



<p>RETURN BIDS TO: RETOURNER LES SOUMISSIONS À:</p> <p>Bid Receiving - Environment Canada / Réception des soumissions – Environnement Canada</p> <p>Electronic Copy: ec.soumissions- bids.ec@canada.ca</p> <p>BID SOLICITATION DEMANDE DE SOUMISSIONS</p> <p>PROPOSAL TO: ENVIRONMENT CANADA</p> <p>We offer to perform or provide to Canada the services detailed in the document including any attachments and annexes, in accordance with the terms and conditions set out or referred to in the document, at the price(s) provided.</p> <p>SOUMISSION À: ENVIRONNEMENT CANADA</p> <p>Nous offrons d'effectuer ou de fournir au Canada, aux conditions énoncées ou incluses par référence dans le document incluant toutes pièces jointes et annexes, les services détaillés dans le document, au(x) prix indiqué(s).</p>	<p>Title – Titre Replacement of Rotary UPS by a Static UPS 200KW</p>		
	<p>EC Bid Solicitation No. /SAP No. – N° de la demande de soumissions EC / N° SAP</p> <p>5000051684</p>		
	<p>Date of Bid solicitation (YYYY-MM-DD) – Date de la demande de soumissions (AAAA-MM-JJ) April 21, 2020</p>		
	<p>Bid Solicitation Closes (YEAR-MM-DD) - La demande de soumissions prend fin (AAAA-MM-JJ)</p> <p>at – à 2:00 P.M. on – le June 18th, 2020</p>	<p>Time Zone – Fuseau horaire</p> <p>Eastern Standard Time</p>	
	<p>F.O.B – F.A.B</p>		
	<p>Address Enquiries to - Adresser toutes questions à Anthony De Flavis</p>		
	<p>Telephone No. – N° de téléphone 514-283-5958</p>		<p>Fax No. – N° de Fax</p>
	<p>Delivery Required (YEAR-MM-DD) – Livraison exigée (AAAA-MM-JJ)</p>		
	<p>Destination - of Services / Destination des services See Herein</p>		
	<p>Security / Sécurité</p> <p><i>No Security Requirements</i></p>		
<p>Vendor/Firm Name and Address - Raison sociale et adresse du fournisseur/de l'entrepreneur</p>			
<p>Telephone No. – N° de téléphone</p>		<p>Fax No. – N° de Fax</p>	
<p>Name and title of person authorized to sign on behalf of Vendor/Firm: (type or print) / Nom et titre de la personne autorisée à signer au nom du fournisseur/de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</p>			
<p>Signature</p>		<p>Date</p>	

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Replacement of Rotary UPS by a Static UPS 200KW

PART 1 – GENERAL INFORMATION

1. Security Requirement

1.1 There is no security requirement associated with this requirement.

2. Statement of Work

The Contractor must perform the Work as required under Annex A: “Statement of Work”

3. Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

4. Mandatory Site Visit

1. There will be a site visit on May 26th, 2020 at 10h00. Interested bidders are to meet at 2121 Trans Canada Route, Dorval, Quebec H9P 1J3

The site visit for this project is **MANDATORY**. The representative of the Bidder must sign the Site Visit Attendance Sheet at the site visit. Bids submitted by **Bidders who have not signed the attendance sheet will be rejected.**

PART 2 – BIDDER INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the PWGSC *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2019-03-04) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

The standard instructions 2003 are modified as follows:

Under “Text” at 02:

Delete: “Procurement Business Number”

Insert: “Deleted”

At Section 02 Procurement Business Number

Delete: In its entirety

Insert: “Deleted”

At Section 05 Submission of Bids, Subsection 05 (2d):

Delete: In its entirety

Insert: “send its bid only to Environment Canada (EC) as specified on page 1 of the bid solicitation or to the address specified in the bid solicitation;”

At Section 06 Late Bids:

Delete: “PWGSC”

Insert: “Environment Canada”

At Section 07 Delayed Bids:

Delete: “PWGSC”

Insert: “Environment Canada”

At Section 08 Transmission by Facsimile, Subsection 08 (1):

Delete: In its entirety

Insert: “Bids may be submitted by facsimile if specified in the bid solicitation.”

At Section 12 Rejection of Bid, Subsection 12 (1) a. and b.:

Delete: In their entirety

Insert: “Deleted”

At Section 17 Joint Venture, Subsection 17 (1) b.:

Delete: “the Procurement Business Number of each member of the joint venture,”

Insert: “Deleted”

At Section 20 Further Information, Subsection 20 (2):

Delete: In its entirety

Insert: “Deleted”

At Section 05 Submission of Bids, Subsection 05 (4)

Delete: “sixty (60) days”

Insert: “one hundred and twenty (120) days”

2. Submission of Bids

2.1 Bids must be submitted to Environment Canada (EC) at the email address and by the date and time indicated on page 1 of the bid solicitation.

3. Former Public Servant – Competitive Bid

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPS, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada’s request and meet the requirement within the prescribed time frame will render the bid non-responsive.

Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the *Financial Administration Act*, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the *Public Service Superannuation Act* (PSSA), R.S., 1985, c.P-36, and any increases paid pursuant to the *Supplementary Retirement Benefits Act*, R.S., 1985, c.S-24 as it affects the PSSA. It does not include pensions payable pursuant to the *Canadian Forces Superannuation Act*, R.S., 1985, c.C-17, the *Defence Services Pension Continuation Act*, 1970, c.D-3, the *Royal Canadian Mounted Police Pension Continuation Act*, 1970, c.R-10, and the *Royal Canadian Mounted Police Superannuation Act*, R.S., 1985, c.R-11, the *Members of Parliament Retiring Allowances Act*, R.S., 1985, c.M-5, and that portion of pension payable to the *Canada Pension Plan Act*, R.S., 1985, c.C-8.

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes () No ()**

If so, the Bidder must provide the following information, for all FPS in receipt of a pension, as applicable:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes () No ()**

If so, the Bidder must provide the following information:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

4. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than (5) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated and the enquiry can be answered to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

5. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Quebec.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

PART 3 – BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid (1 soft copy in PDF format by email)

Section II: Financial Bid (1 soft copy in PDF format by email)

Section III: Certifications (1 soft copy in PDF format by email)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Note for electronic submission of bids:

In order to be considered, bids must be received no later than 1400h (4 p.m.) (Eastern Time) on the date and time indicated on the cover page to herein as the "Closing Date." Bids received after the Closing Date will be considered non-responsive and will not be considered for contract award. Bids submitted by email must be submitted ONLY to the following email address:

Email Address: ec.soumissions-bids.ec@canada.ca

Attention: *Anthony De Flavis*

Solicitation Number: 5000051684

Bidders should ensure that their name, address, Closing Date of the solicitation and Solicitation Number are clearly indicated in the body of their email. Bids and supporting information may be submitted in either English or French.

The total size of the email, including all attachments, must be less than 15 megabytes (MB). It is each Bidder's responsibility to ensure that the total size of the email does not exceed this limit.

Bids sent by fax will not be accepted.

It is important to note that emails systems can experience systematic delays and, at times, large attachments may cause systems to hold or delay transmission of emails. It is solely the Bidder's responsibility to ensure that the Contracting Authority receives a bid on time, in the mailbox that has been identified for bid receipt purposes. Date stamps for this form of transmission are not acceptable.

Section I: Technical Bid

In their technical bid, bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will carry out the Work

Section II: Financial Bid

1. Bidders must submit their financial bid in accordance in accordance with the Basis of Payment in Annex B. The total amount of Applicable Taxes must be shown separately.

1.1 Price Breakdown

In their financial bid, the bidders are requested to provide a detailed breakdown of the price for

the following elements of the Work, as applicable:

- (a) Professional fees: For each individual and (or) labour category to be assigned to the Work, the bidders should indicate: i) the firm hourly rate or the firm daily rate, inclusive of overhead and profit; and ii) the estimated number of hours or days, as applicable. The bidders should indicate the number of hours in one working day.
- (b) Equipment (if applicable): The bidders should specify each item required to complete the Work and provide the pricing basis of each one, Canadian customs duty and excise taxes included, as applicable. These items will be deliverable to Canada upon completion of the contract.
- (c) Materials and Supplies (if applicable): The bidders should identify each category of materials and supplies required to complete the Work and provide the pricing basis. The Bidder should indicate, on a per category basis, whether the items are likely to be consumed during the performance of any resulting contract.
- (d) Subcontracts (if applicable): The bidders should identify all of the proposed subcontractors and provide in their financial bid for each one a price breakdown.
- (e) Other Direct Charges (if applicable): The bidders should identify all of the categories of other direct charges anticipated, such as long distance communications and rentals, providing the pricing basis for each and explaining the relevance to the work described in the resultant contract in part 6 of the bid solicitation.
- (f) Applicable Taxes: The bidders should indicate the Applicable Taxes separately.

1.2 Bidders should include the following information in their financial bid:

- (a) Their legal name; and
- (b) The name of the contact person (including this person's mailing address, phone and facsimile numbers and email address) authorized by the Bidder to enter into communications with Canada with regards to their bid; and any contract that may result from their bid.

Section III - Certifications

1. Certifications Required Precedent to Contract Award

Bidders must provide the required certifications Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.

1.1 Technical Evaluation

Except where expressly provided otherwise, the experience described in the bid must be the experience of the Bidder itself (which includes the experience of any companies that formed the Bidder by way of a merger but does not include any experience acquired through a purchase of

assets or an assignment of contract). The experience of the Bidder's affiliates (i.e. parent, subsidiary or sister corporations), subcontractors, or suppliers will not be considered.

1.2 Technical Evaluation

1.2.1. Mandatory Technical Criteria

N*	Mandatory Technical Criteria	Compliant	Non Compliant
1)	Experience		
	The Bidder must provide a summary of its experience in carrying out electrical work. In his summary, the supplier must demonstrate that he has two consecutive years of experience in the last five (5) years by closing bid date in the execution of electrical work for contracts where the value is equal or superior to \$100 000.00.		
2)	RBQ Licence		
	The Bidder must provide their RBQ licence number		
3)	WHS		
	The Bidder must provide his occupational health and safety program.		

1.3.2 Evaluation of Price

The price of the bid will be evaluated in Canadian dollars, the Applicable Taxes excluded, Canadian customs and excise taxes included.

2. Basis of Selection - Mandatory Technical Criteria

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and associated information to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default in carrying out any of its obligations under the Contract, if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority may render the bid non-responsive or constitute a default under the Contract.

1. Certifications Required Precedent to Contract Award

1.1 Integrity Provisions - Associated Information

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Bid of Standard Instructions 2003. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

PART 6 - RESULTING CONTRACT *(at contract award, delete this line)*

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation *(at contract award, delete this sentence and insert the title)*.

Title: *(insert title at contract award)*

1. Security Requirement

1.1 There is no security requirement applicable to this Contract.

2. Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A".

3. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the PWGSC *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

3.1 General Conditions

2010B (2018-06-21), General Conditions - Professional Services (Medium Complexity), as modified below, apply to and form part of the Contract.

General conditions 2010B is modified as follows:

At Section 12 Transportation Costs

Delete: In its entirety

Insert: "Deleted"

At Section 13 Transportation Carriers' Liability

Delete: In its entirety.

Insert: "Deleted"

At Section 18, Confidentiality:

Delete: In its entirety

Insert: "Deleted"

Insert Subsection: "35 Liability"

"The Contractor is liable for any damage caused by the Contractor, its employees, subcontractors, or agents to Canada or any third party. Canada is liable for any damage caused by Canada, its employees or agents to the Contractor or any third party. The Parties agree that no limitation of liability or indemnity provision applies to the Contract unless it is specifically incorporated in full text in the Articles of Agreement. Damage includes any injury to persons (including injury resulting in death) or loss of or damage to property (including real property) caused as a result of or during the performance of the Contract."

B. For standard service requirements (ex.: manual services, snow or garbage removal, cleaning, window washing, maintenance, etc.) the general conditions 2010 B General Conditions Professional Services (Medium Complexity), must be modified as follows:

At Section 06 Subcontracts

Delete: paragraphs 1, 2, and 3 in their entirety.

Insert: "The Contractor may subcontract the supply of goods or services that are customarily subcontracted by the Contractor. Subcontracting does not relieve the Contractor from any of its obligations under the Contract or impose any liability upon Canada to a subcontractor. In any subcontract, the Contractor agrees to bind the subcontractor by the same conditions by which the Contractor is bound under the Contract, unless the Contracting Authority agrees otherwise, with the exception of requirements under the Federal Contractors Program for employment equity which only apply to the Contractor."

At Section 19 Copyright

Delete: In its entirety

Insert: "Deleted"

4. Term of Contract

4.1 Period of the Contract

The period of the Contract is from date of issuance to March 31, 2021 inclusive.

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Anthony De Flavis
Procurement Specialist
Environment and Climate Change Canada
Assets, Contracting and Environmental Management Directorate
Workplace Services and Contracting Assets
105 McGill, 5e étage, Montréal QC H2Y 2E7
anthony.deflavis@canada.ca
Telephone 514-283-5958

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

5.2 Technical Authority

The Technical Authority for the Contract is:

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone: ____ - ____ - _____

Facsimile: ____ - ____ - _____

E-mail address: _____

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

5.3 Contractor's Representative

(Fill in or delete as applicable)

6. Proactive Disclosure of Contracts with Former Public Servants

By providing information on its status, with respect to being a former public servant in receipt of a Public Service Superannuation Act (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with Contracting Policy Notice: 2012-2 of the Treasury Board Secretariat of Canada.

7. Payment

7.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price of \$ _____ *(insert the amount at contract award)*. Customs duties are _____ *(insert "included", "excluded" OR "subject to exemption")* and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

7.2 Limitation of Expenditure

- (a) Canada's total liability to the Contractor under the Contract must not exceed \$ _____. Customs duties are (*insert "included", "excluded" or "subject to exemption"*) and Applicable Taxes are extra.
- (b) No increase in the total liability of Canada or in the price of the Work resulting from any design changes, modifications or interpretations of the Work, will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been approved, in writing, by the Contracting Authority before their incorporation into the Work. The Contractor must not perform any work or provide any service that would result in Canada's total liability being exceeded before obtaining the written approval of the Contracting Authority. The Contractor must notify the Contracting Authority in writing as to the adequacy of this sum:
- (i) when it is 75 percent committed, or
 - (ii) four (4) months before the contract expiry date, or
 - (iii) as soon as the Contractor considers that the contract funds provided are inadequate for the completion of the Work,
- whichever comes first.
- (c) If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability.

8 Invoicing Instructions

8.1 Single Payment

- (a) The Contractor must submit invoices (*choose monthly or other timeframe*) in accordance with the section entitled "Invoice Submission" of the general conditions.
- (b) Canada will pay the Contractor upon completion and delivery of the Work in accordance with the payment provisions of the Contract if:
- (i) an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
 - (ii) all such documents have been verified by Canada;
 - (iii) the Work delivered has been accepted by Canada.

9. Certifications

9.1 Compliance

Compliance with the certifications provided by the Contractor in its bid is a **condition** of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor

does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

10. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Quebec

11. Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) Modified 2010B General Conditions - Professional Services (Medium Complexity) (2018-06-21)
- (c) Annex ____, Statement of Work;
- (d) Annex ____, Basis of Payment;
- (e) the Contractor's bid dated _____, (*insert date of bid*)

12. LIMITATION OF LIABILITY

GC1.6 of R2810D is deleted and replaced with the following:

GC1.6 Indemnification by the Contractor

1. The Contractor shall indemnify and save Canada harmless from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings whether in respect to losses suffered by Canada or in respect of claims by any third party, brought or prosecuted and in any manner based upon, arising out of, related to, occasioned by, or attributable to the activities of the Contractor in performing the Work, provided such claims are caused by the negligent or deliberate acts or omissions of the Contractor, or those for whom it is responsible at law.

The Contractor's obligation to indemnify Canada for losses related to first party liability shall be limited to:

- a. In respect to each loss for which insurance is to be provided pursuant to the insurance requirements of the Contract, the Commercial General Liability insurance limit for one occurrence as referred to in the insurance requirements of the Contract .
- b. In respect to losses for which insurance is not required to be provided in accordance with the insurance requirements of the Contract, the greater of the Contract Amount or \$5,000,000, but in no event shall the sum be greater than \$20,000,000.

The limitation of this obligation shall be exclusive of interest and all legal costs and shall not apply to any infringement of intellectual property rights or any breach of warranty obligations.

3. The Contractor's obligation to indemnify Canada for losses related to third party liability shall have no limitation and shall include the complete costs of defending any legal action by a third party. If requested by Canada, the Contractor shall defend Canada against any third party claims.
4. The Contractor shall pay all royalties and patent fees required for the performance of the Contract and, at the Contractor's expense, shall defend all claims, actions or proceedings against Canada charging or claiming that the Work or any part thereof provided or furnished by the Contractor to Canada infringes any patent, industrial design, copyright trademark, trade secret or other proprietary right enforceable in Canada.
5. Notice in writing of a claim shall be given within a reasonable time after the facts, upon which such claim is based, became known.

13. INSURANCE TERMS

Minimum Insurance Requirements:

- *Commercial General Liability (minimum 1,000,000\$)*

1) Insurance Contracts

- (a) The Contractor must, at the Contractor's expense, obtain and maintain insurance contracts in accordance with the requirements of the Certificate of Insurance. Coverage must be placed with an Insurer licensed to carry out business in Canada.
- (b) Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract. The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

2) Period of Insurance

- (a) The policies required in the Certificate of Insurance must be in force from the date of contract award and be maintained throughout the duration of the Contract.
- (b) The Contractor must be responsible to provide and maintain coverage for Products/Completed Operations hazards on its Commercial General Liability insurance policy, for a period of six (6) years beyond the date of the Certificate of Substantial Performance.

3) Proof of Insurance

- (a) Before commencement of the Work, and no later than thirty (30) days after contract award, the Contractor must deposit with Canada a Certificate of Insurance.

(b) Upon request by Canada, the Contractor must provide originals or certified true copies of all contracts of insurance maintained by the Contractor pursuant to the Certificate of Insurance.

4) **Insurance Proceeds**

In the event of a claim, the Contractor must, without delay, do such things and execute such documents as are necessary to effect payment of the proceeds.

5) **Deductible**

The payment of monies up to the deductible amount made in satisfaction of a claim must be borne by the Contractor.

**ANNEX A
STATEMENT OF WORK**

<u>SECTIONS</u>	<u>DESCRIPTION</u>	<u>PAGES</u>
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01 33 00	Documents/samples to submit	2
01 35 30	Health and safety	3
01 45 00	Quality control	2
01 56 00	Work access and temporary protection	1
01 77 00	Closeout procedures	1
DIVISION 26	ELECTRICITY	
26 05 00	Electrical - Common work results	14
26 05 21	Wire and cables 0-1000V	2
26 05 28	Grounding- secondary	2
26 05 29	Hangers and supports for Electrical Systems	2
26 05 34	Conduits, conduits fastenings and conduits fittings	2
DRAWINGS		
CMC-MA-20191127-E01-E	Single line diagram, existing, modifications	1
CMC-MA-20191127-E01-N	Single line diagram, new	1
DAO 3000698369-E02-E	Existing equipment layout, room NSI	1
DAO 3000698369-E02-N	New equipment layout, Room NSI	1
DAO 3000698369-E03-E	Existing plot plant layout, building zone dismantling	1
DAO 3000698369-E03-N	New plot plant layout, building zone	1
DAO 3000698369-E04	UPS Details and layout	1
DAO 3000698369-E05	UPS Control details	1
DAO 3000698369-E06	Layout details cable tray	1

END OF THE SECTION

Partie 1 General information

1.1 RELATED SECTIONS

- .1 All the material required is concerned with this section.

1.2 CONSIDERATIONS OF ADMINISTRATIVE NATURE

- .1 Submit as soon as possible to the Engineer documents for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with work affected by submittal until review is complete.
- .3 Verify field exact measurements and affected adjacent works are coordinated.
- .4 Contractor's responsibility for errors and omissions to transmit complete and exact parts in submission is not relieved by Engineer's review of submittals.
- .5 The fact that the documents and the subjected samples are reviewed by the Engineer does not relieve the Contractor of his responsibility to transmit suitable parts to the requirements of the contractual documents.

1.3 SHOP DRAWINGS AND DATA SHEETS

- .1 The expression "shop drawings" means the complete drawings of construction including the obstructions, control diagrams, wiring drawing, connector blocks, specifications of all equipment and equipment being used for erection of the structure and control, illustrations, tables, graphs of output or performance charts, folders and other documentation which the Contractor must provide to show in detail part of the work concerned.
- .2 Submit six (6) printed copies, plus one (1) electronic copy of the workshop drawings prescribed in the technical sections of the estimate and according to the reasonable requirements of the Engineer.
- .3 Shop drawings are necessary for following equipment:
 - .1 Power cables and control cables.
 - .2 Firebreak Materials.
- .4 The workshop drawings required within the framework in the project must include:
 - .1 Dimensions and connection details.
 - .2 All oneline drawings, mounting drawings, and wiring diagrams.
 - .3 All accessories.
- .5 Make changes in shop drawings changes which are requested by the Engineer, in conformity with the requirements of the contractual document.
- .6 If upon review by the Engineer and that no error or omission were detected or if only minor corrections are made, (4) copies will be returned, and work fabrication and installation can then be undertaken. If the shop drawings are rejected, the annotated copies will be returned and the corrected shop drawings must again be submitted

according to the above mentioned indications before work fabrication and installation can be undertaken.

