

**CITY OF FLINT**  
**FINANCE DEPARTMENT - DIVISION OF PURCHASES AND SUPPLIES**

City Hall  
1101 S. Saginaw Street, M203 – Flint, Michigan 48502  
(810) 766-7340 FAX (810) 766-7240 [www.cityofflint.com](http://www.cityofflint.com) TDD 766-7120



Dr. Karen W. Weaver  
Mayor

**REQUEST FOR PROPOSAL**

**OWNER/RETURN TO:**

THE CITY OF FLINT  
FINANCE DEPARTMENT - DIVISION OF PURCHASES AND SUPPLIES  
1101 S. SAGINAW ST., ROOM 203, 2nd FLOOR  
FLINT, MI 48502

**PROPOSAL NO.:**        19000539

**SCOPE OF WORK:**

The City of Flint, Finance Department – Division of Purchases & Supplies, is soliciting sealed proposals for providing:

**WATER POLLUTION CONTROL THIRD AVENUE PUMPING STATION  
SWITCHGEAR & MOTOR CONTROL REPLACEMENT  
INSTALLATION**

Per the attached additional requirements.

If your firm is interested in providing the requested goods or services, please submit one (1) original and one (1) copy of your detailed proposal to the City of Flint, Finance Department - Division of Purchases and Supplies, 1101 S. Saginaw St., Room 203, Flint, MI, 48502, **July 23, 2019 @ 3:00 PM (EST)**. Please note: all detailed proposals received after 3:00 PM (EST) will not be considered. Proposals must be in a sealed envelope clearly identifying the proposal and number. Faxed proposals into the Finance Department - Division of Purchases and Supplies are not accepted.

**All additional proposal documents, requirements, addendums, specifications, and plans/drawings (if utilized) are available on the Purchasing page of the City of Flint’s web site at <https://www.cityofflint.com/finance/purchasing/bids-2/> under “open bids” and the specific bid or proposal number assigned to this notice.**

**Successful proposers should complete and submit a vendor application, IRS W-9 Form, and Vendor ACH Payment Authorization Form with the City of Flint. Contact (810)766-7266 or [accountspayable@cityofflint.com](mailto:accountspayable@cityofflint.com) for Vendor ACH Payment Authorization Form and instructions.**

**Results may be viewed next business day online at <https://www.cityofflint.com/finance/purchasing/results/> under “bid results”.**

Any questions regarding the proposal process may be directed to Joyce McClane in writing by **no later than 7/17/19** to [jmcclane@cityofflint.com](mailto:jmcclane@cityofflint.com).

Sincerely,  
*Joyce A. McClane*  
Finance Department - Division of Purchases and Supplies

## INSTRUCTIONS TO VENDORS

- 1) **PRE-BID INFORMATION AND QUESTIONS:** Each proposal that is timely received will be evaluated on its merit and completeness of all requested information. In preparing proposals, Proposers are advised to rely only upon the contents of this RFP and accompanying documents and any written clarifications or addenda issued by the City of Flint. If a Proposer finds a discrepancy, error or omission in the RFP package, or requires any written addendum thereto, the Proposer is requested to notify the Purchasing contact noted on the cover of this RFP, so that written clarification may be sent to all prospective Proposers. **THE CITY OF FLINT IS NOT RESPONSIBLE FOR ANY ORAL INSTRUCTIONS.** All questions must be submitted in writing to the Purchasing Department before any Pre-Bid Question Deadline (if specified) or at least one (1) week prior to the proposal opening date indicated on the front of this document.
- 2) **RFP MODIFICATIONS:** The City of Flint has the right to correct, modify or cancel the RFP, in whole or in part, or to reject any Proposal, in whole or in part, within the discretion of the City of Flint, or their designee. If any such changes are made, all known recipients of the RFP will be sent a copy of such changes. If any changes are made to this RFP document by any party other than the City of Flint, the original document in the City of Flint's files takes precedence.
- 3) **PROPOSAL SUBMISSION:**
  - a) The Proposer must include the following items, or the proposal may be deemed non-responsive:
    - i) All forms contained in this RFP, fully completed.
  - b) Proposals must be submitted to the Finance Department – Purchases and Supplies, City of Flint, 1101 S. Saginaw Street – Room 203, Flint, Michigan 48502 by the date and time indicated as the deadline. The Purchasing Department time stamp will determine the official receipt time. It is each Proposer's responsibility to insure that its' proposal is time stamped by the Purchasing Department by the deadline. This responsibility rests entirely with the Proposer, regardless of delays resulting from postal handling or for any other reasons. Proposals will be accepted at any time during the normal course of business only, said hours being 8:00 a.m. to 5:00 p.m. Local Time, Monday through Friday, legal holidays as exception.
  - c) Proposals must be enclosed in a sealed, non-transparent envelope, box or package, and clearly marked on the outside with the following: RFP Title, RFP Number, Deadline and Proposer's name.
  - d) Submission of a proposal establishes a conclusive presumption that the Proposer is thoroughly familiar with the Request for Proposals (RFP), and that the Proposer understands and agrees to abide by each and all of the stipulations and requirements contained therein.
  - e) All prices and notations must be typed or printed in ink. No erasures are permitted. Mistakes may be crossed out and corrections must be initialed in ink by the person(s) signing the bid.
  - f) Proposals sent by email, facsimile, or other electronic means will not be considered unless specifically authorized in this RFP.
  - g) All costs incurred in the preparation and presentation of the proposal are the Proposer's sole responsibility; no pre-bid costs will be reimbursed to any Proposer. All documentation submitted with the proposal will become the property of the City of Flint.
  - h) Proposals must be held firm for a minimum of 120 days.
- 4) **EXCEPTIONS:** Proposer shall clearly identify any proposed deviations from the Terms or Scope in the Request for Proposal. Each exception must be clearly defined and referenced to the proper paragraph in this RFP. The exception shall include, at a minimum, the proposed substitute language and opinion

as to why the suggested substitution will provide equivalent or better service and performance. If no exceptions are noted in the proposal, the City of Flint will assume complete conformance with this specification and the successful Proposer will be required to perform accordingly. Proposals not meeting all requirements may be rejected.

- 5) **DUPLICATE BIDS:** No more than one (1) proposal from any Proposer including its subsidiaries, affiliated companies and franchises will be considered by the City of Flint. In the event multiple proposals are submitted in violation of this provision, the City will have the right to determine which proposal will be considered, or at its sole option, reject all such multiple proposals.
- 6) **WITHDRAWAL:** Proposals may only be withdrawn by written notice prior to the date and time set for the opening of proposals. No proposal may be withdrawn after the deadline for submission.
- 7) **REJECTION/GOOD STANDING:** The City of Flint reserves the right to reject any or all proposals, or to accept or reject any proposal in part, and to waive any minor informality or irregularity in proposals received if it is determined by the City of Flint, or their designee, that the best interest of the City will be served by doing so. No Proposal will be considered from any person, firm or corporation in arrears or in default to the City on any contract, debt, taxes or other obligation, or if the Proposer is debarred by the City of Flint from consideration for a contract award pursuant to Section 18-21.5 (d) of Article IV of the "Purchasing Ordinance of the City of Flint.
- 8) **PROCUREMENT POLICY:** Procurement for the City of Flint will be handled in a manner providing fair opportunity to all businesses. This will be accomplished without abrogation or sacrifice of quality and as determined to be in the best interest of the City. The City of Flint and their officials have the vested authority to execute a contract, subject to City Council and Mayoral approval where required.
- 9) **PROPOSAL SIGNATURES:** Proposals must be signed by an authorized official of the Proposer. Each signature represents binding commitment upon the Proposer to provide the goods and/or services offered to the City of Flint if the Proposer is determined to be the lowest Responsive and Responsible Proposer.
- 10) **CONTRACT AWARD/SPLIT AWARDS:** The City of Flint reserves the right to award by item, group of items, or total proposal to the lowest responsive, responsible Proposer. The Proposer to whom the award is made will be notified at the earliest possible date. Tentative acceptance of the proposal, intent to recommend award of a contract and actual award of the contract will be provided by written notice sent to the Proposer at the address designated in the proposal if a separate Agreement is required to be executed. After a final award of the Agreement by the City of Flint, the Contractor/Vendor must execute and perform said Agreement. All proposals must be firm for at least 120 days from the due date of the proposal. If, for any reason, a contract is not executed with the selected Proposer within 14 days after notice of recommendation for award, then the City may recommend the next lowest responsive and responsible Proposer.
- 11) **NO RFP RESPONSE:** Proposers who receive this RFP but who do not submit a proposal should return this RFP package stating "No Proposal" and are encouraged to list the reason(s) for not responding. Failure to return this form may result in removal of the Proposer's name from all future lists.

- 12) **FREEDOM OF INFORMATION ACT REQUIREMENTS:** Proposals are subject to public disclosure after the deadline for submission in accordance with state law.
- 13) **ARBITRATION:** Contractor/Vendor agrees to submit to arbitration all claims, counterclaims, disputes and other matters in question arising out of or relating to this agreement or the breach thereof. The Contractor's agreement to arbitrate shall be specifically enforceable under the prevailing law of any court having jurisdiction to hear such matters. Contractor's obligation to submit to arbitration shall be subject to the following provisions:
  - (a) Notice of demand for arbitration must be submitted to the City in writing within a reasonable time after the claim; dispute or other matter in question has arisen. A reasonable time is hereby determined to be fourteen (14) days from the date the party demanding the arbitration knows or should have known the facts giving rise to his claim, dispute or question. In no event may the demand for arbitration be made after the time when institution of legal or equitable proceedings based on such claim dispute or other matters in question would be barred by the applicable statute of limitation.
  - (b) Within fourteen (14) days from the date demand for arbitration is received by the City, each party shall submit to the other the name of one person to serve as an arbitrator. The two arbitrators together shall then select a third person, the three together shall then serve as a panel in all proceedings. Any decision concurred in by a majority of the three shall be a final binding decision.
  - (c) The final decision rendered by said arbitrators shall be binding and conclusive and shall be subject to specific enforcement by a court of competent jurisdiction.
  - (d) The costs of the arbitration shall be split and borne equally between the parties and such costs are not subject to shifting by the arbitrator.
- 14) **PROPOSAL HOLD:** The City of Flint may hold proposals for a period of one hundred twenty - (120) days from opening, for the purpose of reviewing the results and investigating the qualifications of proposers prior to making an award.
- 15) **NONCOMPLIANCE:** Failure to deliver in accordance with specifications will be cause for the City of Flint and they may cancel the contract or any part thereof and purchase on the open market, charging any additional cost to the Contractor/Vendor.
- 16) **DISCLAIMER OF CONTRACTUAL RELATIONSHIP:** Nothing contained in these documents shall create any contractual relationship between the City and any Subcontractor or Sub-subcontractor.
- 17) **ERRORS AND OMISSIONS:** Proposer is not permitted to take advantage of any obvious errors or omissions in specifications.
- 18) **INTERPRETATION:** In the event that any provision contained herein shall be determined by a court of competent jurisdiction or an appropriate administrative tribunal to be contrary to the provision of law or to be unenforceable for any reason, then, to the extent necessary and possible to render the remainder of this Agreement enforceable, such provision may be modified or severed by such court or administrative tribunal having jurisdiction over this Agreement and the interpretation thereof, or the parties hereto, so as to, as nearly as possible, carry out the intention of the parties hereto, considering the purpose of the entire Agreement in relation to such provision.
- 19) **LAWS AND ORDINANCES:** The proposer shall obey and abide by all of the laws, rules and regulations of the Federal Government, State of Michigan, Genesee County and the City of Flint,

applicable to the performance of this agreement, including, but not limited to, labor laws, and laws regulating or applying to public improvement, local government, and its operational requirements.

- 20) **LOCAL PREFERNECE:** Proposers/bidders located within the corporate city limits of Flint, Michigan may be given a seven percent (7%) competitive price advantage. Additionally, if the lowest responsible bidder is not located within the limits of the City of Flint, but is located within the County of Genesee, and said bidder does not exceed the bid of the lowest non-local bidder by more than three and one-half percent (3-1/2%), then said lowest Genesee County bidder may be determined to be the lowest responsible bidder, and make the award to such Genesee County bidder accordingly, subject to the approval of the city council. If the lowest non-local bidder does not exceed that of any proposers/bidders by (7%) inside the City of Flint or (3-1/2%) inside the County of Genesee, then the Purchasing Director shall be allowed to request that the lowest local vendor match the price offered by the lowest non-local vendor.
- 21) **MATERIAL WORKMANSHIP AND STANDARDS OF PERFORMANCE:** The proposer agrees to exercise independent judgment and to complete performance under this Agreement in accordance with sound professional practices. In entering into this Agreement, the City is relying upon the professional reputation, experience, certification and ability of the proposer by him/her or by others employed by him/her and working under his/her direction and control. The continued effectiveness of this Agreement during its term or any renewal term shall be contingent, in part, upon the proposer maintaining his/her operating qualifications in accordance with the requirements of federal, state and local laws. All materials furnished must be new, of latest model and standard first grade quality, or best workmanship and design, unless otherwise expressly specified. Proposer, if required, must furnish satisfactory evidence of quality materials; offers of experimental or unproven equipment may be disregarded.
- 22) **MODIFICATIONS/CHANGES:** Any modification to this agreement must be in writing and signed by the authorized employee, officer, board or council representative authorized to make such modifications pursuant to the State law and local ordinances.
- 23) **NON-COLLUSION:** The proposer acknowledges that by signing this document that he/she is duly authorized to make said offer on behalf of the company he/she represents and that said bid is genuine and not sham or collusive and not made in the interests or on behalf of any person not therein named, and that he/she and said bidder have not directly induced or solicited any other person(s) or corporation to refrain from responding to this solicitation and that he/she and said bidder have not in any manner sought by collusion to secure to himself/herself and said bidder any advantage over any other proposer.
- 24) **NON-DISCRIMINATION:** Pursuant to the requirements of 1976 P.A. 453 (Michigan Civil Rights Act) and 1976 P.A. 220 (Michigan Handicapped Rights Act), the local unit and its agent agree not to discriminate against any employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment or a matter directly or indirectly related to employment because of race, color, religion, national origin, age, sex, height, weight, marital status or because of a handicap that is unrelated to the person's ability to perform the duties of nondiscrimination provision identical to this provision and binding upon any and all contractors and subcontractors. A breach of this covenant shall be regarded as a material breach of this contract.
- 25) **SUBCONTRACTING:** No subcontract work shall be started prior to the written approval of the subcontractor by the City. The City reserves the right to accept or reject any subcontractor.
- 26) **UNION COMPLIANCE:** Contractor agrees to comply with all regulations and requirements of any national or local union(s) that may have jurisdiction over any of the materials, facilities, services or personnel to be furnished by the City.

- 27) **WAIVER:** Failure of the City to insist upon strict compliance with any of the terms, covenants or conditions of this Agreement shall not be deemed a waiver of that term, covenant or condition or of any other term, covenant or condition. Any waiver or relinquishment of any right or power hereunder at any one or more times shall not be deemed a waiver or relinquishment of that right or power at any other time.
- 28) **PREVAILING WAGE:** If applicable, the successful proposer providing any contractual labor services must comply with all requirements and pay prevailing wages and fringe benefits on this project per the City's Resolution R-12 adopted 4/8/91. The bidder is aware of City of Flint Resolution #R-12 dated April 8, 1991, a copy of which is annexed hereto and incorporated herein, and agrees to abide by all of the applicable covenants and requirements set forth in said resolution. The prevailing wage information is available on the city's website @ [www.cityofflint.com](http://www.cityofflint.com).
- 29) **CITY INCOME TAX WITHHOLDING:** Contractor and any subcontractor engaged in this contract shall withhold from each payment to his employees the City income tax on all of their compensation subject to tax, after giving effect to exemptions, as follows:
- (a) Residents of the City:  
At a rate equal to 1% of all compensation paid to the employee who is a resident of the City of Flint.
  - (b) Non-residents:  
At a rate equal to 1/2% of the compensation paid to the employee for work done or services performed in the City of Flint.
- These taxes shall be held in trust and paid over to the City of Flint in accordance with City ordinances and State law. Any failure to do so shall constitute a substantial and material breach of this contract.
- 30) **CONTRACT DOCUMENTS:** The invitation for proposal, instructions to proposal, proposal, affidavit, addenda (if any), statement of proposer's qualifications (when required), general conditions, special conditions, performance bond, labor and material payment bond, insurance certificates, technical specifications, and drawings, together with this agreement, form the contract, and they are as fully a part of the contract as if attached hereto or repeated herein.
- 31) **DISCLAIMER OF CONTRACTUAL RELATIONSHIP WITH SUBCONTRACTORS:** Nothing contained in the Contract Documents shall create any contractual relationship between the City and any Subcontractor or Sub-subcontractor.
- 32) **EFFECTIVE DATE:** Any agreement between the City and the contractor shall be effective upon the date that it is executed by all parties hereto.
- 33) **FORCE MAJEURE:** Neither party shall be responsible for damages or delays caused by Force Majeure nor other events beyond the control of the other party and which could not reasonably have anticipated the control of the other party and which could not reasonably have been anticipated or prevented. For purposes of this Agreement, Force Majeure includes, but is not limited to, adverse weather conditions, floods, epidemics, war, riot, strikes, lockouts, and other industrial disturbances; unknown site conditions, accidents, sabotage, fire, and acts of God. Should Force Majeure occur, the parties shall mutually agree on the terms and conditions upon which the services may continue.
- 34) **INDEMNIFICATION:** To the fullest extent permitted by law, Contractor agrees to defend, pay on behalf of, indemnify, and hold harmless the City of Flint, its elected and appointed officials, employees and volunteers and other working on behalf of the City of Flint, including the Project Manager, against any and all claims, demands, suits, or losses, including all costs connected

therewith, and for any damages which may be asserted, claimed, or recovered against or from the City of Flint, its elected and appointed officials, employees, volunteers or others working on behalf of the City of Flint, by reason of personal injury, including bodily injury or death and/or property damage, including loss of use thereof, which may arise as a result of Contractor's acts, omissions, faults, and negligence or that of any of his employees, agents, and representatives in connection with the performance of this contract. Should the Contractor fail to indemnify the City in the above-mentioned circumstances, the City may exercise its option to deduct the cost that it incurs from the contract price forthwith.

