حكومة مملكة البحرين
Government of Bahrain

بنايات
BENAYAT
نظام اصدار رخص البناء
BUILDING PERMIT PORTAL

Unified Guidebook of Building Permit Regulations

Kingdom of Bahrain
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البحرين
BAHRAIN

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Executive Summary:

This guidebook aims to collate all building permit regulations and their interpretations in the Kingdom of Bahrain in a unified document, in line with Vision 2030 and in accordance to the latest international standards and best practices.

The following requirements of the following entities are covered under this guidebook:

- Urban Planning and Development Authority.
- Municipalities Affairs at the Ministry of Works, Municipalities Affairs and Urban Planning.
- Directorate of Roads Planning and Design at the Ministry of Works, Municipalities Affairs and Urban Planning.
- Directorate of Sanitary Engineering Planning and Projects at the Ministry of Works, Municipalities Affairs and Urban Planning.
- Electricity Distribution Directorate Industrial Security and safety Directorate at the Electricity and Water Authority
- Water Distribution Directorate and Electricity and Water Conservation Directorate (Water Conservation Department) at the Electrcity and Water Authority.
- Electricity and Water Conservation Directorate (Thermal Insulation Department) at the Electricity and Water Authority.
- Civil Aviation Affairs at the Ministry of Transportation and Telecommunications.
- Industrial Areas Operations Directorate at the Ministry of Industry, Commerce and Tourism
- General Department of Civil Defence at the Ministry of Interior

This document is made in Arabic and English. In the event of a dispute or inconsistency between both versions, the Arabic language version shall prevail.

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1. Introduction

This part of the Code reviews EWA standard conditions and specifications as related to provision of electricity supply to Buildings, under the following main items, and will be highlighted in the issued Power Conditions Form of Building Permit, as applicable.

The main clauses of this part are as follows:

- Load criteria that defines the method of supplying the Building with Electricity, and how the Applicant will contribute to that.
- Controls and obligations by the Applicants with respect to:
  - General conditions,
  - Protection of EWA Networks and Buildings prior, during and after the constructions works of the building.
  - Technical specifications of the Load & Supply Arrangement at building / project.
  - Technical and specifications of the substations that applicants are obliged to build.
- To clarify the conditions of EWA Readiness to supply the electrical loads of the building / project.

All concerned; applicants, owners, developers, engineering offices and contractors should consult and take into considerations the conditions of this Code, starting at the planning and technical design stage of the Building/ Development.

2. Definitions

A

Additional Cost of Electricity: The cost calculated by multiplying the Extra Load (in kVA) by the rate of BD 55 /kVA

Applicant: A developer, an owner, a contractor and/or who represent them.

Approved Load: The electrical load applied by the Applicant, approved by EWA and indicated in the Power Conditions Form.

B

Building: One unit or a group of units within one plot.

Building Contractor: A contractor approved by the concerned authorities in the Kingdom of Bahrain and authorized to undertake constructions works, including structural and electrical works.

Building Installations: The internal electrical installation of the Building installed and operated by the Applicant, with the exception of the electrical switchgear at the main point of the supply.

C

Clearances: Permitted physical clearance between Building and EWA Networks / Buildings.

Complex: A set of housing units within one boundary and have Single Point of Connection.

Construction Area: The area of a Building and its surrounding found in the proximity of EWA's services and networks.

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CR: Customer Request, a request applied by a customer to change, to relocate or to remove the customer's service.

CRPEP: The Council for Regulating the Practice of Engineering Professions.

CSD Centers: EWA customer services centers distributed in different locations in the Kingdom of Bahrain.

CSD: Customer Services Directorate, EWA

Customer: Any natural or legal person to whom the Authority provides electricity and water services upon request.

Customer's Terminals/ Service Point: The connecting point of the customers' installations to EWA point of supply.

D

Developer: The owner of the property, whether natural or legal, benefits from infrastructure services

Development Infrastructure: Infrastructure within a development.

Development: Investment and real estate development projects and others.

DPS: Damage Preventive Section, EWA. DPS is mainly concerned with protecting EWA networks and buildings from damage.

E

EDD: Electricity Distribution Directorate, EWA.

Electrical Unit: Electrical load / power measured in 1 kVA.

ETD: Electricity Transmission Directorate, EWA

EWA Buildings: All EWA buildings including electricity and water substations, complex and other buildings

EWA Networks: All Overhead and Underground electricity and Water Networks of EWA.

EWA: Electricity & Water Authority in the Kingdome of Bahrain

Extra load: The difference between the Approved Load (in kVA) and the Initial Load (in kVA).

F

Form, Application for Power Conditions: An application form used by an authorized party to apply for Power Conditions.

Form, Application for Supply: A form used by an authorized party to apply for connecting to electricity supply

Form, Power Conditions: A form issued by EDD showing EDD and DPS conditions for issuing a Building Permit.

Form, Substation Declaration: A declaration form signed by the Applicant, through which he undertakes to build a substation as per EWA specifications and requirements and to execute it under EWA supervision.

G

GMTX: Ground Mounted Transformer

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H

HV: High Voltage, voltage of the connection higher than the Medium Voltage.

I

Infrastructure: The main and sub networks of electricity, water, roads and sewerage, parking and landscape areas and other facilities and services, as covered by the Cabinet resolution(s) based on the recommendations of the Ministerial Committee.

Initial Cost of Infrastructure: The amount resulted from multiplying of the net area (m2) by 12 BD/m2.

Initial Load: The electrical Load calculated by multiplying the Net Area measured in (m2) by the rate of (0.12 kVA/m2) by.

Intake Substation: Distribution substation at 11 kV to connect one customer

K

KVA: Kilo Volt Ampere.

L

Load & Supply Arrangement: The arrangement undertaken by the Applicant in order to connect between the Building electrical load and EWA electrical supply.

Load Address: The address of the building or complex for which the Power Conditions have been issued.

LV: Low Voltage, voltage of the connection at 415 V (phase –phase voltage)

M

M: meter

Meters Group: A group of meters connected to EWA network through single point of supply service.

MOU: Memorandum of Understanding signed between EWA and a main Developer.

MTC Contractor: A contractor assigned by EWA to undertake EWA works as per Measured Term Contract (MTC)

MV: Medium Voltage, Voltage of the connection at 11000 V

N

Net Area: An area measured in (m2), to be constructed in accordance with the engineering drawings submitted with the application for building permit and complying with the conditions of the urban planning entities in Bahrain

P

P&SD: Planning & Studies Directorate, EWA.

Primary S/S: Transmission Substations receiving voltages at 33,66,220,400 kV.

Property: A place that is provided with electricity services and has a separate address. That includes fixed and mobile housing, commercial and industrial, farms, open lands and others.

Proposal: A project proposed by EWA to extend / lay network, build substation or all.

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R

Readiness: Readiness of EWA Network and Substations to supply the electrical load of the Building

S

S/S: A distribution substation which receives supply at a voltage of 11000 V and steps it down to 415 V.

S/S, Building type: A substation that is located within building or directly attached to a building.

S/S, Free building type: A substation that is free standing and not attached to the proposed development.

Service Corridors: EWA corridors of existing/proposed services and networks.

SLD: Electrical Single Line Diagram

SPOS: Single Point of Supply which connect a group of buildings to EWA network through single point.

T

Trial Hole: An inspection hole prepared by MTC contractor for inspection and confirming routes and dimensions of underground network.

3. Scope of application

These terms and conditions shall be applied to electrical loads included in two main categories:

- Electrical loads that equal or exceed 12,000 electrical unit under which the Developer pays the initial cost of property infrastructure in addition to additional cost of electricity, as appropriate.
- Electrical loads that equal or exceed 12,000 electrical units, under which the developer pays an amount of 5.5 Dinars for the net area required to be built in addition to other infrastructure services besides building electricity grids at his own expense and in accordance with the requirements of decision No. 13 of 2006.

This guide covers the following types of Applications for Power Conditions:

- Request for new electrical loads
- Request for additional
- Request for load adjustment
- Request for splitting/ merging of electrical load.
- Demand for Power Conditions with no electrical loads.

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4. Laws and Regulations

- Legislative Decree No. (1) of 1996, with respect to electricity and water
- Ministerial Decree No. (13) of 2006, with respect to the regulations of charges for the delivery of electricity and water services.
- Ministerial Decree No. (2) of 2010, with respect to the regulations for electrical installations.
- Ministerial Decree No. (25) of 2015, with respect to the cost collection of establishing and developing infrastructure in the reconstruction areas.
- Ministerial Decree No. (1) of 2005, with respect to the work regulations in the field of electrical wiring, and its amendments
- Ministerial Decree No. (11) of 2017 on the definition of categories and mechanisms for the collection of the cost of establishing and developing the infrastructure in the existing reconstruction areas and facilities.
- Law No. 51 of 2014, with respect to Regulating the Practice of Engineering Professions

5. Power Condition

1. Load Criteria for Electrical Supply:

The Applicants submit the required Electrical Loads of buildings, estimated in kW and EDD will convert it into kVA (Electrical Unit) after considering diversity factor. The following criteria take into consideration the value of loads in the Electrical Unit.

1.1 Applicant Obligation to Provide a S/S based on the Electrical Units of the Building

This section refers to the provisions of Ministerial Decree No. (13) of 2006, with respect to the regulation of charges for the delivery of electricity and water services, with highlight on the applicant's obligation to build and/ or to provide plot(s) of land to build substation.

The obligations are defined for the following types of buildings and facilities:

a. Domestic / Government (D)

b. Flats (F)

c. Non-Domestic (Low Voltage and Medium Voltage) (ND)

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1.1.1 For Electrical Loads Not Exceed 12000 Electrical Units

Applicants are obliged to provide plot(s) of land and/ or to build substation as per the following table and Note 1:

	Building Type	L: Load Electrical Unit	Substation Type	Substation Capacity
1	All Types	L ≤ 340 *	-	-
2	All Types	340 < L < 900	Distr. S/S	1 no. 1000 kVA GMTX
3	All Types	900 ≤ L < 1350	Distr. S/S	1 no. 1500 kVA GMTX
4	All Types	1350 ≤ L < 1800	Distr. S/S	2 no. 1000 kVA GMTX
5	All Types	1800 ≤ L < 2700	Distr. S/S	2 no. 1500 kVA GMTX
6	All Types	2700 ≤ L ≤ 3500	Distr. S/S	3 no. 1500 kVA GMTX
7	D, F	3500 ≤ L < 4050	Distr. S/S	3 no. 1500 kVA GMTX
8	D, F	4050 ≤ L ≤ 5000	Distr. S/S	4 no. 1500 kVA GMTX
9	D, F	5000 < L ≤ 6000	Intake Substation	1 no. 3-panel
10	ND	3500 < L ≤ 6000	Intake Substation	1 no. 3-panel
11	All Types	6000 < L ≤ 12000	Intake Substation	2 no. 3-panels

* Note 1: In case load of a building is less than or equal 340 Electrical Unit but the network capacity is not sufficient to supply that load, Or there is no sufficient area to build a substation, EWA reserve its right to request the applicant to provide a plot of land to build a distribution substation, as applicable.

1.1.2 For Electrical Loads that Exceeds 12000 Electrical Units

a. The Developer has to provide, at his expense, a plot of land measured 45 meters x 45 meters, reserved to build a Primary S/S.

b. The applicant has to build, at his expense, a 66 kV Primary S/S in accordance with EWA specifications and under EWA supervision, in order to supply the required loads.

c. If the load exceeds 48000 Electrical Unit, the applicant is obliged to provide, at his expense, a plot of land measured 120 meters x 120 meters, to be reserved for building an additional 220 kV Primary S/S.

d. The Developer is obliged to construct, at his expense, the infrastructure of the developed area, including the electrical substations and network.

e. The Developer has to adhere to the technical terms and conditions of the MOU.

1.2 Capital Contribution and Infrastructure Fees Based on the Electrical Load

This section refers to the provisions of Ministerial Decree No. (13) of 2006, and the Ministerial Decree No. (11) of 2017 on the definition of categories and mechanisms for the collection of the cost of establishing and developing the infrastructure in the existing reconstruction areas and facilities.

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1.2.1 For Electrical Loads Less than 12000 Electrical Units

The Developer has to pay the Initial Cost of the property infrastructure, plus the Additional Cost of electricity, as applicable.

1.2.2 For Electrical Loads that equal or exceed 12000 Electrical Units

a. The Developer has to pay an amount equivalent to 5.5 Bahraini Dinars multiplied by the Net Area of the Building(s), against other infrastructure services.

b. The Developer has to comply with the technical terms and conditions of the MOU.

2. Classifications and Implementation of Power Conditions

Power Conditions fall under two main categories:

The First Category - Obligations by the Applicants with Respect to:

a. General Conditions.

b. Conditions for Protection of EWA Networks and Properties.

c. Technical conditions and specifications of the Load & Supply Arrangement at the Building/ Development.

d. Technical conditions and specifications of the substations that applicants are obliged to build.

The Second Category - Information on EWA Readiness to Supply the Electrical Loads of the Building / Project.

This category relates to the information provided by EWA in the Power conditions form to inform the applicant of the readiness of the network to supply the building with electricity.

Implementation of Power Conditions

- The terms and conditions in this manual are standard ones.
- The responsibility for complying with these requirements rests with all stakeholders including the concerned developer, current as well as future owners, consultants and contractors.
- These conditions and specifications must be observed and taken into consideration prior to the design stage of the Building / Development, during and after implementation.
- Number of conditions will be mentioned in the related Power Condition Form as well as the dated version of the manual published in the Official Gazette.
- Additional conditions, not mentioned in this manual might be raised and added in the Power Condition Form, as appropriate.

2.1 General Conditions

The General Conditions are applicable to all applications. They concern mainly with compliance of the Applicant with and validity of the Power Conditions, as well as the safety pre-cautions prior to the construction of the building / project.

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2.1.1 The Applicant should carefully read and adhere to all Power Conditions highlighted in the Power Conditions Form, during all stages of constructions and using the Building/ Development.

2.1.2 EWA reserves its rights Not-to-Supply the Load Address if Applicant not complying with the Power Conditions.

2.1.3 Original Power Conditions should be applied; any exemption of those Power Conditions should be approved by EWA which in turn should give the necessary justification for that exemption.