- .7 Delete information not applicable to project.

1.4 CERTIFICATES AND OFFICIAL REPORTS

- .1 Immediately after award of contract, submit present the documents required by the commission of health and safety to work (CNESST).
- .2 Submit transcription of insurance after award of contract.

Partie 2 Products

2.1 WITHOUT OBJECT

- .1 Without object.

Partie 3 Execution

3.1 WITHOUT OBJECT

- .1 Without object.

END OF SECTION

Partie 1 General information

1.1 CONTENTS OF THE SECTION

- .1 The Contractor must manage his activities so that the health and the safety of the site public and workers as well as environmental protection always has precedence of the questions connected to the costs and the calendar of work.

1.2 REFERENCES

- .1 Canada Labour Code, part II, Canada Occupational Safety and Health Regulations.
- .2 Canadian Standards Association (CSA).
- .3 Workplace Hazardous Material Information System (WHMIS) /Health Canada.
 - .1 Material Safety Data Sheet (MSDS).
- .4 Law on health and safety at Work, L.R.Q. Chapter S-2.1.
- .5 Safety Code for the Construction Industry, S-2.1, r.6.

1.3 DOCUMENTS/SAMPLES FOR SUBMITTALS

- .1 Transmit to the Engineer and the CNESST, the prevention program specific to the construction site, at least 10 days before the beginning of work. The Contractor must update his prevention program thereafter if the course of work differs from its initial forecasts. The Engineer can, following to the reception of the program and constantly during work, require that the program be modified or supplemented for better reflecting the reality of the construction site. The Contractor must then make the necessary corrections before the beginning of work.
- .2 To transmit to the Engineer, within 24 hours, a copy of any inspection report, opinion of correction, or recommendations put forth by the federal or provincial inspectors.
- .3 To transmit to the Engineer, within 24 hours, an investigation report for any accident involving a wound and any incident which clarifies a potential of risk.
- .4 Notice of opening of construction site: the Notice of opening of construction site must be transmitted to the Commission of health and occupational safety (CNESST) before the beginning of work, with copy to the Engineer. A copy of this Notice must also be posted well in sight with the construction site. At the time of the demobilization, the Notice of closing must be transmitted to the CNESST, with copy to the Engineer.
- .5 Plans and certificates of conformity by an engineer: The Contractor must transmit to the CNESST and the Engineer a copy signed and sealed by an engineer of all the plans and certificates of conformity which are necessary under the terms of Safety Code for the Construction Industry (S-2.1, R. 6), of another law, or another clause of the estimate or the contract. A copy of these documents must be available in any time to the construction site.
- .6 Certificate of conformity delivered by the CNESST: the Certificate of conformity is a document delivered by the CNESST confirming that the contractor is in rule with the CNESST, i.e. it paid to it all the sums due relative to a given contract. This document must be provided to the Engineer at the end of work.

1.4 EVALUATION OF THE RISKS

- .1 The Contractor must carry out an identification of the dangers relative to each task carried out on the construction site.
- .2 The Contractor must plan and organize work in order to support elimination with the source of the dangers or collective protection and thus to reduce the recourse to the individual protective gears to the minimum. When an individual protection against the falls is required, the workers will have to use safety straps in accordance with standard CAN/CSA-Z-259.10. The safety belt should not be used as protection against the falls.
- .3 Equipment, tool or means of protection which cannot be installed or used without compromising the health and the safety of the workers or the public is inadequate for work to be carried out.

1.5 REQUIREMENTS OF THE ORGANIZATIONS REGULATION

- .1 Conform to all the laws, rules, and standards which are applicable to the completion of the work.
- .2 Observe the standards and the rules prescribed in order to guarantee a normal course of the field work contaminated by dangerous or toxic matters.
- .3 Notwithstanding the publication date of the standards indicated in the Safety Code for the Construction Industry, one must always use the version in force at the time when it applies.

1.6 CONSTRUCTION SITE STATUS / IMPLEMENTATION

- .1 On this construction site, the Contractor must take account of the following characteristics:
 - .1 Works done in sub-stations and places in operation.
 - .2 Works carried out under the elevated floor.
 - .3 Works for dismantling and pulling of cables, in places with existing cables of various dimensions. This work will require special precautions not to damage the cables or to disconnect the existing circuits.
 - .4 Works which will have to be carried out in sequences at the hours and times according to the availabilities of the customer.
 - .5 Electrical works with equipment with more than one source.

1.7 MANAGEMENT OF HEALTH AND SAFETY

- .1 Accept and assume all the tasks and the obligations normally reserved for the project superintendent under the terms of the Law on health and safety at Work, (L.R.Q., S-2.1 chapter) and Safety Code for the Construction Industry (S-2.1, r.6).

1.8 RESPONSIBILITIES

- .1 It does not matter the size of the construction site or the number of workers present, to name a qualified person as supervisor and person in charge of health and safety. To take all the necessary measures to ensure health and safety of the people and the goods on-site and in the immediate environment of the construction site which could be affected by the course of work.
- .2 To take all the necessary measures to make sure of the application and the respect of the requirements health safety contained in the contractual documents, the federal and

provincial regulation, the standards which are applicable and the prevention program specific to the construction site and to conform without delay to any ordinance where opinion of correction emitted by the Standards, fairness of the health and the occupational safety (CNESST).

- .3 To take all the necessary measures to keep the construction site clean and well ordered, throughout work.

1.9 COMMUNICATION AND POSTING

- .1 To take all the necessary measures to ensure an effective communication of information health safety on the construction site. As of their arrival on the construction site, all the workers must be informed of the characteristics of the prevention program, their obligations and their rights. The Contractor must insist on the right of the workers to refuse to carry out a work if they believe that this work can compromise their health, their safety, their physical integrity or those of the other people present on the construction site. He must preserve on the construction site and update a register with transmitted information and the signature of all the workers who received this information.

1.10 UNFORESEEN

- .1 When a source of danger not specified in the estimate and non-identifiable during the preliminary inspection of the construction site appears by the fact or during the completion of the work, the Contractor must stop work immediately, set up protection measures temporary for the workers and the public and warn the Engineer verbally and in written. The Contractor must thereafter make the modifications necessary to the prevention program so that work can begin again in full safety.

1.11 SEALING GUNS AND OTHER DEVICES WITH CARTRIDGES

- .1 The use of sealing guns or other cartridge devices are prohibited.
- .2 Any other device with cartridge must be used according to the indications of the manufacturer and the standards and rules applicable.

Partie 2 Products

2.1 WITHOUT OBJECT

- .1 Without object.

Partie 3 Execution

3.1 WITHOUT OBJECT

- .1 Without object.

END OF SECTION

Part 1 General information

1.1 RELATED SECTIONS

- .1 All the sections are concerned.

1.2 INSPECTION

- .1 The contractor must obtain and to include in his price all the costs for the licenses.
- .2 The Engineer must have access to the works. If part of work or works is carried out outside the construction site, the access to this place must also be assured throughout all this work.
- .3 If works must be subjected to inspections, approvals or special tests ordered by the Engineer or required under the terms of local rules aiming at the construction site, make the request within a reasonable delay.
- .4 If the Contractor covered or allowed to cover a work before it was submitted to the inspections, approvals or required special testing, it must uncover the work in question, to allow the execution of the inspections or the necessary tests to the satisfaction of the competent authorities, then put back the work in its initial state.
- .5 The Engineer can order the inspection of very part of the work whose conformity with the contractual documents is questioned. If, after examination, the work in question is declared not in conformity with the requirements of the contractual documents, the Contractor must take the necessary measures to make the work in conformity with the specified requirements, and to assume all expenses of inspection and repair.

1.3 ORGANIZATIONS TEST AND INSPECTION

- .1 All equipment testing on site must be carried out in presence of the Engineer.
- .2 To provide the materials required by the organizations indicated for the realization of the tests and inspections.
- .3 The recourse at organizations of test and inspection does not release the Contractor of its responsibility concerning the completion of the work in accordance with the requirements for the contractual documents.

1.4 COSTS OF TESTS

- .1 Include all the costs of tests preparation and all the costs related with the checking of the equipment tests in the presence of the Engineer including UPS and breakers in start-up period. Provide assistance to UPS technician during stat-up period. The cost for the material including load banc and DLO cable will be provide by client.
- .2 Include all the costs of start-up of equipment by the manufacturer or any other specialized company in the field, at the site. The cost to provide a UPS technician are included in UPS contract.

1.5 ACCESS TO THE CONSTRUCTION SITE

- .1 To allow the organizations of test and inspection to have access to the construction site and off site like the manufacturing and workshops located outside the construction site.

1.6 PROCEDURE

- .1 To warn in advance the suitable organization and the Engineer when it is necessary to carry out tests so that all the attendance in question can be present.

1.7 REJECTED WORKS OR WORK

- .1 Remove the defective elements considered to be not in conformity with the documents contractual and rejected by the Engineer, either because they were not carried out according to the code of practice, or because they were carried out with defective materials or products, and this, even if they were already integrated into the work. To replace or remake the elements in question according to the requirements of the contractual documents. If necessary, to repair without delay the works of the other contractors who were damaged during the replacement or above-mentioned renovation work.

1.8 REPORTS

- .1 Provide (4) four copies of the tests and inspections reports to the Engineer.
- .2 Provide copies of these reports to the subcontractors responsible for the works inspected or put at the test.

1.9 MATERIALS, EQUIPMENT AND SYSTEMS

- .1 Submit adjustment and balancing reports of the electric systems.

Part 2 Products

2.1 WITHOUT OBJECT

- .1 Without object.

Part 3 Execution

3.1 WITHOUT OBJECT

- .1 Without object.

END OF SECTION

Part 1 General information

1.1 RELATED SECTIONS

- .1 All works are concerned.

1.2 INSTALLATION AND REMOVAL OF THE MATERIAL

- .1 Provide, install or arrange the works of temporary accesses and protection necessary to allow the completion of the work as soon as possible.
- .2 Remove and evacuate the material out of the construction site when not required anymore.
- .3 Protect the personnel when opening the elevated floor and during work of pulling of cables. Set up a temporary screen with barriers, to create a secure working area for the working personnel.

1.3 SCREENS DUST GUARD

- .1 Provide dust protection screens or isolated partition to close spaces where activities of dust are carried out, to protect the equipment.
- .2 Keep these screens and move them as needed until these activities are finished.
- .3 Cover the equipment during work generating dust.

1.4 PROTECTION OF FINISHED SURFACES OF THE BUILDING

- .1 For all the period of completion of the work, protect the material as well as partially and completely finished surfaces of work.
- .2 Provide necessary screens, covers and barriers.
- .3 Assume whole responsibility for the damage caused with the works because of a lack of protection or an inappropriate protection.
- .4 Provide and install all the protections requested by the manager of the building. The contractor has the responsibility to consult the requirements of the manager of the building.

END OF SECTION

Part 1 General information

1.1 RELATED SECTIONS

- .1 All works.

1.2 INSPECTION AND DECLARATION of SUBSTANTIAL COMPLETION

- .1 Inspection carried out by the Engineer: The Engineer will carry out with the Contractor an inspection of works with an aim of locating the obvious failures and defects. The Contractor will have to make the corrections requested.

1.3 DOCUMENTS/SAMPLES TO BE SUBMITTED

- .1 Before the substantial completion of work, give all the documents of operation and services of maintenance, drawings of building site with the annotations and the modifications with the red pencil with the drawings for construction in order to produce the drawings as built, workshop drawings and reports of tests approved for checking by the Engineer.
- .2 Provide a proof of closing of construction site to the CNESST. The Contractor must discharge the expenses.
- .3 Provide a letter of guarantee for one year period.
- .4 Provide in the form of handbook the workshop drawings, the test reports and any documentation considered to be relevant by the Engineer.

1.4 CLEANING

- .1 Remove the remains and waste materials waste out of the building site.
- .2 Clean under floor all the remains, the diffusers and other lighting surfaces.
- .3 Dust interior surfaces of the building and to pass the vacuum cleaner, without forgetting to clean the back of the grids and the shutters.

END OF SECTION

General information

.1 SUMMARY

- .1 The project consists in the installation of a 200kW UPS and to fold back the critical loads on new switchboards distribution. Work includes mainly the installation of a 200kW static UPS, two 300kVA transformers, two distribution panels and supply power to 4 existing transformers. Work also include moving a 600V supply source and several transformers for the existing power measurement at the building of the 2121 Trans-Canada West North service road.
- .2 Related sections
 - .1 Section 01 33 00 Documents and samples to be subjected.
 - .2 Section 01 45 00 Quality control.
 - .3 Section 01 35 30 Health and safety.

.2 REFERENCES

- .1 Canadian association of standardization (CSA) /CSA International, last edition
 - .1 CAN3-C235-F83 (C2000), Voltages recommended for the AC current networks from 0 to 50 000 V.
- .2 American Society of Mechanical Engineers (ASME)
 - .1 ANSI/ASME A13.1-96, Design for the Identification off Piping Systems.
- .3 Canadian association of standardization (CSA) /CSA International
 - .1 CAN/CSA-B651-F04, accessible Design for the built environment.
 - .2 CSA C22.1-F06, Canadian Code of electricity, First part (last edition), Security standard relating to electrical installations; CE Handbook Code. Quebec amendments.
 - .3 CSA C22.2, general Requirements, Canadian Code of electricity, Second part.
- .4 Association of the manufacturers of electrical equipment and electronics of Canada (EEMAC) last edition
 - .1 EEMAC 2Y-1- [1958], Light Gray Color for Indoor Switch GEAR.
- .5 Canada health - Information system on the dangerous matters used with work (SIMDUT)
 - .1 Profile Data Sheets.
- .6 Underwriters Laboratories of Canada (ULC)

.3 REQUIREMENTS OF DESIGN AND PERFORMANCE

- .1 The materials, components and units must function in a satisfactory way at the frequency of 60 Hz and inside the limits established in standard CAN3 C235, without damage being caused with the equipment and without power interruption.
- .2 Accessibility: the materials and the components must be in conformity with standard CAN/CSA-B651.

- .3 Language of exploitation and display: Provide for identification and display, identification plates and labels in French and English for the command and control devices.

.4 MATERIALS PROVIDED BY THE CUSTOMER

- .1 The customer provides the following equipment:
- .1 A 200kW UPS of manufacture EATON models 9395P-UPS including a bypass cabinet, a UPS and two cabinets of batteries.
 - .2 A 300kVA transformer, winding Y, 600V-480V.
 - .3 A 300kVA transformer, Delta 480V-600/347V Star.
 - .4 Two distribution panels:
 - .1 Complete 600V panel with two 400A circuit breakers.
 - .2 Complete 600V panel with four 400A circuit breakers.
- .2 Information concerning materials provided by the customer are shown on the drawings.

.5 DOCUMENTS/SAMPLES TO BE SUBJECTED

- .1 Subject necessary documents and samples in accordance with the section 01 33 00 - Documents and samples to be subjected.
- .2 Subject the necessary data sheets under the terms of the Information system on the dangerous materials used with work (SIMDUT) which must be in conformity with Labour Canada and Health and Safety Canada.
- .3 Workshop Drawings :
- .1 Subject the workshop drawings of the equipment to supply as required in accordance with the section 01 33 00 - Documents and samples to be subjected.
 - .2 The subjected workshop drawings must carry the seal and the signature of a qualified engineer recognized or entitled to exert in Canada, in the province of Quebec.
 - .3 The workshop drawings must indicate the disposition of the materials, including connection details, wiring diagrams and general diagrams, as well as dimensions, electrical characteristics, weight, lifting point and component performances of the installation.
 - .4 The drawings must indicate the technical details of the products and materials/electrical materials, electronic and safety devices.
 - .5 Submit six (6) copies of drawings and data sheets to the Engineer. If changes are required, inform the Engineer before they are carried out.
- .4 Quality control: in accordance with the section 01 45 00 - Quality control.
- .1 Provide CSA certified equipment and materials. Circuit breakers, transfer switches and disconnecting switches must include lockout devices.
 - .2 Carry out the key lockout of equipment and make safe the areas of intervention during work. The Contractor must maintain an elevated level of safety for the individuals and equipment.
 - .3 Whenever one cannot obtain certified CSA equipment, subject the proposed equipment to the authorities of inspection for approval before delivering them on the work site.

- .4 Submit the tests results of the systems and electric instruments installed. Adjust the safety devices as indicated in the relay adjustment table which will be provided later on by the Engineer.
- .5 Perform the isolation of the grounding cables.
- .6 Perform a measurement of the contact resistance of all the circuit breakers used in the mandate and / or supplied by the customer.
- .7 Perform the Megger test and ground continuity of the conductors, validate the insulation of the conductors before switching on the power supply. Confirm the phasing of the conductors and the phase rotation using appropriate devices, previously checked and calibrated and designed for the application. Perform test work by qualified electricians under the supervision of the Engineer.
- .8 Perform Megger tests on the cables before connection with the UPS.
- .9 License and rights: in accordance with the general terms of the contract.
- .10 Once the work is completed, validate with the engineer the load balancing and produce the test reports.
- .11 Once the work is completed, submit the acceptance certificate issued by the competent authority to the Engineer.

.6 DOCUMENTS/ELEMENTS TO BE GIVEN AT WORK COMPLETION

- .1 Join precise drawings of the as built works.
- .2 Manufacturer's Installation Instructions: Submit the manufacturer's instructions for the installation and operation of products, components and assemblies.
- .3 Provide the operating and maintenance manuals for the component parts, indicating the construction characteristics, the function of the various elements and the requirements to be met for the effectiveness of the maintenance and repair work.
- .4 Provide technical data sheets, product data, component illustrations, technical descriptions, parts lists, wiring diagrams and block diagrams that are not patented, as well as test reports, adjustments and controls.

.7 QUALITY INSURANCE

- .1 Health and safety:
- .2 Take the necessary health and safety measures in construction in accordance with the section 01 35 30 - Health and safety.
- .3 Comply with the rules of health and occupational safety in construction in accordance with the section 01 35 30 - Health and safety.
- .4 Quality assurance: according to the section 01 45 00 - Quality control. Qualifications: work of electricity must be carried out by approved electricians, qualified, by an electrical contractor with a license delivered by the province of Quebec.

.8 REPORTS/RATIOS OF THE TESTS

- .1 Contacts resistance tests of all the circuit breakers including those provided by the customer. The tests must be carried out by the contractor or a qualified person in the presence of the customer's engineer.

- .2 UPS testing during commissioning will be performed by others in the presence of the customer's engineer. The Contractor must provide assistance in carrying out the test work. Allow 8 hours at regular time.
- .3 Remove faulty or damaged conductors and equipment or those that do not meet the requirements; replace by new ones.

.9 FORMATION

- .1 The formations will be ensured by the engineer.

.10 CERTIFICATES

- .1 Obtain and pay for the required permits and inspection certificates.

.11 TRANSPORT, STORAGE AND HANDLING

- .1 Delivery schedule of the materials: submit a delivery schedule to the Engineer one (1) week following the attribution of the contract.
- .2 Management and waste disposal of construction/demolition are responsibility of the contractor.
- .3 The Contractor must take delivery the distribution panel in the customer's basement. He must remove the linings and protective panels to reduce the risk of damage to the case.

.12 MATERIALS

- .1 Provide all materials and equipment request in this specification.
- .2 Materials
 - .1 According to the case, the materials must be CSA certified and be approved by the ULC.
 - .2 In cases where there is no CSA or ULC designation, obtain approval from the appropriate local authority.
- .3 Make sure that the labels are visible and readable once the material is installed.
- .4 Control / command panels and component assemblies must be assembled at the factory. The contractor must install the circuit breakers in the new distribution panel.

.13 ACCESSORIES

- .1 The terminals, lugs and screws of connections must be appropriate for materials of the conductors. The contractor must provide and compress all the lugs with the suitable rings and equipment for the gauge of the conductors.
- .2 Supports: provide anchors and supports for electric materials and components.
- .3 Provide independent supports, including fixings, material and suspending rods being able to support the load of the materials and the components more 100 kg. The pins out of fibers, wooden or plastic are not accepted.

.14 COMPLETION

- .1 Finish in workshop surfaces of the metal envelopes; apply a rust-proof primer, inside and outside, and at least two layers of painting-enamel on completion.

.15 GUARANTEE

- .1 Cover: work must be guaranteed 12 months calendar as from the date of completion of work against the defect of performance according to the regulations.

.16 STARTUP

- .1 The equipment startup of the installation will be carried out jointly with the Engineer according to a procedure of startup which will be produced by the Engineer.

Products

.1 MATERIALS

- .1 The materials and equipment must be certified CSA. Whenever one cannot obtain materials or certified CSA, to subject the materials and the equipment of replacement to the authorities of inspection before delivering them on the work site.
- .2 The control boards/control and the whole of components must be assembled in factory.
- .3 The Contractor must assemble the panelboard, set of bars and carry out the tightening of the bolts according to the manufacturer's specification.