- 35) **INDEPENDENT CONTRACTOR:** No provision of this contract shall be construed as creating an employer-employee relationship. It is hereby expressly understood and agreed that Contractor is an "independent contractor" as that phrase has been defined and interpreted by the courts of the State of Michigan and, as such, Contractor is not entitled to any benefits not otherwise specified herein.
- 36) **NO THIRD-PARTY BENEFICIARY:** No contractor, subcontractor, mechanic, material man, laborer, vendor, or other person dealing with the principal Contractor shall be, nor shall any of them be deemed to be, third-party beneficiaries of this contract, but each such person shall be deemed to have agreed (a) that they shall look to the principal Contractor as their sole source of recovery if not paid, and (b) except as otherwise agreed to by the principal Contractor and any such person in writing, they may not enter any claim or bring any such action against the City under any circumstances. Except as provided by law, or as otherwise agreed to in writing between the City and such person, each such person shall be deemed to have waived in writing all rights to seek redress from the City under any circumstances whatsoever.
- 37) **NON-ASSIGNABILITY:** Contractor shall not assign or transfer any interest in this contract without the prior written consent of the City provided, however, that claims for money due or to become due to Contractor from the City under this contract may be assigned to a bank, trust company, or other financial institution without such approval. Notice of any such assignment or transfer shall be furnished promptly to the City.
- 38) **NON-DISCLOSURE/CONFIDENTIALITY:** Contractor agrees that the documents identified herein as the contract documents are confidential information intended for the sole use of the City and that Contractor will not disclose any such information, or in any other way make such documents public, without the express written approval of the City or the order of the court of appropriate jurisdiction or as required by the laws of the State of Michigan.
- 39) **RECORDS PROPERTY OF CITY:** All documents, information, reports and the like prepared or generated by Contractor as a result of this contract shall become the sole property of the City of Flint.
- 41) **SEVERABILITY:** In the event that any provision contained herein shall be determined by a court or administrative tribunal to be contrary to a provision of state or federal law or to be unenforceable for any reason, then, to the extent necessary and possible to render the remainder of this Agreement enforceable, such provision may be modified or severed by such court or administrative tribunal so as to, as nearly as possible, carry out the intention of the parties hereto, considering the purpose of the entire Agreement in relation to such provision. The invalidation of one or more terms of this contract shall not affect the validity of the remaining terms.
- 42) **TERMINATION:** This contract may be terminated by either party hereto by submitting a notice of termination to the other party. Such notice shall be in writing and shall be effective 30 days from the date it is submitted unless otherwise agreed to by the parties hereto. Contractor, upon receiving such notice and prorated payment upon termination of this contract shall give to the City all pertinent records, data, and information created up to the date of termination to which the City, under the terms of this contract, is entitled.

- 43) **TIME PERFORMANCE:** Contractor's services shall commence immediately upon receipt of the notice to proceed and shall be carried out forthwith and without reasonable delay.
- 44) **EVALUATION OF PROPOSAL:** In the City's evaluation of proposals, at minimum: cost, serviceability, financial stability, and all requirements set forth in this document shall be considered as selection and award criteria unless otherwise specified.





FOR PARTNERSHIP

STATE OF.....

S.S.

COUNTY OF .....

..... , being duly sworn, deposes and says that he is a member of the firm of ..... , a co-partnership, making the above bid; that he is duly authorized to make said bid in behalf of said co-partnership; that said bid is genuine and not sham of collusive and not made in the interests of or on behalf of any person not therein named, and that he has not and said bidder has not directly or indirectly induced or solicited any bidder to put in a sham bid; that he has not and said bidder has not directly or indirectly induced or solicited any other person or corporation to refrain from bidding, and that he has not and said bidder has not in any manner sought by collusion to secure to himself or to said bidder any advantage over other bidders.

Subscribed and sworn to before me at ....., in said County and State

this ..... day of ....., A. D. 20 .....

.....

\*Notary Public, .....County.....

My Commission expires ....., 20.....

FOR AGENT

STATE OF .....

S.S.

COUNTY OF .....

..... being duly sworn, deposes and says that he executed the within and foregoing bid in behalf of ..... , the bidder therein named, he having been theretofore lawfully authorized, as the agent of said bidder, so to do; that said bid is genuine and not sham or collusive and not made in the interests of or on behalf of any person not therein named, and that he has not and said bidder has not directly or indirectly induced or solicited any bidder to put in a sham bid; that he has not and said bidder has not directly or indirectly induced or solicited any other person or corporation to refrain from bidding, and that he has not and said bidder has not in any manner sought by collusion to secure to himself or to said bidder any advantage over other bidders.

Subscribed and sworn to before me at ....., in said County and State, this

..... day of ....., A. D. 20.....,

.....

\* Notary Public, ..... County,.....

My Commission expires ....., 20.....

NOTE: If executed outside of the State of Michigan, certificate by Clerk of the Court of Record, authenticating the Notary's Signature and authority should be attached.

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**CITY OF FLINT  
WATER POLLUTION CONTROL  
THIRD AVENUE PUMPING STATION  
SWITCHGEAR and MOTOR CONTROL REPLACEMENT  
INSTALLATION BID SPECIFICATIONS**

The City of Flint Water Pollution Control Facilities (WPC) is seeking bids from qualified electrical contractors for the replacement of obsolete General Electric Switchgear, Motor Control and related equipment in its Third Avenue Pumping Stations facility. Qualified contractors shall meet the following specifications:

1.0 General.

- 1.1 The contractor shall have a minimum of 7 years of experience in the installation of Medium Voltage Switchgear, Motor Control Equipment and related equipment in industrial municipal locations. The contractor shall also have 7 years of experience in municipal industrial ethernet, communication and telemetry work.
- 1.2 The contractor shall have a business office within 20 miles of the City of Flint, but the City may approve any firm upon satisfactory proof of qualifications.
- 1.3 The City of Flint reserves the right to add, subtract, delete or change any specification in the bid document. Additional work will be quoted separately and credits are to be given in the event of a deletion.
- 1.4 The contractor shall be responsible for engineering the installation of the switchgear, motor control, transformers, ATS, disconnects, communication and telemetry. The contractor shall have a State of Michigan certified Electrical Engineer on their staff. The Engineer shall be responsible for verifying the work outlined in Section 2 prior to installation. This will include review and approval of proposed prints from the contractor. The Engineer shall also be responsible for the integration of the new system with the existing system. Any recommendations made by the Engineer are subject to approval from the City. The Engineer may be required to be on-site during installation of the switchgear, motor control and telemetry and shall be available for 1 year after date of acceptance to address and correct problems.
- 1.5 The contractor shall adhere to the standard City of Flint contractual requirements including performance bonds and insurance certificates.
- 1.6 The switchgear and equipment scheduled for replacement, renovation, new installation or removal include, but are not limited to:
  - 1.6.1 Third Avenue Switchgear S4.

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- 1.6.2 Third Avenue Medium Voltage Motor control centers.
- 1.6.3 Medium Voltage Transformers.
- 1.6.4 Disconnects and Automatic Transfer Switch.
- 1.6.4 Wiring, Conduits and raceway systems.
  
- 1.7 Any and all documentation generated shall be provided to the City in both print and AutoCAD 2002 or 2005 formats or Microsoft Word format, where appropriate. **Adobe Acrobat documents shall not be allowed.** The contractor shall supply “as-built” drawings. There shall be no generic or "Typical" drawings. Three copies of the print media shall be supplied. Each copy shall be in an appropriately labeled three-ring binder. AutoCAD and Word files shall be provided on a CD.
  
- 1.8 Any site visits to examine and inspect the work site and equipment shall be coordinated with Tim Donlan, Utilities Electrical Foreman and John Florshinger, Utilities Maintenance and SCADA Supervisor.
  
- 2.0 Scope of Work.
  - 2.1 The contractor shall verify that all existing wiring will be able to be terminated at the proper locations in the new switchgear. If any wiring is unable to do so, the contractor shall consult with the designated project manager(s) for approved methods of correction.
  
  - 2.2 The City will provide current drawings as well as new drawings from the manufacturer on which the contractor can base the work insofar as they are available. Current drawings located in the Appendix are not guaranteed to be completely accurate. The drawings may be upgraded as the project progresses. The drawings shall include medium voltage drive information and wiring.
  
  - 2.3 The contractor shall pull back all existing spare wiring from the switchgear or other equipment to the first pull box. The City shall assume responsibility from that point.
  
  - 2.4 The contractor shall be responsible for the removal of the existing switchgear and equipment and documenting all existing terminations at the time of removal. This documentation shall be provided to the City. The removed switchgear and equipment sections shall be taken outside of the building and placed in a location deemed acceptable by Utilities Electrical. The contractor shall provide in the bid documents an

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anticipated salvage credit to the City of Flint if the City permits the contractor to remove and dispose of the equipment from the site.

- 2.5 The contractor shall be responsible for the installation of the new switchgear and equipment provided by the City of Flint. The contractor shall document all terminations that take place during the installation. This documentation shall be provided to the City.
- 2.6 The contractor shall have the supervisor who oversaw the work present during each testing of the equipment prior to the City's final acceptance. The supervisor shall coordinate with the equipment manufacturers, the equipment distributors, and the City of Flint designated project manager(s).
- 2.7 Testing shall include but not be limited to motor rotation, drive start-ups, switchgear transfers, 480VAC systems, communications and telemetry, E-stops, control wiring, transfer schemes, and integration with existing systems.
- 2.8 The contractor shall be responsible for any City of Flint or State of Michigan permits, fees or associated paperwork necessary for the jobs. Work shall meet or exceed NFPA 70, 2017 edition. The contractor shall coordinate any inspections with Utilities Electrical.
- 2.9 Specific Work.
  - 2.9.1 In addition to the other requirements listed in this specification, the contractor shall specifically perform the following work:
    - 2.9.2 Third Avenue Pumping Station.
      - 2.9.2.1 The contractor shall procure and install conduit, cable tray, junction boxes, wiring and terminating material and equipment to support successful replacement and/or relocation of the Third Avenue switchgear, motor control, disconnects, transformers, the automatic transfer switch, communication and telemetry. The contractor shall terminate wires as required to provide complete and operational systems.
      - 2.9.2.2 The contractor shall procure and install concrete, conduit, wiring, termination hardware and appurtenances as needed to reroute the motor wiring, RTD wiring and vibration monitoring wiring for each motor.

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INSTALLATION BID SPECIFICATIONS

- 2.9.2.3 The contractor shall pay particular attention to the work required for the integration of the Rockwell Automation PowerFlex 700 with the Eaton contactor.
  - 2.9.2.4 **The schedule of installation is critical as the station must have two operational pumps AT ALL TIMES!** This shall require two separate installation segments, one for each incoming feeder. The tie breaker section is of particular concern. The contractor shall provide an extremely detailed written description and gant chart for the complete installation procedure. See section 3.0
  - 2.9.2.5 The contractor shall provide, install and terminate properly-sized equipment grounding conductors to each of the pumps.
  - 2.9.2.6 The contractor shall verify the feasibility of the location of the transformers, disconnects and 480VAC automatic transfer switch including gutter/cooling distances. If the proposed solution is not feasible, the contractor shall coordinate with WPC Project Manager and Utilities Electrical for approved locations.
  - 2.9.2.7 **The contractor shall be responsible for verifying and coordinating all of the switchgear and motor control electronic relays with the proper FLA settings and all other required parameters that is needed for proper protection and operation.**
- 2.10 **The contractor shall conform to the timeline requirements stated in section 3.**
  - 2.11 The contractor shall be responsible for any concrete work or demolition that is required. Any concrete shall utilize high-quality concrete and be designed for at least twice the weight of the equipment to be mounted.
  - 2.12 The contractor shall bond the switchgear and all other required equipment to building steel with a properly labeled wire sized according to NFPA 70 Table 250.66. Any conduit runs necessary for this shall be included.
  - 2.13 The contractor shall be responsible for transporting all equipment from storage locations to Third Avenue and placing them inside the building.

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2.14 The contractor shall be responsible for providing a complete and operational switchgear and motor control system to include associated equipment and separately derived systems.

3.0 Timelines.

3.1 WPC Third Ave operations cannot and shall not be interrupted. If a temporary shutdown is absolutely required, the Contractor shall keep any process operations disruptions to under fifteen (15) minutes during low-flow to normal-flow conditions. Shutdowns during high-flow conditions SHALL NOT be permitted.

3.2 Third Avenue Pumping Station Timeline

- 3.2.1 Documentation of existing equipment, terminations and telemetry.
- 3.2.2 Installation of transformers, ATS and disconnects.
- 3.2.3 Coordination with WPC regarding shutdown of North Feeder.
- 3.2.4 Shutdown of North Feeder. Lockout of outdoor transformer & tie breaker, if applicable.
- 3.2.5 Removal of existing North switchgear and motor control.
- 3.2.6 Installation of new North switchgear and motor control.
- 3.2.7 Installation and termination of motor power and monitoring conduits and wiring and Transformer/ATS conduits and wiring.
- 3.2.8 South switchgear power up and Drive start-up. Rotation checks. Transfer of MCC power to new ATS requiring small shut-down of MCCs.
- 3.2.9 Minimum of one (1)- week test of North switchgear and motor control.
- 3.2.10 Coordination of South Feeder shut-down with WPC.
- 3.2.11 Shutdown of South Feeder. Lockout of outdoor transformer and tie breaker, if applicable.
- 3.2.12 Removal of existing South switchgear and motor control.
- 3.2.13 Installation of new South switchgear and motor control.
- 3.2.14 Installation of motor power and monitoring conduits and wiring and Transformer/ATS conduits & wiring.
- 3.2.15 South switchgear power up and Drive start-up. Rotation checks.
- 3.2.16 Testing of Main-Tie-Main switchover, ATS switchover and full line-up communications testing.
- 3.2.17 Minimum of one (1)-week test of South switchgear and motor control.
- 3.2.18 Training of Operations and affected Maintenance personnel in the operation of the new Switchgear and Motor Control.
- 3.2.19 Training of Switchgear and motor control PM and



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Troubleshooting (contractor participation may be optional)

3.2.20 Final notations and comments from manufacturer, contractor and City of Flint. Final walkthrough and sign off.

- 3.3 Overtime is permitted up to six hours per day and additional shifts are permitted as required only to minimize operation disruptions. Variations shall be approved by the WPC designated project manager contingent upon progress of the project.
- 3.3 Submitted bid documents shall include a written, very detailed, descriptive plan and gant chart by the contractor showing how the contractor shall adhere to the timeline, including staging and preparatory work. Included in this plan shall be details regarding how the contractor shall ensure two pumps are operational at all times and contingency considerations. Also included shall be a detailed plan on the installation of the Tie section of the Main-Tie-Main switchgear. Failure to include this plan in the bid documents shall result in automatic disqualification.
- 3.4 Scheduling and timing of the work shall be coordinated with the Project Manager and WPC Operations.
- 3.5 **The maximum permitted time for sections 3.2.4 through 3.2.17 is five (5) weeks. Every effort shall be made to minimize the duration of the work.**
- 4.0 Work Procedures.
- 4.1 Work shall be done in accordance with the 2017 National Electrical Code or latest adopted Code, City of Flint ordinances and other pertinent Codes.
- 4.2 Wire numbers shall be replaced. Wires without numbers shall be assigned numbers and documented. Panduit type S100X150VATY or similar shall be used.
- 4.3 Phasing shall be maintained.
- 4.4 All bolts and screws shall be torqued to manufacturer's specifications. A green color code mark shall be used to indicated bolts and screws so tightened.

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- 4.5 The contractor shall be responsible for the physical connection of all sections of the switchgear, motor control and equipment as required. This shall include anchoring the switchgear or equipment to the floor or pad.
- 4.6 The contractor is responsible for all wiring and bus inter-connections between switchgear and motor control sections.
- 4.7 The contractor is responsible for all wire terminations from the field and within each switchgear section, motor control section and between pieces of equipment.
- 4.8 The contractor will ensure that all installed communication units in the switchgear are connected to the communications trunklines per WPC SCADA direction.
- 4.9 No insulation shall be allowed under terminals. Between 1/8" and 1/4" of bare copper shall be exposed at the terminal. All strands on stranded wire shall be under the terminal.
- 4.10 Where possible, alternating current power and control wiring for individual switchgear units not internal to the unit shall be cabled together at a minimum of 3 foot intervals with cable ties in both the horizontal and vertical wireways. At intervals not exceeding 6 feet, label-type cable-ties shall be used and marked to indicate at which switchgear unit the wires terminate. Communication cables are exempt from this section.
- 4.11 Direct current wiring shall be routed so as to minimize any interference from the alternating current wiring. Cross-overs shall be at 90 degrees if possible and DC wires running parallel to AC wires shall be kept a minimum of 3 inches from the AC wires. Communication cables are included in this section.
- 4.12 Installation shall be in a neat and workmanlike manner. At random times, quality control inspections of the work shall be conducted
- 4.13 All bonding and equipment grounds shall be made up per NFPA 70, 2017 edition.
- 4.14 The contractor shall maintain the worksite as clean as possible. The contractor shall be responsible for trash removal with the exception of the removed switchgear sections. The contractor shall clean-up the work area

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after the work is completed each day. Final payment may be contingent on final inspection of work area.