2.1.4 The latest Power Conditions will supersede all previous ones applied for the same Load Address.

2.1.5 The Applicant should appoint only consultants and contractors approved/ licensed by EWA and/or licensed by CRPEP.

2.1.6 The Applicant should use / install only electrical materials and equipment approved by EWA.

2.1.7 In the interest of safety, it is strictly prohibited to move or remove the service wires/cables/ wall boxes/meters by the Applicant, without prior official approval by EWA and under EWA supervision.

2.1.8 EWA will be taking all necessary legal actions towards all violators. Moreover in case of any negligence in applying the EWA Safety rules, the Applicant will take full responsibility regarding the personnel safety along with all relevant compensations requested due to damages resulting from that negligence.

2.1.9 In case of any violation, EWA will not be responsible for any delay in connecting the service to the building / project, as it was caused by that violation.

2.1.10 The Applicant should apply for Supply Connection at any of CSD Centres, 6 months earlier from the target date of the connection.

2.1.11 The Applicant should comply with EWA Regulations for Electrical Installations.

2.1.12 The Applicant should note the validation date of the Power Conditions Form.

2.2 Protection Conditions of EWA Networks and Properties

This section reviews the standard conditions determined by the DPS for the protection of property, buildings and networks of EWA and the required guarantees, as well as general safety requirements, which the applicants must abide by, before, during and after the construction of the building / project.

The relevant terms and conditions code will be indicated in the Power Conditions Form for the specific application, as provided in the Building Code published in Bahrain Gazette, as well as any other conditions, as applicable.

In the case of large investment projects, it is recommended to approach DPS for information on the status of EWA's networks in the proximity of the project area, before the design stage. If such information is obtained, DPS report must be attached with the Power Conditions Application Form.

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2.2.1 Prior to start of construction works on site, the Applicant should notify DPS of the Nominated Contractor, start date and work program on Fax No. 17727737.

2.2.2 The Applicant has to take into consideration, P&SD proposal to lay electricity transmission network in the vicinity of the plot, where building is proposed to be constructed.

2.2.3 The Applicant has to take into consideration, EDD proposal to lay electrical cables in the vicinity of the plot, where building is proposed to be constructed.

2.2.4 The Applicant has to take into consideration, EDD proposal to install street lighting network in the vicinity of the plot, where building is proposed to be constructed.

2.2.5 The Applicant has to take into consideration, EDD proposal to establish distribution substation and to lay cables in the vicinity of the plot, where building is proposed to be constructed.

2.2.6 The Applicant has to take into consideration, P&SD proposal to lay water transmission network in the vicinity of the plot, where building is proposed to be constructed.

2.2.7 The Applicant has to maintain EWA standard clearances between the Building and EWA Networks and Buildings.

2.2.8 The Applicant should apply a CR at any of CSD Centers, in order to relocate EWA MV (11kV) cable in conflict.

2.2.9 The Applicant should apply a CR at any of CSD Centers, in order to relocate EWA LV cable in conflict.

2.2.10 The Applicant should apply a CR at any of CSD Centers, in order to relocate EWA overhead lines in conflict.

2.2.11 The Applicant should apply a CR at any of CSD Centers, in order to relocate EWA services in conflict.

2.2.12 The Applicant should apply a CR at any of CSD Centers, in order to relocate EWA street lighting in conflict.

2.2.13 The Applicant should apply a CR at any of CSD Centers, in order to relocate EWA Substation in conflict.

2.2.14 The Applicant should apply a CR at any of CSD Centers, for disconnection and removal of existing services, prior to commencing of works, demolishing or dismantling of the existing structure/Kiosks.

2.2.15 The Applicant should manually excavate trial holes in consultation with/under direct supervision of DPS, to ascertain exact route/level of the existing underground services.

2.2.16 The Applicant has to submit a request for inspection/supervision by DPS through Fax No. 17727737, 2 days earlier the starting date.

2.2.17 The Applicant has to coordinate with EDD, TSS Group (17991957), in order to check the status of cable(s) within the property and confirmed if live or abandoned.

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2.2.18 The Applicant has to take into consideration that EDD has a service corridor spared to lay underground cables in road's reserve, adjacent to plot boundary.

2.2.19 The Applicant has to maintain two (2.0) meters Clearance from any 400 KV transmission underground circuit.

2.2.20 The Applicant has to maintain one and half (1.5) meters Clearance from any 220 KV transmission underground circuit.

2.2.21 The Applicant has to maintain one (1.0) meter clearance from any 66 kV/ 33 kV transmission underground circuit.

2.2.22 The Applicant has to maintain a minimum horizontal clearance of one (1.0) meter between near-edge of excavation for foundation footings of boundary pillars of boundary wall from the nearest electricity distribution network.

2.2.23 The Applicant has to ensure that no window opening is facing EWA Primary S/S / EWA's compound.

2.2.24 The Applicant has to ensure that foundation footings / piles / pile-caps are placed well and away from the reserved corridor of the existing / proposed electricity distribution network services.

2.2.25 The Applicant has to maintain a minimum of two and half (2.5) meters horizontal Clearance from water transmission corridor/ the nearest water transmission main-chamber-thrust block.

2.2.26 The Applicant has to coordinate with DPS on the Clearance requirement from the water transmission main to near-edge of excavation of the Building foundation. DPS should agree on those clearances.

2.2.27 The Applicant has to maintain a horizontal Clearance of one (1) meter, from electricity distribution substation of types: Free Building (FB); Package Unit Building (PB) type.

2.2.28 The Applicant has to maintain a horizontal Clearance of two (2) meters, from distribution, LV overhead network.

2.2.29 The Applicant has to maintain a horizontal Clearance of four (4) meters, from distribution, 11KV (MV) overhead network.

2.2.30 The Applicant has to maintain a horizontal Clearance of seven (7) meters, from 66 KV overhead networks.

2.2.31 The Applicant has to maintain a minimum of 300 mm vertical clearance from the bottom of the beam between the pillars and the nearest electricity distribution network.

2.2.32 No construction works are allowed on/above distribution substation of the types: Free Building; Building Package Unit; Package Unit.

2.2.33 In order to prevent slipping of the soil surrounding EWA services, the Applicant has to provide protective shuttering/sheet piling to EWA network, under DPS supervision.

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2.2.34 The Building Contractor should secure sheet piles inside the plot boundary with substantial bracing, as required. Contiguous piling to be done inside the line of the sheet piles, using rotary drilling only. All works, including dimensions of the arrangement to be agreed and supervised by DPS technician.

2.2.35 EWA reserves the right to request additional protection measures in the area of EWA network, as required. Costs for such protection to be borne by the Applicant. The Building Contractor should record all vibration due to piling works and submit it to DPS.

2.2.36 The Building Contractor should discuss with DPS the method of shuttering/trench support/de-watering process/removal of soil from excavated foundations, in the vicinity of existing EWA network. DPS representative should agree and supervise these arrangements on site.

2.2.37 Vibration required to consolidate the site foundation, should be carried-out with a static roller, not exceeding 10 tons D.W.

2.2.38 The Building Contractor should assign a specialized de-watering contractor, in order to ensure that no accumulation of water is adjacent to EWA Network/ Substation.

2.2.39 The Building Contractor should discuss and get DPS approval on site access/exit points for movement of construction traffic nearby EWA Network.

2.2.40 If access/exit points involve crossing of EWA corridors, the Applicant should assign MTC Contractor to provide protection to EWA underground services at the access/exit points, at the Applicant's cost and under direct supervision of DPS.

2.2.41 The Applicant/Building Contractor should provide, under approval and supervision of DPS, suitable barriers along the unprotected section of EWA service corridors, in order to prevent unauthorized access to the site.

2.2.42 The Building Contractor should discuss with DPS representative the sign board/crane and radius of movement at the site close to EWA overhead Network. DPS representative should approve these arrangements.

2.2.43 The Building Contractor should exercise caution while demolishing the existing structure/ operating of machinery, in the vicinity of EWA network.

2.2.44 The Building Contractor is obliged to cover existing electricity transmission network to ± 250 mm.

2.2.45 The Building Contractor should provide a minimum of 30 mm filler (seal-end) between EWA's boundary structure and adjoining compound wall/structure.

2.2.46 EWA imposes restriction on works in the vicinity of 400/220/66 KV transmission circuit, during summer peak period (between May and November).

2.2.47 Building Contractor has to deposit the cash insurance amount or a guarantee letter as determined by EWA ,in addition to providing proof of Third Party Liability Insurance cover for a minimum of BD 250,000 (Two hundred fifty thousand) Bahraini Dinars, in order to cover any damage or failure of EWA Network/ Substations in the working area, during the period of construction /or;

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2.2.48 Building Contractor has deposit the cash insurance amount or a guarantee letter as determined by EWA ,in addition to providing proof of Third Party Liability Insurance cover for a minimum of BD 500,000 (Five hundred thousand) Bahraini Dinars, in order to cover any damage or failure of EWA Network/ Substations in the working area, during the period of construction/or;

2.2.49 Building Contractor has to deposit the cash insurance amount or a guarantee letter as determined by EWA ,in addition to providing proof of Third Party Liability Insurance cover for a minimum of BD 1,500,000 (One million and five hundred thousand) Bahraini Dinars, in order to cover any damage or failure of EWA Network/ Substations in the working area, during the period of construction /or;

2.2.50 Building Contractor has to deposit the cash insurance amount or a guarantee letter as determined by EWA ,in addition to providing proof of Third Party Liability Insurance cover for a minimum of BD 2,000,000 (Two million) Bahraini Dinars, in order to cover any damage or failure of EWA Network/ Substations in the working area, during the period of construction/or;

2.2.51 Building Contractor has to deposit the cash insurance amount or a guarantee letter as determined by EWA ,in addition to providing proof of Third Party Liability Insurance cover for a minimum of BD 4,000,000 (Four million) Bahraini Dinars, in order to cover any damage or failure of EWA Network/ Substations in the working area, during the period of construction /or;

2.2.52 Building Contractor has to deposit the cash insurance amount or a guarantee letter as determined by EWA ,in addition to providing proof of Third Party Liability Insurance cover for a minimum of BD 6,000,000 (Six million) Bahraini Dinars, in order to cover any damage or failure of EWA Network/ Substations in the working area, during the period of construction /or;

2.2.53 Building Contractor has to deposit the cash insurance amount or a guarantee letter as determined by EWA, in addition to providing proof of Third Party Liability Insurance cover for a minimum of BD 7,000,000 (Seven million) Bahraini Dinars, in order to cover any damage or failure of EWA Network/ Substations in the working area, during the period of construction.

2.2.54 The Applicant has to provide a copy of Third Party Liability Insurance cover to DPS, in addition to a proof of the deposit amount of the cash insurance or a guarantee letter as determined by EWA , at least 5-working days in advance of site works commencement date.

2.2.55 The Applicant has to ensure that spoil / construction materials – machinery / temporary worksites / blinding fence / porta-cabins / cranes - foundation pads or sign boards are not placed over the existing E&W underground services or the reserved corridors. The Applicant should ensure that EWA and its agents are having 24-hours unhindered access, for routine/ emergency maintenance works.

2.2.56 EWA Power Conditions do not cover any other works like foot-path/paving blocks/landscaping work, proposed to be constructed by the developer outside the plot boundary. Any such works should be the subject of a wayleave, which is to be initiated through Central Planning Office/ Roads, Ministry of Works.

2.2.57 Prior to the clearance of DPS permission to proceed working on site located in the vicinity of EWA services, the Applicant has to sign an Undertaking Letter for guaranteeing safety of EWA services. (Undertaking Form is attached),

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2.3 Load & Supply Arrangement

This section reviews the standard conditions of the connecting point between the Building / Development and EWA supply, as applicable.

2.3.1 All meters of the Building/ Development shall be in one location and connected from Single Point of Supply.

2.3.2 In general, Main Electricity Board (Meters and Circuit Breaker / Cut-out) shall be on Boundary Wall facing main road, accessible to EWA staff for 24 hours.

2.3.3 Meter Board should be designed and fabricated in accordance with EWA specifications. A sample design is attached.

2.3.4 For security and safety requirements, when installing meters in a multi-storey building, the meter board and circuit breakers/cutouts must be placed inside a room with sufficient ventilation and cooling, isolated and away from the path of the residents and Fire Brigade.

2.3.5 In the case of multi-storey Building / Development, the Applicant should submit the Single Line Diagram of the installations for approval by EDD (Construction Section, Planning & Materials Section) Internal wiring and installations should comply with EWA Regulations for Electrical Installations and be approved by EDD before applying for Electricity Supply.

2.3.6 Power Condition is granted as agreed with the associated Planning Permission, approved previously, as applicable.

2.3.7 Power supply will be as per the MOU agreed upon by EWA and the Applicant.

2.3.8 All internal and external infrastructure works of the project are on the responsibility of the Applicant, as per the MOU.

2.3.9 Power supply shall be as per Power Supply Confirmation Form issued by the Main Developer.

2.3.10 The Applicant has to comply with the Term and Conditions of the 11 KV Consumers.

2.3.11 Before submitting an Application for Electricity Supply, the Applicant should submit the needed technical reports to EDD (Planning & Material Section), for their approval on Power Factor & Harmonics study of the applied load.

2.3.12 Before submitting an Application for Electricity Supply, the Applicant should apply the needed technical reports to EDD (Planning & Material Section) for their approval of Electrical Materials and Equipment installed in the Building.

2.3.13 As per the Declaration Form, Electricity Supply shall be provided only after a New Substation is constructed by the Applicant. The substation design should be approved by EDD Civil Section and executed under their supervision.

2.3.14 EWA has reserves its right to operate the substation that built by the applicant, as well to feed other customers without prior permission from the Applicant.

2.3.15 The Applicant should provide a plot of 45 mx 45 m for building a Primary S/S.

2.3.16 The Applicant should build a Primary S/S within the boundary of the Project.

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2.3.17 Electricity Supply shall be connected to the building from the Primary S/S located within the boundary of the Project.

2.3.18 Electricity Supply shall be provided through Underground Cable only.

2.3.19 Electricity Supply shall be provided without any change in the current cable or cut-out size, only Electricity Meter will be changed.

2.3.20 New loads will not be connected to the building, as per a documented confirmation by the applicant.

2.4 Technical Specifications and Conditions of the Substations

According to "Load Criteria for Electrical Supply," the applicant has to build a Distribution/ Primary S/S in order to feed the Approved Load.