.2 WARNING SIGNS

- .1 Warning Signs: in conformity with the requirements of the authorities of inspection of the Engineer.

.3 TERMINATIONS OF WIRING

- .1 Make sure that the compressed lugs, terminals and screws of the terminations of wiring are appropriate size for conductors out of copper or aluminum RW90 and according to the gauge as shown on the single line drawing.
- .2 The Contractor must use flexible cables of type DLO in EMT conduits of sufficient gauge for the connection in the battery's cabinet. The Contractor must respect the filling of conduits and conform to the requirements of the electric code into force.

.4 SCREW, BOLTS AND NUTS

- .1 The screws, bolts and nuts must be out of stainless steel. The contractor must use Belleville spring washers out of stainless steel for the cables having a gauge larger than 4/0 AWG like on the copper bars.

.5 MATERIAL IDENTIFICATION

- .1 The Contractor must identify all the equipment and circuit breakers including those provided by the customer.
- .2 For electrical materials identification, use identification plates in conformity to the following indication:
 - .1 Identification plates: plates to be engraved out of plastic name plate 3mm thickness, with face of color on the drawings, fixed mechanically by means of self-tapping screw, with inscriptions in correctly aligned letters, engraved until the core of the plate.

- .2 Styles conform to the drawings.
- .3 The inscriptions of the identification plates and labels must be approved by the Engineer before manufacture.
- .4 Allow at least twenty-five (25) letters per plate and label.
- .5 The identification plates of disconnect switches, starters and contactors must indicate the ordered equipment and the voltage.
- .6 The identification plates of the casing of connector blocks, pull boxes and junction boxes must indicate the characteristics of the network and/or the voltage.
- .7 The identification plates of transformers must indicate the power as well as the primary and secondary voltages.
- .8 The identification plates of the distribution panel must indicate the power, voltage, capacity 100% rated of the busbars, default capacity and the identification of each device.

.6 WIRING IDENTIFICATION

- .1 Identify both ends of the phase conductors of each feeder and each derivation circuit must be marked in a permanent and indelible way using a colored plastic ribbon.
- .2 Maintain phase sequence and the same code of color for all the installation.
- .3 The color code must be in conformity with the standard CSA C22.1.
- .4 Use communication cables made of conductors with uniform identification color in the entire network.
- .5 Use marked adhesive markers in a permanent and indelible way using a marker with lettering conceived for this purpose and approved by the Engineer.

.7 IDENTIFICATION OF THE CONDUITS AND THE CABLES

- .1 Color codes conduits, boxes and the metallic armored cables.
- .2 Apply plastic ribbon or painting, as means of identification to the cables or the conduits at all points where conduit or cable enters wall, ceiling, or floor, and at 15 m intervals.
- .3 Provide means of identification of the materials, components and units prescribed. Those must be out of material which can resist the environment of exploitation envisaged.
- .4 The bands of the basic colors must have 25 mm x 20 mm

	Prime color	Auxiliary color
To 250 V	yellow	
To 600 V	yellow	Green
Telephone	Green	
Other communication networks	Green	Blue
Emergency communication	red	Blue
Other security systems	red	Yellow

.8 COMPLETION

- .1 Surfaces of the metal envelopes must be finished in workshop and be covered with a rust-proof primer, inside and outside, and of at least two layers of painting-enamel on completion.

- .1 The panelboards of commutation and distribution equipment installed inside must be painted in pale gray according to standard EEMAC 2Y-1.

Execution

.1 INSTALLATION

- .1 In general, work consists in making the connection of a 200kW UPS, two 300kVA transformers, two distribution panel and supply power to 4 existing transformers. Work also includes moving a 600V feeder and several current transformers for measurements. Work will be carried out in several stages of realization in order to limit the impacts of service interruptions on the operations of the customer's data center.
- .2 Unless otherwise specified, construct the entire installation in accordance with the standard CSA C22.1.
- .3 Conform to the requirements, recommendations and the written specifications of the manufacturer, including with any technical bulletin available, to the instructions indicated in the catalog of the products, to those appearing on the packing of the products and to the indications of the profile sheets and the data sheets.
- .4 Protect the electrical materials against dirtiness and dust. During construction, seal or plug the openings of the conduits, equipment and materials using products approved by the Engineer.
- .5 Install EMT conduits, TECK cables, DLO cables and of the equipment requested from the specification. Move and install the lighting equipment, socket-outlets, plates and other visible articles to allow installation of the equipment. The apparent conduits must be of alignment, parallels and to right angle compared to the walls, partitions and ceiling of the building and in the floor. The TECK cables under the floor must be aligned and/or with right angle compared to the wall.
- .6 Provide and install the connection lugs of the cables. Use compressed lugs for the copper wires RW90 which will be connected on bars.
- .7 Fix the materials and components neatly and levelled, by respecting with precision their planned positioning. The sections and supports must be neatly installed.
- .8 Take the necessary measures during work in order to protect the mechanical equipment, sprinkler heads, surveillance devices and mobile equipment on the floor and use security bollards on the floor for the protection of the employees and create an area of protected intervention space.
- .9 The Contractor will have the responsibility to take all the necessary precautions to avoid the fall of parts of assembly during his work and more particularly the objects which could fall on the mechanical equipment or other, and on the floor.
- .10 The Contractor has the responsibility to ensure a protection on all the course of cables pulling to avoid damaging the protection of the conductors by friction. To do this, the Contractor must raise the existing cables with each crossing and/or move them suitably.
- .11 The Contractor must carry out borings of the walls to carry out his installation. Before carrying out borings, the contractor must execute the Xray of the walls in order to avoid

cutting the reinforcement in the concrete. Work of inspection must be carried out in the presence of the engineer and carried out by a specialist company in the field.

- .12 The Contractor must carry out cutting work outside the building.
- .13 The Contractor must clean the area of intervention at the end of each shift of work.
- .14 The Contractor must respect the gauge and arrangements of cables which are shown on the drawings.
- .15 The Contractor must concentrate his work in the areas of intervention as preliminary determined.
- .16 The Contractor must make the amendments with the electrical network as requested from the drawings.
- .17 The Contractor must adjust the work so as to insure seals of the openings, of the electric sleeves and conduits as well as other crossing elements.
- .18 The Contractor must completely seal the vacuums around the openings of the lines of walls, roofs or floors firebreak, with a material with a compound 2 hours fire resistance or more.
- .19 During borings, the Contractor must aspire the concrete dust via a vacuum cleaner in order to avoid the propagation of the dust in data-processing equipment.
- .20 Make borings of the floor tiles for the passage of the cables in the panels, the openings under the UPS, the bypass cabinet and the batterie's cabinet.

.2 DETAILED DESCRIPTION OF WORK

- .1 Install a Siemens panel (E06) 800A, 600V, 25kA, 3Ph # S2-D6U3 in NSI room. To install in panel S2-D6U3, four (4) 400A circuit breakers complete with electronic safety device standard LSI. The circuit breakers and the panel are provided by the customer.
- .2 Install a new I-LINE panel (E02) 800A, 600V, 25kA, 3Ph # S2-D4G2 in NSI room. The panel includes two 600AF circuit breakers. The circuit breakers and the panel are provided by the customer.
- .3 Connect a new UPS EATON (E03, E04, E05, E06) complete critical load bypass cabinet and UPS cabinet including a 200kW charger/inverter and two cabinets of batteries for a 10 minutes range to full load. The UPS and the cabinets are provided by the customer.
- .4 Install a new 300kVA 480/600-347V transformer S2-T6U2 (E07), complete winding Delta-Star, 55°C with three copper winding reels for assembly on the ground. The transformer is provided by the customer.
- .5 Install a new 300kVA, 600-480V transformer S2-T4G2 (E01), Star, 55°C complete with three winding reels of copper for assembly on the ground. The transformer is provided by the customer.
- .6 Install in preparation the C5 cable between panel S2-D6G2 and transformer S2-T4G2.
- .7 Install temporary DLO cables (4) 1C-4/0AWG (provided by the customer) between the generator EX-B6G3 connection box and the manual transfer switch S2-I6G2 via the cable junction box BJ-S2-B6G2 located in the S-205 room. The cables will have to pass through the stairway to the shelter.

- .8 Feed the UPS #5 via the G3 generator. Once the UPS is stabilized, stop the S2-D6G2 panel.
- .9 Disconnect the C5 cable which feeds the panel 06-D6G1 via the connection box S1-BJ6G2 and release the 400A circuit breaker.
- .10 Connect the C6 cable in panel S2-D6G2 and padlock the 400A circuit breaker in open position.
- .11 Put back in service from panel S2-D6G2.
- .12 Feed the UPS #5 via panel S2-D6G2 via the transfer switch. Once the UPS is stabilized, stop the G3 generator and disconnect temporary DLO cables. Properly coil the customer's cables.
- .13 Move the power supply feeder of the distribution center 06-D6G1 C5 cable. Move the source of panel S2-D6G2 located in the S-212 room towards panel S1-D6G1 located in the S-162 room via the junction box S1-BJ6G2 located in the electric enclosure S-126.
- .14 From the spare 400A circuit breaker of panel S2-D6G2 located in the S-212 room, feed the S2-T4G2 transformer located in NSI room via the C6 cable.
- .15 From the S2-T4G2 transformer located in NSI room, feed the S2-D4G2 panel, E02 located in NSI room via the C7 cable.
- .16 Starting from panel S2-D4G2 located in NSI room, to feed the cabinet of the UPS via the C10 cable.
- .17 From panel S2-D4G2 located in NSI room, feed the UPS bypass cabinet via the C9 cable.
- .18 From the UPS module, feed the cabinet of batteries 1 via the C12 cable.
- .19 From the UPS module, feed the cabinet of batteries 2 via the C11 cable.
- .20 Install control cables between the UPS and the circuit breaker of the batteries, cabinet 1 via the C26 cable.
- .21 Install control cables between the UPS and the circuit breaker of the batteries, cabinet 2 via the C27 cable.
- .22 From the UPS module, supply alarms to a junction box installed at the wall in the S-212 room via the C8 cable.
- .23 Connect the UPS output to the bypass cabinet source via the C16 cable. Install the control cables between the UPS and the bypass cabinet via the C14 cable.
- .24 From the bypass cabinet of the UPS, feed the source of bypass of the UPS via the C13 cable.
- .25 From the bypass cabinet output, feed the S2-T6U2 transformer, E07 via the C16 cable.
- .26 A load bank with cables will be provided by others to carry out the tests of the UPS #6. Install the load bank in the shelter. Install DLO type cables between the UPS and the load bank. The cables must circulate in the corridor and the stairway which go up in the shelter.
- .27 Provide assistance of one electrician during the UPS #6 commissioning work.
- .28 Once work completed, the contractor must rewind DLO cables and give them to the supplier.
- .29 From transformer S2-T2U2, feed panel S2-D6U3 via the C25 cable.
- .30 From panel S2-D6U3 located in NSI room, prepare the power supply for transformer S2-T2U9 located in the S-212 room via the C21 cable.

- .31 From panel S2-D6U3 located in NSI room, prepare the power supply feeder of transformer S2-T2U3 located in NSI room via the C24 cable.
- .32 Following the stop of panel S2-D6U1 located in the S-212 room, disconnect and withdraw the C4 cables which feed S2-T2U9 and the C3 cables which feed the transformer S2-T2U3 via the C4 cable.
- .33 Relocate three current transformers 400A to 5A of the panel S2-D6U1 in the cabinet of transformer S2-T2U9 as well as a fusible block 3 phases at the secondary of the transformer in its cabinet. This equipment will be useful for a new measuring device for transformer S2-T2U9.
- .34 Relocate three current transformers 400A to 5A of the panel S2-D6U1 in the cabinet of transformer S2-T2U3 as well as a fusible block 3 phases at the secondary of the transformer in its cabinet. This equipment will be useful for a new measuring device for transformer S2-T2U3.
- .35 Connect the C21 cable to feed transformer S2-T2U9 located in the S-212 room.
- .36 Connect the C24 cable to feed transformer S2-T2U3 located in NSI room.
- .37 Energize service panels S2-D2U9 and S2-T2U3 via the UPS.
- .38 From panel S2-D6U3 located in NSI room, prepare the power supply feeder for transformer S2-T2U6 located in S-205 room via the cables C23 and C17 and the measuring box CE-4.
- .39 From panel S2-D6U3 located in NSI room, prepare the power supply feeder of transformer S2-T2U2 located in NSI room via the cables C22 and C18 and the measuring box CE-6.
- .40 Following to drop the voltage of panel S2-D6U2, disconnect and withdraw cable C2 which feeds transformer S2-T2U2 located in NSI room.
- .41 Following to drop the voltage of panel S2-D6U2, disconnect and withdraw cable C1 which supplies transformer S2-T2U6 located in the S-205 room.
- .42 Relocate two measuring units CE-4 and CE-6 and install on the wall.
- .43 Connect cables C22 and C18 to feed transformer S2-T2U2 located in NSI room.
- .44 Connect cables C23 and C17 to feed transformer S2-T2U6 located in the S-205 room.
- .45 Install a 1''Ø EMT conduit with 10-12AWG conductors between the measuring box of the S-212 room and transformer S2-T2U3.
- .46 Install a 1''Ø EMT conduit with 10-12AWG conductors between the measuring box of the S-212 room and transformer S2-T2U9.
- .47 Install a 1''Ø EMT conduit with 8-18AWG conductors of between UPS #6 alarms terminal block and a new box with terminal block which will be located on the wall of the S-212 room.
- .48 Energize service panels S2-D2U9 and S2-T2U3 via the UPS.
- .49 Execute grounding following equipment with 2/0 AWG copper isolated ground cables via the ground bar in the sub-station in the S-212 room:
 - .1 Panel S2-D4G2.
 - .2 UPS including all the cabinets.
 - .3 The star point of transformer S2-T6U2.
 - .4 Panel S2-D6U3.

- .50 Install a mechanical grounding for all equipment and frames via the ground cable of each TECK cable.
- .51 Use compressed lugs for all connection points.

.3 EQUIPMENT SITE

- .1 The load bank will be supplied by others, in the shelter.
- .2 Height of assembly of materials, measured from the finished floor surface to the axis of the equipment.

.4 PROCEDURES

- .1 The Engineer responsible for work of startup will produce a release procedure of equipment and a startup procedure for each stage of realization.
- .2 The Contractor must attend two meetings (2x4h) for the revision of each procedure produced by the Engineer responsible for work startup.

.5 SEQUENCES OF WORK

- .1 Install panels S2-D6U3 and S2-D4G2.
- .2 Install transformers S2-T4G2 and S2-T6U2.
- .3 Connect internal equipment of UPS#6 including bypass cabinet, batteries and wiring of associated control.
- .4 Prepare installation of the cables between the panels and transformers S2-T2U9, S2-T2U6, S2-T2U2, S2-T2U3.
- .5 Make a temporarily connection UPS#5 via BJ S2-B6G2 with 4/0AWG DLO cables coming from generator GEN3.
- .6 Start generator GEN3 and transfer UPS #5 towards the source from GEN3 via the transfer switch S2-I6G2.
- .7 Make a shutdown service the panel S2-D6G2 and move the power supply of the panel 06-D6G1 via BJ S1-BJ6G2. During the shutdown of panel S2-D6G2 connect the cable which will supply transformer S2-T4G2.
- .8 Lockout the 400A circuit breaker used for transformer S2-T4G2.
- .9 Energize panel S2-D6G2 and transfer the UPS #5 towards the normal source coming from panel S2-D6G2.
- .10 Make a shutdown the generator GEN3 and disconnect DLO cables in BJ S2-B6G2.
- .11 Connect DLO cables with the load bank located in the shelter and with panel S2-D6U3.
- .12 Put the UPS in service and carry out the load tests.
- .13 Put the UPS in bypass and open the 400A circuit breaker of panel S2-D4G2 which feeds the bypass source of the UPS.
- .14 Dismantle the DLO cables and connect the cables C21, C22, C23 and C24 in panel S2-D6U3.
- .15 Lockout all the circuit breakers of panel S2-D6U3.
- .16 Make a shutdown the panel S2-D6U2 and remove the cables C1 and C2.

- .17 Relocate the measuring units CE-4 and CE-6.
- .18 Energize panel S2-D6U2.
- .19 Complete the connections of the cables to feed transformers S2-T2U2 and S2-T2U6.
- .20 Remove the lockout of the two 400A circuit breakers which feed transformers S2-T2U2 and S2-T2U6.
- .21 Remove the lockout of the circuit breaker which feeds the bypass source of the UPS #6 and energize panel S2-D6U3.
- .22 Energize panel S2-T2U2.
- .23 Energize panel S2-T2U6.
- .24 Transfer the load on UPS #6.
- .25 Make a shutdown the panel S2-D6U1 and remove the cables C3 and C4. Relocate the current transformers. Install the current transformers in transformers S2-T2U9 and S2-T2U3.
- .26 Energize panel S2-D6U1.
- .27 Connect the cables in the two transformers S2-T2U9 and S2-T2U3.
- .28 Put the UPS #6 on bypass and energize transformer S2-T2U9.
- .29 Energize transformer S2-T2U3.
- .30 Transfer the load of the UPS #6 in UPS mode.

.6 IDENTIFICATION LABELS AND MANUFACTURING NAME PLATE

- .1 Make sure that the CSA identification labels, plates and the manufacturing name plates are visible and readable once the material is installed.

.7 INSTALLATION OF CONDUITS AND CABLES

- .1 Make borings of the cement walls to install conduits and cables. The contractor must install sleeves in all borings.
- .2 Install fireproof material compound to maintain the integrity of the locals, 2 hours to fire resistance or more.

.8 HEIGHTS OF ASSEMBLY

- .1 Except indication or contrary regulation, measure the height of assembly of the materials starting from the surface of the covered floor to the axis of the equipment.
- .2 Whenever the height of assembly is not indicated, verify with the qualified people before beginning the installation.
- .3 Unless otherwise specified, install the materials with the height indicated hereafter.
 - .1 Distribution panel and equipment: according to the requirements of the Code or the indications.

.9 COORDINATION AND PROTECTION DEVICES

- .1 Make sure that the electrical protection devices of the circuits like the overcurrent shunt trip, the relays and the fuses are installed, that they are properly adjusted and that they meet according to the values prescribed by the Engineer.

.10 QUALITY CONTROL ON SITE

- .1 Confirm that the related works are ready to receive the works planned under the present section and of the related sections on electricity.
- .2 Carry out the commissioning of the electrical distribution with electricians in the presence of the engineer.
- .3 Qualification
 - .1 Electricians: work of electricity must be only carried out by electricians approved, qualified, according to the terms of the provincial law concerning the professional training and the qualification of labor.
- .4 Work being the subject of this section must be carried out by a Master electrician or a contractor electrician, holder of a license delivered by the province where work will be carried out.
- .5 To carry out the tests of the following elements, in accordance with the section 01 45 00 - Quality control.
 - .1 Electrical network distribution, including the control of the phases, the voltage and grounding, and the load balance.
 - .2 Confirm the phases and the phase rotation of the three-phase feeder with 600V and 208V.
 - .3 Carry out a megger test at 1000V circuits coming from each panel. Make a checking phase-phase and phase-ground before energizing in the presence of the engineer.
 - .4 Measure the resistance of contacts of all commutation equipment such as the circuit breakers and switch using a micro-ohmmeter. This work will be carried out in the presence of the engineer.
 - .5 Measurements of the insulation resistance
 - .1 Measure, using a megger of 500 V, the value of insulation of the circuits, distribution cables and equipment of nominal voltage at most 350 V.
 - .2 Measure, using a megger of 1000 V, the value of insulation of the circuits, feeders and equipment of nominal voltage ranging between 350 V and 600 V.
 - .3 Verify the value of the resistance of the insulation to the ground before carrying out the energizing.
- .6 Carry out the tests and measurements in the presence of the Engineer.
- .7 Provide the measuring devices, the indicators, the flag, the equipment and the personnel necessary for the execution of the tests during the realization of work and at the completion of the latter.
 - .1 Provide labor, instruments and necessary equipment to tests, and to discharge the expenses from them. The Engineer reserves the right to require a proof of the precision of the instruments used for the tests.

- .8 The startup commissioning of the UPS will be carried out by the manufacturer's technician or an approved representative including a test of batteries discharge, transfer tests and the usual checks certified by the manufacturer. The installation of DLO cables will be carried out by the contractor and will have to circulate in the stairway placed in a safety way.
- .9 The engineer will have to witness to his satisfaction with the tests of all the equipment, circuit breakers and UPS.

.11 CLEANING

- .1 Clean and improve the surfaces painted in workshop which were scratched or damaged in the course of forwarding and of installation; Use a painting of the type and color identical to the painting of origin.
- .2 Clean the hooks, supports, fasteners and other apparent attachment devices, not galvanized, and apply a primer to protect them from rust.
- .3 Once work of installation and the control of the performance finished, evacuate working materials and materials of surplus, waste, tools and the equipment.

.12 MONITORING

- .1 The security agents will be provided by the customer.
- .2 No work can be carried out without the constant presence of a security agent.

END OF LA SECTION

Partie 1 General information

1.1 RELATED SECTIONS

- .1 Section 26 05 00 Electricity - General requirements of work.