- 4.15 The contractor shall take all necessary precautions while transporting the equipment to the Third Avenue pumping station site as well as into and within the building. Damage to the equipment during any contractor transport shall be repaired or replaced by the contractor.
  
- 5.0 Warranty.
  - 5.1 The contractor shall warranty the work performed for a period of not less than 12 months from the date of acceptance.
  
- 6.0 Date of Acceptance.
  - 6.1 The date of acceptance shall be when the City approves payment for the final invoice.

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 SWITCHGEAR and MOTOR CONTROL REPLACEMENT  
 INSTALLATION BID SPECIFICATIONS

BID FORM

Company \_\_\_\_\_ Date \_\_\_\_\_

Equipment	Amount
Third Avenue Switchgear/MCC Replacement	
Third Avenue Transformer/ATS Installation	
Equipment Disposal Credit (do not include in total)	
<b>Total</b>	

1. Failure to use this bid form may result in bid disqualification.
2. List any value added considerations on a separate page.
3. Please attach submitted drawings to the back of this bid. Failure to attach drawings may result in bid disqualification.

Contact \_\_\_\_\_

/s/ \_\_\_\_\_

Phone Number \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

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SWITCHGEAR and MOTOR CONTROL REPLACEMENT  
INSTALLATION BID SPECIFICATIONS**

**THIS PAGE MUST BE COMPLETED AND INCLUDED WITH SUBMITTAL:**

The undersigned hereby certifies, on behalf of the respondent named in this Certification (the "Respondent"), that the information provided in this offer submitted to the City of Flint is accurate and complete, and that I am duly authorized to submit same. I hereby certify that the Respondent has reviewed all documents and requirements included in this offer and accept its terms and conditions.

Cash Discounts will be computed from the date of receipt of invoice. Prices firm unless stated otherwise by bidder. Delivery can be made in ( ) days ARO (after receipt of order).

Payment Terms: \_\_\_\_\_ Delivery Dest.: \_\_\_\_\_ Fed. ID #: \_\_\_\_\_

**(All Freight Terms are considered F.O.B., Prepaid unless otherwise noted by seller)**

COMPANY NAME (Respondent): \_\_\_\_\_  
(Printed)

ADDRESS: \_\_\_\_\_

CITY/STATE/ZIP: \_\_\_\_\_

PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

EMAIL: \_\_\_\_\_

PRINT NAME and TITLE: \_\_\_\_\_  
(Authorized Representative)

\_\_\_\_\_  
SIGNED

\_\_\_\_\_  
DATE:

**Please submit original documents plus one copy.**

Bid results may be viewed next business day online at  
<https://www.cityofflint.com/finance/purchasing/results/> under "bid results".

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WATER POLLUTION CONTROL  
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APPENDIX A

THIRD AVENUE PUMPING STATION  
EXISTING  
DRAWINGS

CITY OF FLINT  
WATER POLLUTION CONTROL  
THIRD AVENUE PUMPING STATION  
SWITCHGEAR and MOTOR CONTROL REPLACEMENT  
INSTALLATION BID SPECIFICATIONS

APPENDIX B

THIRD AVENUE PUMPING STATION  
NEW EQUIPMENT  
DRAWINGS



*Powering Business Worldwide*



**EATON**

*Powering Business Worldwide*


**EATON**

*Powering Business Worldwide*

# Master Document Index

## Medium Voltage Assemblies MVA 5kV Indoor


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19	CONN DIAG VERT SECT 4&5	MR580N1-W032.DWG	1
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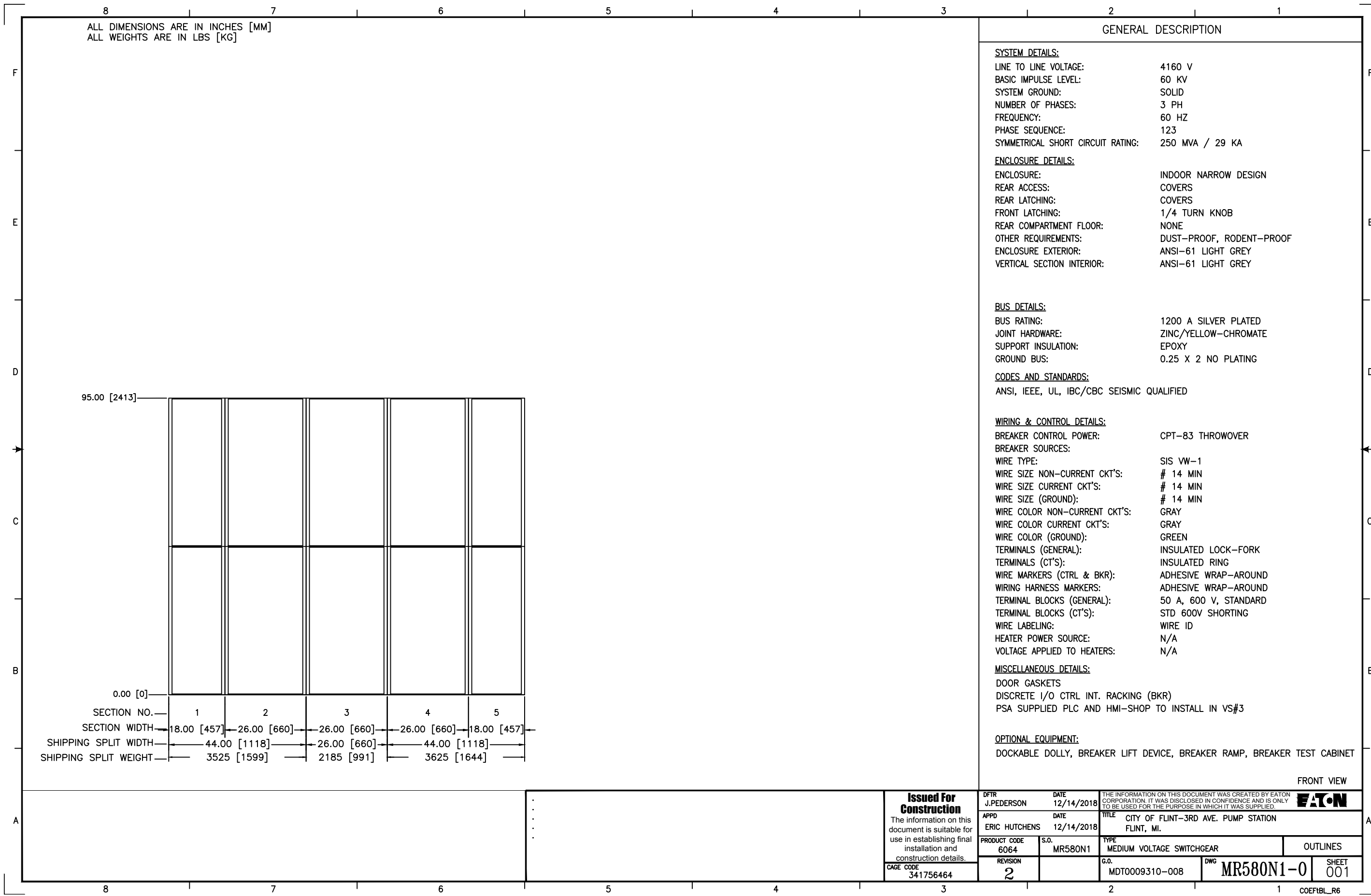
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		<b>DT720430X8K2</b>	
		<b>M-T-M</b>	<b>Construction Drawings</b>
<b>REVISION</b>	<b>DWG SIZE</b>	<b>G.O.</b>	<b>DWG</b>
<b>2</b>	<b>A</b>	<b>MDT0009310-008</b>	<b>M00FGE6M01.DOC</b>
			<b>SHEET</b>
			1 of 1

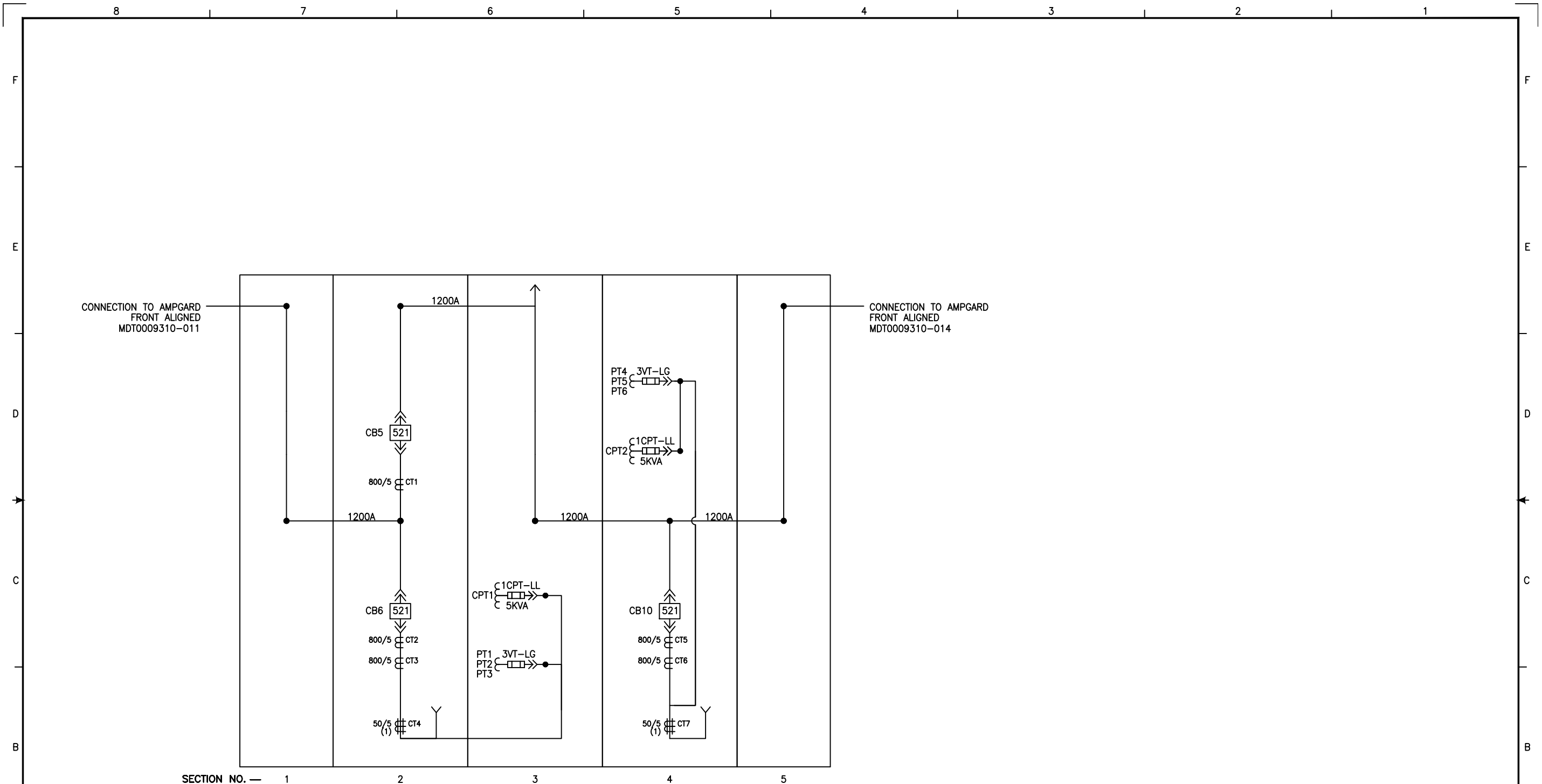
REVISION STATUS		SHEET DESCRIPTION
SHEET	REV	
000	2	REVISION SHEET
001	2	FRONT VIEW; SECTIONS: 1-5
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REVISION HISTORY				
REV	REVISION DESCRIPTION	BY	APPD	DATE
1	CUSTOMER APPROVAL	JLP	EH	12/14/2018
2	CONSTRUCTION	BAR	EH	4/29/2019

REVISION SHEET

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	APPD ERIC HUTCHENS	DATE 12/14/2018	TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.		
	PRODUCT CODE 6064	S.O. MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR		OUTLINES
	CAGE CODE 341756464	REVISION 2	G.O. MDT0009310-008	DWG MR580N1-0	SHEET 000



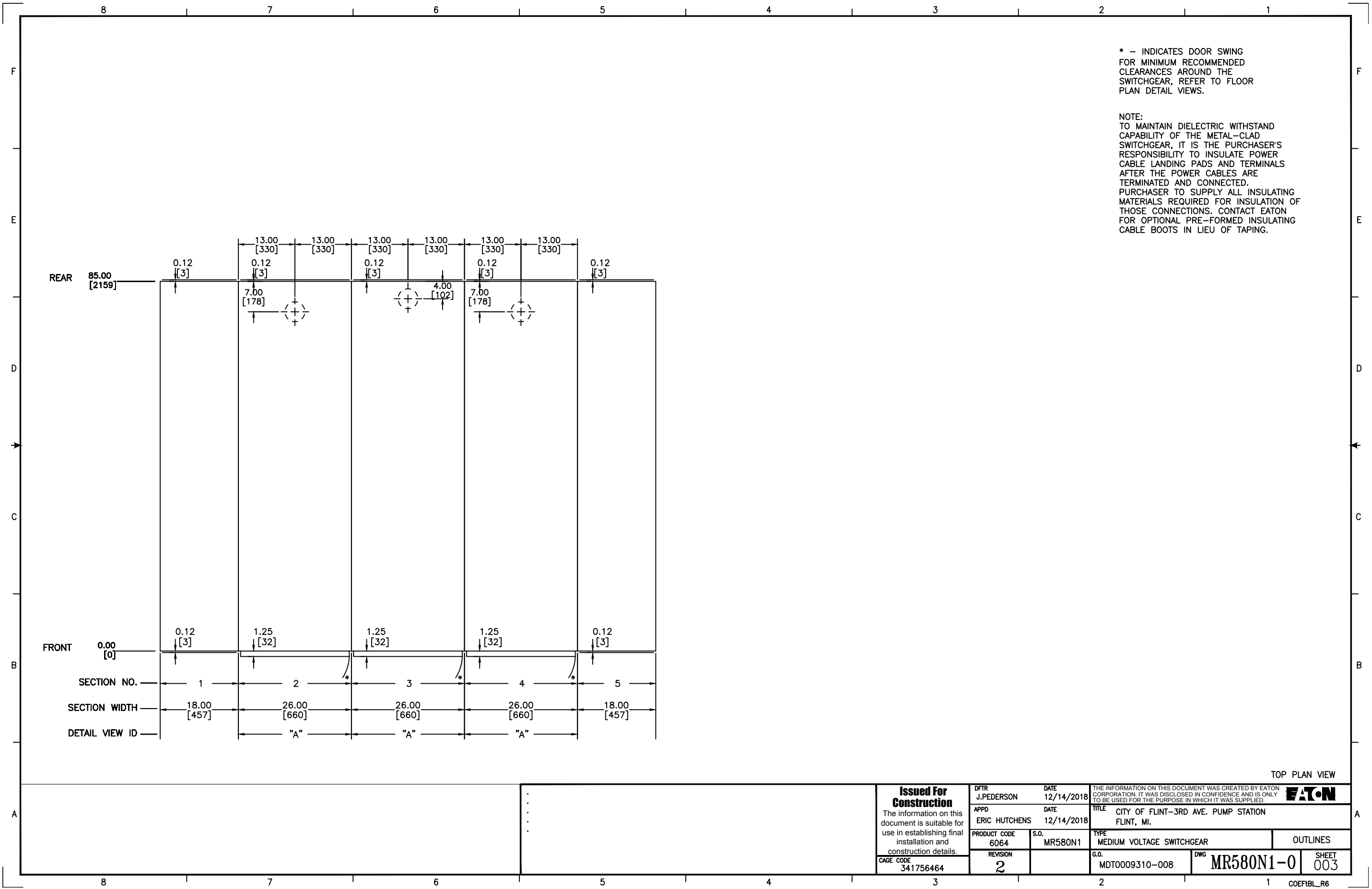


SECTION NO. — 1 2 3 4 5

POWER FLOW VIEW

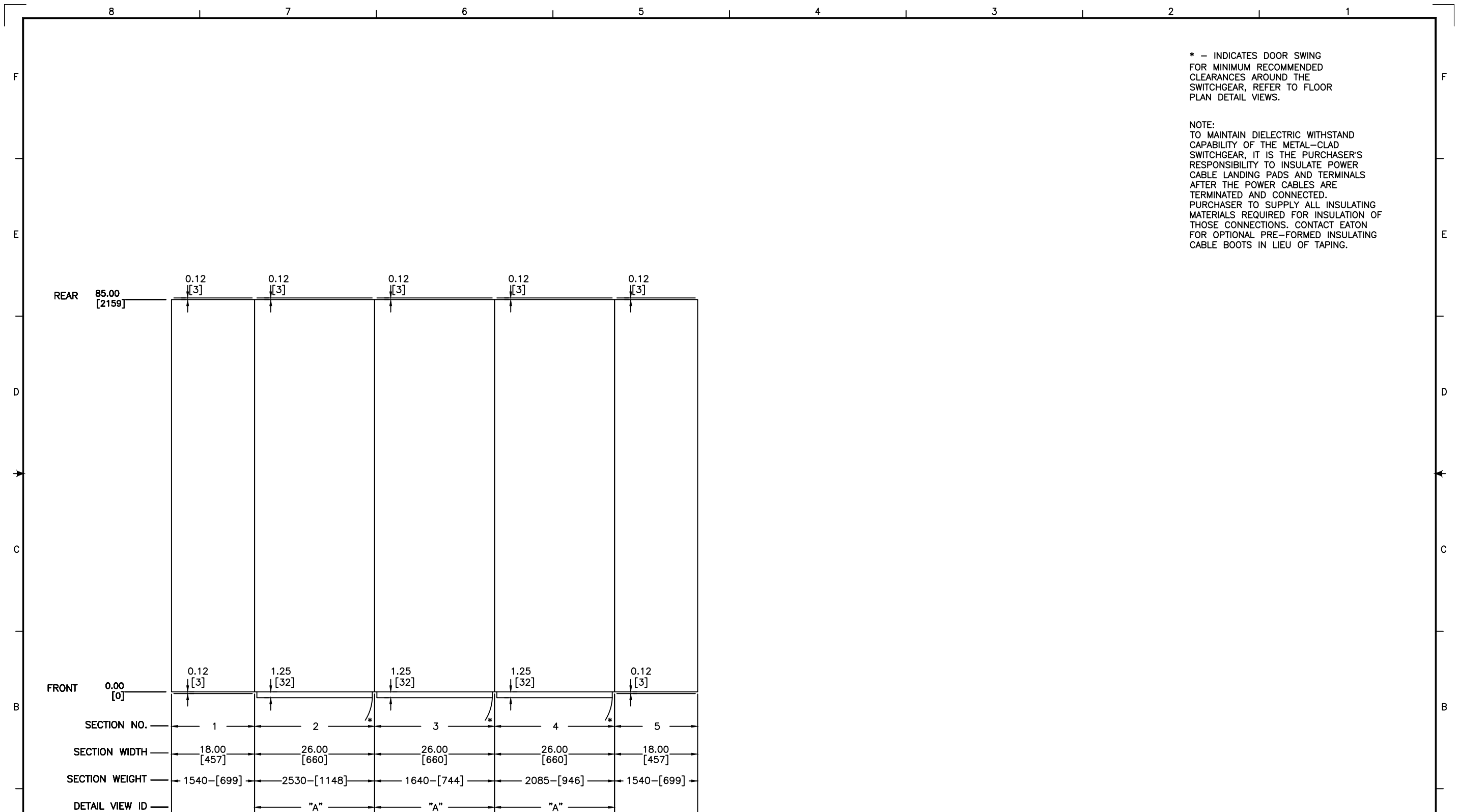
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	PRODUCT CODE 6064	S.O. MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR	
	REVISION 2		G.O. MDT0009310-008	DWG MR580N1-0 SHEET 002