This chapter reviews the technical conditions and specifications for constructing substations, as applicable

2.4.1 Special Conditions for building a Substation

1. Substation location to be shown in the "Ground Floor Plan" or "Site Development Plan", as applicable.
2) Substation door should open to a main public road with 5.0 m minimum width.
3. For safety and protection of the substation, the Applicant should avoid wet areas (toilets, kitchens, pump rooms, etc.), above or in the surrounding of the substation.
4. In case wet area is unavoidable above S/S, the Applicant should construct double slab, with a gap of minimum 1.0 m between the two slabs.
5. Building drawings should show cross-section of the S/S building and above.
6. For protection and safety, the applicant should avoid basement under S/S.
7. In case a basement is unavoidable under the S/S building, head room under S/S trench work should be a minimum of 2.5 m and the Applicant should show reinforcement details for floor and trenches bed.
8. Building columns / column projection are not allowed inside a S/S building.
9. Building columns should not obstruct routes of LV and MV cables.
10. The Applicant Switch room should have a minimum clear width of 2.0 m.
11. The Applicant Switch room should be attached to S/S, or away from the S/S with a maximum distance of 10 m. In case that arrangement not achievable, the Applicant should provide channels or trenches for passage of cables, with inspection rooms sized 1.2 m x 1.2 m every 15 meters. The approved arrangement should be documented in the engineering drawings of the Building / Development.
12. Sufficient ventilation to be provided for S/S. Ventilation proposal should be approved by EDD.
13. The Applicant is responsible to provide the official road level in front of S/S, from the Roads Directorate.

The requirements Electricity and Water Authority - Electricity Distribution Directorate Industrial Security and safety Directorate

14. The Applicant should ensure that the top level of all foundation in substation area is 750 mm below existing road level.
15. The Applicant should ensure that services of other utilities are not passing within or under substation building.
16. The Applicant should submit all S/S's drawings including ventilation proposal, for EDD approval before start constructing the S/S building.
17. No construction works are allowed above substation building of types: Free Building / Package Unit.
18. Applicants and other parties are not allowed to use substation buildings for any other usage than those stated in the definitions.
19. Applicants and other parties are not allowed to change the design of substations building.
20. The Applicant has to comply with the standard sizes of substation building. If not achievable, the Applicant has to approach EDD, Civil Engineering Section and get their approval through an application of pre-consultation, before applying for the Building Permit stage.

2.4.2 Standard Specifications for Substation Buildings

According to the Load Criteria for Electrical Supply, the applicant must build the substation, while complying with the standard drawings and technical specifications mentioned in the "Power Conditions Form", and while adhering to the comments of EWA Civil Engineer, mentioned in the approved drawings.

The following is the list of standard Specifications of Substation Buildings to be mentioned in the "Power Conditions Form":

Ref. No.	Drawing Number	Substation Capacity and Type		S/S size in (m)	DOOR			No. of Exhaust Fan (ExF) / No. of (2 ton) Split Unit A\C
					No.	Size in (m)		
						W	H	
1	A/BA/647-R2	1 TX 1000KVA	Door on short side	4.8×7.6×3.0	1	2.4	2.5	1 ExF
2	A/BA/638-R2	1 TX 1000KVA	Standard	6.6×4.4×3.0	1	2.4	2.5	1 ExF
3	A/BA/670-R2	1 TX 1500KVA	Door on short side	5.2×7.6×3.3	1	2.4	2.5	2 ExF
4	A/BA/668-R3	1 TX 1500KVA	Standard	7.0×4.8×3.3	1	2.4	2.5	2 ExF
5	A/BA/644-R2	2 TX 1000KVA (2 No. L.V Boards)	Standard	10.9×5.5×3.0	2	2.4	2.5	2 ExF

The requirements Electricity and Water Authority - Electricity Distribution Directorate Industrial Security and safety Directorate

Ref. No.	Drawing Number	Substation Capacity and Type		S/S size in (m)	DOOR			No. of Exhaust Fan (ExF) / No. of (2 ton) Split Unit A\C
					No.	Size in (m)		
						W	H	
6	A/BA/711-R1	2 TX 1000/1500KVA (3 No. L.V Boards + ACB)	Door on short side	6.9×12.25×3.3	1	2.4	2.5	3 ExF
7	A/BA/730-R1	2 TX 1500KVA (3 No. L.V Boards + ACB)	Standard	12.0×6.0×3.3	2	2.4	2.5	4 ExF
8	A/BA/744	2 TX 1500KVA (4 No. L.V Boards)	Standard (Not rate in MTC)	12.0×8.0×3.3	2	2.4	2.5	4 ExF
9	A/BA/645-R2	3 TX 1000KVA (3 No. L.V Boards)	Standard	12.8×5.5×3.0	3	2.4	2.5	3 ExF
10	A/BA/727-R1	3 TX 1500KVA (3 No. L.V Boards + ACB)	Standard	14.0×6.0×3.3	3	2.4	2.5	5 ExF
11	A/BA/745	3 TX 1500KVA (6 No. L.V Boards)	Standard (Not rate in MTC)	17.2X8.0X3.3	3	2.4	2.5	5 ExF
12	A/BA/746	4 TX 1500KVA (4 No. ACB)	Standard (Not rate in MTC)	17.5X6.0X3.5	4	2.4	2.5	5 ExF
13	A/BA/726	2 TX 1500KVA (4 No. L.V Boards)	Double Story Building	(G.F): 7.9×5.9×3.6 (F.F): 7.9×5.9×3.0	1 1	2.4 3.4	2.5 2.7	3 ExF 1 ExF
14	A/BA/739-R1	11KV Intake (9 Panels)	Standard	11.4×8.0×4.0	2	2.4	2.88	6 A/C
15	A/BA/739-R1	11KV Intake (7 Panels)	Standard	10.0×8.0×4.0	2	2.4	2.88	4 A/C
16	A/BA/684-R1	11KV Intake (3 Panels)	Standard	6.0×8.0×4.0	1	2.4	2.88	3 A/C
17	1A/BA/687-R2	Package Building 1000 KVA	Standard	4.0×3.8×3.0	1	2.9	2.5	1 ExF
18	A/BA/741-R1	Package Building 1500 KVA	Standard	4.6×3.8×3.3	1	3.55	2.5	2 ExF
19	A/BA/656-R1	L.V. Switch room	Standard	Size: 2.2×2.3×3.0 (min) Size is determined by the size of Meter Board of the Building and the number of meters and ACB				

The requirements Electricity and Water Authority - Electricity Distribution Directorate Industrial Security and safety Directorate

2.5 EWA Readiness to Supply

This section reviews the general criteria of EWA readiness to supply the approved load and will be stated in the “Power Conditions Form”, as applicable. The standard time associated with readiness is indicated in this Code.

2.5.1 List of Readiness Criteria

1. Supply depends on the network readiness at the time of the Application for Supply.
2. The Applicant should check with EWA, EDD, the status of the Network/ Distribution S/S / Primary S/S before applying for electricity supply.
3. Electricity Supply shall be available only after a New Primary S/S is constructed and energized within the Development.
4. Electricity Supply shall be available only after a New Primary S/S is constructed and energized in the nearby area.
5. Electricity Supply shall be available only after a New Distribution Substation, reserved to the related area, is constructed and energized.
6. Electricity Supply shall be available only after Reinforcement / Rearrangement of nearby 11 kV/ LV Network is completed.
7. Electricity Supply shall be available only after Uprating / Revitalization of related Distribution Substation is completed.
8. Electricity Supply shall be available only, after a Substation Plot is granted for EWA and a Substation, reserved to the related area, is constructed and energized.
9. Extension of network depends on grading / demarcation of approved service corridor.
10. Electricity Supply depends on the road condition/ readiness in the area.
11. Applicants for lands allocated through a Court Order, should approach EDD through an application of pre-consultation, in order to verify availability of electricity supply, before applying for Building Permit

The requirements Electricity and Water Authority - Electricity Distribution Directorate Industrial Security and safety Directorate

2.5.2 Average Durations for Readiness to Supply

Readiness of supply is associated with the readiness of the substations and networks as well as the readiness of the Building itself.

1. Readiness of the Substation constructed by EWA:

This period are defined by the following:

- The period required to possess a site to build the substation with the necessary permits. This period varies per areas and availability of locations for the substations.
- Construction of a Primary S/S building takes an average of 18 months.
- Construction of a Distribution S/S building takes an average of 6 months.
- Installing of electrical equipment inside the substation and connecting them to the network take an average of three weeks.
- Inspection and commissioning of the substation take an average of one week.

2. Readiness of EWA's Underground Network :

This period are defined by the following:

- Time period to get the permits for excavation work and it varies by the cable route(s).
- Time period for excavation the corridors of the underground network and laying the cables depends on the length of the network.
- Inspect and commissioning the network takes an average of about a week.

6. Attachments

- Form: Undertaking letter by the Applicant to Guarantee the Safety of EWA services.
- Form: Declaration for Substation.
- Meter board Specification.
- The Standard Drawings of Substation Buildings.

Appendix 1

Applicant Consent Form …

The requirements Electricity and Water Authority - Electricity Distribution Directorate Industrial Security and safety Directorate

EWA
هيئة الكهرباء والماء
Electricity & Water Authority
Kingdom of Bahrain

إدارة الأمن الصناعي والسلامة
INDUSTRIAL SECURITY & SAFETY DIRECTORATE

UNDERTAKING **تعهد**

Building Permit No: رقم ترخيص البناء:

I, the undersigned, hereby undertake to guarantee the safety of Electricity & Water services in the area where I have been permitted to carry out the works as per the above building permit and I acknowledge I responsible for any damage that occurs to these services during the period of executing the mentioned work and if damage occurs, I undertake to bear the repair cost to the Electricity and Water Authority (EWA), and will indemnify EWA their contractors, agents and employees for any such damage and repair cost.

أنا الموقع أدناه أتعهد بسلامة شبكة هيئة الكهرباء والماء بالمنطقة المصرح لي بتنفيذ العمل فيها بموجب ترخيص البناء اعلاه، وانا اتحمل كافة المسؤولية عن اي تلف أو ضرر قد يلحق بشبكة هيئة الكهرباء والماء. كما اتعهد بدفع تكاليف اصلاح أي ضرر يحدث اثناء العمل لشبكة هيئة الكهرباء والماء.

Owner Name:_____ _____: اسم صاحب الطلب

Owner CPR:_____ _____: الرقم الشخصي

Signature:_____ _____: التوقيع

Date:_____ _____: التاريخ

Electricity Account:_____ _____: رقم حساب الكهرباء

Address : _____ _____: عنوان المراسلة

E-mail:_____ _____: البريد الإكتروني

www.mew.gov.bh

P.O. Box: 2, Tel.: (+973) 17998778, Fax : (+973) 17554950

ص.ب: ٢ – هاتف: ١٧٩٩٨٧٧٨ (٩٧٣+) – فاكس: ١٧٥٥٤٩٥٠ (٩٧٣+)

Appendix 2

Applicant's Consent Form …

The requirements Electricity and Water Authority - Electricity Distribution Directorate Industrial Security and safety Directorate

To: Director, EDD — إلى: مدير إدارة توزيع الكهرباء

Subject: Declaration for Substation – الموضوع: تعهد خاص بمحطة كهرباء

رقم رخصة بناء Building Permit No.	رقم شروط الكهرباء Power Conditions No.

عنوان المبنى/ المشروع Building Address				
مبنى - Building	رقم العقار - Plot	طريق - Road	مجمع - Block	منطقة - Area

As per the process of getting EWA Power Conditions and Connection of Electricity Supply, I, the undersigned applicant, pledge the following:	ضمن إجراءات الحصول على شروط الكهرباء المذكورة أعلاه وبغرض توصيل الكهرباء للمبنى، أنا صاحب الطلب الموقع أدناه، أتعهد بالتالي:
1- To provide a plot for S/S, 2- To build Electrical S/S building, as per the standard conditions of the EWA "Electrical Guide",	1- توفير موقع 2- بناء محطة كهرباء بحسب الشروط القياسية الواردة في "**الدليل الكهربائي للمكاتب الهندسية والمقاولين**"
and the Standard Drawing No:	والرسومات القياسية رقم:
and number of Substation(s):	عدد المواقع / المحطات:
3- not impeding the entry of EWA employees and assigned contractors, to the station	3- عدم إعاقة دخول موظفي الهيئة والمقاولين المتعاقدين معها للمحطة
4- Not to use the station building for unauthorized purposes	4- عدم استخدام مبنى المحطة لأغراض أخرى غير مرخص بها
5- Not to tamper the station building or its surrounding area.	5- عدم العبث بمبنى المحطة أو إساءة استخدام المساحات البينية المحيطة بها
6- Not to object on EWA operations in the substation, including connecting of other customers.	6- عدم الاعتراض على قيام الهيئة بتشغيل المحطة وتوصيل مشتركين آخرين بالكهرباء.