1.2 REFERENCES

- .1 CSA C22.2 No 0.3-92, Testing methods of wire and electrical cables.
- .2 CAN/CSA-C22.2 No 131-M89 (C1994), Cables of the type TECK 90.

1.3 DATA SHEETS

- .1 Submit required data sheets, in accordance with the section 01 33 00 - Documents and samples to be submitted.

Partie 2 Products

2.1 WIRING FOR CONTROL AND REMOTE ALARM

- .1 Copper conductors: minimum gauge of 12 AWG, multi-conductor type, quantity of conductors according to indications on drawings, designed for a tension of control of 300 V, multicore cable covered with an armoured protection out of steel covered with a green sheath, FT4.
- .2 Multi-conductor completes with ground cable for cable with armor.

2.2 BUILDING'S WIRING

- .1 Copper conductors: of size according to indications, with 1000V insulation of chemically cross-linked thermosetting polyethylene rated RW90.
- .2 Aluminium conductors: of size according to indications, with 1000V insulation of chemically cross-linked thermosetting polyethylene rated RW90.

2.3 EMERGENCY COMMUTATION PANEL GROUNDING CABLES

- .1 Grounding Cable, standard RW90, out of copper, with a sheath isolated 1000V, color GREEN of gauge according to the indications.
- .2 Grounding Cable, stranded type, stripped, out of reheat tinplated copper of gauge according to the indications.

Partie 3 Execution

3.1 INSTALLATION OF THE BUILDING'S WIRING

- .1 Install the building's wire as follows:
 - .1 In conduits, in accordance with the section 26 05 34 Conduits, conduits fastenings and conduit fittings.
 - .2 In the cable trays when it is about cable having a metal armour.

3.2 WIRING FOR CONTROL AND REMOTE ALARM

- .1 Install the alarm and control cables in conduits EMT and/or cable trays according to the case.
- .2 Ground the metal armour of control conductors at only one end.

3.3 GROUNDING CABLES INSTALLATION

- .1 To install green isolated grounding cables of the frames in EMT conduits.
- .2 Ground the conduits at the two ends via an isolated copper cable with gauge in conformity with the requirements of the electric code and specification.

END OF THE SECTION

Partie 1 General information

1.1 RELATED SECTIONS

- .1 Section 26 05 00 Electricity - General requirements of work.

1.2 REFERENCES

- .1 American National Standards Institute (ANSI) / Institute of Electrical and Electronics Engineers (IEEE)
 - .1 ANSI/IEEE 837, Qualifying Permanent Connections Used in Substation Grounding.
 - .2 Canadian Standard Association, (CSA) /CSA International
 - .3 CAN/CSA Z32, Safety as regards of electricity and essential electrical network of health care establishments.

Partie 2 Products

2.1 MATERIAL

- .1 Ground conductors: bare copper, stranded galvanized reheets, of gauge indicated.
- .2 Ground Conductors green insulator coated 1000Volts, type RW90.
- .3 Anti-corrosive accessories necessary to the grounding system, dimensions and materials according to the indications, in particular:
 - .1 Grounding and bonding bushings.
 - .2 Protective type clamps.
 - .3 Bolted type conductor connectors.
 - .4 Bonding jumpers, straps.
 - .5 Pressure wire connectors.

Partie 3 Execution

3.1 INSTALLATION - GENERAL INFORMATION

- .1 Install a complete, permanent and continuous system of grounding including conductors, connectors and necessary accessories. When using metal electrical tubing (type EMT), install grounding conductor in the tubes. The gauge of the conductor must meet the requirements of the electric code.
- .2 Install the connectors according to the manufacturer's directives.
- .3 Protect from the damage the exposed grounding conductors.
- .4 To realize by thermo welding and using copper compression connectors, controllable, in conformity with standard ANSI/IEEE 837.
- .5 Use mechanical connectors if it is not possible to install compressed lug connectors. Confirm with the Engineer.
- .6 The welded joints are prohibited.

- .7 Install a wire of connection on the flexible conduits, fixed carefully on the outside of the conduit and connected to each end to an end of grounding, a terminal without welding, a wire crimper or a screw with a Belleville spring washer.
- .8 Ground the frame measurement equipment via the grounding bars of the local electric rooms of the building.

3.2 SYSTEM AND CIRCUIT GROUNDING

- .1 Install system and grounding connections to neutral according to indications.

3.3 EQUIPMENT GROUNDING

- .1 Install grounding connections required, with the ground prescribed, for the whole of the material, in particular: service equipment, transformers, switchgear, conduits, cable trays, control panels and distribution panels.

3.4 GROUNDING BUS

- .1 Ground electrical equipment in electrical room to the grounding bus with individual isolated stranded copper conductors of gauge as per indications.
- .2 Ensure the continuity of the masses of the frames of equipment, conduits, armoured cables, cable trays, transformers, UPS, commutation cells, transfer switches, equipment and of electrical appliances from the sub-station grounding bars.
- .3 Connect grounding bar to the structure, frameworks of doors, doors and equipment. Use flexible connections at places necessary and on vibrating equipment.

3.5 FIELD QUALITY CONTROL

- .1 Perform tests in accordance with the section 26 05 00 - Electricity - General Requirements of work.
- .2 Perform tests before energizing electrical installation.

END OF THE SECTION

Partie 1 General information

1.1 RELATED SECTIONS

- .1 Section 26 05 00 Electricity - General requirements of work.

Partie 2 Products

2.1 STRUCTURAL U SHAPE CHANNEL SUPPORTS

- .1 Supports profiled out of U, 41 mm X 41 mm, 2.5 mm thickness, for projecting or suspended installation.

Partie 3 Execution

3.1 INSTALLATION

- .1 Fix the equipment on the full or hollow surfaces to masonry and plaster, using lead anchors.
- .2 Fix the equipment to concrete surfaces, using expansion inserts.
- .3 Support conduits or cables by fasteners, spring loaded bolts and the cable clamps designed like accessories to U channel.
- .4 Install ½" stainless steel threaded rods for the supports of cable trays starting from inserts installed in concrete or on frame. Have anchoring points approved by the engineer and this, before carrying out work.
- .5 Use malleable iron steel strip to fix apparent cables or conduits with the frame or structural components of the building.
 - .1 Malleable iron steel strip with a hole to fix projecting conduits and cables of 2 in. -50 mm of diameter or less.
 - .2 Malleable iron steel strip with two steel holes to fix conduits and cables of larger than 2 Po-50 mm
 - .3 Use flanges mounting clamp to fix conduits at apparent structural steel members.
- .6 Suspended supports systems:
 - .1 Support each cable or conduit runs with 12 mm diameter threaded rods and spring clip fastener.
 - .2 Support at least two cables or conduits on profiled U shape channel supported by threaded hanger rods of 12 mm when unable to fix to Building's structure.
- .7 To assemble projecting two conduits or more, use profiled U shape channel installed at 1.5 m distance between centres.
- .8 Install consoles, mountings, hooks, clamping mounting flanges and other forms of mediums metal at the places indicated and where it is necessary to support the conduits and the cables.
- .9 Ensure a suitable support for raceways, conduits and cables dropped vertically to equipment where there is no wall support.

- .10 Do not use a wire lashing or perforated strap binding to support or secure raceways or cables.
- .11 Do not use supports or equipment installed for other trade for conduits or cables supports, except with permission of other trade and the approval of the Engineer.
- .12 Install fasteners and supports according to the needs for each type of equipment, conduits and cables in accordance with manufacturer's recommendations.

END OF THE SECTION

Partie 1 General information

1.1 RELATED SECTIONS

- .1 Section 26 05 00 Electricity - General requirements concerning the result of work.

1.2 REFERENCES

- .1 Canadian association of standardization (CSA)
 - .1 CAN/CSA-C22.2 No 18 [98], Boxes of exit, boxes for conduit, connections and accessories.
 - .2 CSA C22.2 No 45- [M1981 (C1992)], Rigid metal conduits.
 - .3 CSA C22.2 No 56- [1977 (C1999)], Flexible metal conduits and liquid tight Flexible metal conduits.
 - .4 CSA C22.2 No 83- [M1985 (C1999)], Electrical Metal Tubing (EMT).
 - .5 CSA C22.2 No 211.2- [M1984 (C1992)], Vinyl polychloride rigid Conduits not plasticized.
 - .6 CAN/CSA-C22.2 No 227.3- [M91 (C1999)], Non-metal flexible Tubing.

Partie 2 Products

2.1 CONDUITS

- .1 Electrical Metallic Tubing (EMT): in conformity with the standard CSA C22.2 No 83, provided with connections and at widened ends.

2.2 CONDUITS FASTENINGS

- .1 One-hole malleable iron or steel straps to secure surface conduits with diameter equal or smaller than NPS 2" -50 mm. 2 holes steel straps for conduits larger than NPS 2" -50 mm.
- .2 Beam clamps to secure conduits to exposed steel works.
- .3 U shape channel support for several conduits, to lay out with 1.5 m distance between centres.
- .4 Threaded rods, 12 mm diameter, to support suspended U shape channel.

2.3 CONDUITS FITTING

- .1 Fittings: especially manufactured for the prescribed conduits. Coating: same as conduits.
- .2 Fittings in L prefabricated, to install at places where 90° elbows are necessary on conduits of NPS 1" -25 mm or more.
- .3 Watertight connectors and EMT couplings for EMT. The set- screw are not acceptable.

2.4 PULLING CORD

- .1 Polypropylene

Partie 3 Execution

3.1 INSTALLATION

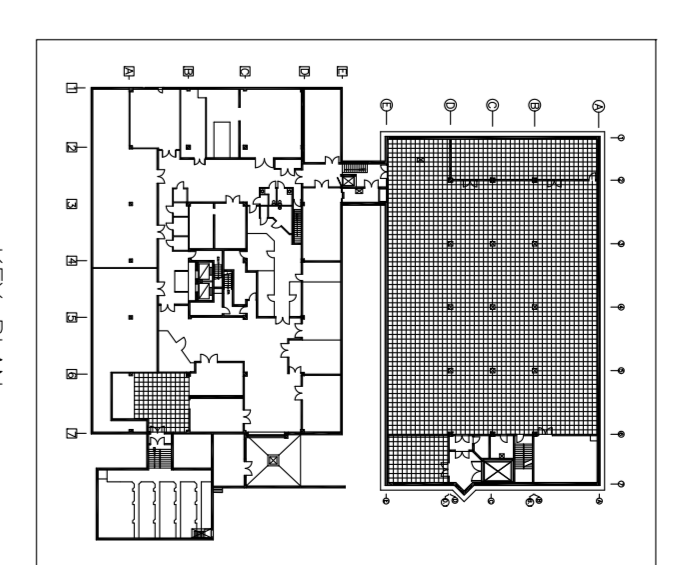
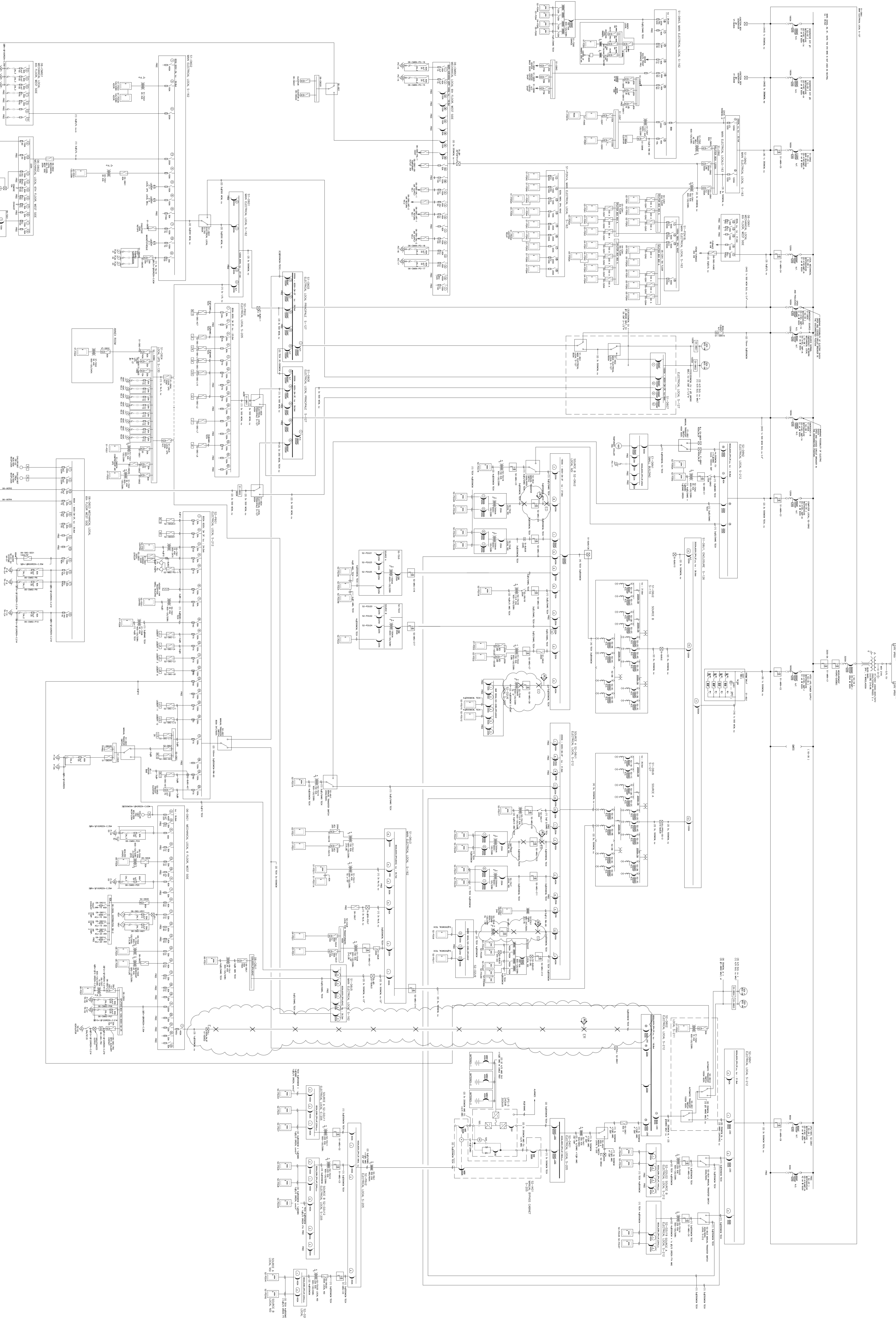
- .1 Install conduits to conserve headroom in exposed location and cause minimum interference in spaces through which they pass.
- .2 Use electrical metallic tubing (EMT).
- .3 Use flexible metal conduits in the case of connections of vibrating material.
- .4 Use conduits of at least NPS ¾"-19 mm
- .5 Bend conduits mechanically. Replace conduits if kinked or flattened more than 1/10" of their original diameter.
- .6 Install fish cord in empty conduits. Seal ends of all empty conduits and make them seal tight.
- .7 Remove and replace blocked conduits sections. Do not use liquids to clean out conduits.
- .8 Connect by electrical metallic tubing (EMT), panels, transformers, junction boxes and switches.
- .9 Dry out conduits before installing wire.
- .10 Install a ground green wire in all conduits.
- .11 Install TECK cables and DLO cable on stairs.

3.2 SURFACE CONDUITS

- .1 Install conduits parallel or perpendicular to building's lines.
- .2 Install conduits in flanged portion of steel structural, if necessary.
- .3 Group conduits wherever possible on suspended U shape channel.
- .4 Unless otherwise specified, conduits should not cross the structural members.
- .5 Do not locate conduits less than 75 mm parallel to steam or hot water lines with minimum of 25 mm at crossovers.

END OF THE SECTION

MASTER PLAN



LEGEND

- UPS NETWORK
- EMERGENCY NETWORK
- NORMAL NETWORK

IDENTIFICATION DE L'EQUIPEMENT

FLOOR: 57-D622

EQUIPEMENT: P-PANNEAU, F-FRANSEUR, I-INTERRUPTEUR, S-SWITCH, B-BOUTONNIERE

VOLTAGE - TENSION: 1, 2, 3, 4, 5, 6, 7, 25

SOURCE: U-UPS, M-M, G-GENERATEUR

SEQUENTIAL NUMBER

SYMBOLS REIMS

- E EXISTING EQUIPMENT
- N NEW EQUIPMENT
- C EQUIPMENT SUPPLIED BY CUSTOMER
- M EQUIPMENT TO DISMANTLE
- D EQUIPMENT TO INSTALL
- S/S SYMBOLS WHICH BE COMMENTED TO SWITCH DOWN
- S/S SYMBOLS WHICH EQUIPMENT TO SWITCH DOWN

PROJETS	DETAILED	DATE
A	no de office	19-11-28
B	no de revision	04-04
C	no de revision	

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PROJET
 REMPLACEMENT DE LA ROTINE UPS
 PAR LE STATIC UPS 200KW
 SINGLE LINE DIAGRAM
 MODIFICATIONS

DESIGNED BY
 M. G. SCHMIDT
 2013-11-27

CHECKED BY
 G. SCHMIDT
 2013-11-27

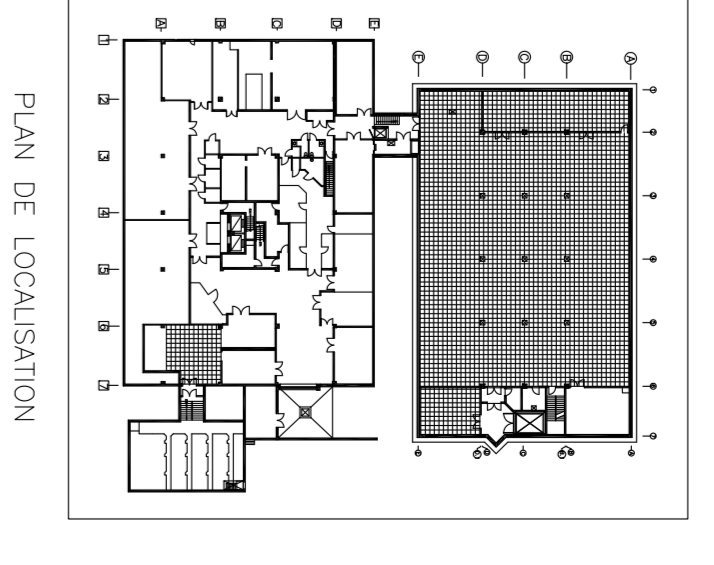
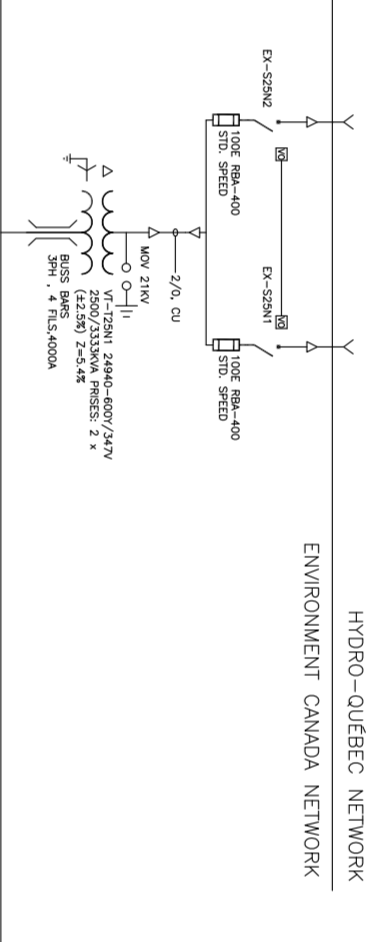
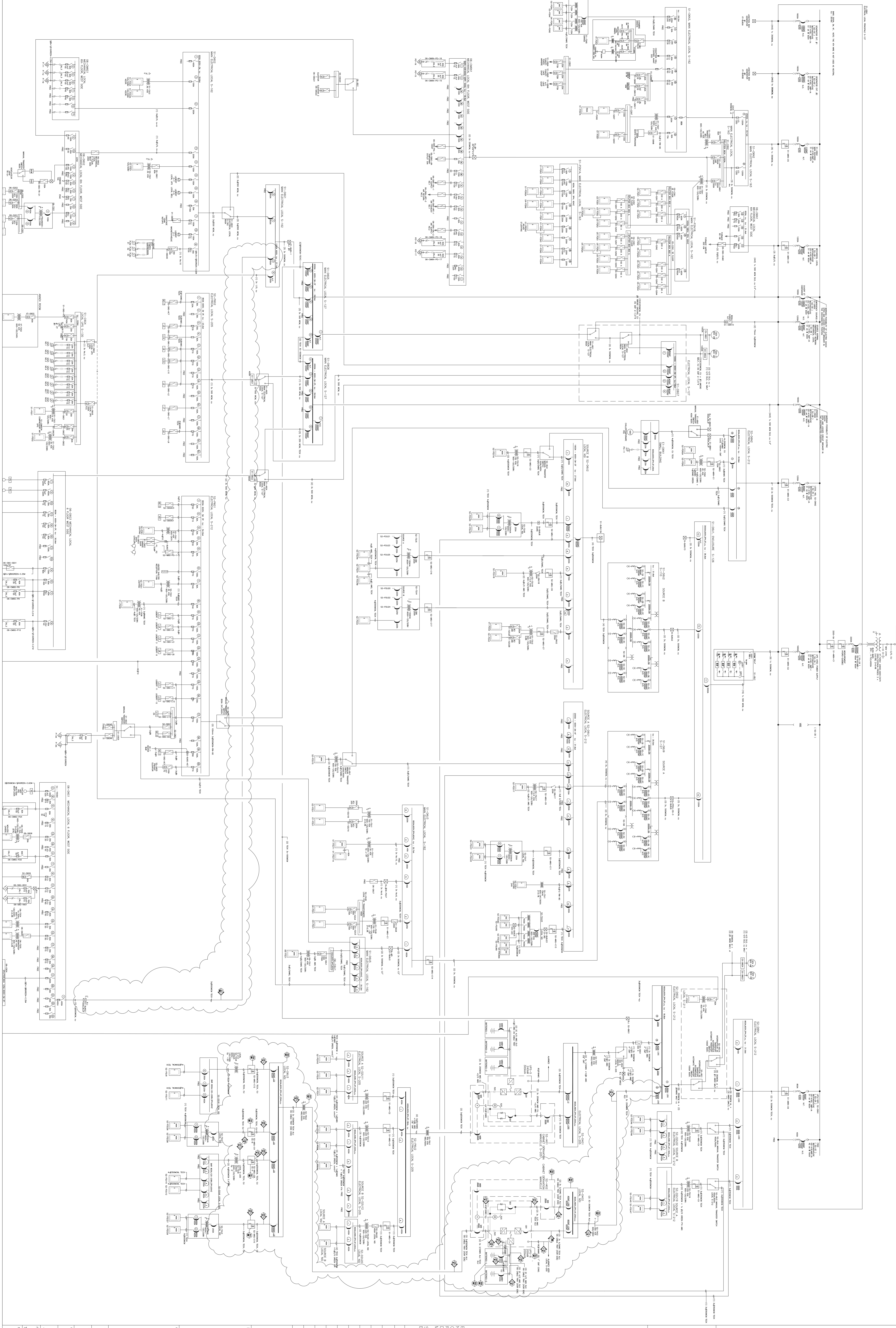
APPROVED BY
 G. SCHMIDT
 2013-11-27