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TOP PLAN VIEW

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	APPD	ERIC HUTCHENS	DATE	12/14/2018			
	PRODUCT CODE	6064	S.O.	MR580N1			
	REVISION	2	G.O.	MDT0009310-008			
				DWG	MR580N1-0	SHEET	003



\* - INDICATES DOOR SWING FOR MINIMUM RECOMMENDED CLEARANCES AROUND THE SWITCHGEAR, REFER TO FLOOR PLAN DETAIL VIEWS.

NOTE:  
TO MAINTAIN DIELECTRIC WITHSTAND CAPABILITY OF THE METAL-CLAD SWITCHGEAR, IT IS THE PURCHASER'S RESPONSIBILITY TO INSULATE POWER CABLE LANDING PADS AND TERMINALS AFTER THE POWER CABLES ARE TERMINATED AND CONNECTED. PURCHASER TO SUPPLY ALL INSULATING MATERIALS REQUIRED FOR INSULATION OF THOSE CONNECTIONS. CONTACT EATON FOR OPTIONAL PRE-FORMED INSULATING CABLE BOOTS IN LIEU OF TAPING.

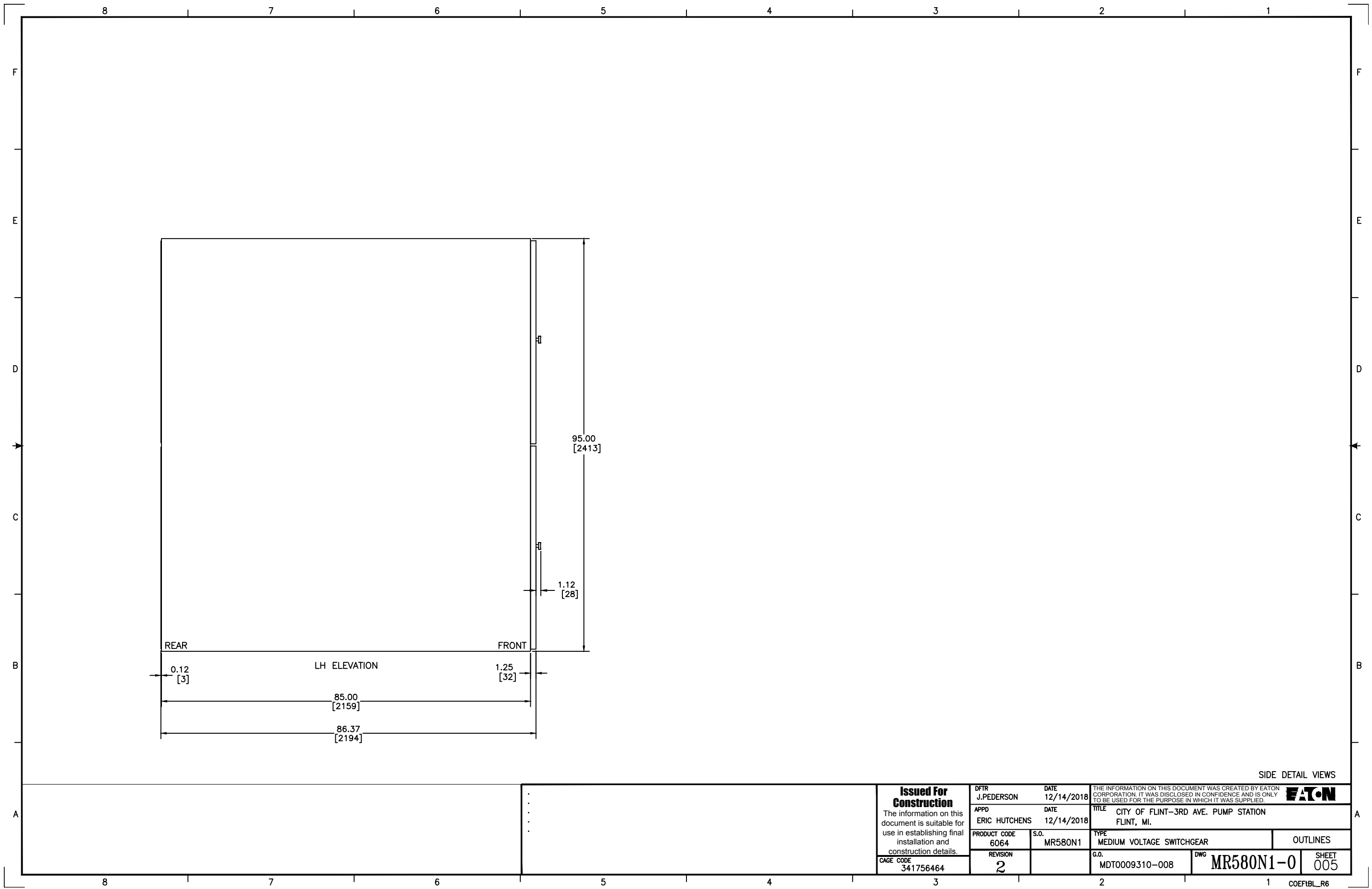
FLOOR PLAN VIEW

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	REVISION 2	G.O. MDT0009310-008	DWG MR580N1-0	SHEET 004



OUTLINES



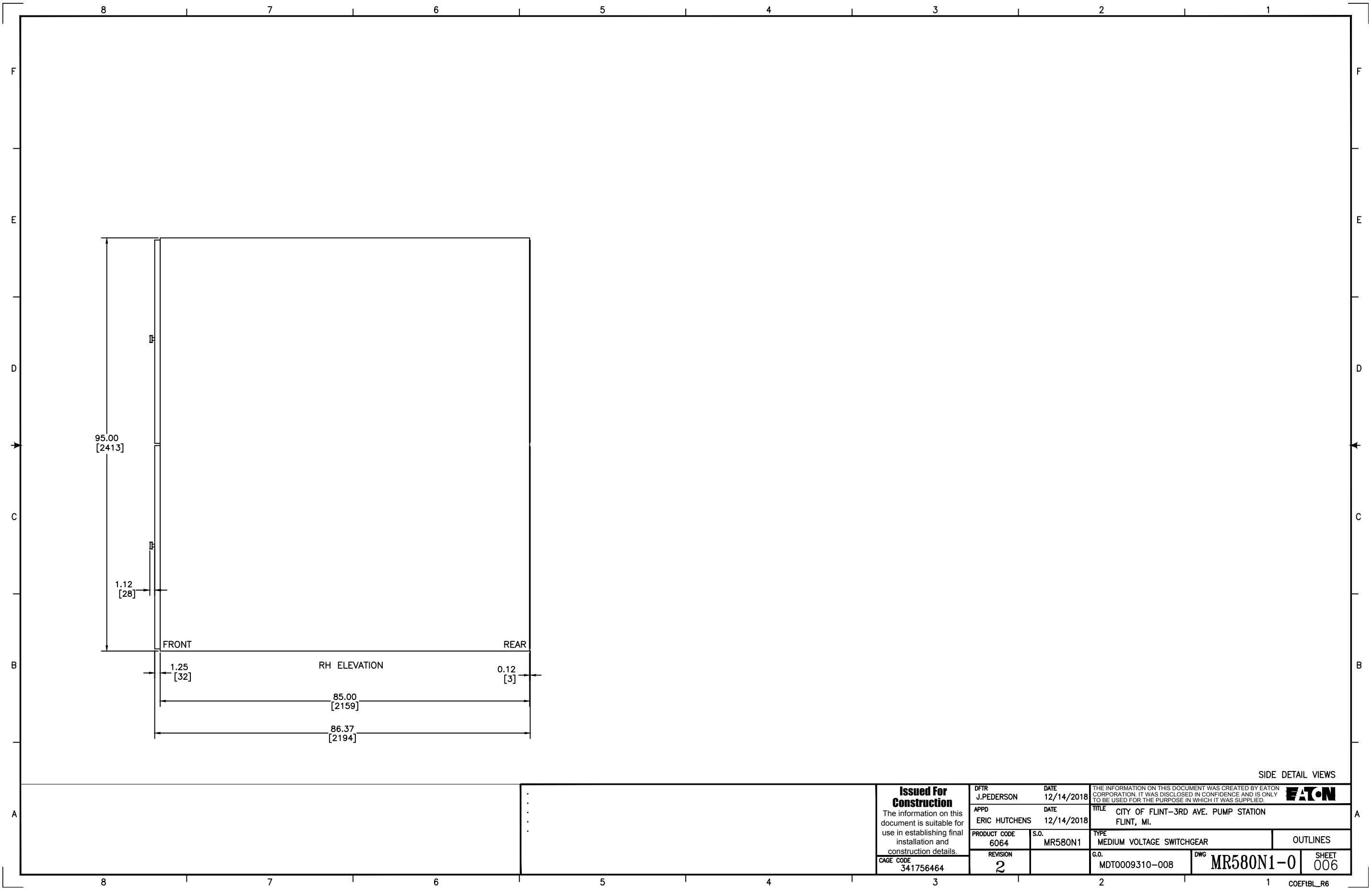


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TYPE MEDIUM VOLTAGE SWITCHGEAR		OUTLINES
G.O. MDT0009310-008	DWG MR580N1-0	SHEET 005

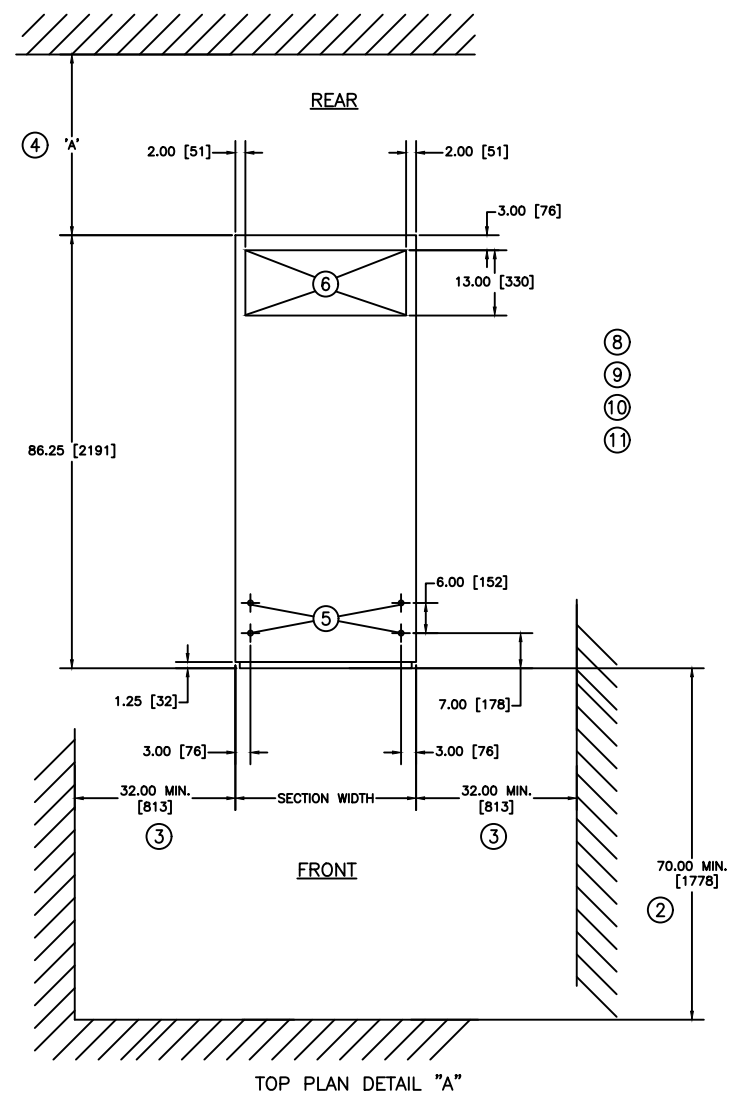
SIDE DETAIL VIEWS



SIDE DETAIL VIEWS


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	<p>PRODUCT CODE 6064</p>	<p>S.O. MR580N1</p>	<p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p>		<p>OUTLINES</p>
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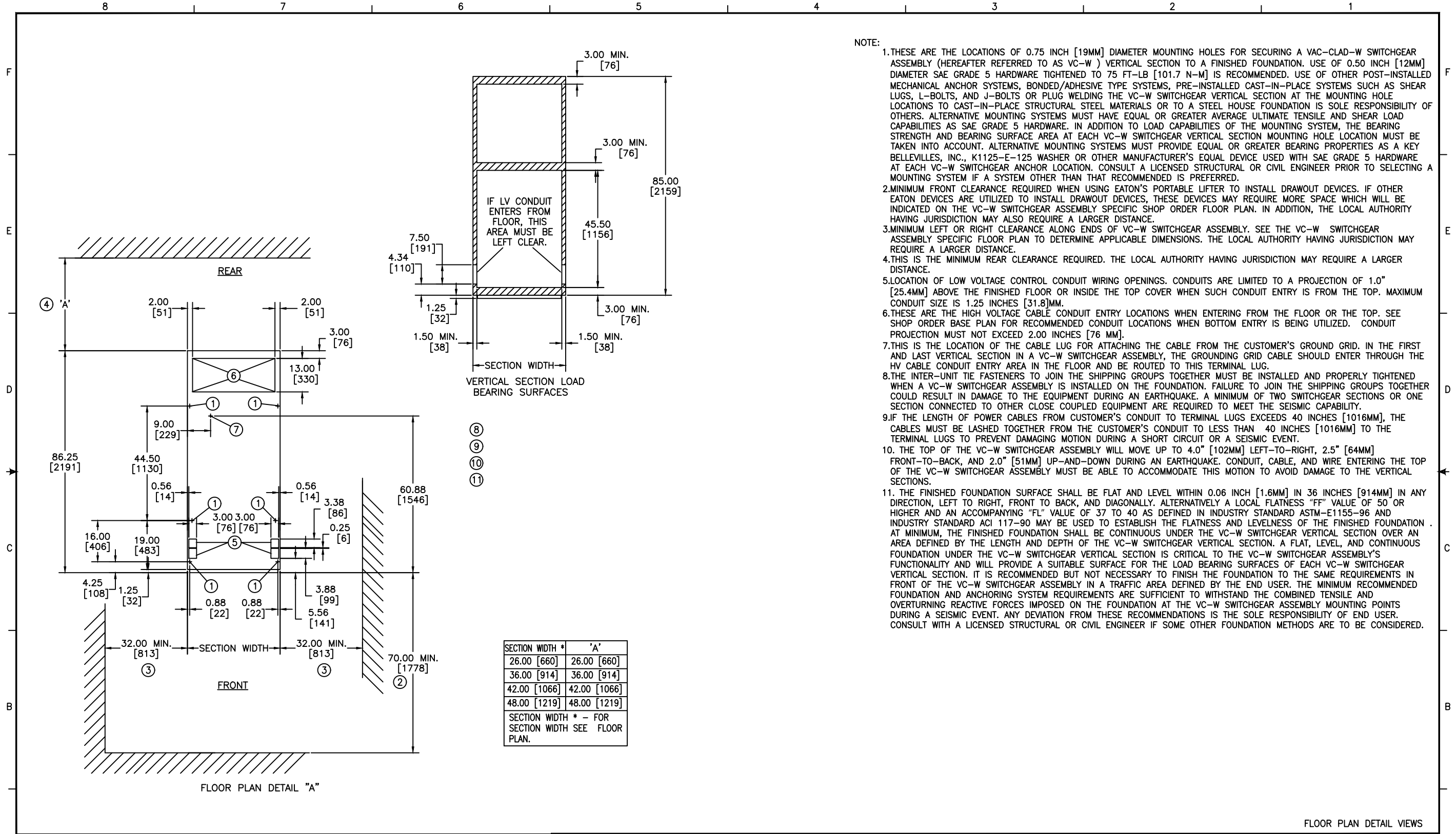
NOTE: SEE FLOOR PLAN DETAIL VIEW FOR NOTES