Owner Name:	**اسم صاحب الطلب (المالك):**
Owner CPR:	**الرقم الشخصي:**
Signature (as on the CPR):	**التوقيع: (مطابق للبطاقة السكانية)**
Date:	**تاريخ:**

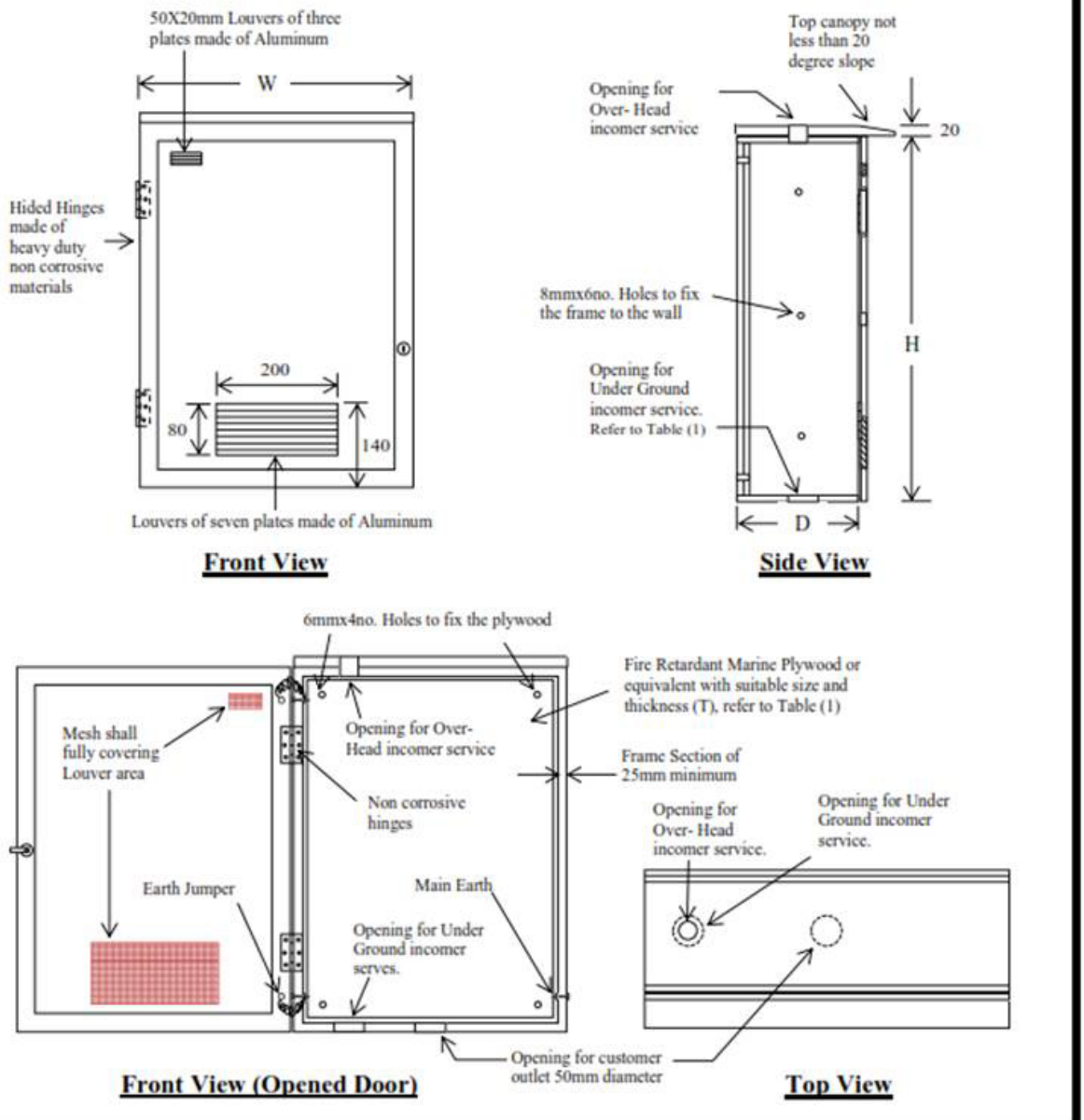
Appendix 3

Standard Form of Meter board

The requirements Electricity and Water Authority - Electricity Distribution Directorate Industrial Security and safety Directorate

KINGDOM OF BAHRAIN ELECTRICITY & WATER AUTHORITY ELECTRICITY DISTRIBUTION DIRECTORATE PLANNING AND MATERIALS SECTION	DESCRIPTION NO.: S-4246 B	PAGE 7 OF 7

KINGDOM OF BAHRAIN
ELECTRICITY AND WATER AUTHORITY
ELECTRICITY DISTRIBUTION DIRECTORATE

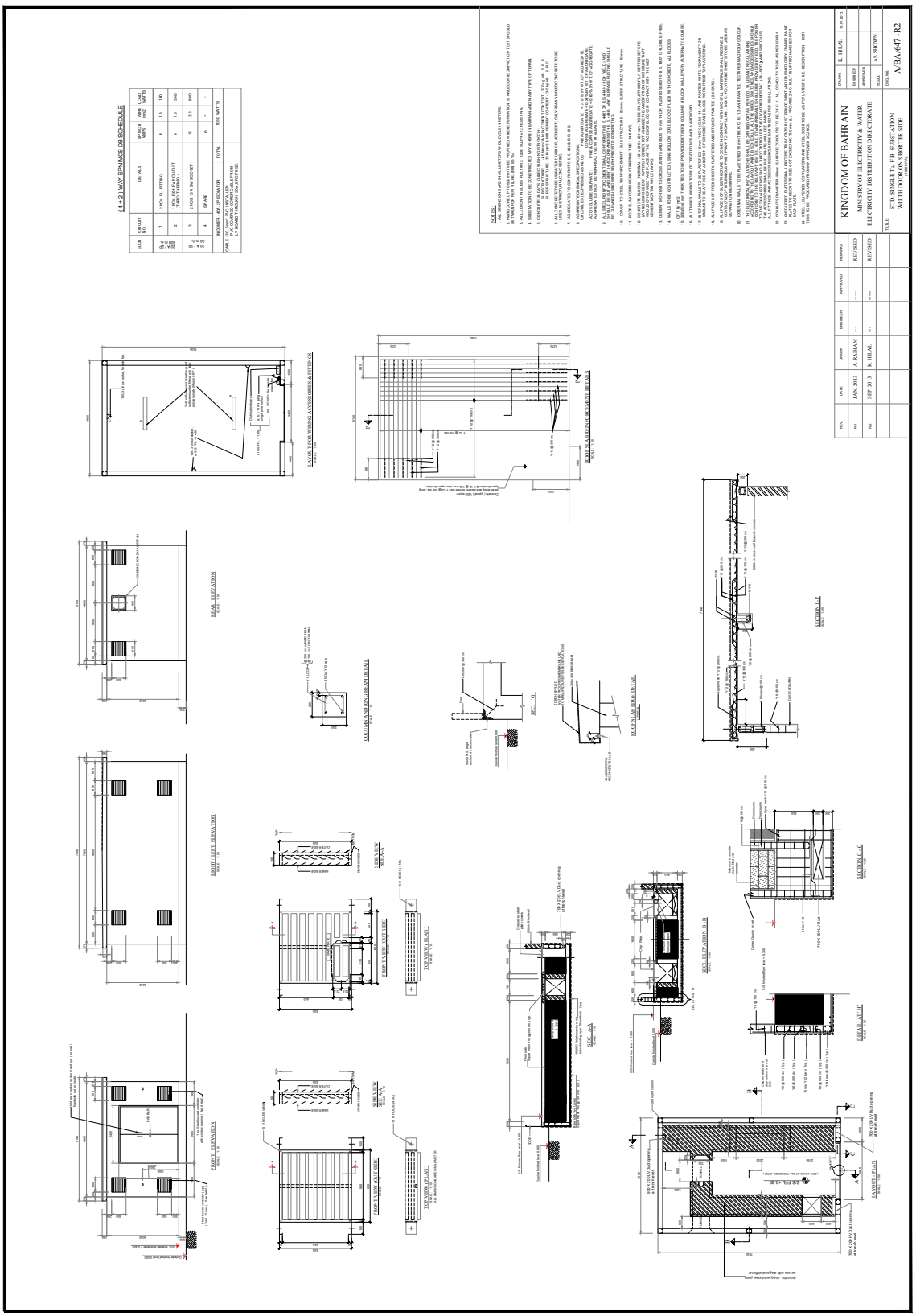


TITLE:	DOMSTIC METER CABINET

Appendix 4

Standard Form of Meter board

The requirements Electricity and Water Authority - Electricity Distribution Directorate Industrial Security and safety Directorate



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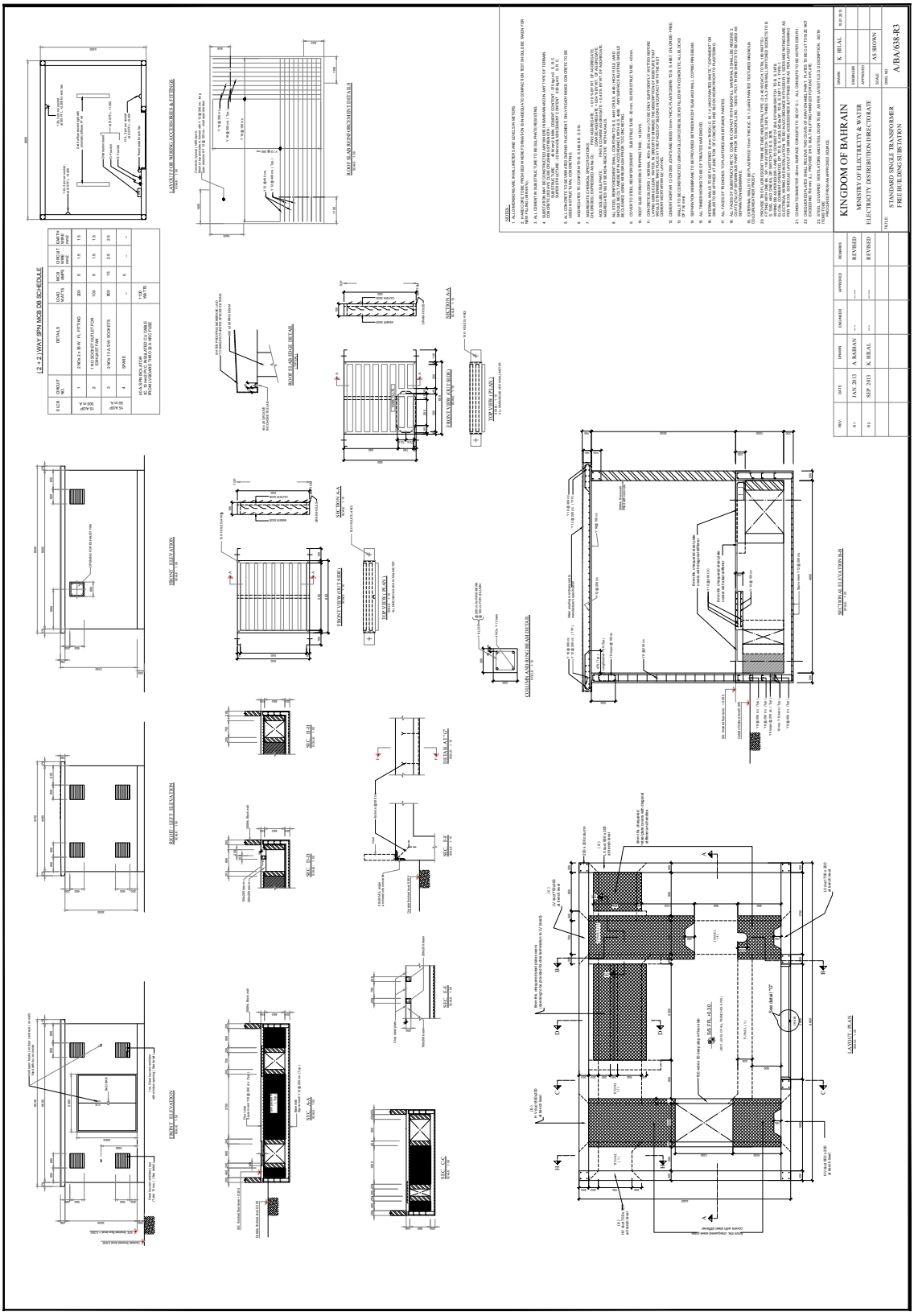

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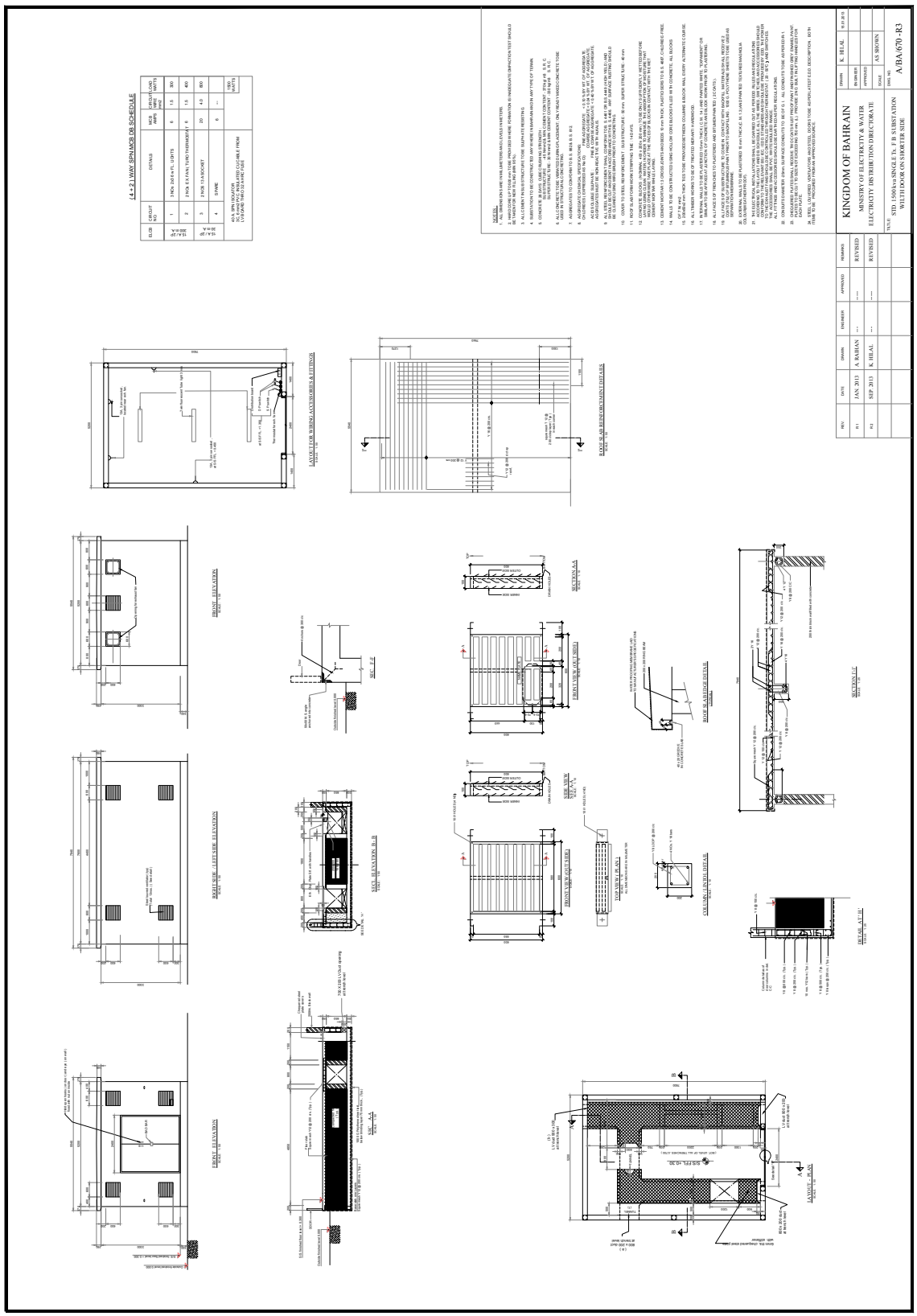