DATE
 2013-11-27

PROJECT NUMBER
 DMC-MA-20191127

DRAWING NO.
 E01-E

MASTER PLAN



LEGEND	
— UPS NETWORK	
— EMERGENCY NETWORK	
— NORMAL NETWORK	

EQUIPMENT IDENTIFICATION 57-DE02
FLOOR
EQUIPMENT
P-PANINITION
F-FRANSFORMER
L-LSWITCH
B-BUNTION BOX
VOLTAGE, TENSION: 1, 2, 3, 4, 5, 6, 75
SOURCE: U-U-UPS, G-GENERATOR
SEQUENTIAL NUMBER

SYMBOLS REMAIS
N- NEW EQUIPMENT
C- EQUIPMENT SUPPLIED BY CUSTOMER
D- EQUIPMENT TO DISMANTLE
M- EQUIPMENT TO MODIFY
E- EQUIPMENT TO BE COMBINED TO SWITCH DOWN

PROJET	
A- no de officiel	2019-11-128
B- but no de situation	484
C- no de dessin	

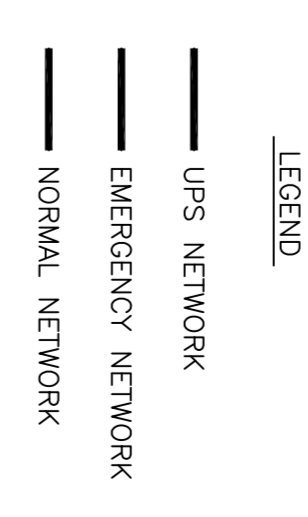
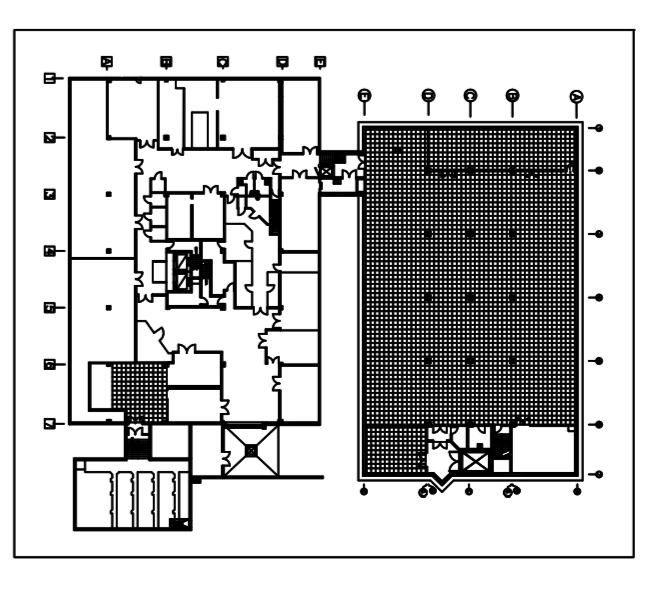
EMERGENCY CONTACT INFORMATION	
MONTREAL: 514-271-1111	
TOLSON: 1-800-367-7327	
TORONTO: 416-291-1111	
OTTAWA: 613-993-8888	

DESIGNER	DRAWN	CHECKED	APPROVED
MARC ST-MAURICE	ANDRÉ GAGNON	ANDRÉ GAGNON	ANDRÉ GAGNON

REPLACEMENT OF THE ROTATIVE UPS BY A STATIC UPS 200KW SINGLE LINE DIAGRAM	
DATE	2019-11-12
PROJECT NUMBER	57-DE02
DRAWING NUMBER	57-DE02

PROJECT	2019-11-12
CLIENT	18-11-27

SCALE	AS SHOWN
PROJECT NUMBER	57-DE02
DRAWING NUMBER	57-DE02



EQUIPMENT IDENTIFICATION	
LEVEL	SZ-D6CZ
EQUIPMENTS :	
1 - TRANSFORMER	
2 - PANEL	
3 - TRANSFORMER	
4 - SWITCH	
5 - JUNCTION BOX	
VOLTAGE / TENSION : 1, 2, 3, 4, 5, 6, 75	
SOURCE : 120/208/240/480/600/720V	
TYPE :	
GENERATOR	
SEQUENTIAL NUMBER	

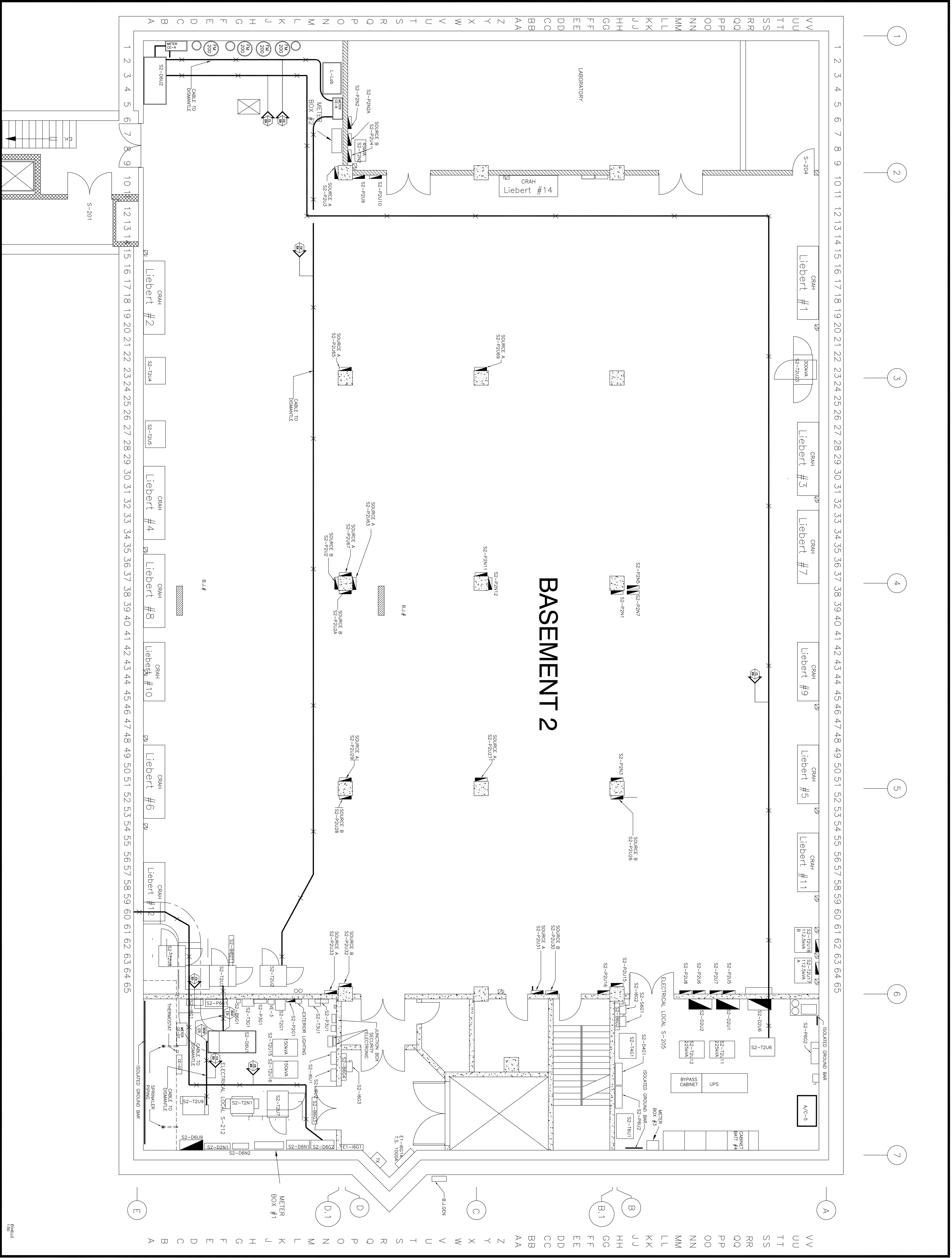
SYMBOLS MEANS
E EXISTING EQUIPMENT
F EXISTING EQUIPMENT
G EQUIPMENT SUPPLIED BY CUSTOMER
H EQUIPMENT TO BE SHUT DOWN
I EQUIPMENT TO BE MODIFIED
M EQUIPMENT TO BE MODIFIED
SYMBOLS MIGHT BE COMBINED
EXISTING EQUIPMENT TO BE SHUT DOWN

PROJECTIONS	
no	description
1	PROJ TOUBER
2	PROJ TOUBER

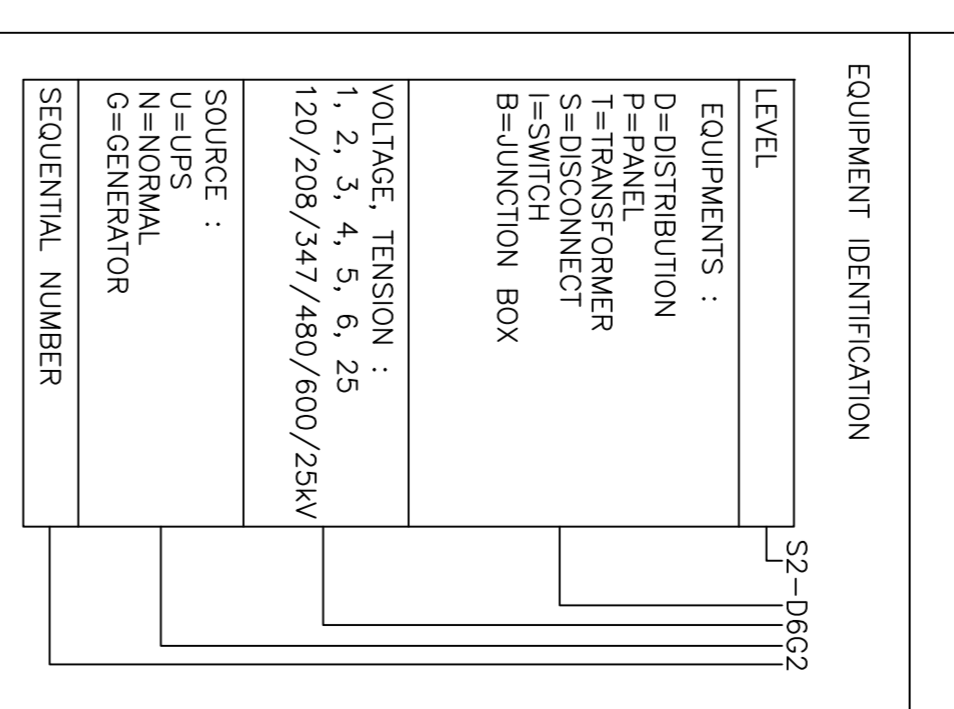
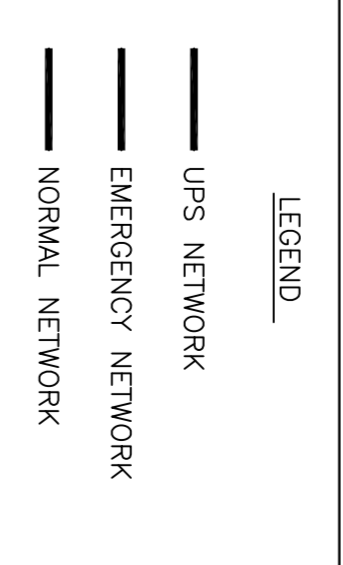
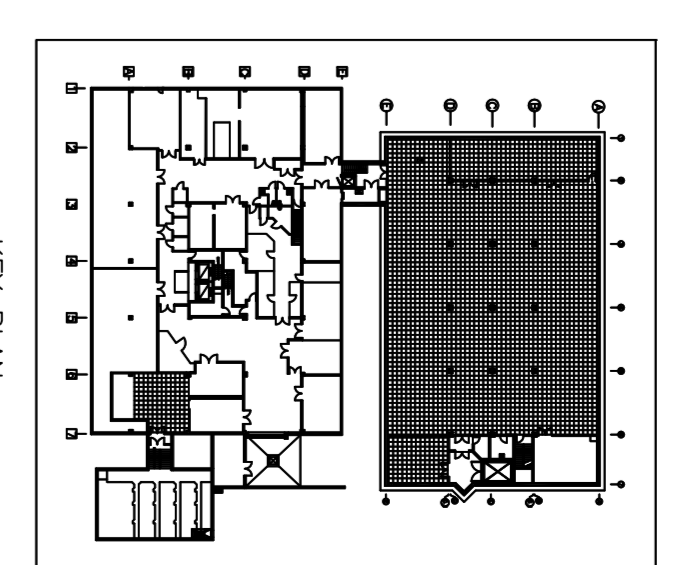
EMERGENCY PREPAREDNESS
REPLACEMENT OF THE ROTARY UPS
BY A STATIC UPS 200KW
EXISTING PLANT LAYOUT
ZONE NSI DISMANTLING

copy print
date of issue
drawing no
2013-11-14
2013-11-14
2013-11-14

Project: 3000898369
Drawing: E02-E



BASEMENT 2



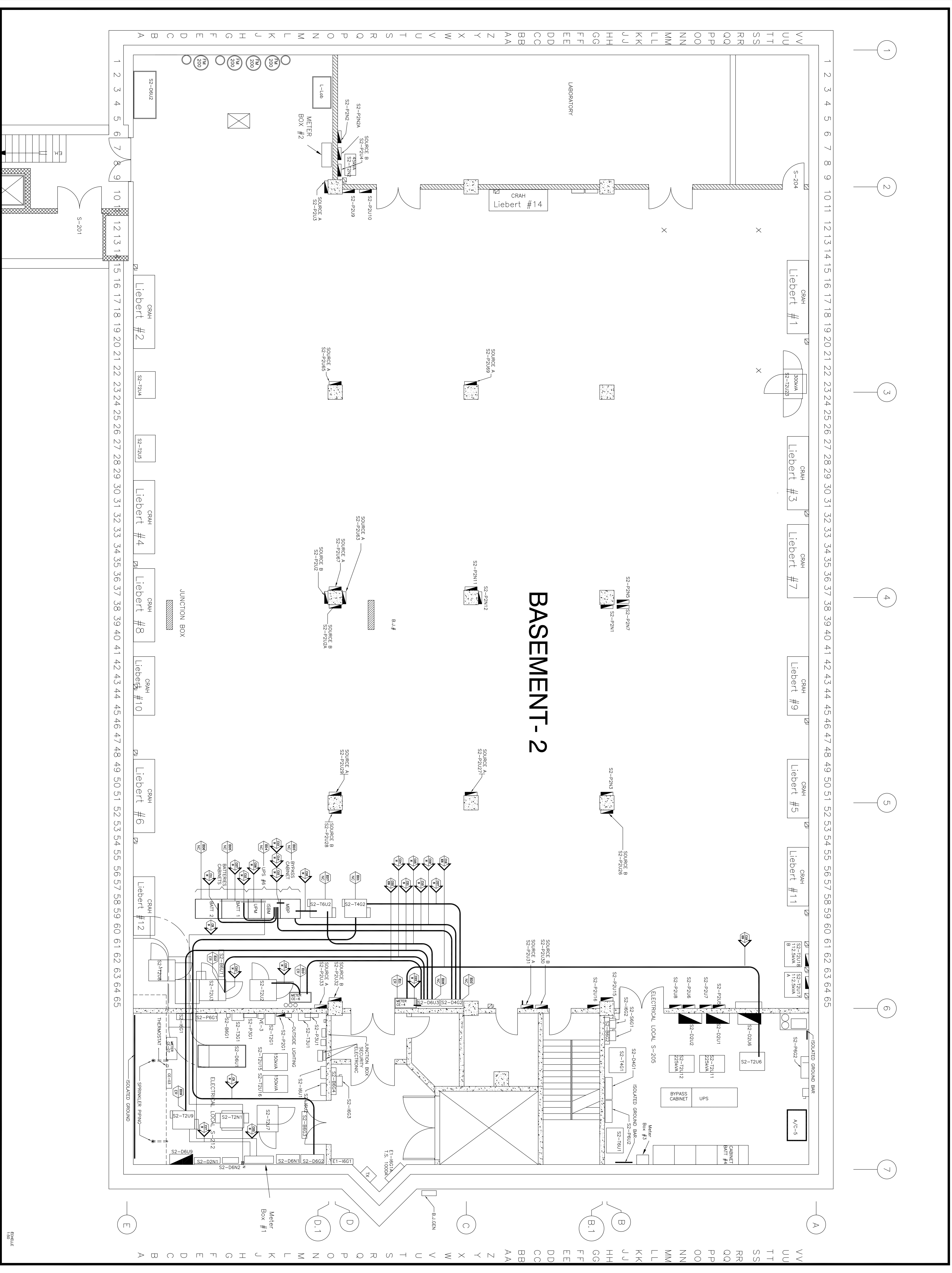
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 E EQUIPMENT EXISTING
 N EQUIPMENT NEW
 C EQUIPMENT TO BE REMOVED
 R EQUIPMENT TO SWITCH DOWN
 M EQUIPMENT TO MODIFY
 L EQUIPMENT TO REMOVE
 Symbols might be combined
 EX: ER EQUIPMENT EXISTING TO SWITCH DOWN

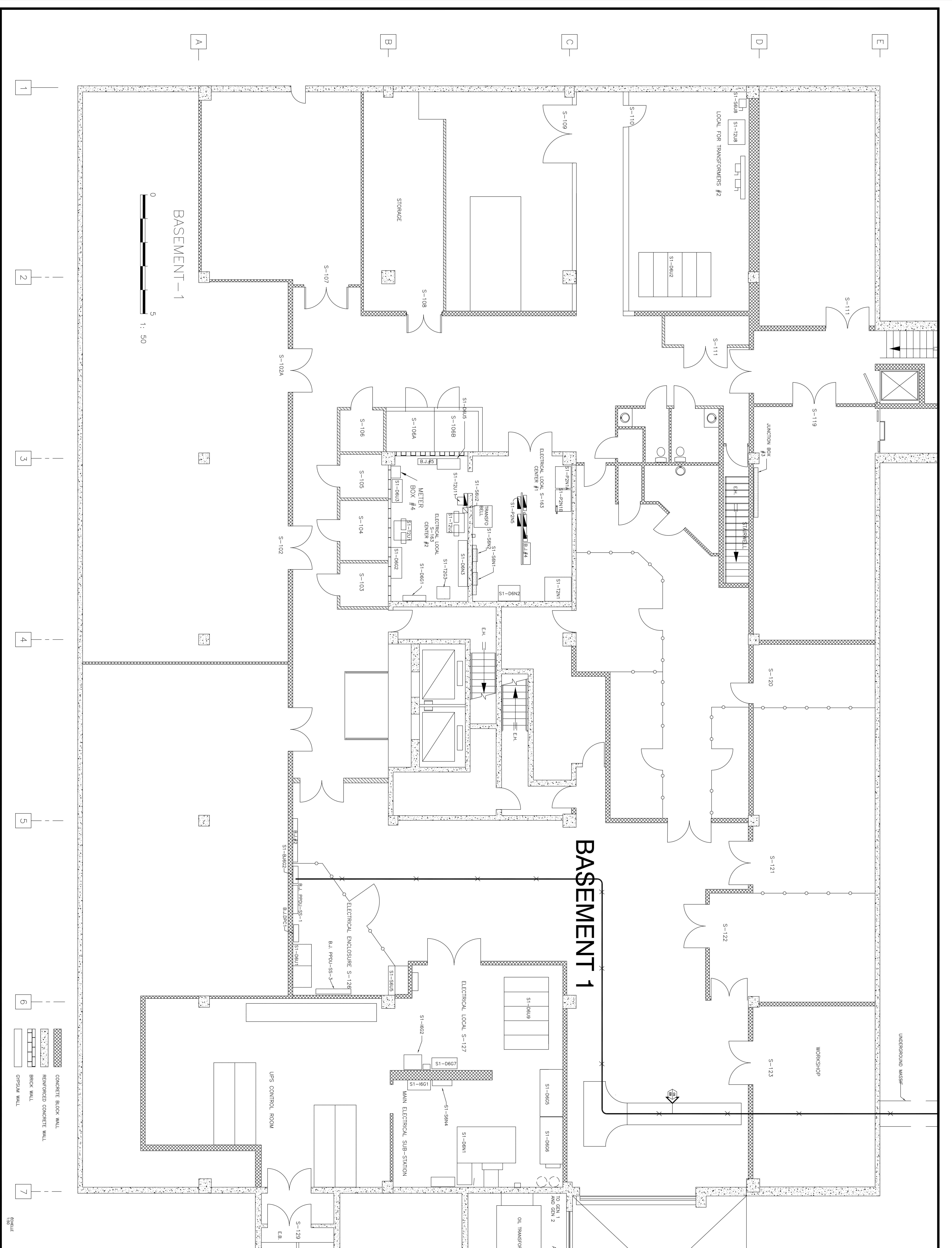
revision	description	date
1	FOR TENDER	19-11-28