TOP PLAN DETAIL "A"

TOP PLAN DETAIL VIEWS

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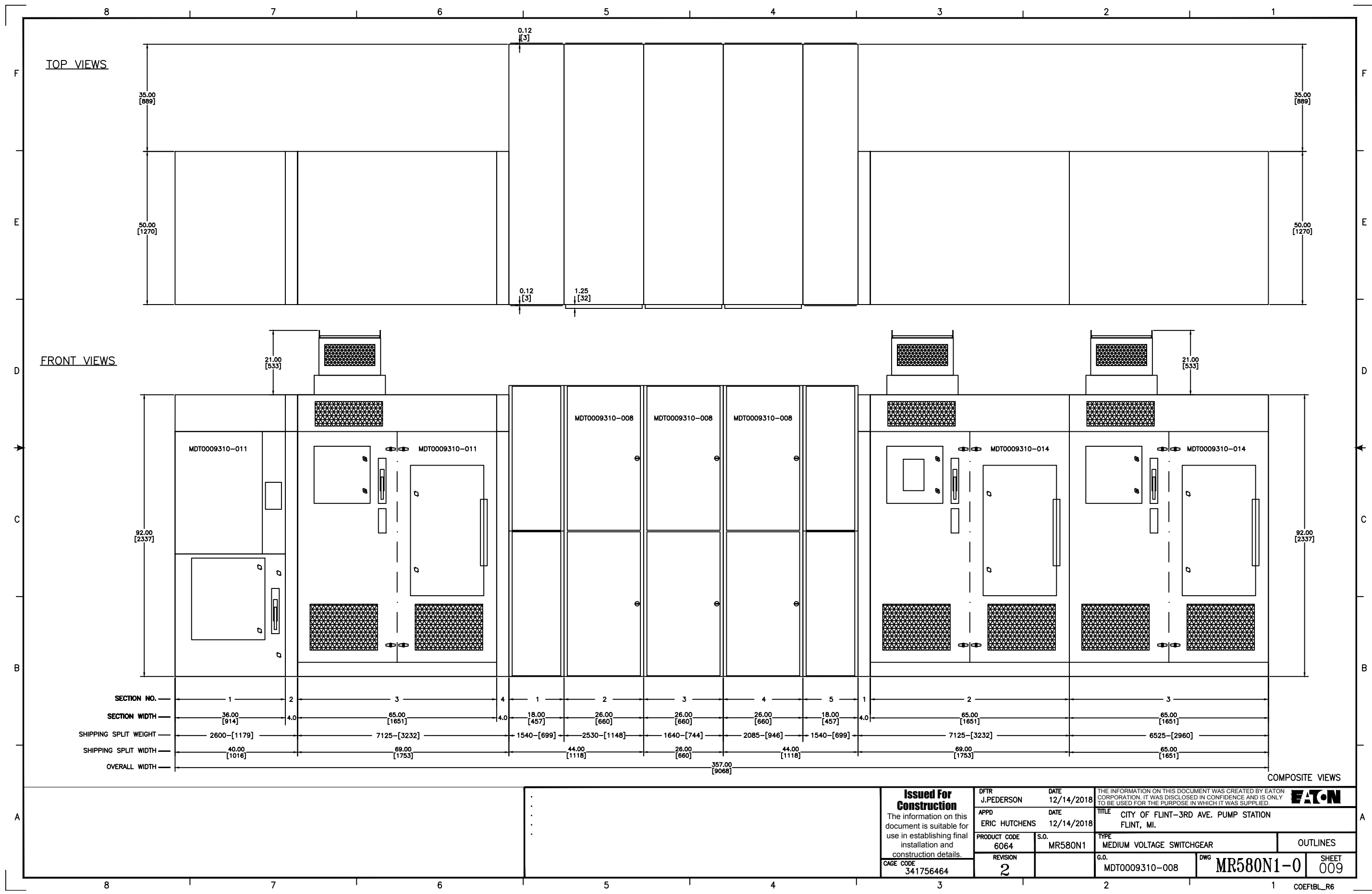


- NOTE:
1. THESE ARE THE LOCATIONS OF 0.75 INCH [19MM] DIAMETER MOUNTING HOLES FOR SECURING A VAC-CLAD-W SWITCHGEAR ASSEMBLY (HEREAFTER REFERRED TO AS VC-W ) VERTICAL SECTION TO A FINISHED FOUNDATION. USE OF 0.50 INCH [12MM] DIAMETER SAE GRADE 5 HARDWARE TIGHTENED TO 75 FT-LB [101.7 N-M] IS RECOMMENDED. USE OF OTHER POST-INSTALLED MECHANICAL ANCHOR SYSTEMS, BONDED/ADHESIVE TYPE SYSTEMS, PRE-INSTALLED CAST-IN-PLACE SYSTEMS SUCH AS SHEAR LUGS, L-BOLTS, AND J-BOLTS OR PLUG WELDING THE VC-W SWITCHGEAR VERTICAL SECTION AT THE MOUNTING HOLE LOCATIONS TO CAST-IN-PLACE STRUCTURAL STEEL MATERIALS OR TO A STEEL HOUSE FOUNDATION IS SOLE RESPONSIBILITY OF OTHERS. ALTERNATIVE MOUNTING SYSTEMS MUST HAVE EQUAL OR GREATER AVERAGE ULTIMATE TENSILE AND SHEAR LOAD CAPABILITIES AS SAE GRADE 5 HARDWARE. IN ADDITION TO LOAD CAPABILITIES OF THE MOUNTING SYSTEM, THE BEARING STRENGTH AND BEARING SURFACE AREA AT EACH VC-W SWITCHGEAR VERTICAL SECTION MOUNTING HOLE LOCATION MUST BE TAKEN INTO ACCOUNT. ALTERNATIVE MOUNTING SYSTEMS MUST PROVIDE EQUAL OR GREATER BEARING PROPERTIES AS A KEY BELLEVILLE, INC., K1125-E-125 WASHER OR OTHER MANUFACTURER'S EQUAL DEVICE USED WITH SAE GRADE 5 HARDWARE AT EACH VC-W SWITCHGEAR ANCHOR LOCATION. CONSULT A LICENSED STRUCTURAL OR CIVIL ENGINEER PRIOR TO SELECTING A MOUNTING SYSTEM IF A SYSTEM OTHER THAN THAT RECOMMENDED IS PREFERRED.
  2. MINIMUM FRONT CLEARANCE REQUIRED WHEN USING EATON'S PORTABLE LIFTER TO INSTALL DRAWOUT DEVICES. IF OTHER EATON DEVICES ARE UTILIZED TO INSTALL DRAWOUT DEVICES, THESE DEVICES MAY REQUIRE MORE SPACE WHICH WILL BE INDICATED ON THE VC-W SWITCHGEAR ASSEMBLY SPECIFIC SHOP ORDER FLOOR PLAN. IN ADDITION, THE LOCAL AUTHORITY HAVING JURISDICTION MAY ALSO REQUIRE A LARGER DISTANCE.
  3. MINIMUM LEFT OR RIGHT CLEARANCE ALONG ENDS OF VC-W SWITCHGEAR ASSEMBLY. SEE THE VC-W SWITCHGEAR ASSEMBLY SPECIFIC FLOOR PLAN TO DETERMINE APPLICABLE DIMENSIONS. THE LOCAL AUTHORITY HAVING JURISDICTION MAY REQUIRE A LARGER DISTANCE.
  4. THIS IS THE MINIMUM REAR CLEARANCE REQUIRED. THE LOCAL AUTHORITY HAVING JURISDICTION MAY REQUIRE A LARGER DISTANCE.
  5. LOCATION OF LOW VOLTAGE CONTROL CONDUIT WIRING OPENINGS. CONDUITS ARE LIMITED TO A PROJECTION OF 1.0" [25.4MM] ABOVE THE FINISHED FLOOR OR INSIDE THE TOP COVER WHEN SUCH CONDUIT ENTRY IS FROM THE TOP. MAXIMUM CONDUIT SIZE IS 1.25 INCHES [31.8]MM.
  6. THESE ARE THE HIGH VOLTAGE CABLE CONDUIT ENTRY LOCATIONS WHEN ENTERING FROM THE FLOOR OR THE TOP. SEE SHOP ORDER BASE PLAN FOR RECOMMENDED CONDUIT LOCATIONS WHEN BOTTOM ENTRY IS BEING UTILIZED. CONDUIT PROJECTION MUST NOT EXCEED 2.00 INCHES [76 MM].
  7. THIS IS THE LOCATION OF THE CABLE LUG FOR ATTACHING THE CABLE FROM THE CUSTOMER'S GROUND GRID. IN THE FIRST AND LAST VERTICAL SECTION IN A VC-W SWITCHGEAR ASSEMBLY, THE GROUNDING GRID CABLE SHOULD ENTER THROUGH THE HV CABLE CONDUIT ENTRY AREA IN THE FLOOR AND BE ROUTED TO THIS TERMINAL LUG.
  8. THE INTER-UNIT TIE FASTENERS TO JOIN THE SHIPPING GROUPS TOGETHER MUST BE INSTALLED AND PROPERLY TIGHTENED WHEN A VC-W SWITCHGEAR ASSEMBLY IS INSTALLED ON THE FOUNDATION. FAILURE TO JOIN THE SHIPPING GROUPS TOGETHER COULD RESULT IN DAMAGE TO THE EQUIPMENT DURING AN EARTHQUAKE. A MINIMUM OF TWO SWITCHGEAR SECTIONS OR ONE SECTION CONNECTED TO OTHER CLOSE COUPLED EQUIPMENT ARE REQUIRED TO MEET THE SEISMIC CAPABILITY.
  9. IF THE LENGTH OF POWER CABLES FROM CUSTOMER'S CONDUIT TO TERMINAL LUGS EXCEEDS 40 INCHES [1016MM], THE CABLES MUST BE LASHED TOGETHER FROM THE CUSTOMER'S CONDUIT TO LESS THAN 40 INCHES [1016MM] TO THE TERMINAL LUGS TO PREVENT DAMAGING MOTION DURING A SHORT CIRCUIT OR A SEISMIC EVENT.
  10. THE TOP OF THE VC-W SWITCHGEAR ASSEMBLY WILL MOVE UP TO 4.0" [102MM] LEFT-TO-RIGHT, 2.5" [64MM] FRONT-TO-BACK, AND 2.0" [51MM] UP-AND-DOWN DURING AN EARTHQUAKE. CONDUIT, CABLE, AND WIRE ENTERING THE TOP OF THE VC-W SWITCHGEAR ASSEMBLY MUST BE ABLE TO ACCOMMODATE THIS MOTION TO AVOID DAMAGE TO THE VERTICAL SECTIONS.
  11. THE FINISHED FOUNDATION SURFACE SHALL BE FLAT AND LEVEL WITHIN 0.06 INCH [1.6MM] IN 36 INCHES [914MM] IN ANY DIRECTION, LEFT TO RIGHT, FRONT TO BACK, AND DIAGONALLY. ALTERNATIVELY A LOCAL FLATNESS "FF" VALUE OF 50 OR HIGHER AND AN ACCOMPANYING "FL" VALUE OF 37 TO 40 AS DEFINED IN INDUSTRY STANDARD ASTM-E1155-96 AND INDUSTRY STANDARD ACI 117-90 MAY BE USED TO ESTABLISH THE FLATNESS AND LEVELNESS OF THE FINISHED FOUNDATION. AT MINIMUM, THE FINISHED FOUNDATION SHALL BE CONTINUOUS UNDER THE VC-W SWITCHGEAR VERTICAL SECTION OVER AN AREA DEFINED BY THE LENGTH AND DEPTH OF THE VC-W SWITCHGEAR VERTICAL SECTION. A FLAT, LEVEL, AND CONTINUOUS FOUNDATION UNDER THE VC-W SWITCHGEAR VERTICAL SECTION IS CRITICAL TO THE VC-W SWITCHGEAR ASSEMBLY'S FUNCTIONALITY AND WILL PROVIDE A SUITABLE SURFACE FOR THE LOAD BEARING SURFACES OF EACH VC-W SWITCHGEAR VERTICAL SECTION. IT IS RECOMMENDED BUT NOT NECESSARY TO FINISH THE FOUNDATION TO THE SAME REQUIREMENTS IN FRONT OF THE VC-W SWITCHGEAR ASSEMBLY IN A TRAFFIC AREA DEFINED BY THE END USER. THE MINIMUM RECOMMENDED FOUNDATION AND ANCHORING SYSTEM REQUIREMENTS ARE SUFFICIENT TO WITHSTAND THE COMBINED TENSILE AND OVERTURNING REACTIVE FORCES IMPOSED ON THE FOUNDATION AT THE VC-W SWITCHGEAR ASSEMBLY MOUNTING POINTS DURING A SEISMIC EVENT. ANY DEVIATION FROM THESE RECOMMENDATIONS IS THE SOLE RESPONSIBILITY OF END USER. CONSULT WITH A LICENSED STRUCTURAL OR CIVIL ENGINEER IF SOME OTHER FOUNDATION METHODS ARE TO BE CONSIDERED.

SECTION WIDTH *	'A'
26.00 [660]	26.00 [660]
36.00 [914]	36.00 [914]
42.00 [1066]	42.00 [1066]
48.00 [1219]	48.00 [1219]
SECTION WIDTH * - FOR SECTION WIDTH SEE FLOOR PLAN.	

FLOOR PLAN DETAIL VIEWS

<p>The information on this document is suitable for use in establishing final installation and construction details.</p> <p>CAGE CODE 341756464</p>	<p><b>Issued For Construction</b></p>	<p>DFT: J.PEDERSON DATE: 12/14/2018</p>	<p>THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.</p>	
	<p>The information on this document is suitable for use in establishing final installation and construction details.</p>	<p>APPD: ERIC HUTCHENS DATE: 12/14/2018</p>	<p>TITLE: CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.</p>	
	<p>PRODUCT CODE: 6064</p>	<p>S.O.: MR580N1</p>	<p>TYPE: MEDIUM VOLTAGE SWITCHGEAR</p>	<p>OUTLINES</p>
	<p>REVISION: 2</p>	<p>G.O.: MDT0009310-008</p>	<p>DWG: MR580N1-0</p>	<p>SHEET: 008</p>



<p><b>Issued For Construction</b></p> <p>The information on this document is suitable for use in establishing final installation and construction details.</p> <p>CAGE CODE 341756464</p>	DFTR J.PEDERSON	DATE 12/14/2018	<p>THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.</p> <p><b>EATON</b></p>	
	APPD ERIC HUTCHENS	DATE 12/14/2018	<p>TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.</p>	
	PRODUCT CODE 6064	S.O. MR580N1	<p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p>	
	REVISION 2	G.O. MDT0009310-008	<p>OUTLINES DWG <b>MR580N1-0</b> SHEET <b>009</b></p>	

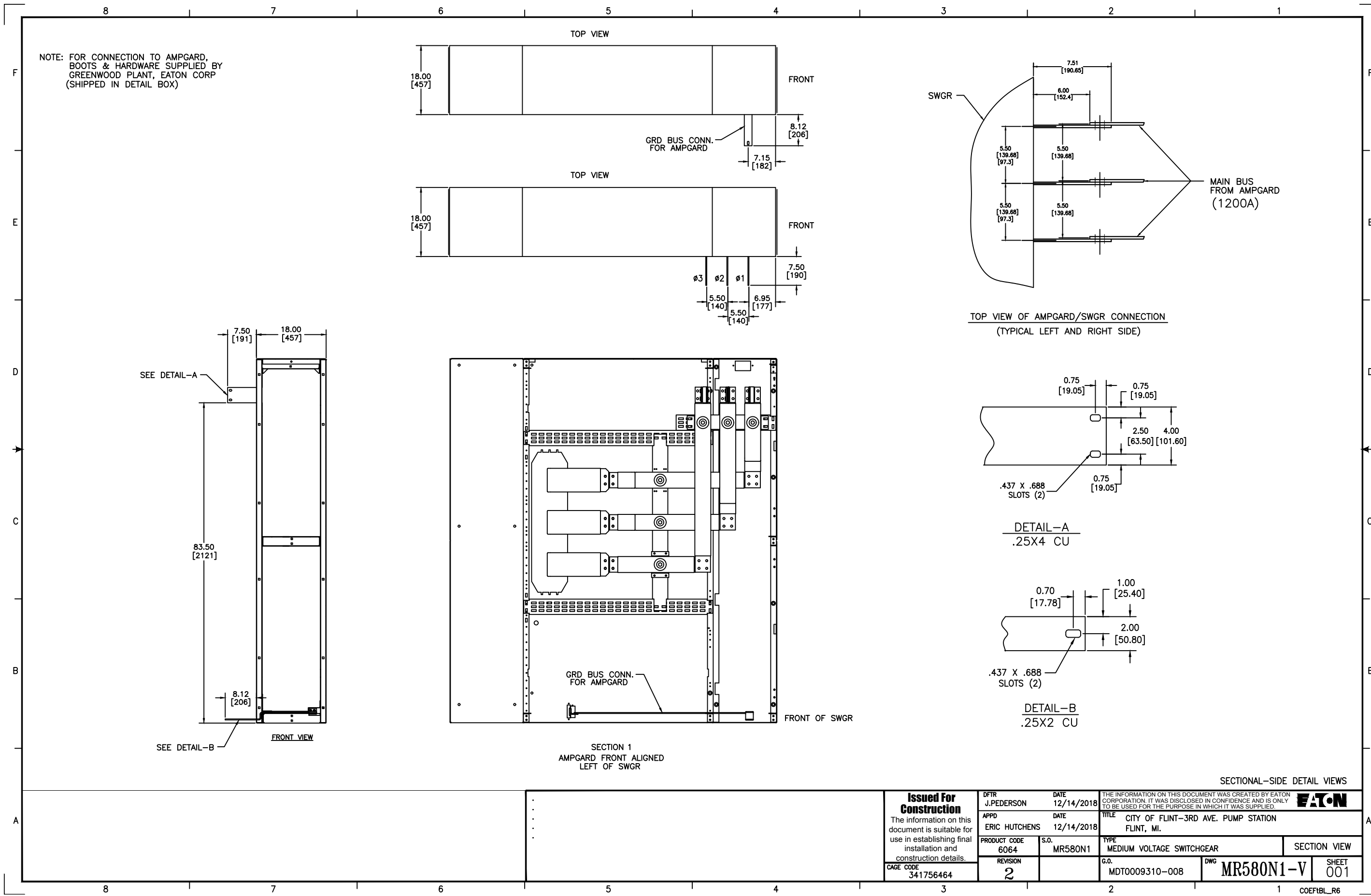
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REVISION STATUS			SHEET DESCRIPTION												
SHEET	REV														
000	2	REVISION SHEET													
001	2	SECTIONAL-SIDE DETAIL VIEWS: SECTIONS: 1													
002	2	SECTIONAL-SIDE DETAIL VIEWS: SECTIONS: 2													
003	2	SECTIONAL-SIDE DETAIL VIEWS: SECTIONS: 3													
004	2	SECTIONAL-SIDE DETAIL VIEWS: SECTIONS: 4													
005	2	SECTIONAL-SIDE DETAIL VIEWS: SECTIONS: 5													