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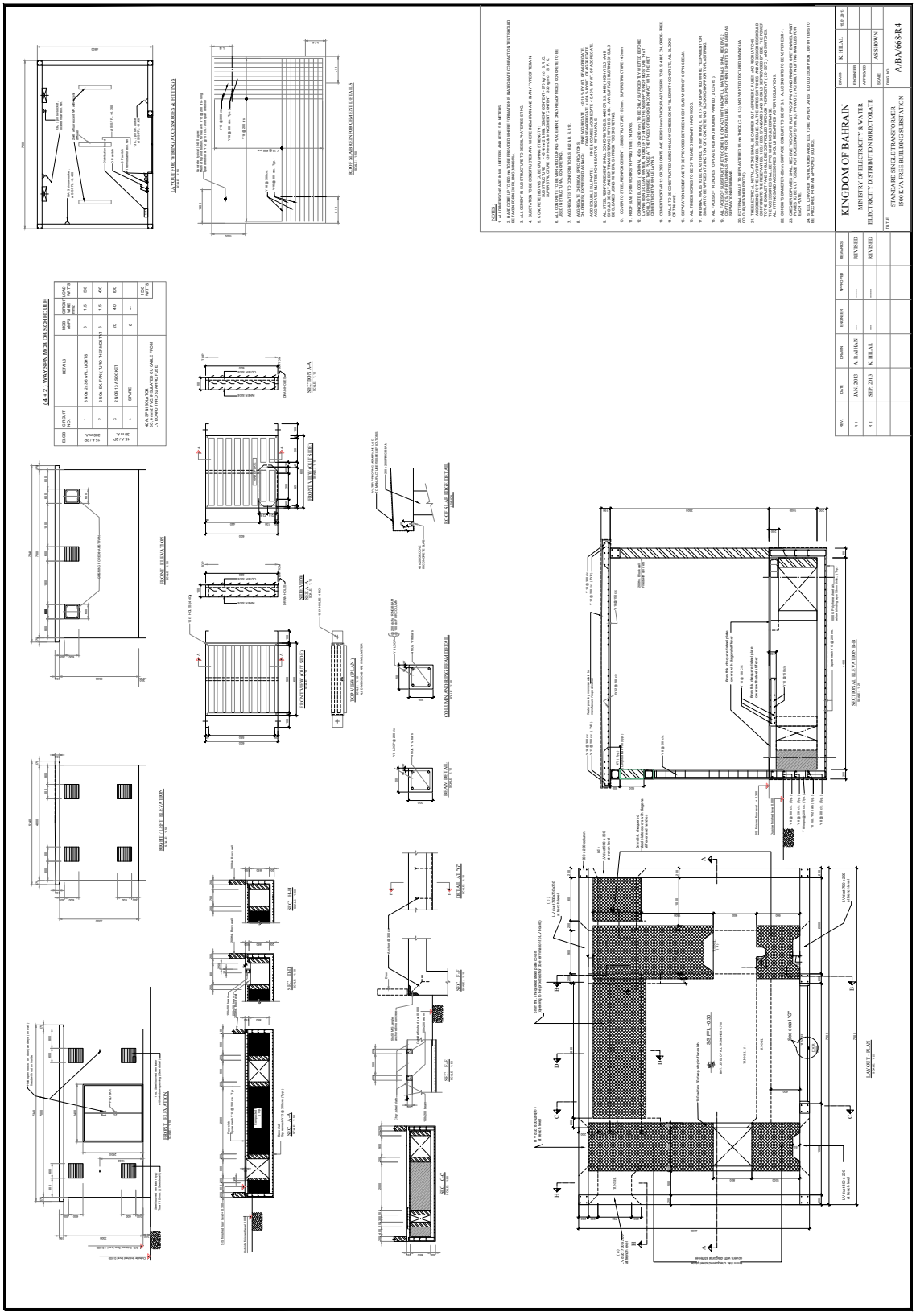

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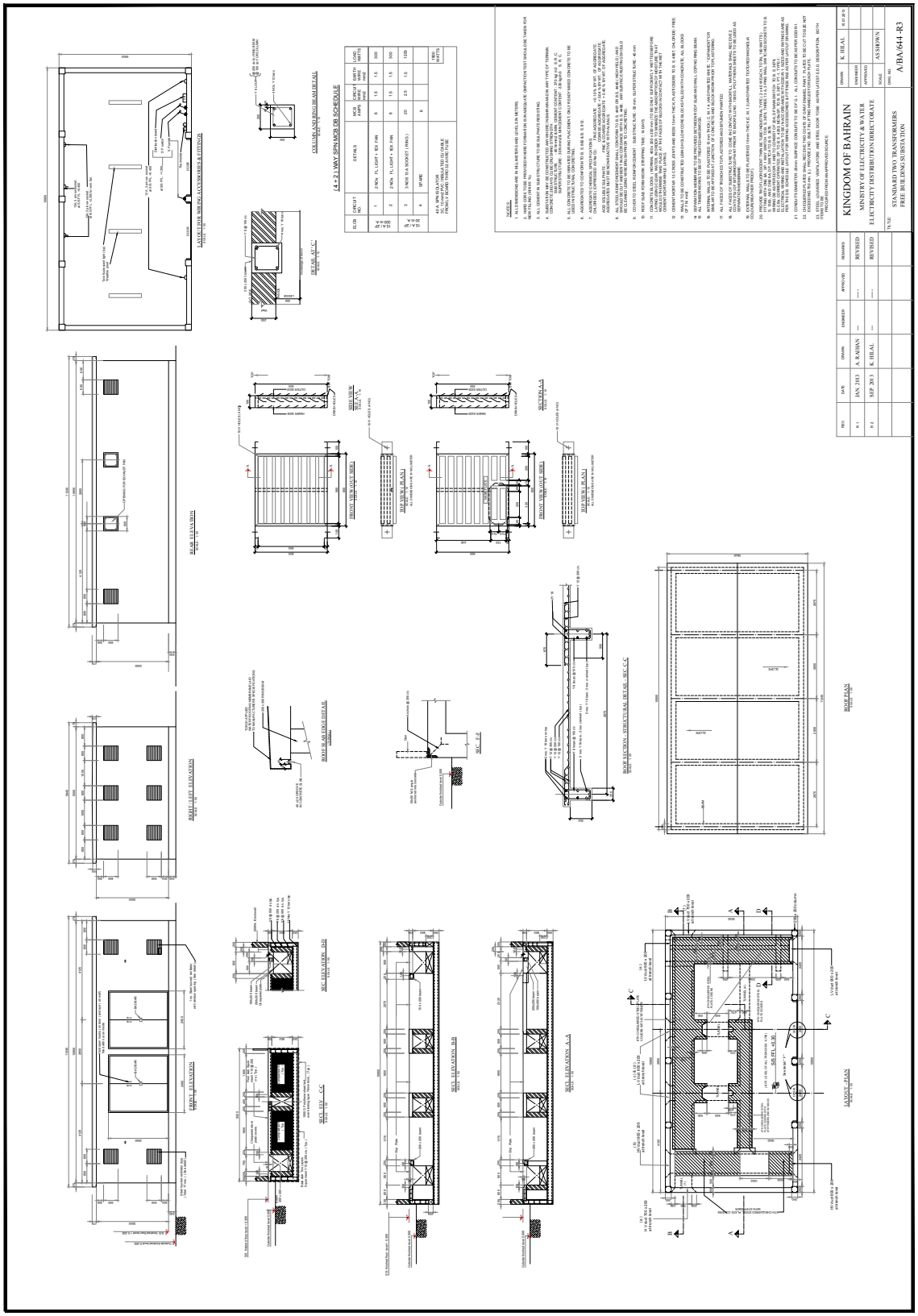

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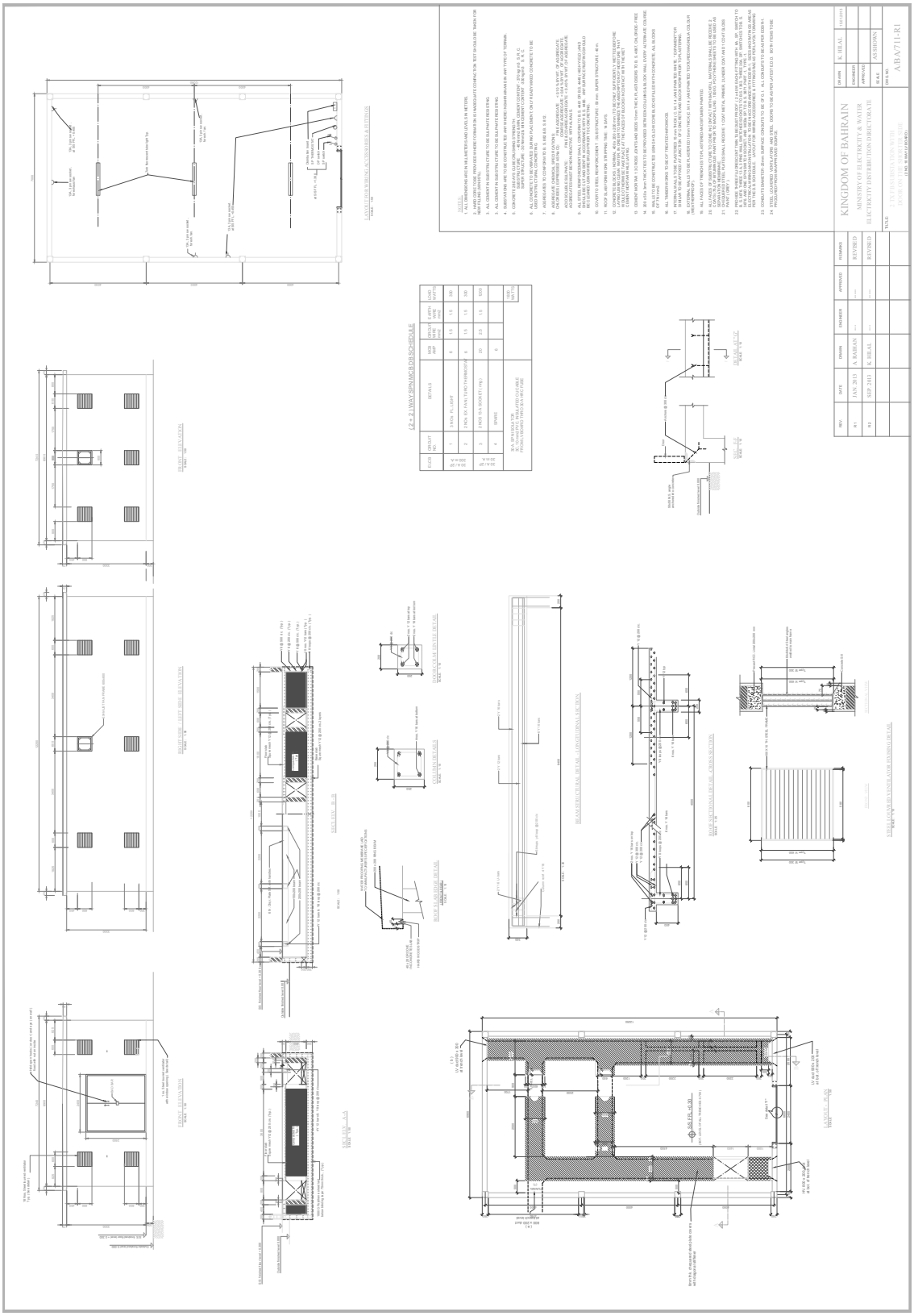

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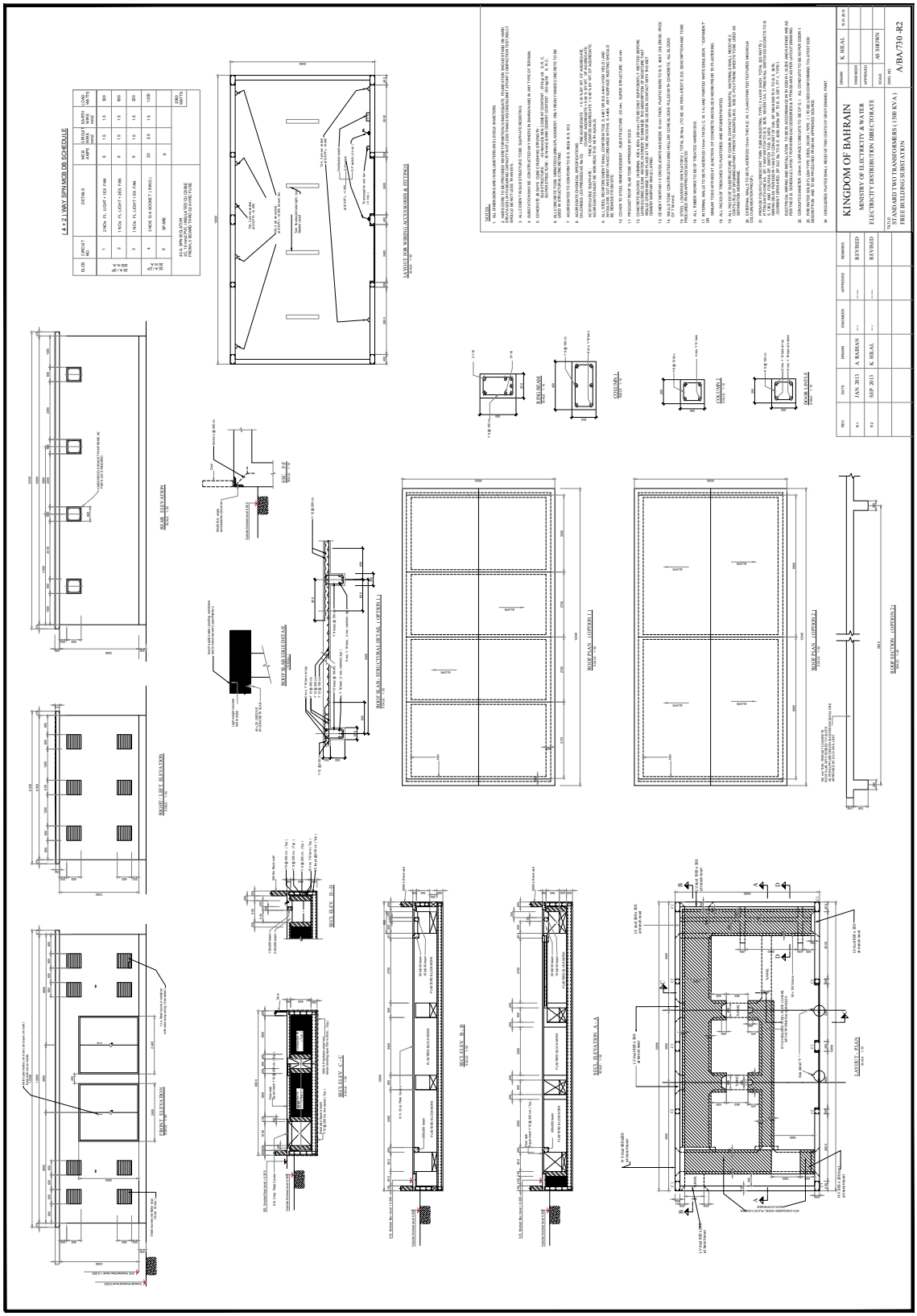