A no de de plan
 B sur no de plan
 C no de dessin
 drawing no

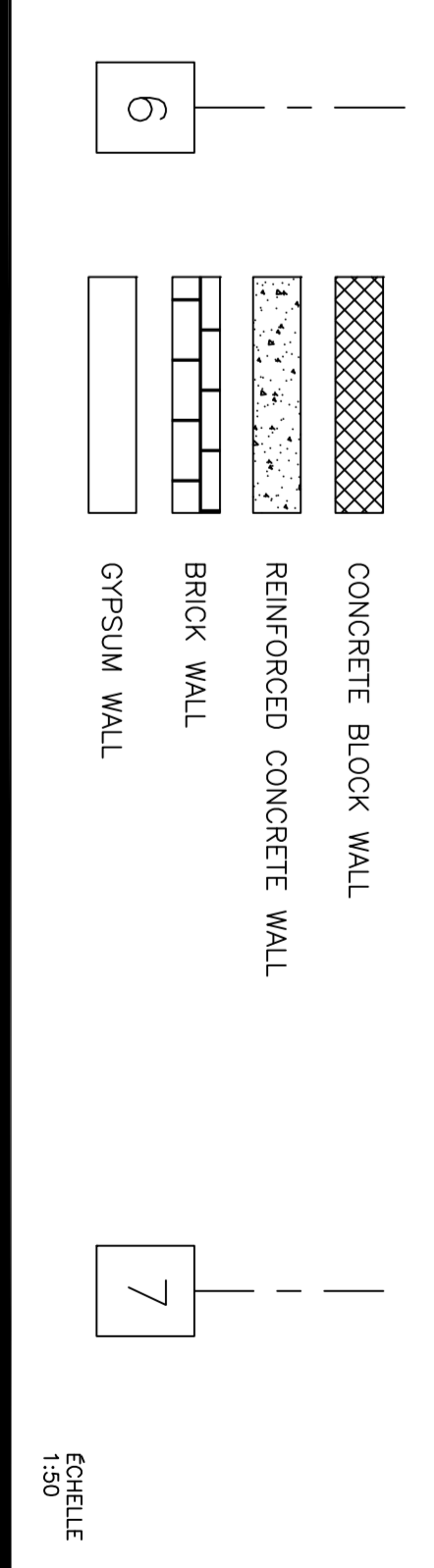
ELECTRICAL
 REPLACEMENT OF THE ROTATING UPS BY A STATIC UPS 200KW
 NEW PLOT PLANT LAYOUT
 NSI ZONE

designed by: 2013-11-14
 checked by: 2013-11-14
 approved by: 2013-11-14
 drawing no: 18-11-27
 sheet no: 046
 title: NEW PLOT PLANT LAYOUT
 project name: NSI ZONE
 project number: E02-N
 no de plan: E02-N
 no de dessin: 3000898369





BASEMENT 1



Environnement Canada
Prévention de la pollution
Téléphone 1-877-975-2739
Centre Multilingue du Canada

KEY PLAN

EQUIPMENT IDENTIFICATION

LEVEL: S7-D622

EQUIPMENTS:

- P-PANEL
- T-TRANSFORMER
- F-FUSE
- S-SWITCH
- B-BUS
- J-JUNCTION BOX

VOLTAGE, TENSION: 1, 2, 3, 4, 5, 6, 75, 120/208/240/480/600/750V

SOURCE:

- U-UPS
- M-M
- G-GENERATOR

SEQUENTIAL NUMBER

SYMBOLS DETAILS

- E EQUIPMENT EXISTING
- F EQUIPMENT SUPPLIED BY CUSTOMER
- C EQUIPMENT TO BE REMOVED
- R EQUIPMENT TO BE RELOCATED
- M EQUIPMENT TO BE MODIFIED
- S SYMBOUS MIGHT BE COMBINED
- EX, EXI EQUIPMENT EXISTING TO SWITCH DOWN

PROJECT: E33-E

PROJETS

UNIVERSITY OF ALBERTA

Electrical

REPLACEMENT OF THE ROTATIVE UPS BY A STATIC UPS 200KW

EXISTING PLOT PLAN LAYOUT BUILDING ZONE DISMANTLING

DETAILED INFORMATION

designed by: J. L. L. / J. L. L. / J. L. L.

checked by: J. L. L. / J. L. L. / J. L. L.

approved by: J. L. L. / J. L. L. / J. L. L.

client: UNIVERSITY OF ALBERTA

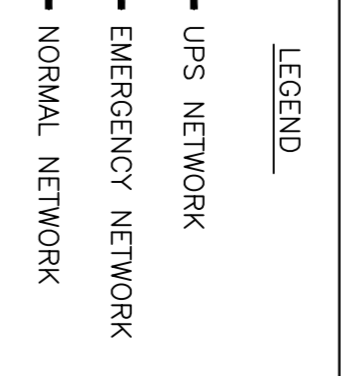
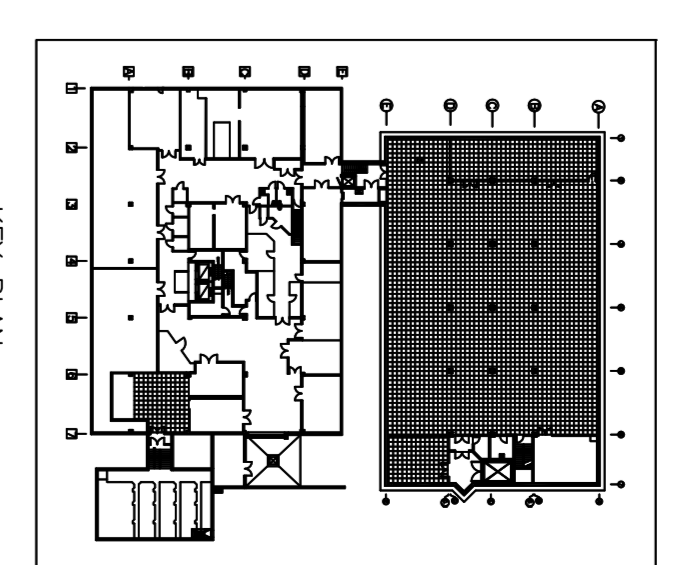
project number: 15-11-27

date: 2013-01-17

sheet: 01/01

scale: 1:50

drawing no: E33-E



EQUIPMENT IDENTIFICATION

LEVEL	EQUIPMENT IDENTIFICATION
S-1	D-DISTRIBUTION
S-1	T-TRANSFORMER
S-1	S-SWITCH DISCONNECT
S-1	B-JUNCTION BOX

VOLTAGE, TENSION :
 1, 2, 3, 4, 5, 6, 75
 120/208/240/480/600/720V

SOURCE :
 U-UPS
 G-GENERATOR

SYMBOL DETAILS
 E EQUIPMENT EXISTING
 F EQUIPMENT SUPPLIED BY CUSTOMER
 G EQUIPMENT TO SWITCH DOWN
 R EQUIPMENT TO MODIFY
 M EQUIPMENT TO MODIFY
 S SYMBOLS MIGHT BE COMBINED
 EXI EXISTING EQUIPMENT EXISTING TO SWITCH DOWN

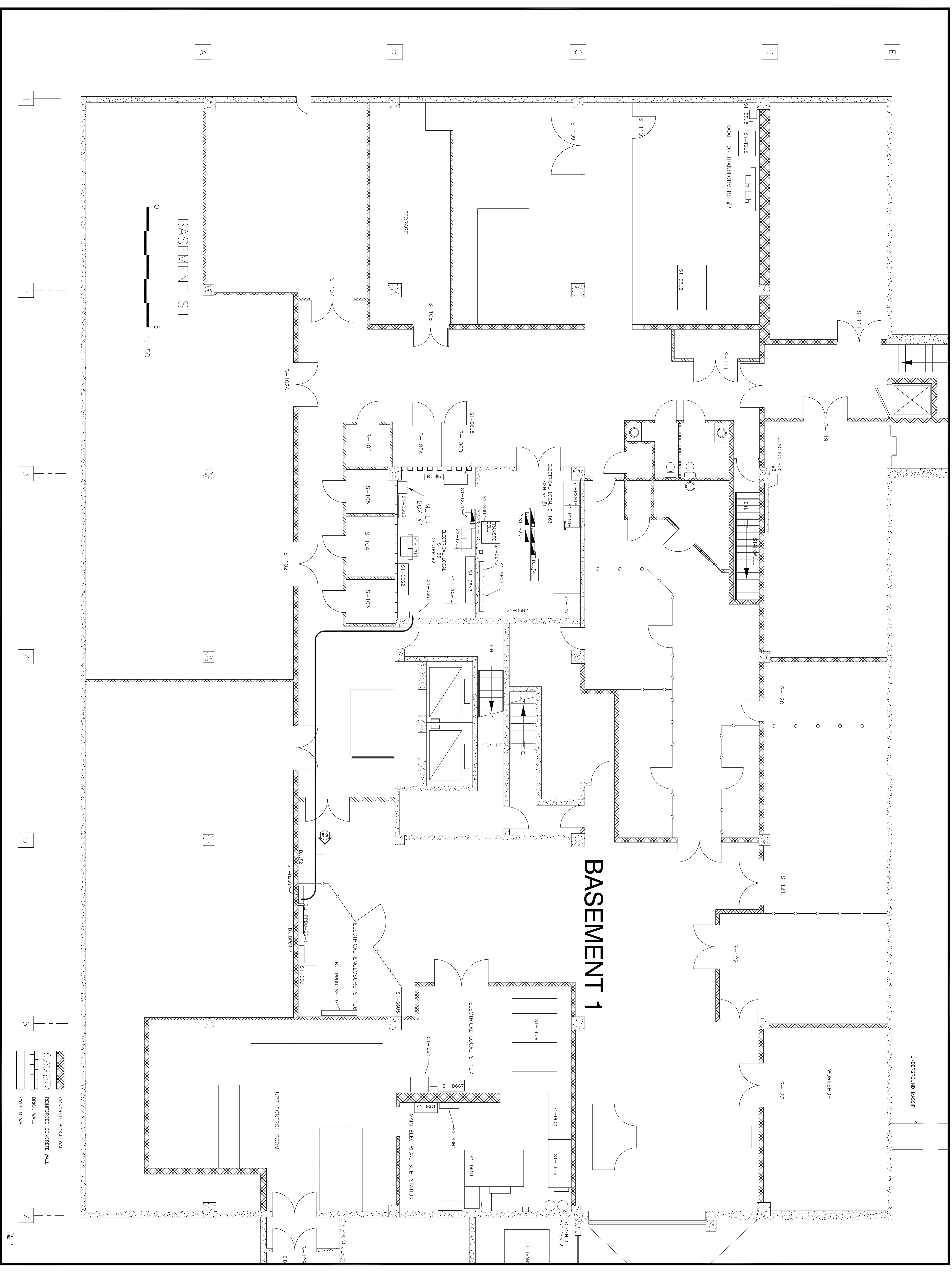
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1	FOR TOWER	19-11-28

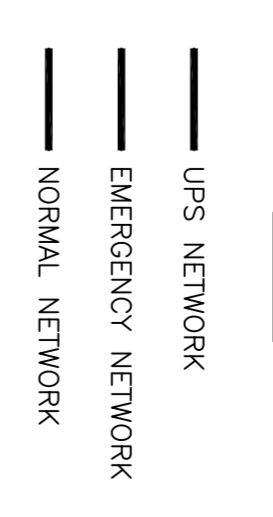
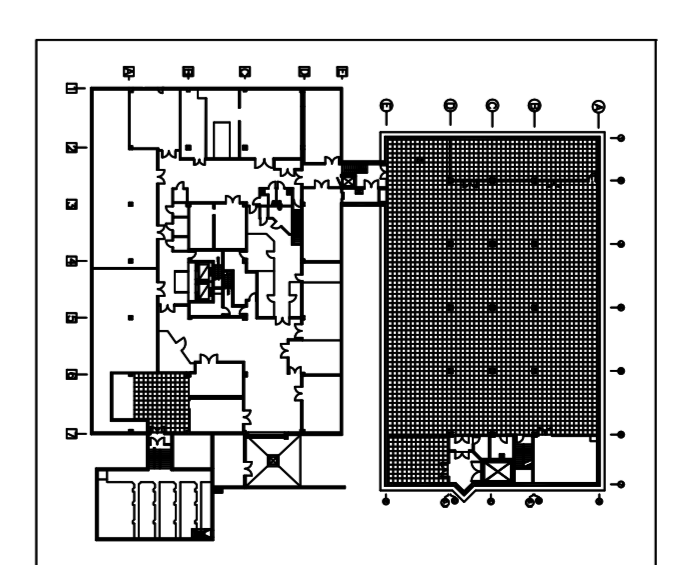
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B sur no. de dessin
C no. de dessin
D no. de dessin
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F no. de dessin
G no. de dessin
H no. de dessin
I no. de dessin
J no. de dessin
K no. de dessin
L no. de dessin
M no. de dessin
N no. de dessin
O no. de dessin
P no. de dessin
Q no. de dessin
R no. de dessin
S no. de dessin
T no. de dessin
U no. de dessin
V no. de dessin
W no. de dessin
X no. de dessin
Y no. de dessin
Z no. de dessin

ENVIRONNEMENT CANADA
 1200, Avenue de la Commune
 Ottawa, Ontario K1A 0S6
 Téléphone : (613) 952-3311
 Télécopieur : (613) 952-3312
 Site Web : www.ec.gc.ca

ELECTRICAL
 REPLACEMENT OF THE ROTATIVE UPS
 BY THE STATIC UPS 200kW
 NEW PLOT PLANT LAYOUT
 BUILDING ZONE

DESIGNATION	DATE	BY	FOR
DESIGNED BY	2019-11-28	...	...
CHECKED BY	2019-11-28	...	...
APPROVED BY	2019-11-28	...	...
DATE	2019-11-28	...	...
PROJECT NO.	...	...	...
CLIENT	...	...	...
SCALE	...	...	...
DRAWING NO.	...	...	...





