	APPROVED BY : CHECKED BY : DESIGNED BY : DATE :	DRG NO : AR-M04 SCALE : 1:100 (if only A3)
CONSULTANTS : YACHIO ENGINEERING CO., LTD. TOKYO, JAPAN				