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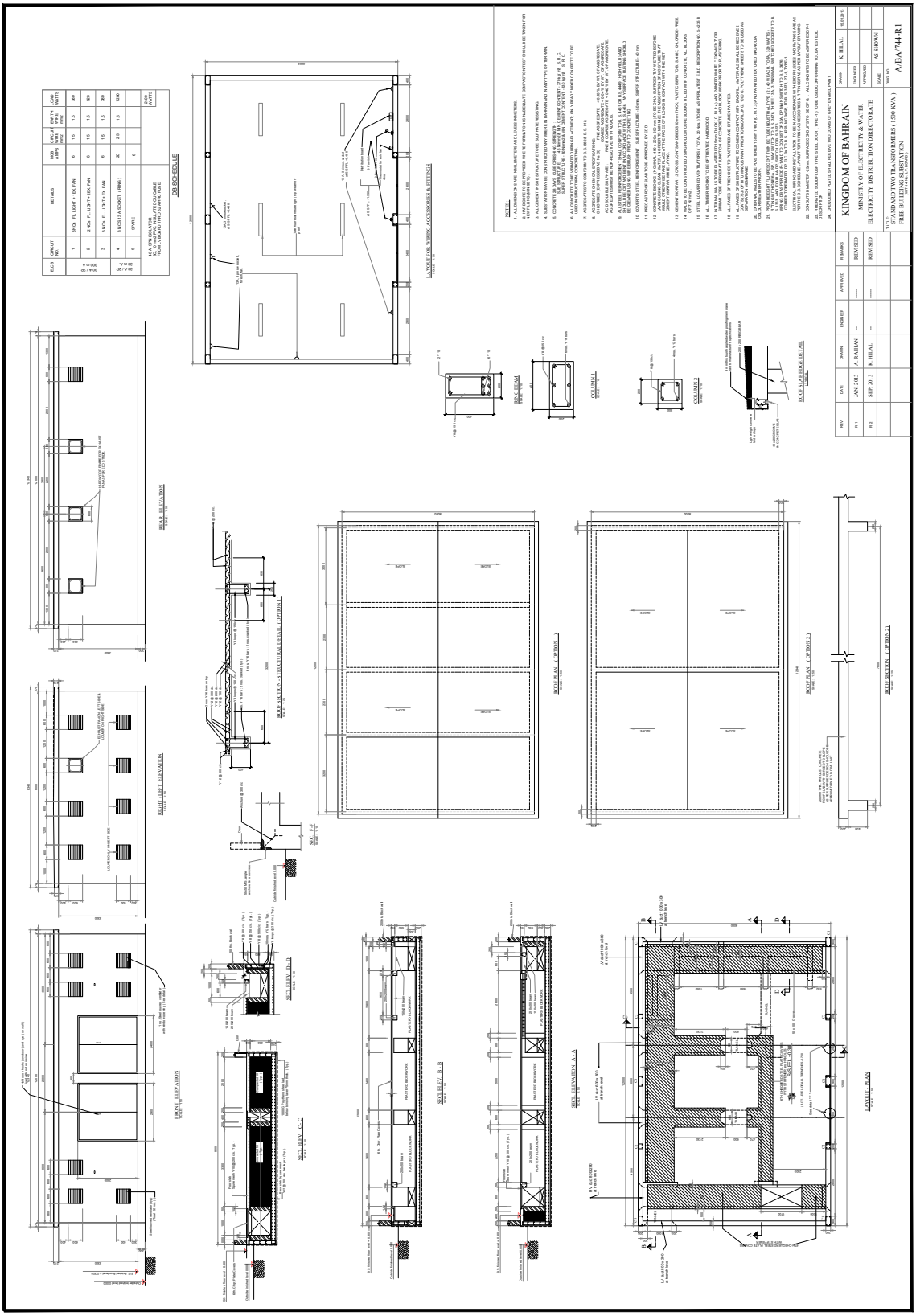

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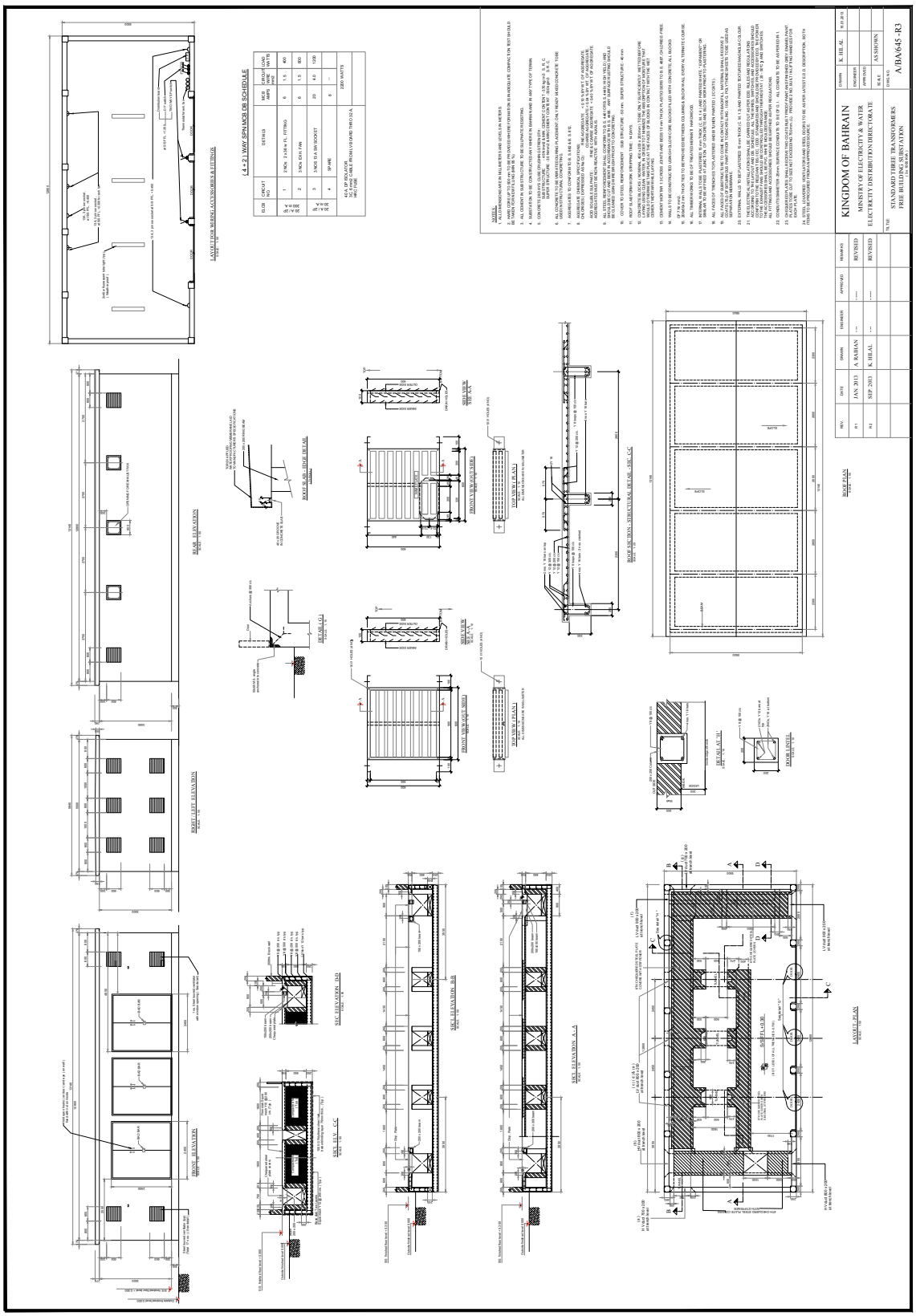

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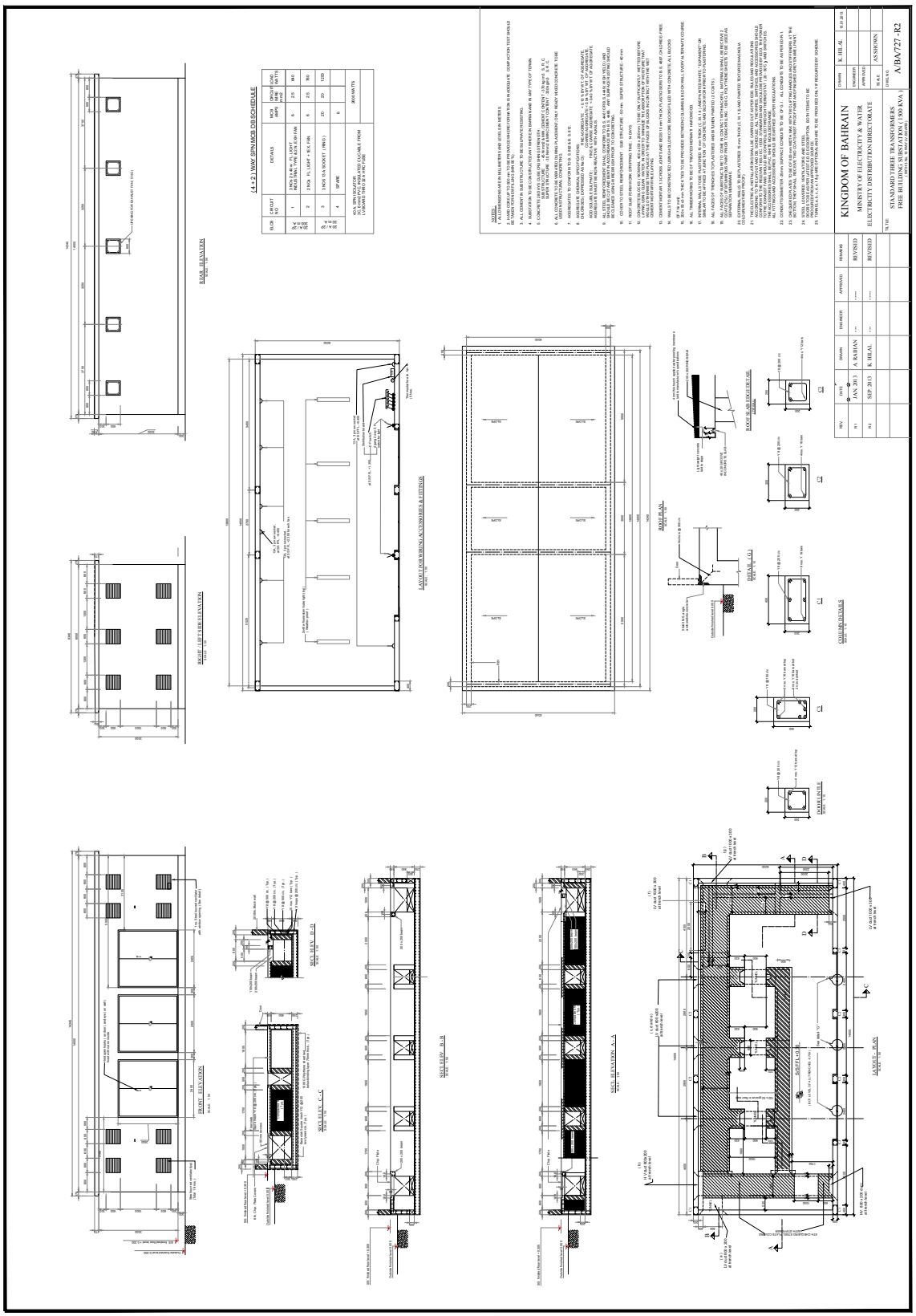
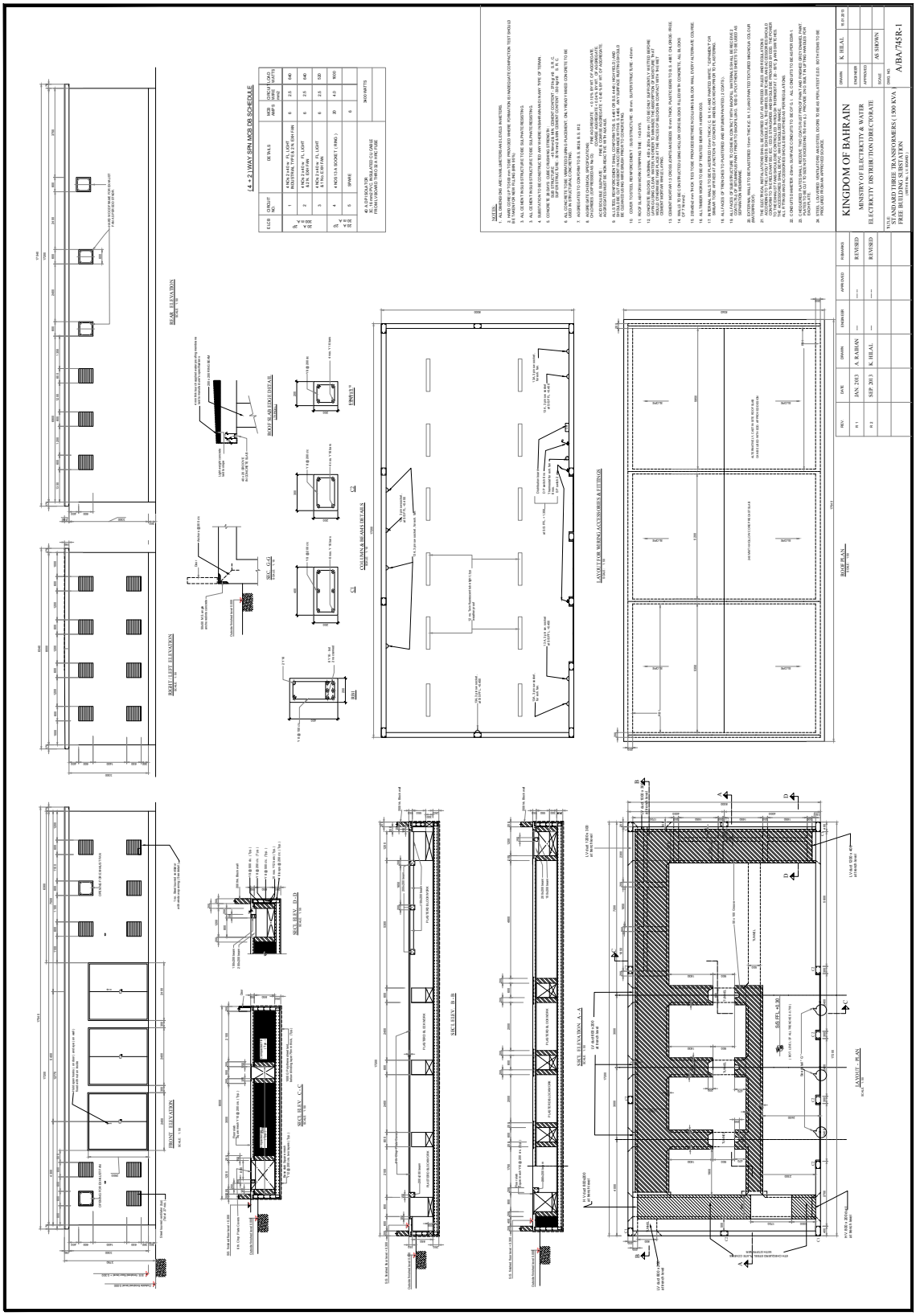