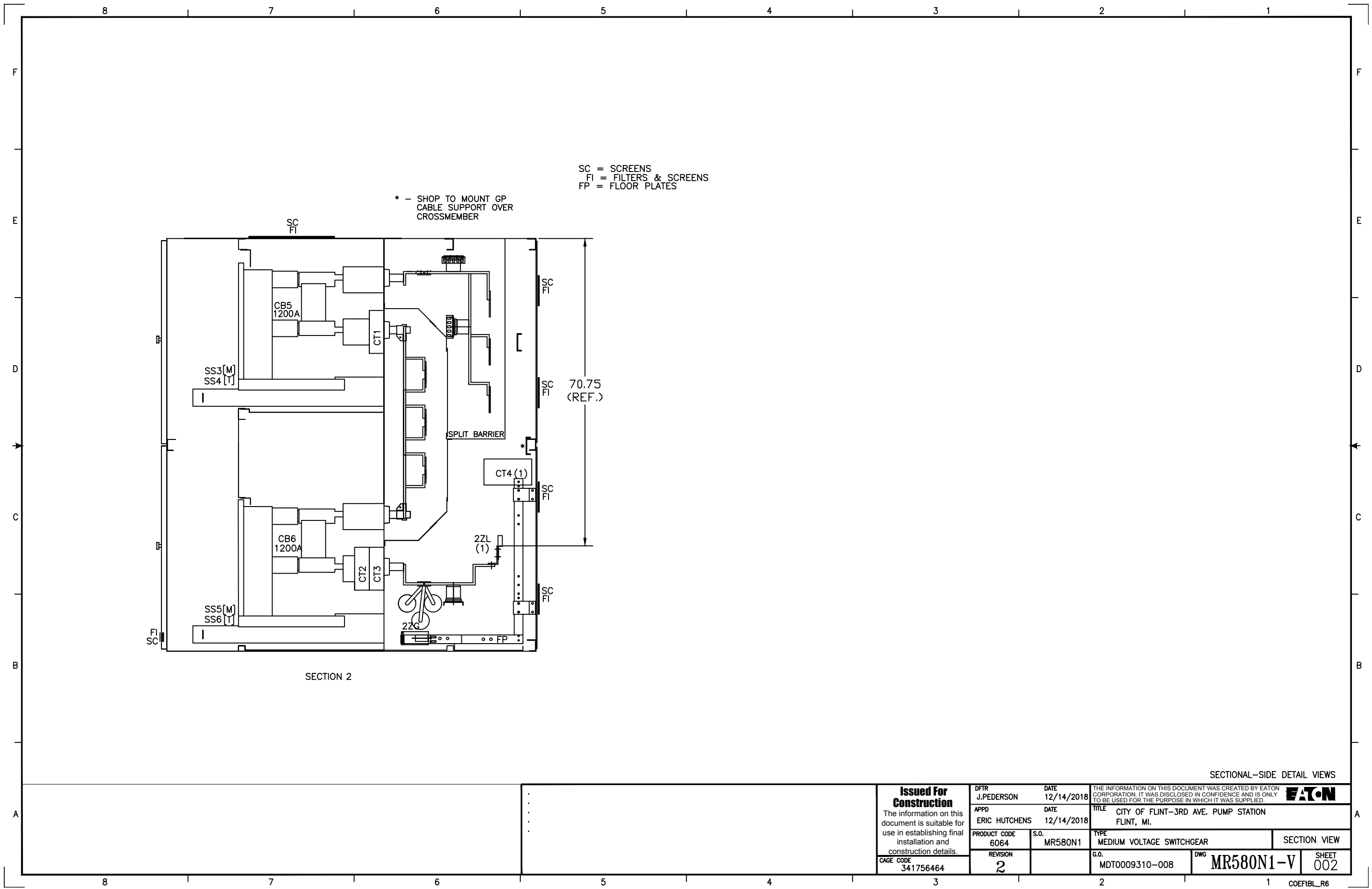
REVISION HISTORY				
REV	REVISION DESCRIPTION	BY	APPD	DATE
1	CUSTOMER APPROVAL	JLP	EH	12/14/2018
2	CONSTRUCTION	BAR	EH	4/29/2019

REVISION SHEET															
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	APPD ERIC HUTCHENS	DATE 12/14/2018	TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.												
	PRODUCT CODE 6064	S.O. MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR											SECTION VIEW	
	CAGE CODE 341756464	REVISION 2	G.O. MDT0009310-008	DWG MR580N1-V	SHEET 000										



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	COEFBL_R6			



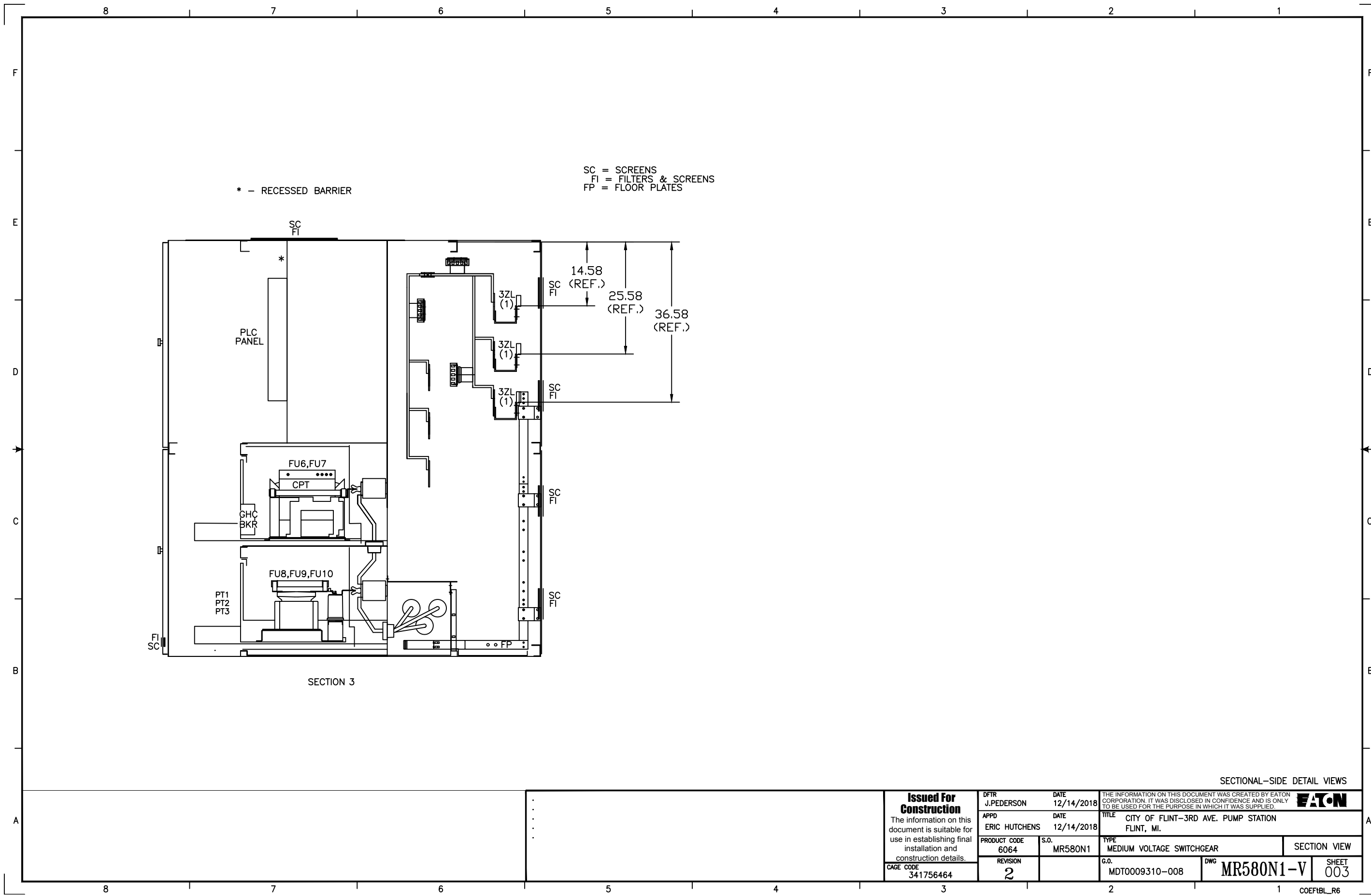
SECTIONAL-SIDE DETAIL VIEWS

**Issued For Construction**  
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 CAGE CODE 341756464

DFTR J.PEDERSON	DATE 12/14/2018
APPD ERIC HUTCHENS	DATE 12/14/2018
PRODUCT CODE 6064	S.O. MR580N1
REVISION 2	

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TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.		
TYPE MEDIUM VOLTAGE SWITCHGEAR	SECTION VIEW	
G.O. MDT0009310-008	DWG MR580N1-V	SHEET 002



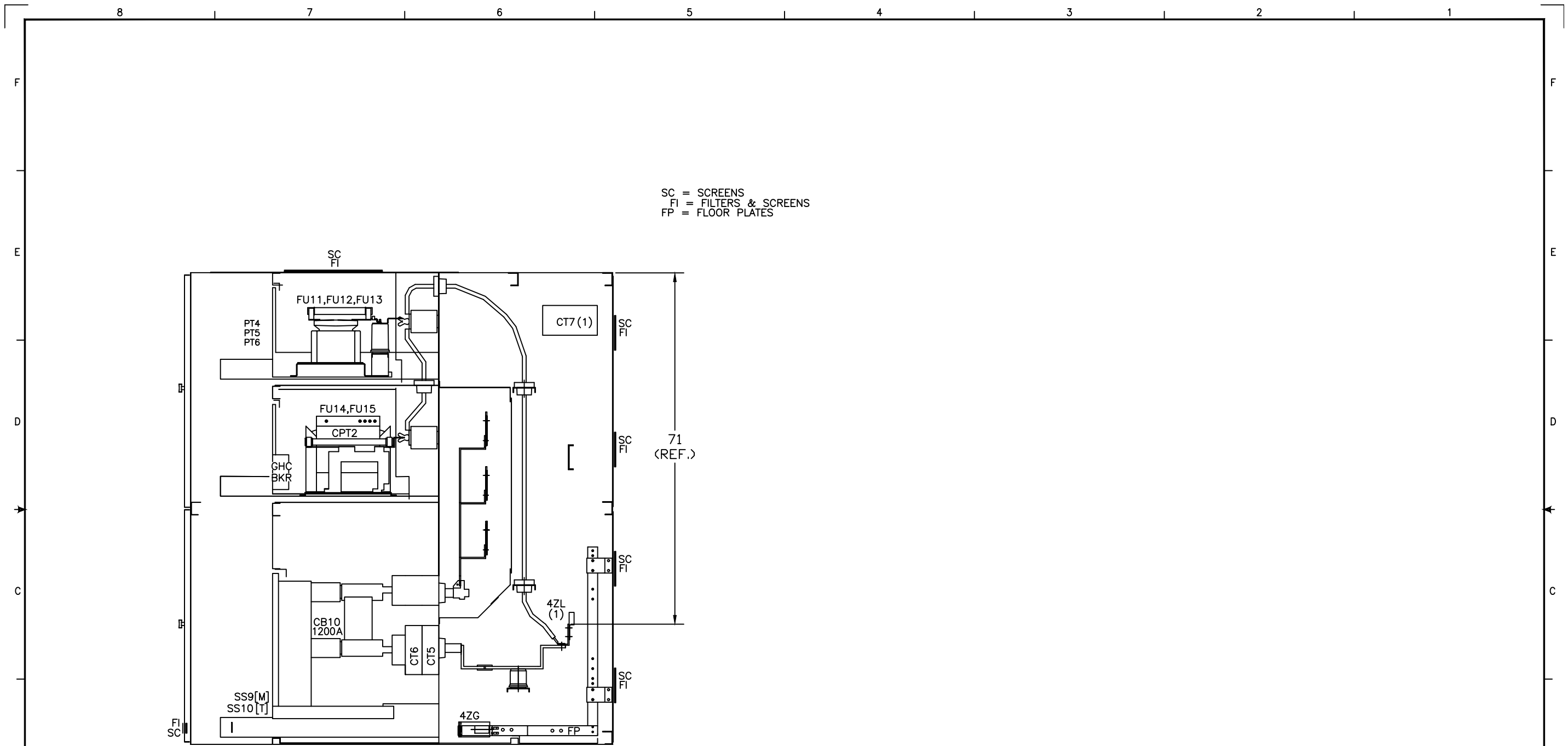


SECTIONAL-SIDE DETAIL VIEWS

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 CAGE CODE 341756464

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APPD ERIC HUTCHENS	DATE 12/14/2018
PRODUCT CODE 6064	S.O. MR580N1
REVISION 2	

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TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.		
TYPE MEDIUM VOLTAGE SWITCHGEAR	SECTION VIEW	
G.O. MDT0009310-008	DWG MR580N1-V	SHEET 003

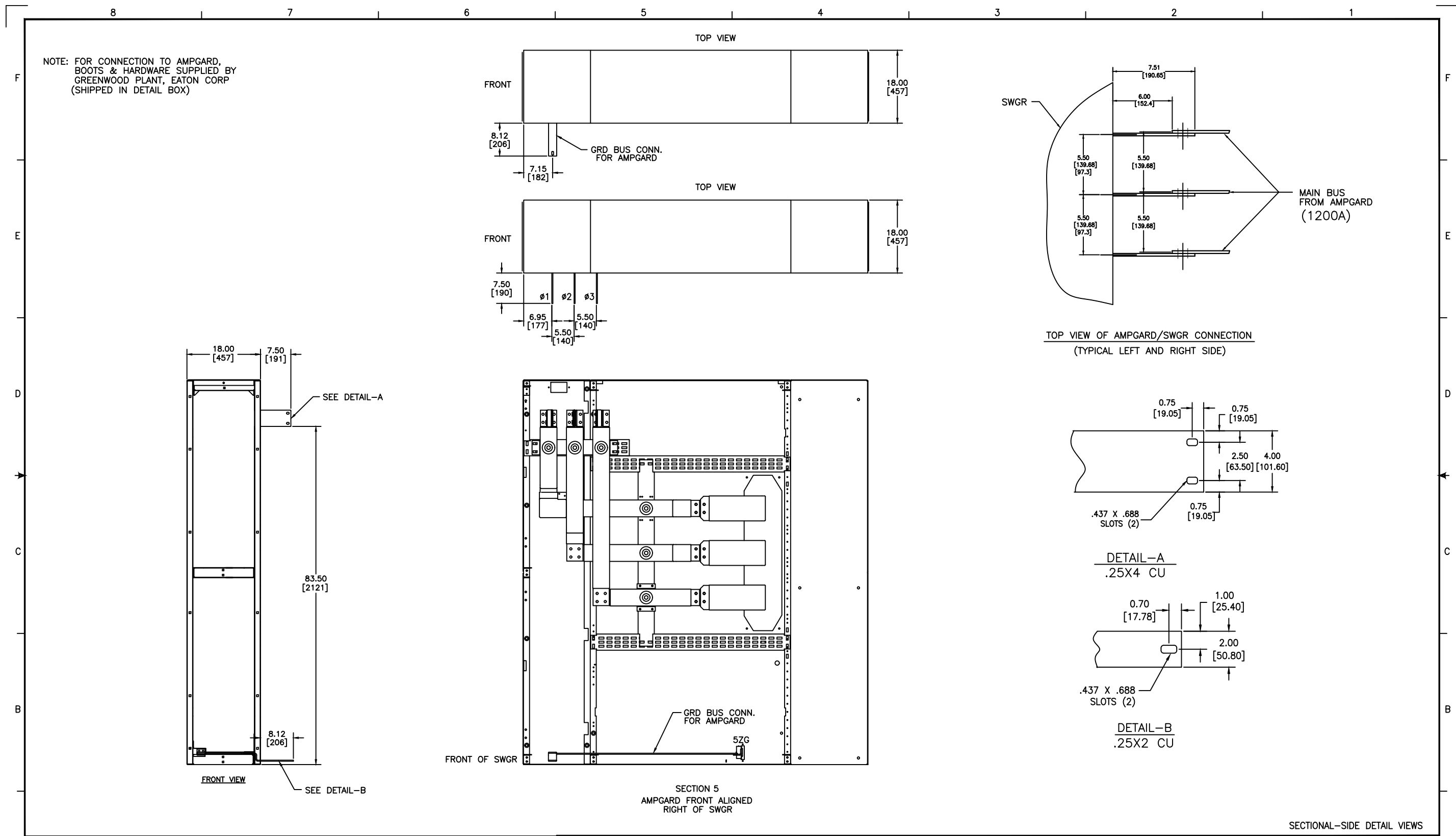


SC = SCREENS  
 FI = FILTERS & SCREENS  
 FP = FLOOR PLATES

SECTION 4

SECTIONAL-SIDE DETAIL VIEWS


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	<p>APPD ERIC HUTCHENS</p> <p>DATE 12/14/2018</p>	<p>TITLE CITY OF FLINT-3RD AVE. PUMP STATION                  FLINT, MI.</p>		
	<p>PRODUCT CODE 6064</p> <p>REVISION 2</p>	<p>S.O. MR580N1</p>	<p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p>	<p>SECTION VIEW</p>
	<p>G.O. MDT0009310-008</p>	<p>DWG MR580N1-V</p>	<p>SHEET 004</p>	