EQUIPMENTS IDENTIFICATION

LEVEL	SYMBOL	EQUIPMENTS
0	○	UPS DISTRIBUTION
1	□	UPS TRANSFORMER
2	△	UPS SWITCH DISCONNECT
3	◇	UPS TRANSFORMER
4	◇	UPS TRANSFORMER
5	◇	UPS TRANSFORMER
6	◇	UPS TRANSFORMER
7	◇	UPS TRANSFORMER
8	◇	UPS TRANSFORMER
9	◇	UPS TRANSFORMER
10	◇	UPS TRANSFORMER
11	◇	UPS TRANSFORMER
12	◇	UPS TRANSFORMER
13	◇	UPS TRANSFORMER
14	◇	UPS TRANSFORMER
15	◇	UPS TRANSFORMER
16	◇	UPS TRANSFORMER
17	◇	UPS TRANSFORMER
18	◇	UPS TRANSFORMER
19	◇	UPS TRANSFORMER
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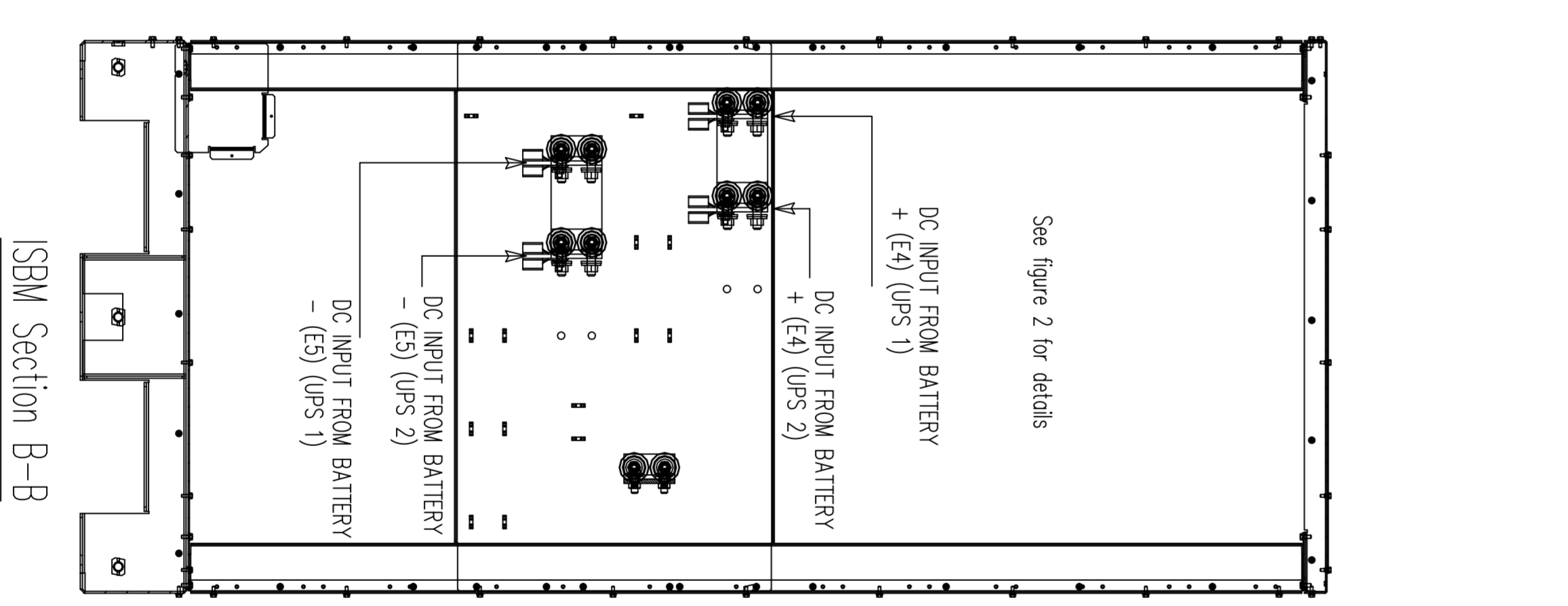
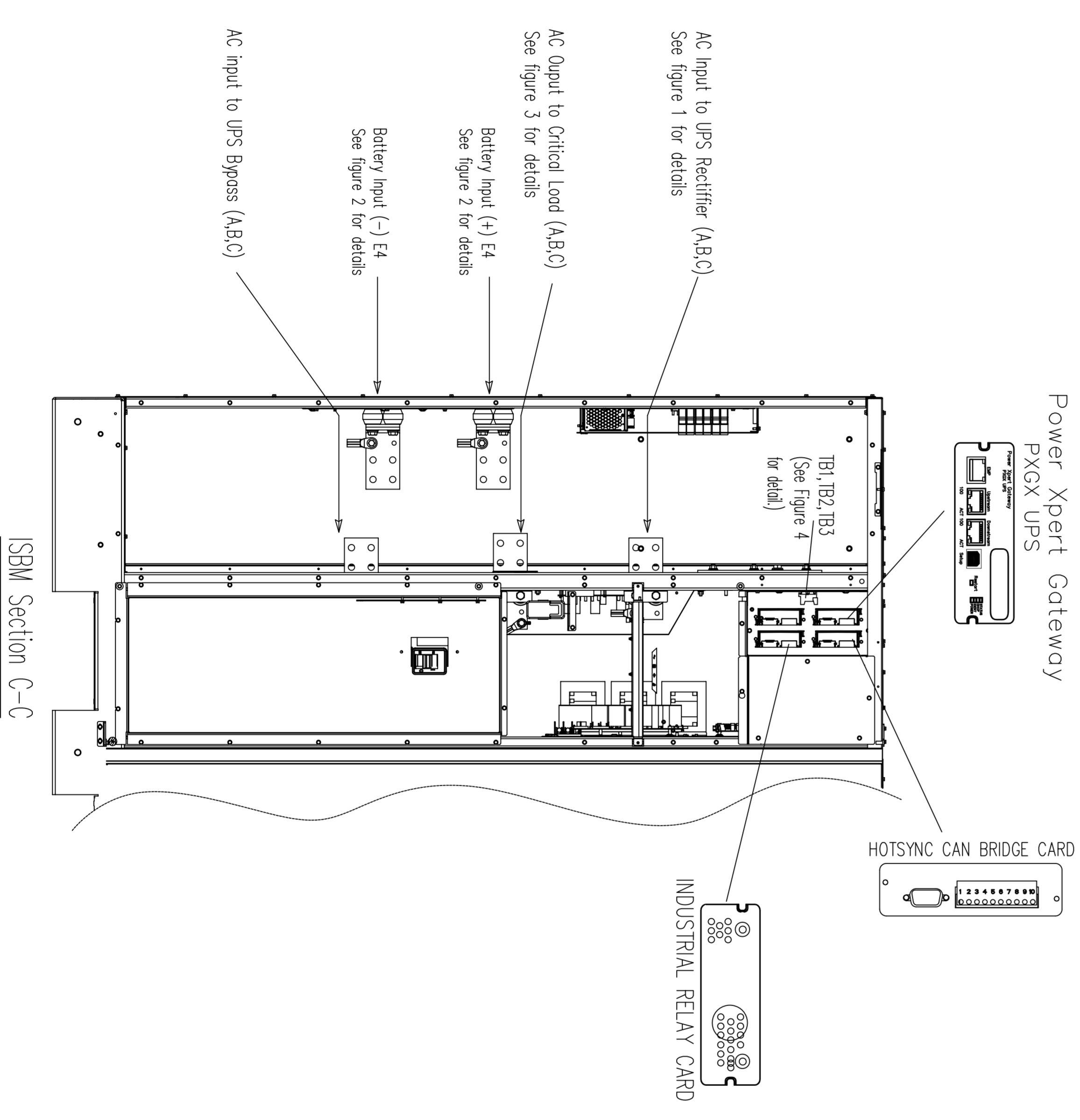
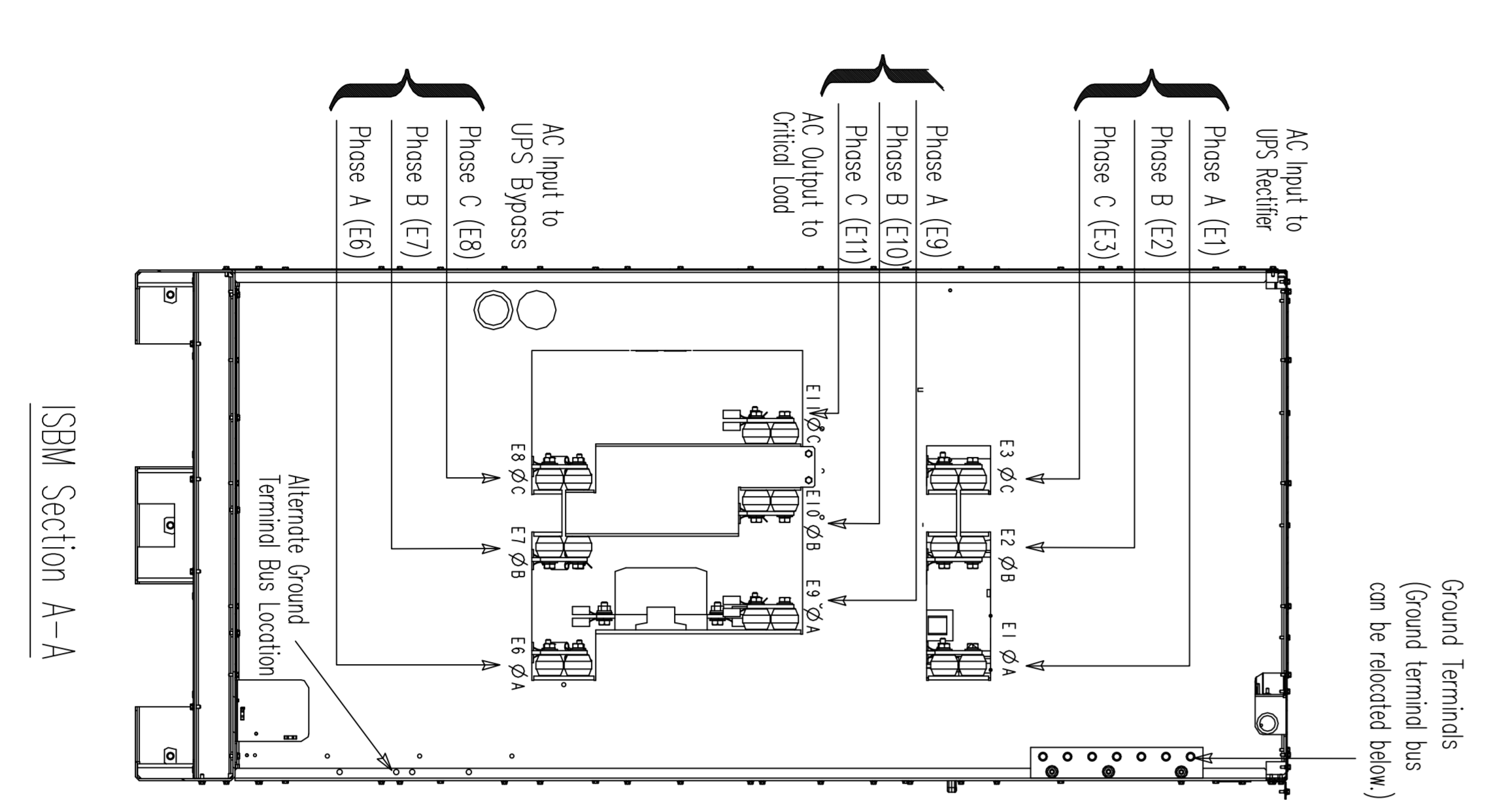
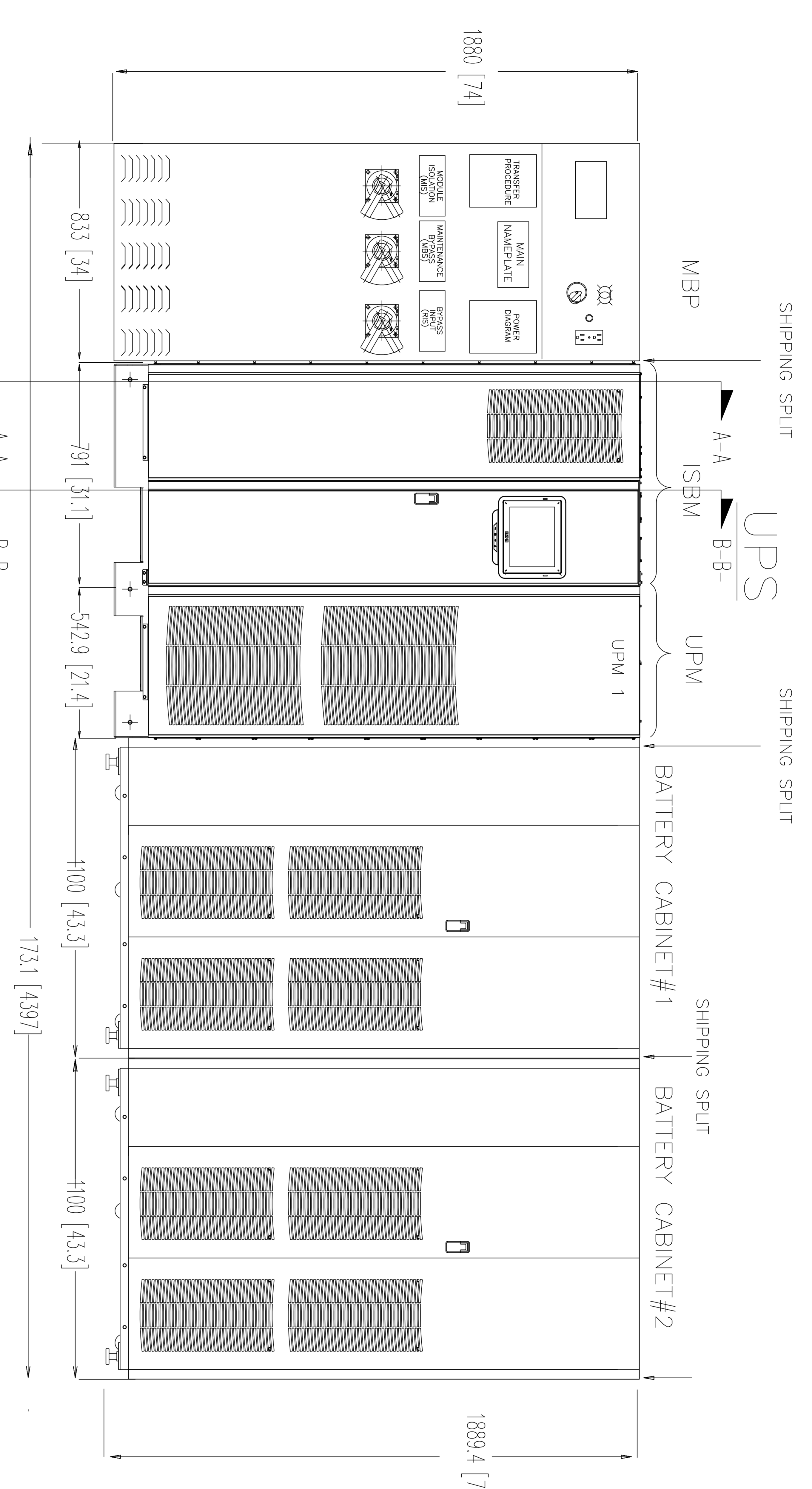
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 F EQUIPMENT TO BE SWITCHED DOWN
 G EQUIPMENT TO BE SWITCHED DOWN
 H EQUIPMENT TO BE SWITCHED DOWN
 I EQUIPMENT TO BE SWITCHED DOWN
 J EQUIPMENT TO BE SWITCHED DOWN
 K EQUIPMENT TO BE SWITCHED DOWN
 L EQUIPMENT TO BE SWITCHED DOWN
 M EQUIPMENT TO BE SWITCHED DOWN
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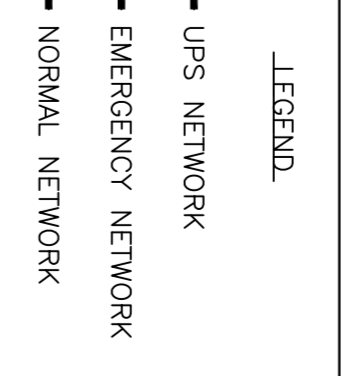
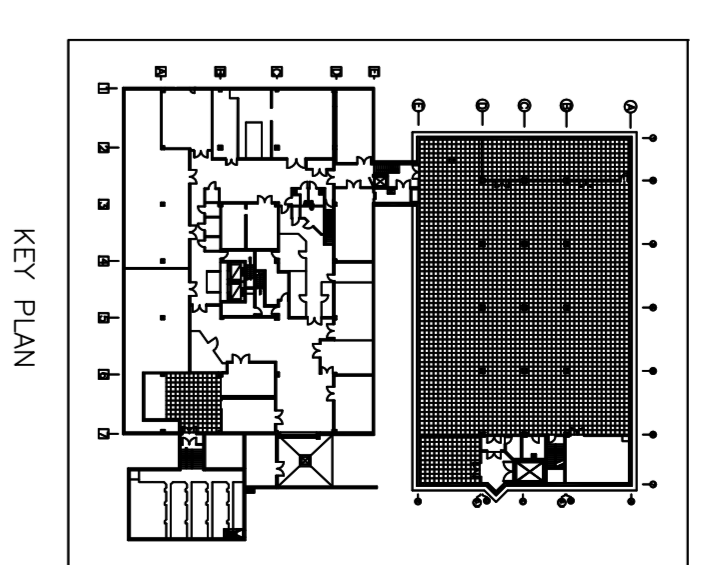
NO	DESCRIPTION	DATE
1	REVISED	19-11-28

PROJECT: **EMERGENCY NETWORK**
 LOCATION: **211**
 DRAWING NO: **57-DK22**

DESIGNED BY: **2013-11-14**
 CHECKED BY: **2013-11-14**
 APPROVED BY: **2013-11-14**
 DATE: **2013-11-14**

PROJECT NO: **57-DK22**
 DRAWING NO: **57-DK22**
 SHEET NO: **57-DK22**





EQUIPMENTS IDENTIFICATION

LEVEL	57-D622
EQUIPMENTS :	D-DISTRIBUTION E-EMERGENCY NETWORK F-EQUIPMENT EXISTING G-GENERATOR H-TRANSFORMER I-EQUIPMENT SUPPLIED BY CUSTOMER J-EQUIPMENT TO SHUT DOWN K-EQUIPMENT TO MODIFY L-EQUIPMENT TO SHUT DOWN M-EQUIPMENT TO MODIFY N-EQUIPMENT TO SHUT DOWN O-EQUIPMENT TO SHUT DOWN P-EQUIPMENT TO SHUT DOWN Q-EQUIPMENT TO SHUT DOWN R-EQUIPMENT TO SHUT DOWN S-EQUIPMENT TO SHUT DOWN T-EQUIPMENT TO SHUT DOWN U-EQUIPMENT TO SHUT DOWN V-EQUIPMENT TO SHUT DOWN W-EQUIPMENT TO SHUT DOWN X-EQUIPMENT TO SHUT DOWN Y-EQUIPMENT TO SHUT DOWN Z-EQUIPMENT TO SHUT DOWN
VOLTAGE, TENSION :	1, 2, 3, 4, 5, 6, 25 120/208/240/480/600/720V
SOURCE :	U-UPS V-UPS W-UPS X-GENERATOR
SEQUENTIAL NUMBER	

SYMBOL DETAILS

- E EQUIPMENT EXISTING
- F EQUIPMENT SUPPLIED BY CUSTOMER
- G EQUIPMENT TO SHUT DOWN
- H EQUIPMENT TO SHUT DOWN
- I EQUIPMENT TO SHUT DOWN
- J EQUIPMENT TO SHUT DOWN
- K EQUIPMENT TO SHUT DOWN
- L EQUIPMENT TO SHUT DOWN
- M EQUIPMENT TO SHUT DOWN
- N EQUIPMENT TO SHUT DOWN
- O EQUIPMENT TO SHUT DOWN
- P EQUIPMENT TO SHUT DOWN
- Q EQUIPMENT TO SHUT DOWN
- R EQUIPMENT TO SHUT DOWN
- S EQUIPMENT TO SHUT DOWN
- T EQUIPMENT TO SHUT DOWN
- U EQUIPMENT TO SHUT DOWN
- V EQUIPMENT TO SHUT DOWN
- W EQUIPMENT TO SHUT DOWN
- X EQUIPMENT TO SHUT DOWN
- Y EQUIPMENT TO SHUT DOWN
- Z EQUIPMENT TO SHUT DOWN

1	FOR TOWER	19-11-28
<p>A no ou de la A detail no B sur no de la cliente C no de la cliente D no de la cliente E no de la cliente F no de la cliente G no de la cliente H no de la cliente I no de la cliente J no de la cliente K no de la cliente L no de la cliente M no de la cliente N no de la cliente O no de la cliente P no de la cliente Q no de la cliente R no de la cliente S no de la cliente T no de la cliente U no de la cliente V no de la cliente W no de la cliente X no de la cliente Y no de la cliente Z no de la cliente</p>		

EMERGENCY CONTACT

Montreal, Quebec, 2711, rue Canada, Service
 Client, 1000-1000, 1000-1000, 1000-1000
 514-393-3333, 1-877-975-5273