The requirements Electricity and Water Authority - Electricity Distribution Directorate Industrial Security and safety Directorate



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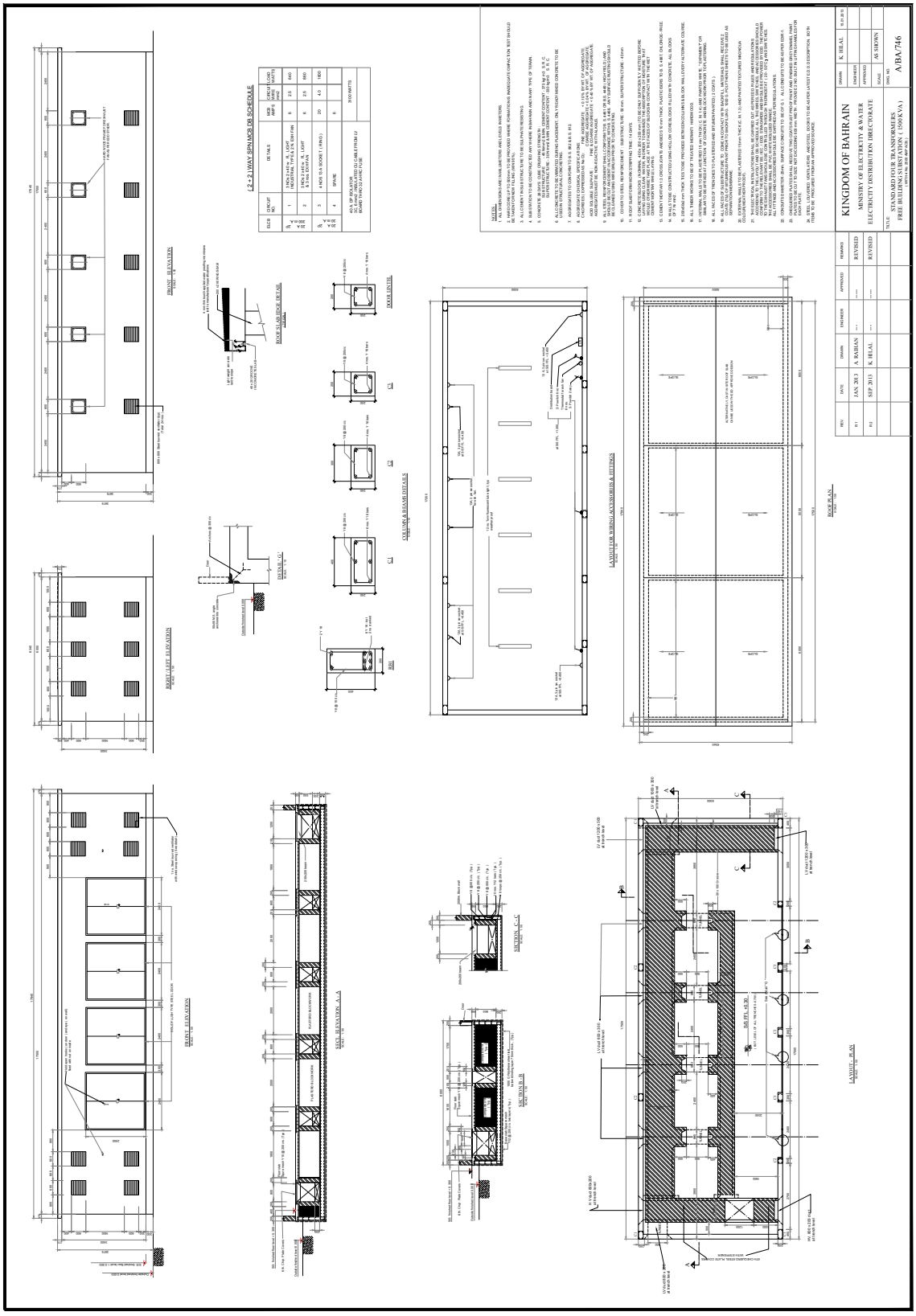

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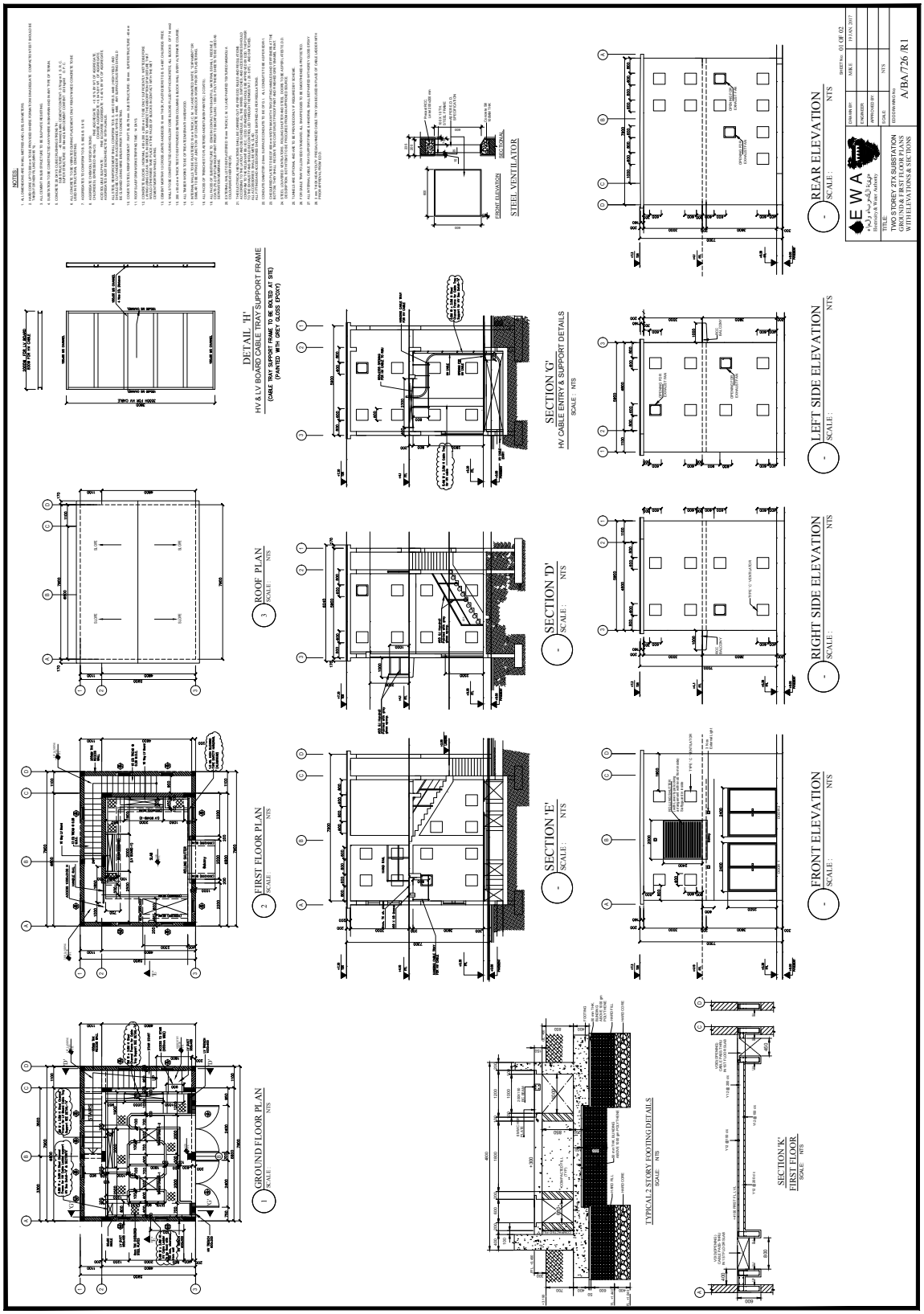

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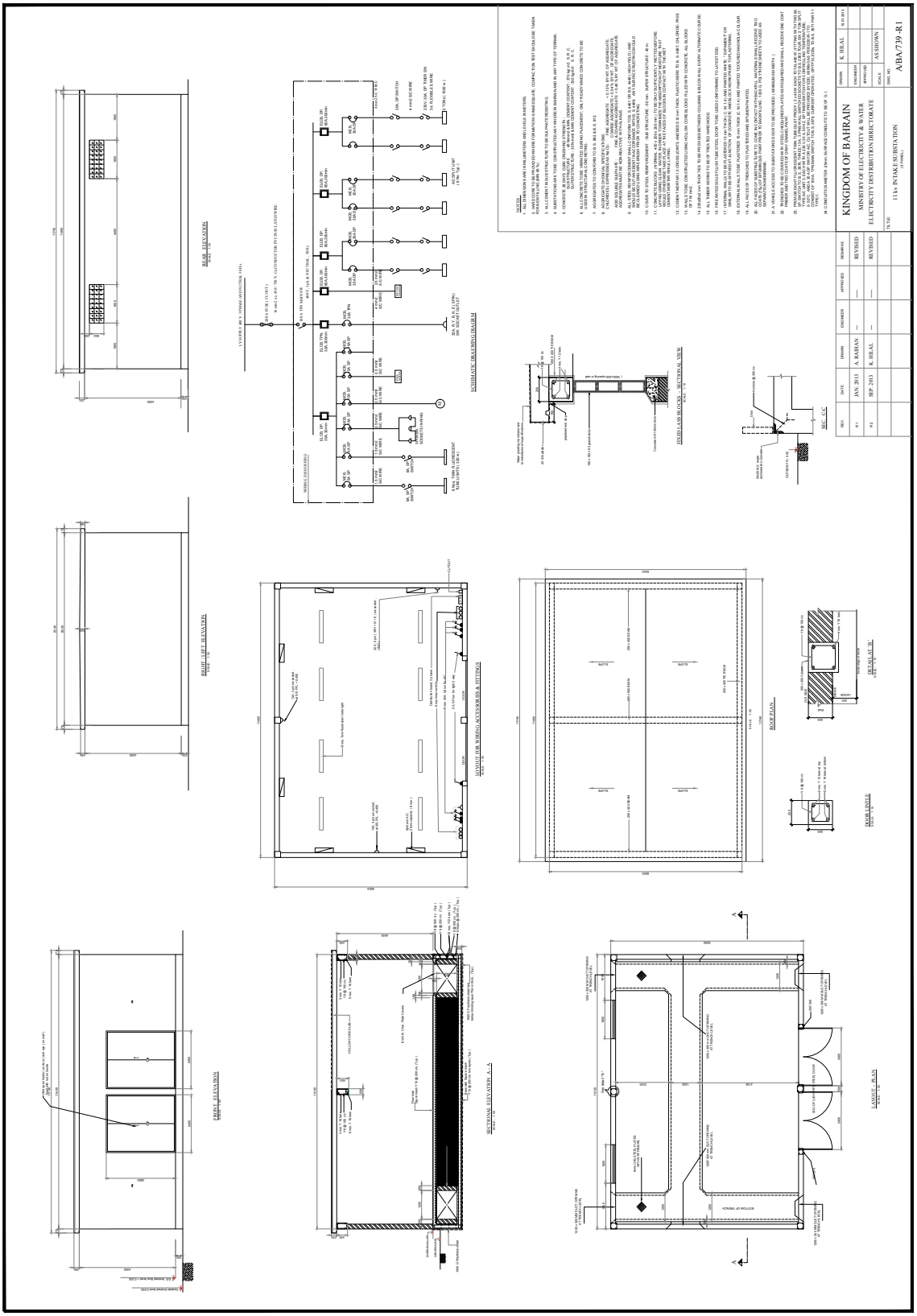