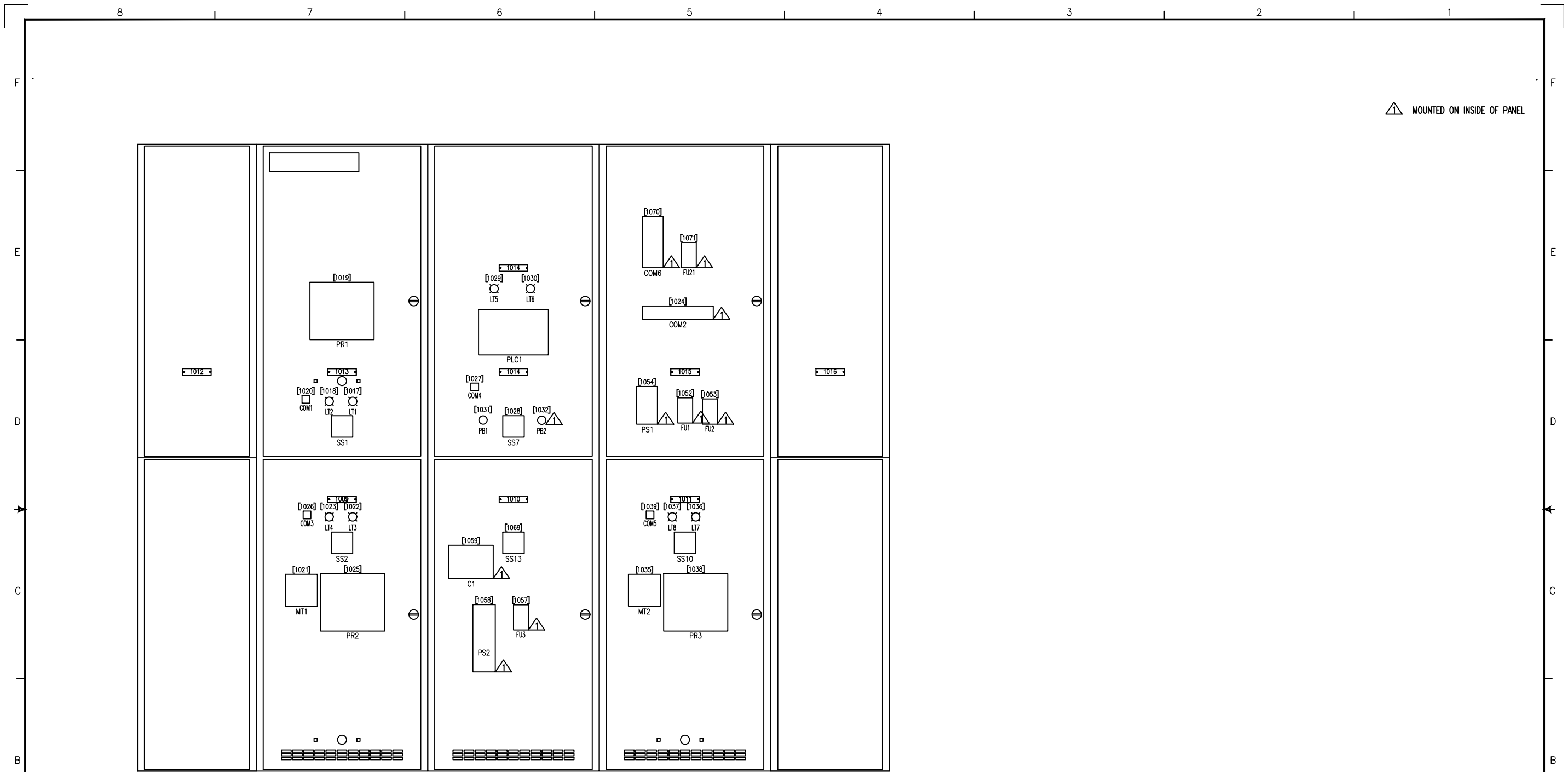


						SECTIONAL-SIDE DETAIL VIEWS	
						<small>THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.</small>	
						TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.	
						TYPE MEDIUM VOLTAGE SWITCHGEAR SECTION VIEW	
						G.O. MDT0009310-008 DWG MR580N1-V SHEET 005	
						COEFBL_R6	

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 CAGE CODE 341756464

DFTR J.PEDERSON	DATE 12/14/2018
APPD ERIC HUTCHENS	DATE 12/14/2018
PRODUCT CODE 6064	S.O. MR580N1
REVISION 2	

8		7		6		5		4		3		2		1										
REVISION STATUS			SHEET DESCRIPTION									REVISION HISTORY												
SHEET		REV												REV	REVISION DESCRIPTION		BY	APPD	DATE					
000		2	REVISION SHEET											1	CUSTOMER APPROVAL		JLP	EH	12/14/2018					
001		2	FRONT LAYOUT VIEW; SECTIONS: 1-5											2	CONSTRUCTION		BAR	EH	4/29/2019					
REVISION SHEET																								
											<b>Issued For Construction</b> The information on this document is suitable for use in establishing final installation and construction details.		DFT J.PEDERSON DATE 12/14/2018		APPD ERIC HUTCHENS DATE 12/14/2018		THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.							
											CAGE CODE 341756464		REVISION 2		PRODUCT CODE 6064		S.O. MR580N1		TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.		TYPE MEDIUM VOLTAGE SWITCHGEAR		FRONT LAYOUT	
											G.O. MDT0009310-008		DWG MR580N1-R		SHEET 000		COEF1BL_R6							
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SECTION NO. - 1

2

3

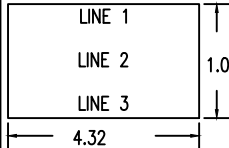
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5

<p>•</p> <p>•</p> <p>•</p> <p>•</p>	<b>Issued For Construction</b>	DFTR J.PEDERSON	DATE 12/14/2018	THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.	<b>EATON</b>		
	The information on this document is suitable for use in establishing final installation and construction details.	APPD ERIC HUTCHENS	DATE 12/14/2018			TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.	
	CAGE CODE 341756464	PRODUCT CODE 6064	S.O. MR580N1			TYPE MEDIUM VOLTAGE SWITCHGEAR	FRONT LAYOUT
	REVISION 2	G.O. MDT0009310-008	DWG MR580N1-R			SHEET 001	

8	7	6	5	4	3	2	1	
REVISION STATUS		SHEET DESCRIPTION						
SHEET	REV							
000	2	REVISION SHEET						
001	2	UNIT SCHEDULE; SECTIONS: 1-5						
		REVISION HISTORY						
REV	REVISION DESCRIPTION				BY	APPD	DATE	
1	CUSTOMER APPROVAL				JLP	EH	12/14/2018	
2	CONSTRUCTION				BAR	EH	4/29/2019	
REVISION SHEET								
<p style="text-align: center;"><b>Issued For Construction</b></p> <p>The information on this document is suitable for use in establishing final installation and construction details.</p> <p>CAGE CODE 341756464</p>			DFR J.PEDERSON DATE 12/14/2018		THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.			
			APPD ERIC HUTCHENS DATE 12/14/2018		TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.			
			PRODUCT CODE 6064	S.O. MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR		SCHEDULES	
			REVISION 2	G.O. MDT0009310-008	DWG MR580N1-N	SHEET 000		
COEF1BL_R6								

ID		DEVICE INFORMATION											TERMINATIONS					ADDITIONAL ACCESSORIES, FEATURES & NOTES	DETAILED DRAWING REFERENCE OR CATALOG NUMBER		
SECTION NUMBER	DEVICE LOCATION	CIRCUIT NAMEPLATE	DEVICE TYPE	DEVICE SIZE	INTERRUPTING RATING (SEE NOTES)	SPRING RELEASE (CLOSE COIL)	SHUNT TRIP (OPEN COIL)	DEVICE MOTOR OPERATOR	AUXILIARY SWITCH	UVR/2ND SHUNT TRIP(2ST)	TRUCK OPERATED CELL SWITCH (TOC)	MECHANISM OPERATED CELL SWITCH (MOC)	KEY INTERLOCK	CONTROL CABLE ENTRY DIRECTION	POWER CABLE ENTRY DIRECTION	TYPE (SEE NOTES)	PHASE SIZE			#PER PHASE	GND SIZE
1	A	BUS TRANSITION TO MCC	NONE											T/B					NONE		
1	D		NONE											T/B					NONE		
2	A	TIE BREAKER	50VCPWND250 3 CYCLE	1200	29KA	120 VAC	120V CAP-CTD2	120 VAC	1A & 3B	NONE	3A & 4B	4A & 3B		T/B					NONE		
2	D	MAIN BREAKER A	50VCPWND250 3 CYCLE	1200	29KA	120 VAC	120V CAP-CTD2	120 VAC	1A & 3B	NONE	3A & 4B	4A & 3B		T/B	TOP	C	350 MCM	1	NONE		
3	A	TRANSFER CONTROLS	BLANK											T/B	TOP	C	NO 2/0	1	NONE		
3	C		1CPT-LL																		
3	D	VOLTAGE TRANSFORMERS A CONTROL TRANSFORMER A	3VT-LG											T/B	TOP				NONE		
4	A	VOLTAGE TRANSFORMERS B CONTROL TRANSFORMER B	3VT-LG											T/B					NONE		
4	B		1CPT-LL																		
4	D	MAIN BREAKER B	50VCPWND250 3 CYCLE	1200	29KA	120 VAC	120V CAP-CTD2	120 VAC	1A & 3B	NONE	3A & 4B	4A & 3B		T/B	TOP	C	350 MCM	1	NONE		
5	A	BUS TRANSITION TO MCC	NONE											T/B					NONE		



**NAMEPLATE FEATURES**  
 COLOR: WHITE W/BLACK LETTERS  
 CHARACTERS PER LINE: 18  
 NAMEPLATE SECURED VIA: SCREW  
 NOT TO SCALE


1A	2A	3A	4A	5A
			4B	
	2D	3C	4D	
		3D		

**NOTES:**  
**TERMINATIONS**  
 B = NON SEGREGATED PHASE BUS  
 C = COMPRESSION TYPE, 2 HOLE MOUNTING, COPPER  
 M = MECHANICAL CU/AL  
 N = NEMA DRILLING ONLY  
**INTERRUPTING RATING**  
 RMS SYMMETRICAL INTERRUPTING RATING AT MAXIMUM RATED VOLTAGE OF 4.76 KV WITH K=1.24

UNIT SCHEDULE

<p><b>Issued For Construction</b></p> <p>The information on this document is suitable for use in establishing final installation and construction details.</p> <p>CAGE CODE 341756464</p>	DFR J.PEDERSON APPD ERIC HUTCHENS	DATE 12/14/2018 DATE 12/14/2018	THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.	
	PRODUCT CODE 6064 REVISION 2	S.O. MR580N1	TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI. TYPE MEDIUM VOLTAGE SWITCHGEAR	SCHEDULES
	G.O. MDT0009310-008	DWG MR580N1-N	SHEET 001	
	COEF1BL_R6			

REVISION HISTORY				
REV	REVISION DESCRIPTION	BY	APPD	DATE
2	CONSTRUCTION	HUT	EH	2/21/2019

		<b>ISSUED FOR CONSTRUCTION</b> - THE INFORMATION ON THIS DOCUMENT IS SUITABLE FOR USE IN ESTABLISHING FINAL INSTALLATION AND CONSTRUCTION DETAILS.				
		DFTR	DATE	THE INFORMATION ON THIS DOCUMENT IS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT IS SUPPLIED. 		
		E.HUTCHENS	2/21/2019			
		APPD	DATE	TITLE		
		E.HUTCHENS	2/21/2019	CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.		
		S.O.	TYPE	DEVICE NAMEPLATES		
		MR580N1	MEDIUM VOLTAGE SWITCHGEAR			
PRODUCT CODE	CAGE CODE	REVISION	G.O.	DWG	SHEET	
6064	341756464	2	A	MDT0009310-008	MR580N1-Y101	1 OF 3




## EXTERIOR DEVICE NAMEPLATES

Device ID	NP. ID	Line 1	Line 2	Type
COM1	1020	BKR PENDANT	PORT	1
COM2	1024	GATEWAY		1
COM3	1026	BKR PENDANT	PORT	1
COM4	1027	LOCAL ETHERNET		1
COM5	1039	BKR PENDANT	PORT	1
LT1	1017	CLOSED		1
LT2	1018	OPEN		1
LT3	1022	CLOSED		1
LT4	1023	OPEN		1
LT5	1029	AUTO		1
LT6	1030	ALARM		1
LT7	1036	CLOSED		1
LT8	1037	OPEN		1
MT1	1021	METERING		1
MT2	1035	METERING		1
PB1	1031	ALARM	RESET	1
PB2	1032	INITIATE	RE-TRANSFER	1
PR1	1019	TIE PROTECTION	RELAY	1
PR2	1025	M1 PROTECTION	RELAY	1
PR3	1038	M2 PROTECTION	RELAY	1
SS7	1028	43-1 MODE	SELECTOR	1

**NAMEPLATE TYPE CODES:**

1 - 2.500" X 0.750" NAMEPLATE, SCREW MOUNTED, WHITE WITH BLACK LETTERS 0.200" HIGH


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E.HUTCHENS		2/21/2019				
APPD		DATE		TITLE		
E.HUTCHENS		2/21/2019		CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.		
S.O.			TYPE		DEVICE NAMEPLATES	
MR580N1			MEDIUM VOLTAGE SWITCHGEAR			
PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET
6064	341756464	2	A	MDT0009310-008	MR580N1-Y101	2 OF 3

## INTERIOR DEVICE NAMEPLATES


Device ID	NP. ID	Line 1	Line 2	Type
C1	1059	83		1
CB1	1041	BKR CONTROL	30 AMP	1
CB2	1042	BKR INTEGRAL	RACKING 15 AMP	1
CB3	1048	BKR CONTROL	30 AMP	1
CB4	1055	BKR INTEGRAL	RACKING 15 AMP	1
CB8	1061	BKR CONTROL	30 AMP	1
CB9	1062	BKR INTEGRAL	RACKING 15 AMP	1
COM6	1070	ETHERENT	SWITCH	1
CR1	1043	95C		1
CR2	1044	95T		1
CR3	1045	95C-T		1
CR4	1046	95T-T		1
CR5	1049	95T/S1		1
CR6	1050	95C		1
CR7	1051	95T		1
CR8	1056	95C/S1		1
CR9	1063	95C		1
CR10	1064	95T		1
CR11	1065	95T-S2		1
CR12	1066	95C-S2		1
CTD1	1040	CAPACITOR TRIP	DEVICE	1
CTD2	1047	CAPACITOR TRIP	DEVICE	1
CTD3	1060	CAPACITOR TRIP	DEVICE	1
FU1	1052	IDEC 120VAC/24VDC	6 AMP	1
FU2	1053	GATEWAY PS	3 AMP	1
FU3	1057	UPS PS	6 AMP	1
FU21	1071	ETHERNET SW PS	3 AMP	1
PS1	1054	120VAC/24VDC	POWER SUPPLY	1
PS2	1058	UPS		1
VS 3_DC	1005	CPT 5 KVA 1-PH		1
VS 3_DD	1006	LINE V.T.s		1
VS 4_DA	1007	LINE V.T.s		1
VS 4_DB	1008	CPT 5 KVA 1-PH		1

**NAMEPLATE TYPE CODES:**

1 - 2.500" X 0.750" NAMEPLATE, SCREW MOUNTED, WHITE WITH BLACK LETTERS 0.200" HIGH

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APPD		DATE		TITLE		
E.HUTCHENS		2/21/2019		CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.		
S.O.			TYPE		DEVICE	
MR580N1			MEDIUM VOLTAGE SWITCHGEAR		NAMEPLATES	
PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET
6064	341756464	2	A	MDT0009310-008	MR580N1-Y101	3 OF 3

REVISION HISTORY				
REV	REVISION DESCRIPTION	BY	APPD	DATE
2	CONSTRUCTION	HUT	EH	2/21/2019

		<b>ISSUED FOR CONSTRUCTION</b> - THE INFORMATION ON THIS DOCUMENT IS SUITABLE FOR USE IN ESTABLISHING FINAL INSTALLATION AND CONSTRUCTION DETAILS.			
		DFTR	DATE	THE INFORMATION ON THIS DOCUMENT IS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT IS SUPPLIED. 	
		E.HUTCHENS	2/21/2019		
		APPD	DATE	TITLE	
		E.HUTCHENS	2/21/2019	CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.	
		S.O.		TYPE	RATING MARKINGS
		MR580N1		MEDIUM VOLTAGE SWITCHGEAR	
PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG
6064	341756464	2	A	MDT0009310-008	MR580N1-Y301
					SHEET
					1 OF 9




Medium Voltage  
Switchgear  
Assembly

**SWITCHGEAR UNIT**

Type:	26 WIDE		
GO:	MDT0009310	Date of Mfr:	
Item:	008		
S.O.:	72YR580	Section	1 of 5
Rated Freq:	60 Hz	Phase:	3
Rated Max Voltage:		5	kV
Power Frequency Withstand:		19	kV
LIWV (BIL):		60	kV
<b>Main Bus Current Ratings</b>			
Continuous:		1200	
Momentary; Peak/RMS Asymmetrical:		97/58	kA
2 second Short Time, RMS Sym:		36	kA
Manufactured In:	Greenwood SC USA		
Instructions:	IB02200001E		
	1C19501H06		

Location: VS 1	4.000" X 4.000" NAMEPLATE, ADHESIVE, BLACK WITH SILVER LETTERS 0.250" HIGH	Id: 1000	1/5
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**ISSUED FOR CONSTRUCTION** - THE INFORMATION ON THIS DOCUMENT IS SUITABLE FOR USE IN ESTABLISHING FINAL INSTALLATION AND CONSTRUCTION DETAILS.