PROJECT

REPLACEMENT A ROTATIVE UPS
 BY A STATIC UPS 200KW

UPS CONTROL DETAILS

designed by
 2013-01-08

checked by
 2013-01-08

approved by
 2013-01-08

drawn by
 2013-01-08

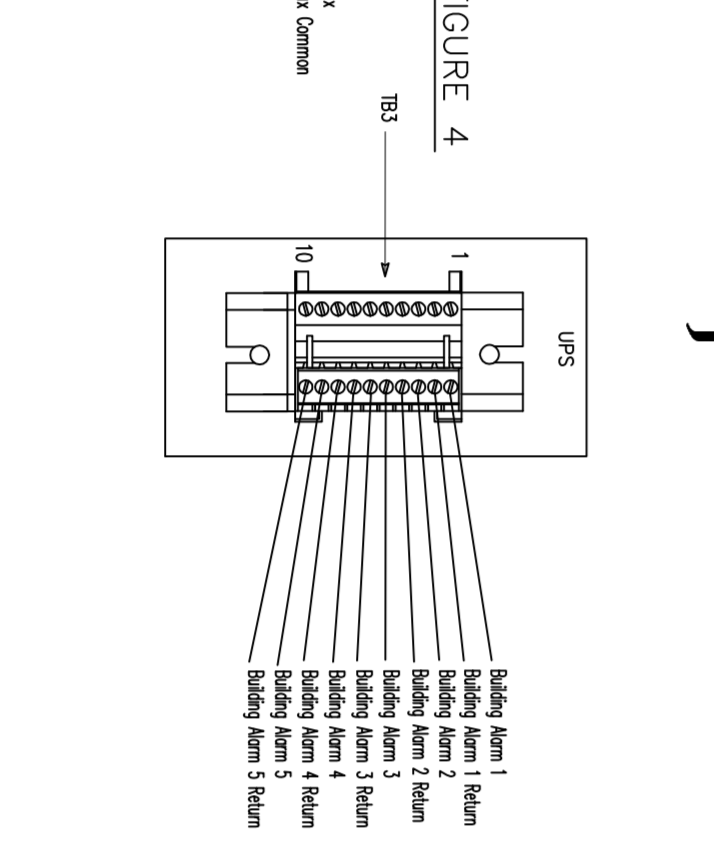
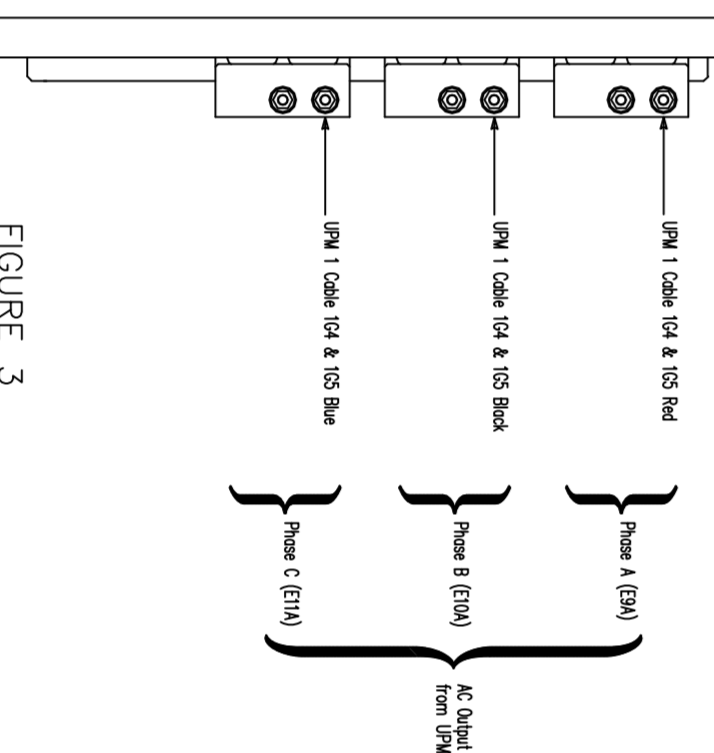
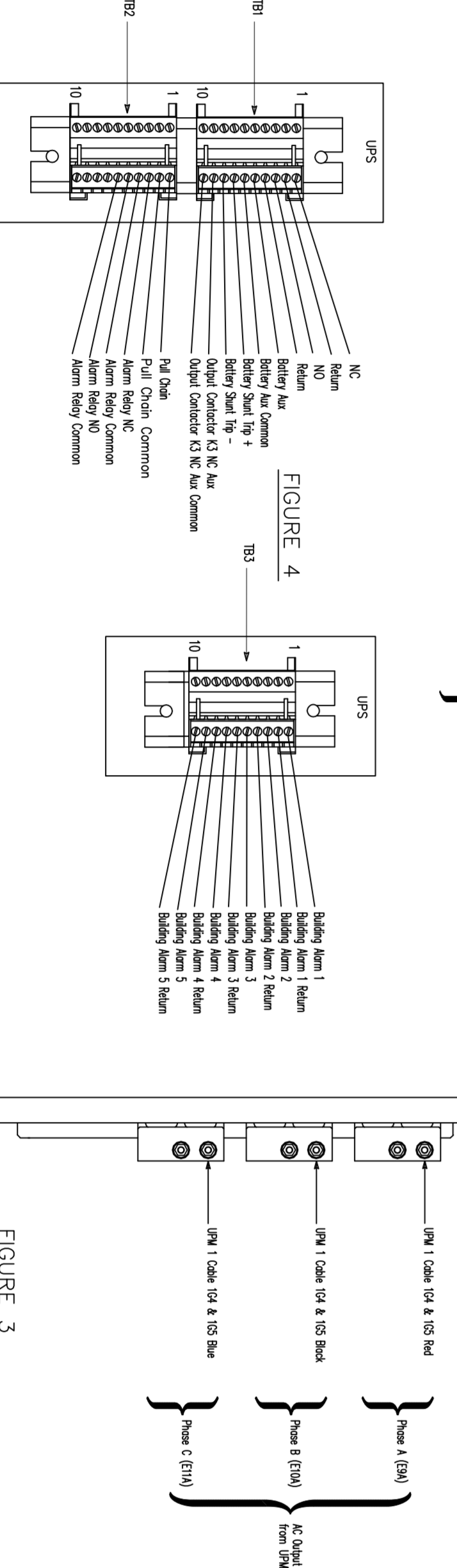
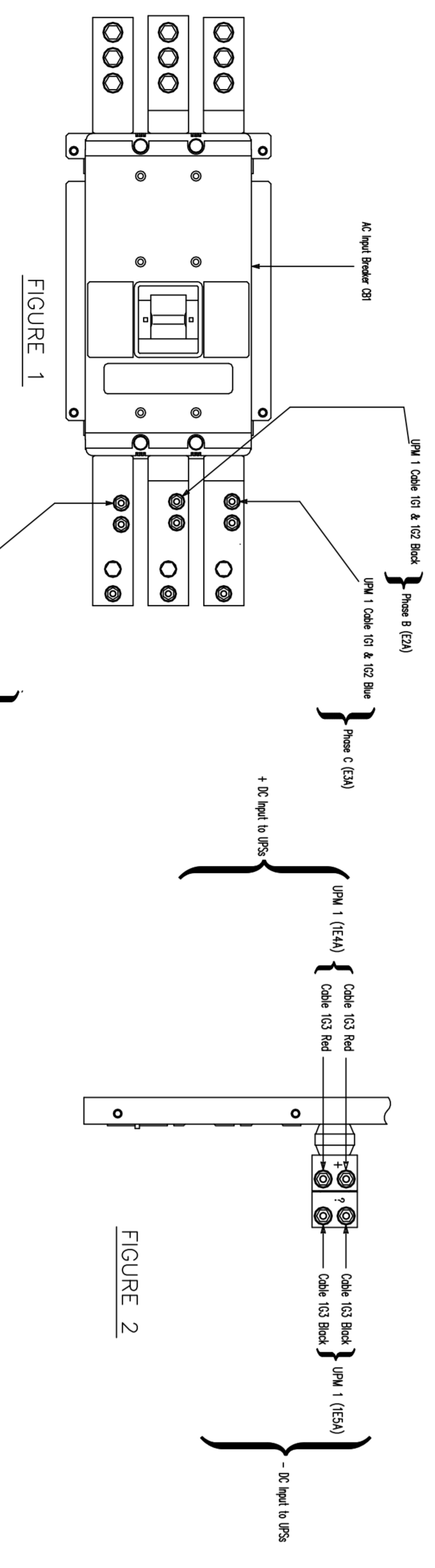
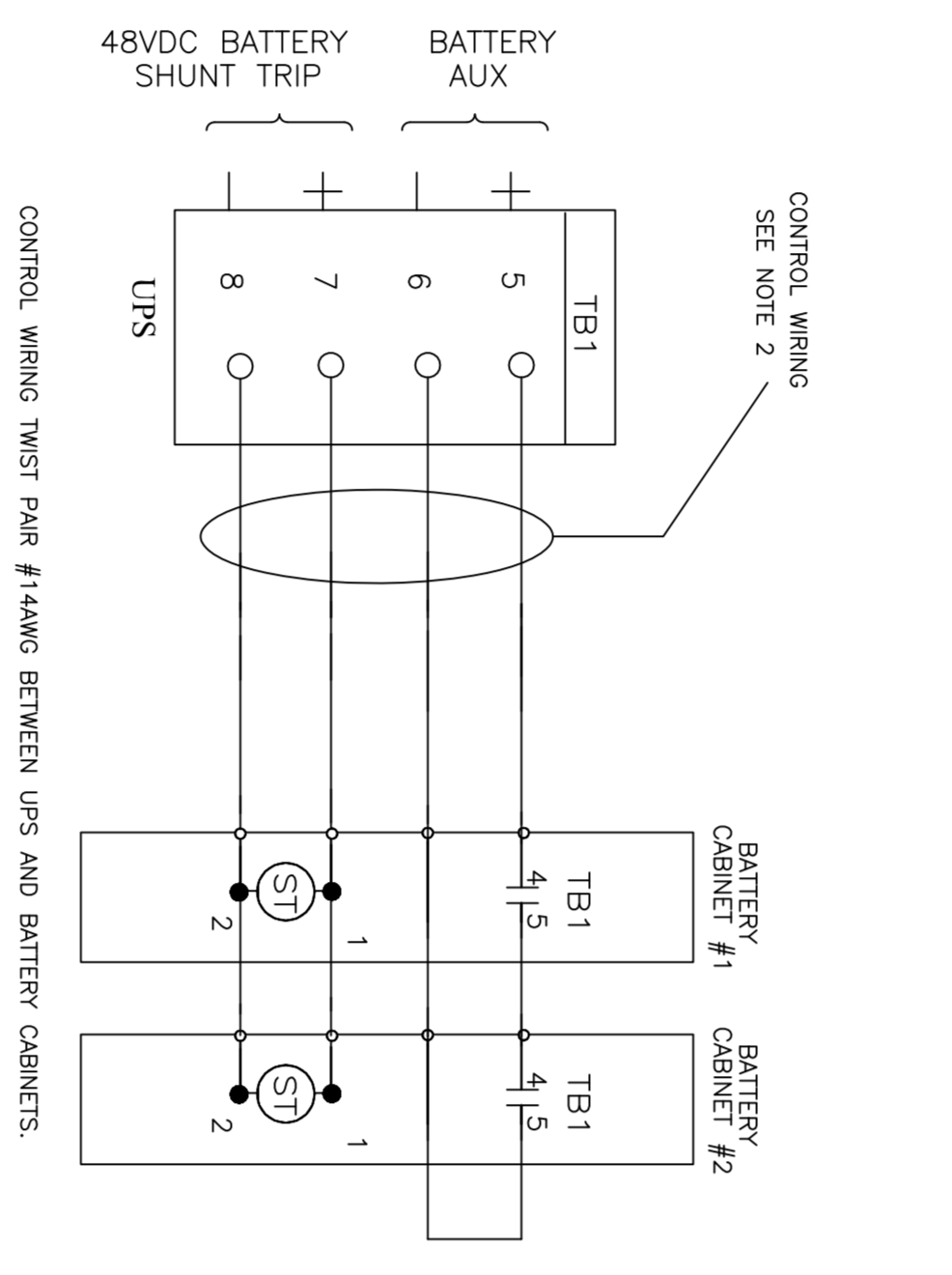
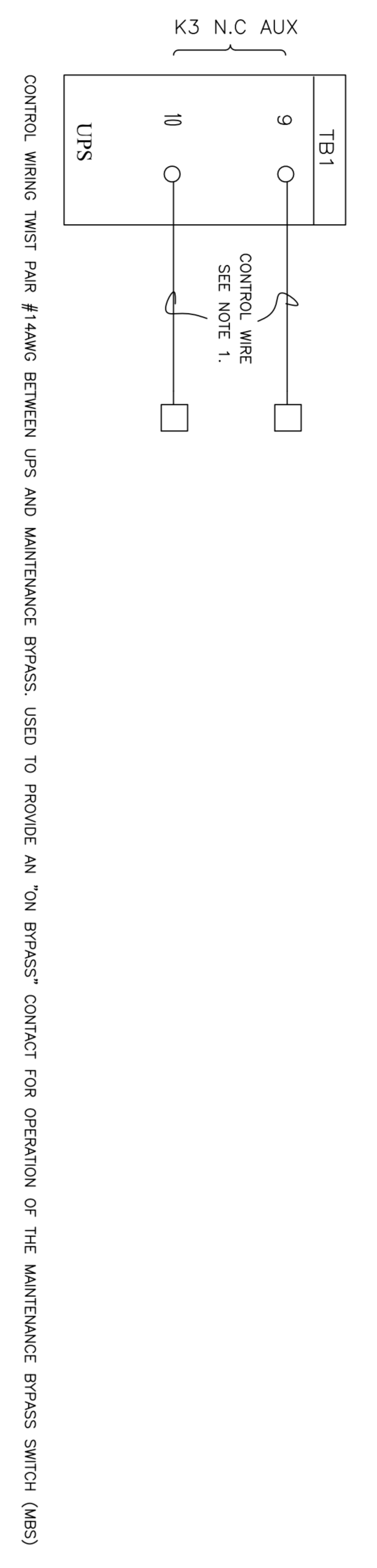
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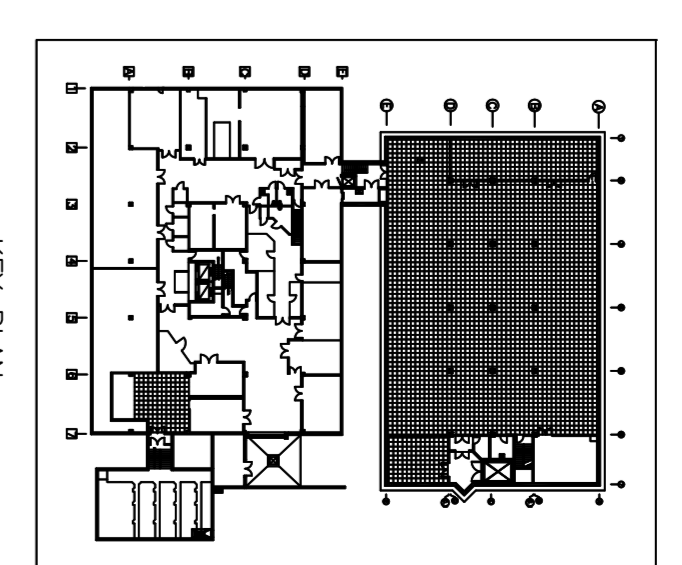
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project no
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client
 1000-1000

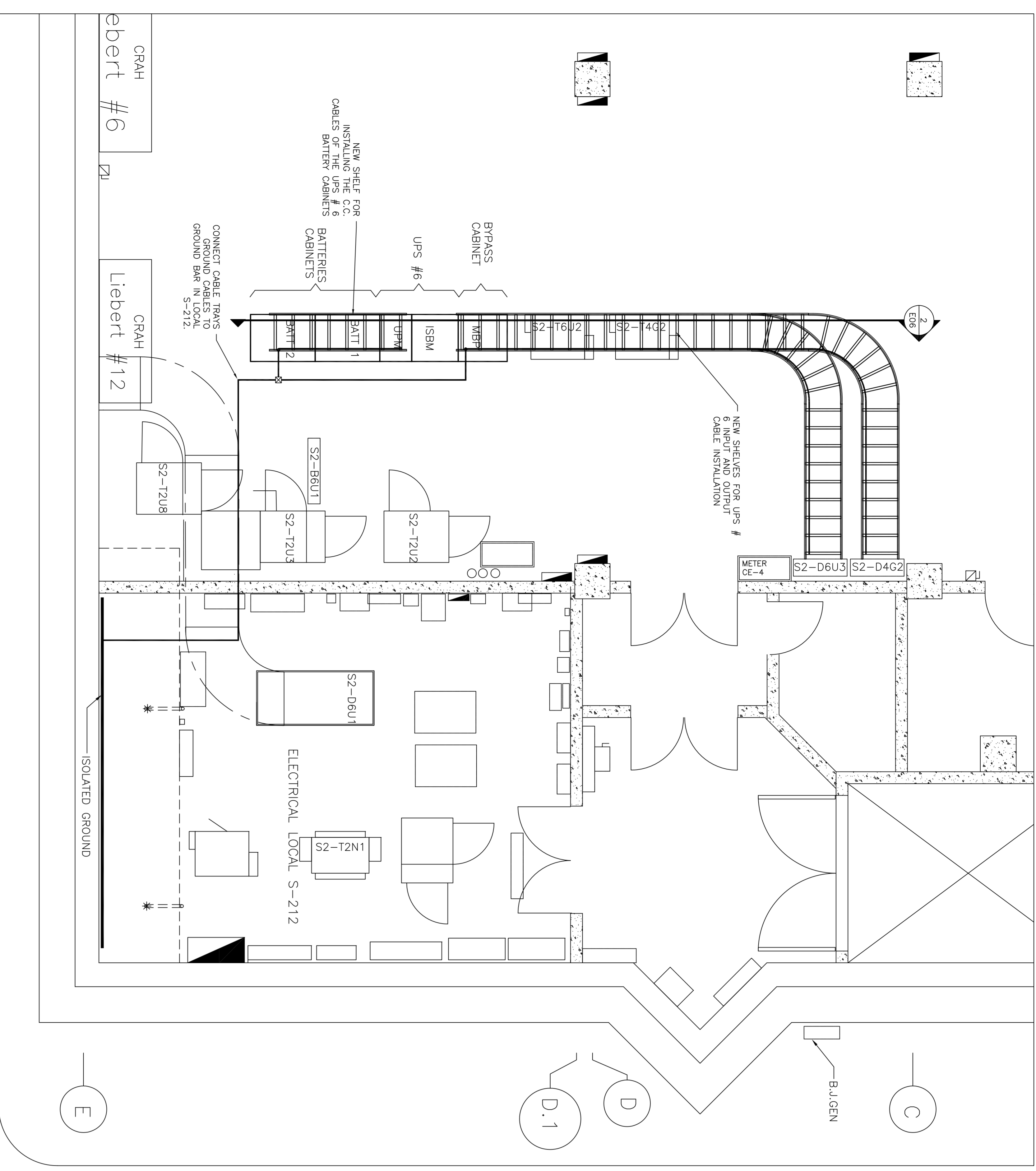
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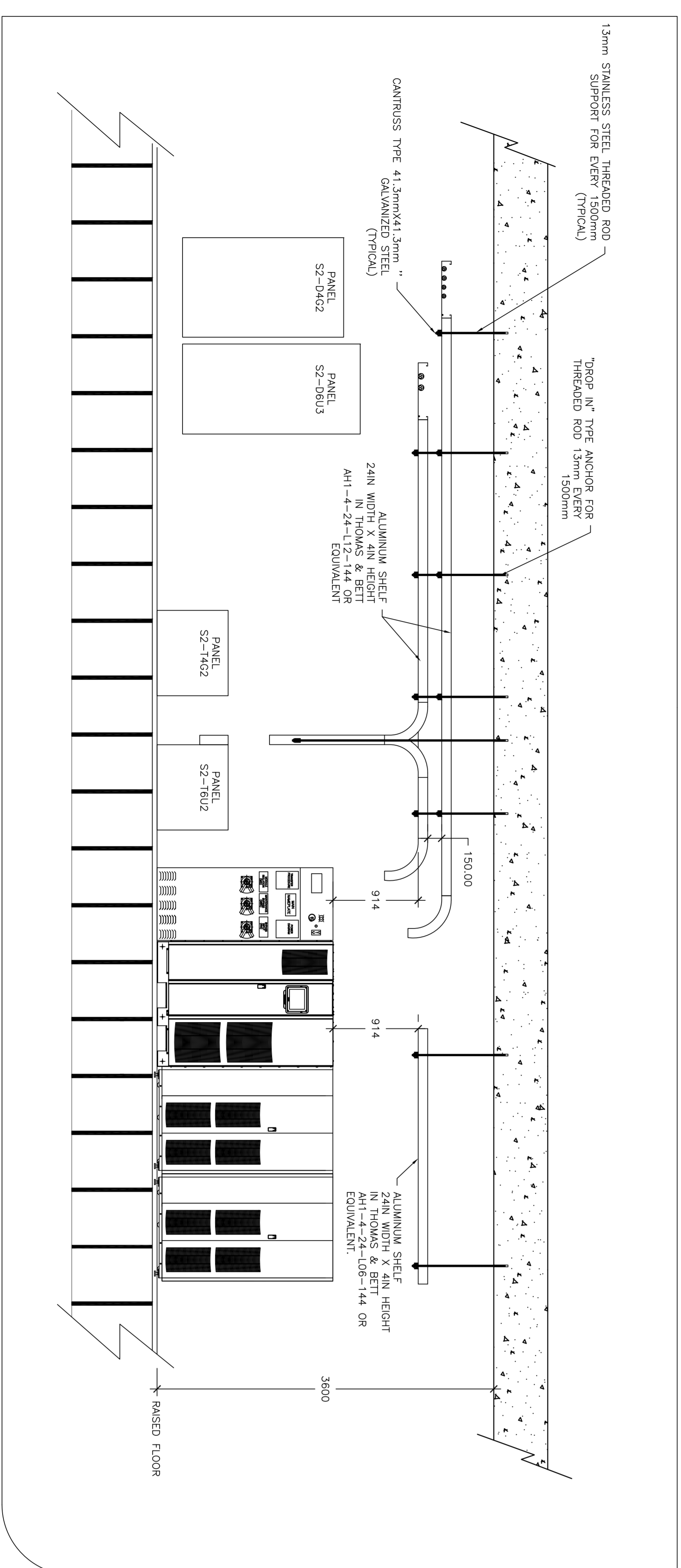


GENERAL NOTES

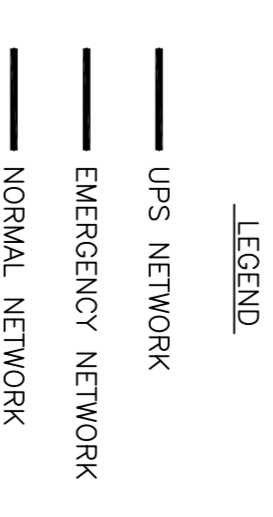
- THE CONTRACTOR MUST PROVIDE SHELVES, FITTINGS, HARDWARE NECESSARY TO INSTALL THE SHELVES.
- ALL SHELVES SHOULD BE SUPPORTED EVERY 1500mm VIA ANCHORS WELDED INSIDE THE CONCRETE CEILING.
- THE CONTRACTOR SHOULD INSTALL A 27mm AMF ATTACH THE CABLE TO THE SHELF EVERY TEN (10) FEET SECTIONS AND CONNECT THE CABLE TO THE A 27mm EMT CONDUIT.
- THE CONTRACTOR MUST RESPECT THE REQUIREMENTS OF THE ELECTRICAL CODE WITH REGARD TO THE SEPARATION OF THE CABLES FROM OTHER SERVICES. THE CABLES MUST BE MAINTAINED TO A MINIMUM CLEARANCE OF 150mm FROM THE PERMISSIBLE CURRENT AS SPECIFIED IN TABLES 1 TO 4 OF THE ELECTRICAL CODE.



1 DEVELOPMENT PLAN - NEW CABLE TRAYS - DISTRIBUTION UPS NO.6
 005 ECHELLE : 1:40



2 ELEVATION - NEW CABLE TRAYS - DISTRIBUTION UPS NO.6
 005 ECHELLE : 1:30



EQUIPMENT IDENTIFICATION

LEVEL	EQUIPMENTS :
D	DISTRIBUTION
T	TRANSFORMER
S	SSMICH DISCONNECT
B	BUS JUNCTION BOX

VOLTAGE, TENSION :
 1, 2, 3, 4, 5, 6, 75
 120/208/240/480/600/720V

SOURCE :
 U-UPS
 G-GENERATOR

SEQUENTIAL NUMBER

SYMBOL DETAILS

E EQUIPMENT EXISTING
 I EQUIPMENT TO BE INSTALLED
 C EQUIPMENT TO BE REMOVED
 R EQUIPMENT TO BE REPLACED
 M EQUIPMENT TO MODIFY
 X EQUIPMENT EXISTING TO SWITCH DOWN

revision	description	date
1	REVISED	19-11-28

A no de desig
 B sur no de desig
 C no de desig
 drawing no

ELECTRICAL
 REPLACEMENT OF THE ROTATIVE UPS
 BY A STATIC UPS 200KW

LAYOUT DETAILS
CABLE TRAYS

designed by	checked by
2013-11-27	2013-11-27
2013-11-27	2013-11-27

M.A.C. S.T. M.A.C.
 Administration de projets EC
 no de projet
 projet number
 EC
 no de plan
 drawing no
 EC
 no de plan
 drawing no
 DAO 3000898369
 E06

**ANNEX B
BASIS OF PAYMENT**

Deliverable	Amount	Grand Total
Replacement of a Rotary UPS by Installing a Static UPS 200KW	<div style="background-color: yellow; border: 1px solid black; display: inline-block; padding: 2px;">_____</div> \$	<div style="background-color: yellow; border: 1px solid black; display: inline-block; padding: 2px;">_____</div> \$ (taxes included)
	<div style="background-color: yellow; border: 1px solid black; display: inline-block; padding: 2px;">+ Taxes (___%)</div>	

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price of \$ _____ (*insert amount at contract award*). Customs duties are *excluded* and Applicable Taxes are extra.