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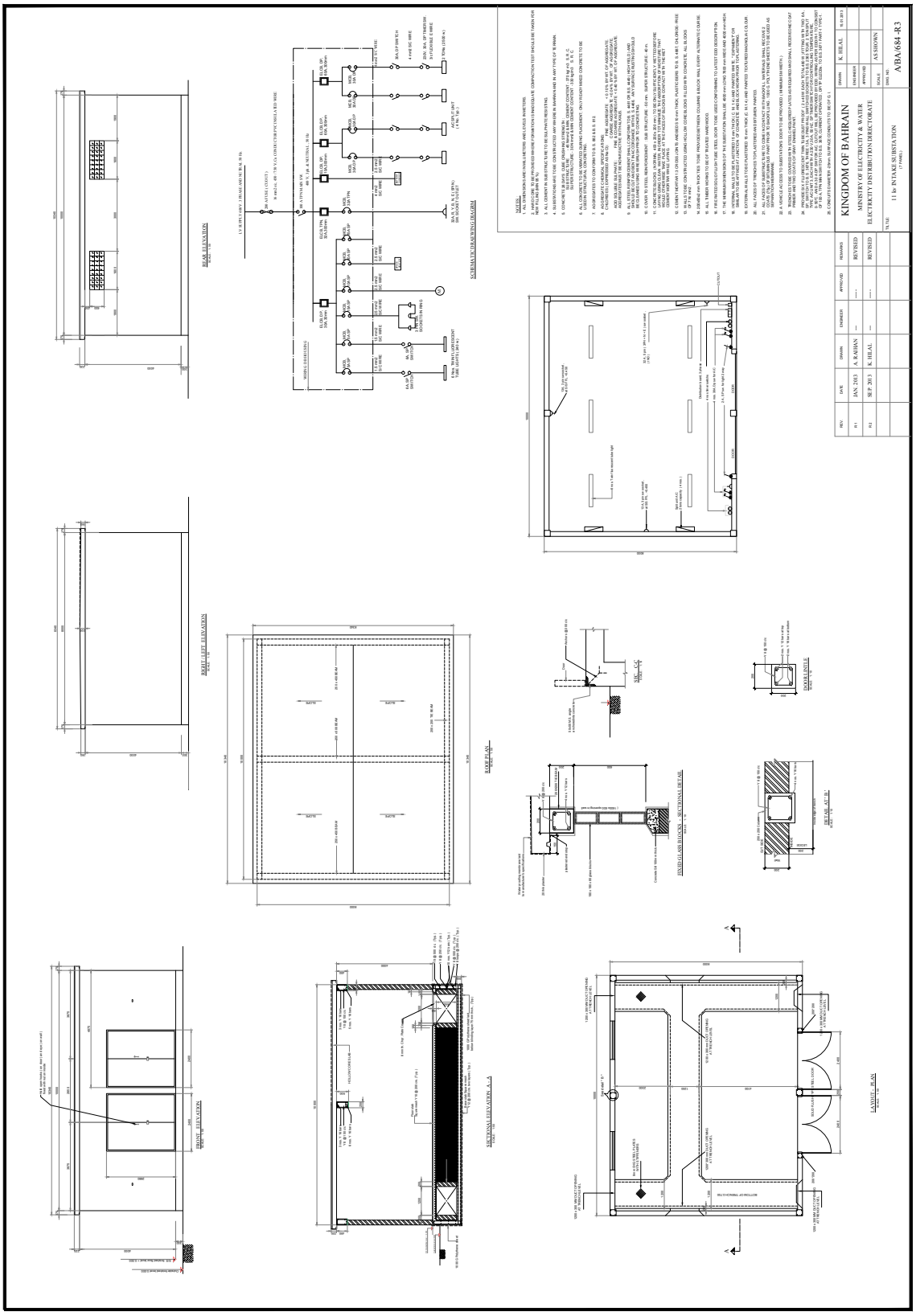

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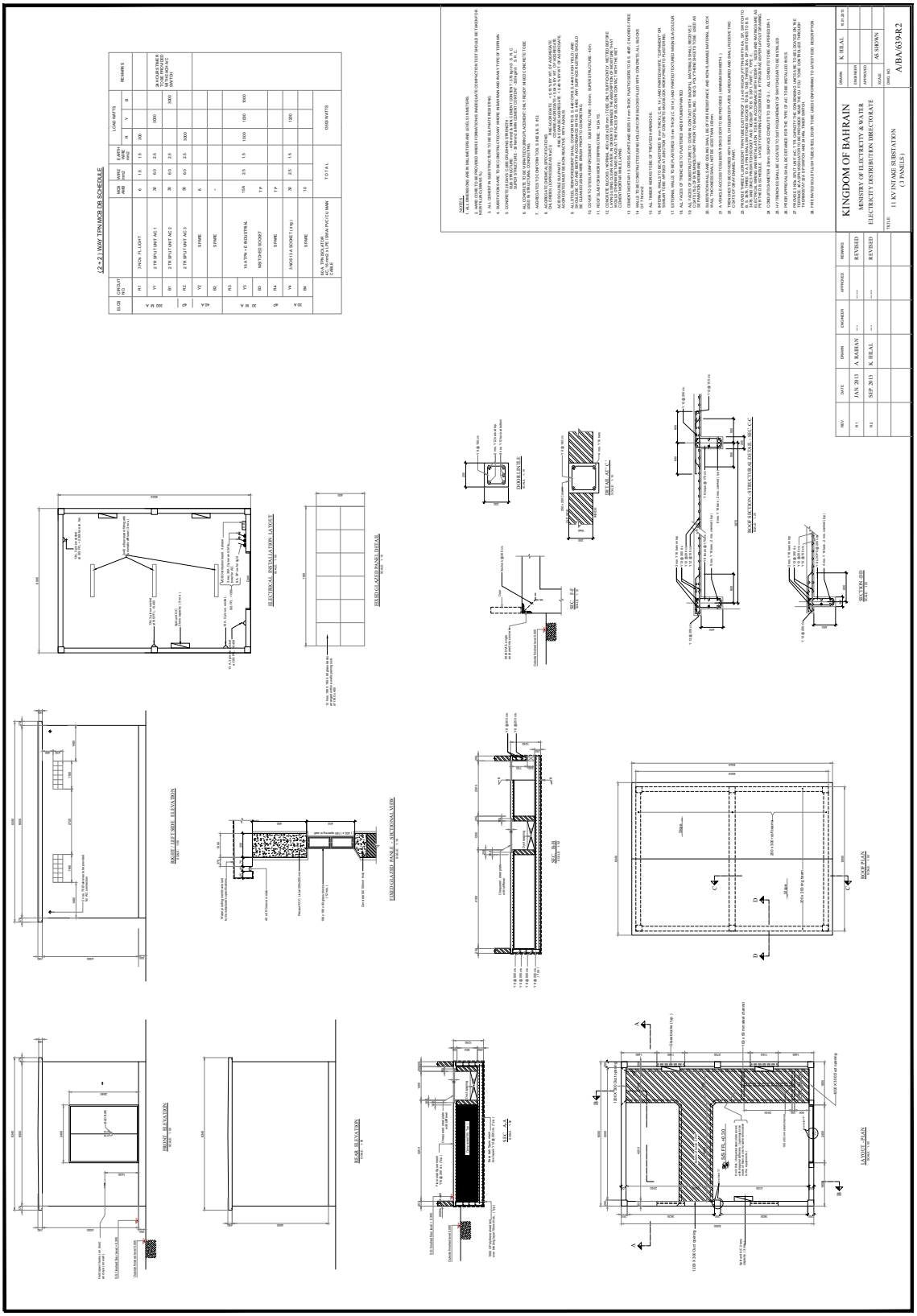

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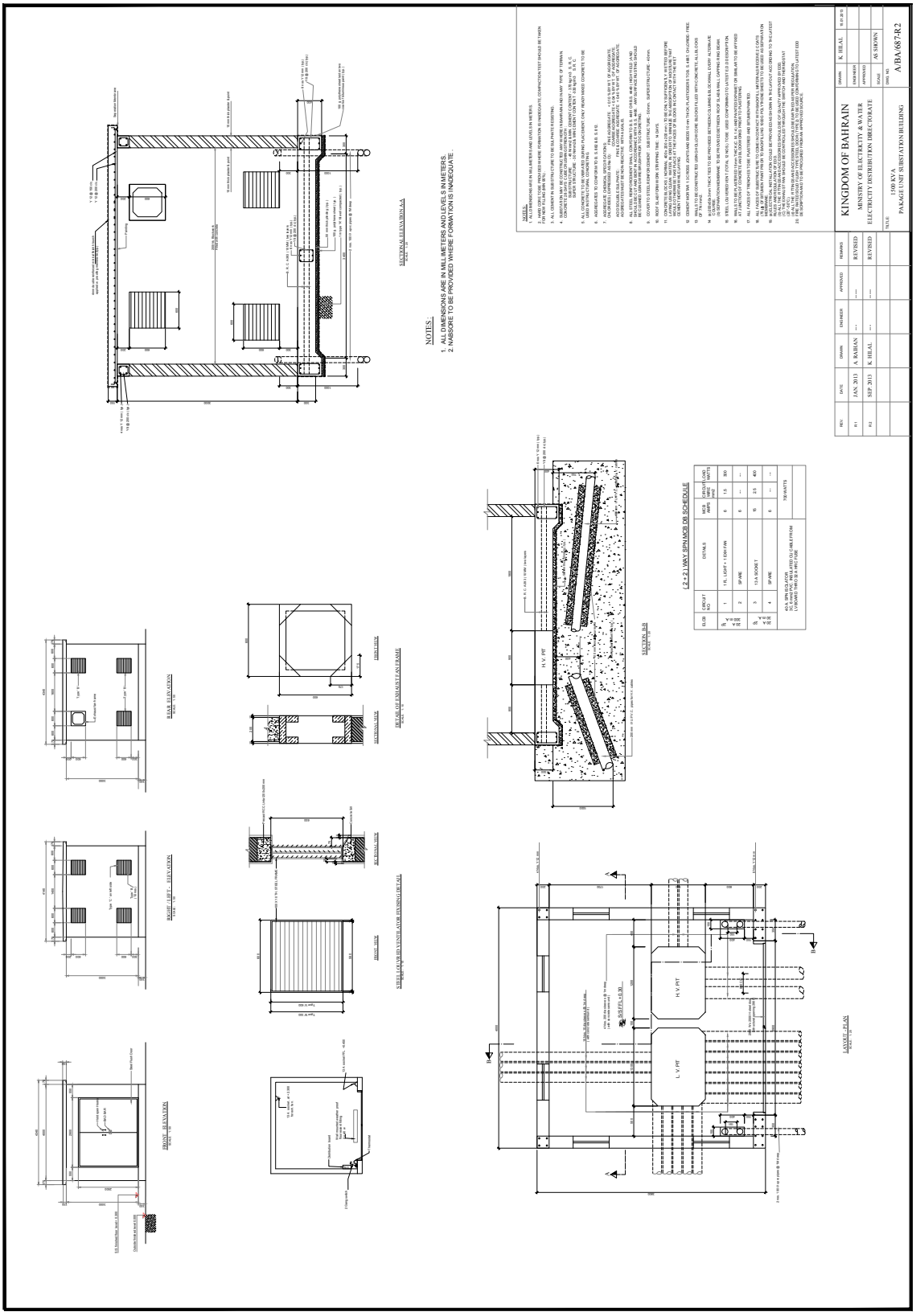

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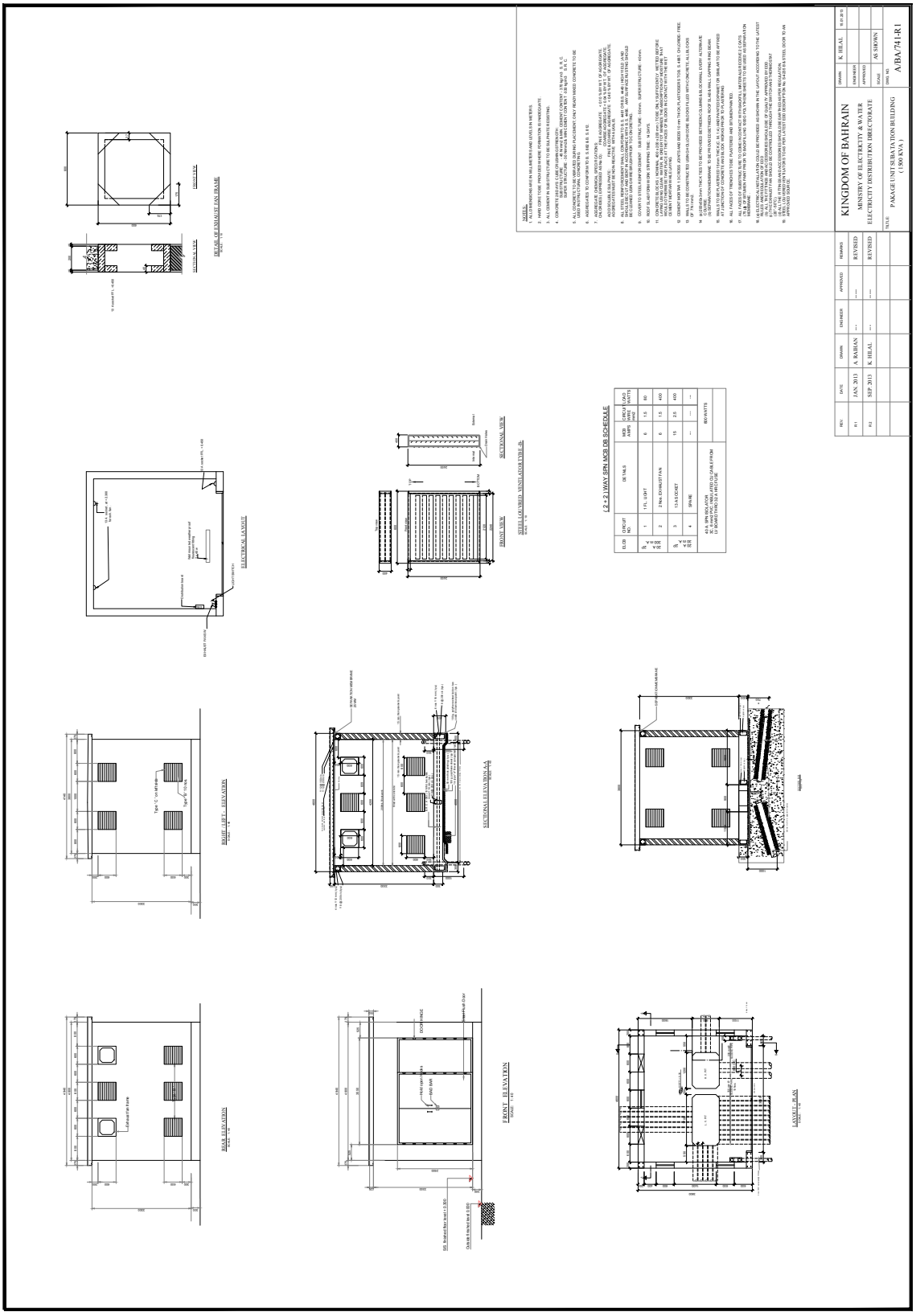

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