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E.HUTCHENS	2/21/2019	
APPD	DATE	TITLE
E.HUTCHENS	2/21/2019	CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.
S.O.	TYPE	RATING MARKINGS
MR580N1	MEDIUM VOLTAGE SWITCHGEAR	

PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET
6064	341756464	2	A	MDT0009310-008	MR580N1-Y301	2 OF 9



Medium Voltage  
Switchgear  
Assembly

**SWITCHGEAR UNIT**

Type:	26 WIDE		
GO:	MDT0009310	Date of Mfr:	
Item:	008		
S.O:	72YR580	Section	2 of 5
Rated Freq:	60 Hz	Phase:	3
Rated Max Voltage:		5	kV
Power Frequency Withstand:		19	kV
LIWV (BIL):		60	kV
<b>Main Bus Current Ratings</b>			
Continuous:		1200	
Momentary; Peak/RMS Asymmetrical:		97/58	kA
2 second Short Time, RMS Sym:		36	kA
Manufactured In:	Greenwood SC USA		
Instructions:	IB02200001E		
	1C19501H06		

Location: VS 2	4.000" X 4.000" NAMEPLATE, ADHESIVE, BLACK WITH SILVER LETTERS 0.250" HIGH	Id: 1001	2/5
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E.HUTCHENS		2/21/2019					
APPD		DATE		TITLE			
E.HUTCHENS		2/21/2019		CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.			
S.O.		TYPE		RATING		MARKINGS	
MR580N1		MEDIUM VOLTAGE SWITCHGEAR					
PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET	
6064	341756464	2	A	MDT0009310-008	MR580N1-Y301	3 OF 9	




Medium Voltage  
Switchgear  
Assembly

**SWITCHGEAR UNIT**

Type:	26 WIDE		
GO:	MDT0009310	Date of Mfr:	
Item:	008		
S.O.:	72YR580	Section	3 of 5
Rated Freq:	60 Hz	Phase:	3
Rated Max Voltage:		5	kV
Power Frequency Withstand:		19	kV
LIWV (BIL):		60	kV
<b>Main Bus Current Ratings</b>			
Continuous:		1200	
Momentary; Peak/RMS Asymmetrical:		97/58	kA
2 second Short Time, RMS Sym:		36	kA
Manufactured In:	Greenwood SC USA		
Instructions:	IB02200001E		
	1C19501H06		

Location: VS 3	4.000" X 4.000" NAMEPLATE, ADHESIVE, BLACK WITH SILVER LETTERS 0.250" HIGH	Id: 1002	3/5
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E.HUTCHENS	2/21/2019	
APPD	DATE	TITLE
E.HUTCHENS	2/21/2019	CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.
S.O.	TYPE	RATING MARKINGS
MR580N1	MEDIUM VOLTAGE SWITCHGEAR	

PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET
6064	341756464	2	A	MDT0009310-008	MR580N1-Y301	4 OF 9




Medium Voltage  
Switchgear  
Assembly

**SWITCHGEAR UNIT**

Type:	26 WIDE		
GO:	MDT0009310	Date of Mfr:	
Item:	008		
S.O:	72YR580	Section	4 of 5
Rated Freq:	60 Hz	Phase:	3
Rated Max Voltage:		5	kV
Power Frequency Withstand:		19	kV
LIWV (BIL):		60	kV
<b>Main Bus Current Ratings</b>			
Continuous:		1200	
Momentary; Peak/RMS Asymmetrical:		97/58	kA
2 second Short Time, RMS Sym:		36	kA
Manufactured In:	Greenwood SC USA		
Instructions:	IB02200001E		
	1C19501H06		

Location: VS 4	4.000" X 4.000" NAMEPLATE, ADHESIVE, BLACK WITH SILVER LETTERS 0.250" HIGH	Id: 1003	4/5
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E.HUTCHENS	2/21/2019		
APPD	DATE	TITLE	
E.HUTCHENS	2/21/2019	CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.	
S.O.		TYPE	RATING MARKINGS
	MR580N1	MEDIUM VOLTAGE SWITCHGEAR	

PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET
6064	341756464	2	A	MDT0009310-008	MR580N1-Y301	5 OF 9



Medium Voltage  
Switchgear  
Assembly

**SWITCHGEAR UNIT**


Type:	26 WIDE		
GO:	MDT0009310	Date of Mfr:	
Item:	008		
S.O.:	72YR580	Section	5 of 5
Rated Freq:	60 Hz	Phase:	3
Rated Max Voltage:		5	kV
Power Frequency Withstand:		19	kV
LIWV (BIL):		60	kV
<b>Main Bus Current Ratings</b>			
Continuous:		1200	
Momentary; Peak/RMS Asymmetrical:		97/58	kA
2 second Short Time, RMS Sym:		36	kA
Manufactured In:	Greenwood SC USA		
Instructions:	IB02200001E		
	1C19501H06		

Location: VS 5	4.000" X 4.000" NAMEPLATE, ADHESIVE, BLACK WITH SILVER LETTERS 0.250" HIGH	Id: 1004	5/5
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E.HUTCHENS		2/21/2019					
APPD		DATE		TITLE			
E.HUTCHENS		2/21/2019		CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.			
S.O.		TYPE		RATING		MARKINGS	
MR580N1		MEDIUM VOLTAGE SWITCHGEAR					
PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET	
6064	341756464	2	A	MDT0009310-008	MR580N1-Y301	6 OF 9	



BUS TRANSITION TO MCC			
Upper Circuit			
Location: VS 1	4.320" X 1.000" NAMEPLATE, SCREW MOUNTED, WHITE WITH BLACK LETTERS 0.200" HIGH	Id: 1012	1/5
TIE BREAKER			
Upper Circuit			
Location: VS 2	4.320" X 1.000" NAMEPLATE, SCREW MOUNTED, WHITE WITH BLACK LETTERS 0.200" HIGH	Id: 1013	2/5
TRANSFER CONTROLS			
Upper Circuit			
Location: VS 3	4.320" X 1.000" NAMEPLATE, SCREW MOUNTED, WHITE WITH BLACK LETTERS 0.200" HIGH	Id: 1014	3/5
VOLTAGE TRANSFORMERS B CONTROL TRANSFORMER B			
Upper Circuit			
Location: VS 4	4.320" X 1.000" NAMEPLATE, SCREW MOUNTED, WHITE WITH BLACK LETTERS 0.200" HIGH	Id: 1015	4/5
BUS TRANSITION TO MCC			
Upper Circuit			
Location: VS 5	4.320" X 1.000" NAMEPLATE, SCREW MOUNTED, WHITE WITH BLACK LETTERS 0.200" HIGH	Id: 1016	5/5


<b>ISSUED FOR CONSTRUCTION</b> - THE INFORMATION ON THIS DOCUMENT IS SUITABLE FOR USE IN ESTABLISHING FINAL INSTALLATION AND CONSTRUCTION DETAILS.						
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E.HUTCHENS		2/21/2019				
APPD		DATE		TITLE		
E.HUTCHENS		2/21/2019		CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.		
S.O.			TYPE		RATING MARKINGS	
MR580N1			MEDIUM VOLTAGE SWITCHGEAR			
PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET
6064	341756464	2	A	MDT0009310-008	MR580N1-Y301	7 OF 9

MAIN BREAKER A			
Lower Circuit			
Location: VS 2	4.320" X 1.000" NAMEPLATE, SCREW MOUNTED, WHITE WITH BLACK LETTERS 0.200" HIGH	Id: 1009	1/3
VOLTAGE TRANSFORMERS A CONTROL TRANSFORMER A			
Lower Circuit			
Location: VS 3	4.320" X 1.000" NAMEPLATE, SCREW MOUNTED, WHITE WITH BLACK LETTERS 0.200" HIGH	Id: 1010	2/3
MAIN BREAKER B			
Lower Circuit			
Location: VS 4	4.320" X 1.000" NAMEPLATE, SCREW MOUNTED, WHITE WITH BLACK LETTERS 0.200" HIGH	Id: 1011	3/3

<b>ISSUED FOR CONSTRUCTION</b> - THE INFORMATION ON THIS DOCUMENT IS SUITABLE FOR USE IN ESTABLISHING FINAL INSTALLATION AND CONSTRUCTION DETAILS.							
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E.HUTCHENS		2/21/2019					
APPD		DATE		TITLE			
E.HUTCHENS		2/21/2019		CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.			
S.O.		MR580N1		TYPE		RATING MARKINGS	
				MEDIUM VOLTAGE SWITCHGEAR			
PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET	
6064	341756464	2	A	MDT0009310-008	MR580N1-Y301	8 OF 9	




REVISION HISTORY				
REV	REVISION DESCRIPTION	BY	APPD	DATE
2	CONSTRUCTION	HUT	EH	2/21/2019
3	UPDATED COMMUNICATION DEVICES	HUT	EH	3/13/2019

		<b>ISSUED FOR CONSTRUCTION</b> - THE INFORMATION ON THIS DOCUMENT IS SUITABLE FOR USE IN ESTABLISHING FINAL INSTALLATION AND CONSTRUCTION DETAILS.		
		DFTR	DATE	THE INFORMATION ON THIS DOCUMENT IS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT IS SUPPLIED. 
		E.HUTCHENS	3/13/2019	
		APPD	DATE	TITLE
		E.HUTCHENS	3/13/2019	CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.
		S.O.		TYPE
		MR580N1		MEDIUM VOLTAGE SWITCHGEAR
				CUSTOMER BOM
PRODUCT CODE	CAGE CODE	REVISION		G.O.
6064	341756464	3	A	MDT0009310-008
				DWG
				MR580N1-P
				SHEET
				1 OF 11


## CONSOLIDATED PARTS

DEVICE ID	DESCRIPTION	PART NUMBER	QTY	MARKING
1ZG, 5ZG	COMPONENT, WES, CABLE CLAMP, 1 BOS	3723A23H02	2	
COM1, COM3, COM5	COMM,RJ-45,M22,ETH,BULKHEAD PASS-THROUGH RECEPTACLE W/ CAP	3A84518G02	3	1020, 1026, 1039
LT1, LT3, LT7	E34 PTT LIGHT RED 120VAC	E34FPB297LRP2A	3	1017, 1022, 1036
LT2, LT4, LT8	E34 PTT LIGHT GREEN 120VAC	E34FPB297LGP2A	3	1018, 1023, 1037
PR1, PR2, PR3	EDR-5000, 8I/11O, ZSI, 61850/MODBUS/DNP3 (RJ45) EDR-5000-2A0HA1	65D1004G26	3	1019, 1025, 1038
SS1, SS2, SS10	SWITCH, ELS, SER 24, BKR CTRL, ELECTROSWITCH	2452D	3	
11133	CAT6 15FT SHIELD CBL 600V BLUE SUPERCEDES CAT6-15	EY6FEN1006015	3	
	ALUMINUM ID LABEL VC-W SWGR GREENWOOD MV SWGR PRODUCTS MASTER DOCUMENT IS ASHEVILLE CONTROLLED	478C642H15	1	
MT1, MT2	PXM2280 METER/DISPLAY 60HZ 5A 90-265V AC/DC	PXM2280MA65105	2	1021, 1035
10440, 10717	CAT6 20FT SHIELD CBL 600V BLUE SUPERCEDES CAT6-20	EY6FEN1006020	4	
CB1, CB3, CB8	PROT/CTRL, CH, BREAKER, GHC, 1 CUTLER HAMMER	GHC1030	3	1041, 1048, 1061
CB2, CB4, CB9	WMZS BREAKER 2P 15A 240VAC ONLY	FAZ-B15/2-NA	3	1042, 1055, 1062
CR1, CR2, CR6, CR7, CR9, CR10	FINDER CAT# 22.32.0.120.1320	3A40940H01	6	1043, 1044, 1050, 1051, 1063, 1064
CTD1, CTD2, CTD3	PROT/CTRL, ITI, CAP-TRIP, 120V BOS FROM ITI	CTD-2	3	1040, 1047, 1060
11133, 10440, 10717	5.2 MM TAGS PRINTED 1-10 HORIZONTAL PACK OF 10	XBMZB5H/1	3	
11133, 10440, 10717	5.2 SPRING CLIP 3 WIRE BLUE TB 28-12AWG	XBPT25D12BU	48	
11133, 10440, 10717	END COVER,TB,ETN	XBACPT25D12	3	
11133, 10440, 10717	PARTITION PLATE,TB,ETN	XBATPT4	3	
CT1, CT2, CT3, CT5, CT6	CT STD. SINGLE RATIO 800/5	3A40852G11N	5	
SS3, SS5, SS11	1 SW/MOC-26,OPER TEST & CONN WIRED	7797C24G12	3	
SS4, SS6, SS12	TOC WIRED SW 4A,3B-26 WIDE	7797C20G02	3	
CT4, CT7	ZERO SEQ CT,AMRAN,MODEL CT355, 50:5 A C10, SPEC. DES	CT355-500-01	2	
4ZL	TRML,COMPRESSION 350 KCMIL BOS T&B C# 54872BE	3A40877H12	6	
COM4	EATON RJ45 SOCKET W/ COVER	M22-RJ45-SA	1	1027
LT5	E34, INDICATING LIGHT PUSH TO TEST GREEN LED 24VDC	E34FPB297LGP24	1	1029
LT6	E34, INDICATING LIGHT PUSH TO TEST RED LED 24VDC	E34FPB297LRP24	1	1030
PB1, PB2	PUSHBUTTON, EATON 1N.O. FLUSH BLACK	10250T23B	2	1031, 1032
PLC1	PLC, EATON, HMI MOUNTED BY GREENWOOD	MR580CMH02	1	
SS7	SW,SER-24,4-STG,NP MAN-AUTO	3A84591G02	1	1028
	CAT6 10FT LONG SHIELDED CABLE SUPERCEDES CAT6-10	EY6FEN1006010	3	
C1	RELAY, CH, CN-55, 3POLE SIZE 1 120VAC/60HZ 110VAC/50	CN55DN3AB	1	1059
FU1, FU3	PROT/CTRL,CH,PULL FUSE 2P W/6 AMP	3A40335G07	2	1052, 1057

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E.HUTCHENS		3/13/2019					
APPD		DATE		TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.			
E.HUTCHENS		3/13/2019					
S.O.				TYPE		CUSTOMER BOM	
MR580N1				MEDIUM VOLTAGE SWITCHGEAR			
PRODUCT CODE		CAGE CODE		REVISION		G.O.	
6064		341756464		3 A		MDT0009310-008	
				DWG		SHEET	
				MR580N1-P		2 OF 11	


## CONSOLIDATED PARTS

DEVICE ID	DESCRIPTION	PART NUMBER	QTY	MARKING
MISC1	POWER CORD NEMA 5/15R, 3 CONDU 9 FT LENGTH	079407-04949	1	
PS2	UPS,POWERWARE,5S700,700VA,420W 120VAC	5S700	1	1058
SS13	SW,SER-24,4-STG,NP BLANK	3A84591G01	1	1069
CR3, CR4, CR5, CR8, CR11, CR12	RELAY, SD, SER-219, XBXDPDPT W/SOC	3A40519G06	6	1045, 1046, 1049, 1056, 1065, 1066
	PLC, EATON, ELC MOUNTED BY GREENWOOD	MR580CMH01	1	
3CA, 4BA	CPT 5 KVA 1-PH 4160/240-120V CAST COIL CPT3-60-5-4161-A	506A004H39	2	
FU6, FU7, FU14, FU15, FU19, FU20	FUSE, 5.5KV 4E .81 DIA CAT# 5NCLPT-4E	7186A29G05	6	
FU8, FU9, FU10, FU11, FU12, FU13, FU16, FU17, FU18	PRI-FUSE, CH, CLE, 5.5KV 1.0E CAT.#5NCLPT-1E-1A	5981C05G05	9	
PT1, PT2, PT3, PT4, PT5, PT6	VT PTW3 4200/120V LG,120V SEC BOS ITI# PTW3-1-60-422CWL	1C19636H23	6	
3WL	TRML,COMPRESSION 2/0 AWG BOS T&B C# 54862BE	3A40877H07	3	
COM2	POWER XPRT GATEWAY 900 24 VDC CONTROL POWER	PXG900	1	1024
COM6	MOXA,ETHERNET-SW, 16 PORTS	EDS-316	1	1070
FU2, FU21	PROT/CTRL, CH, PULL FUSE 2P W/ 2 3 AMP FUSES	3A40335G05	2	1053, 1071
PS1	IDEC POWER SUPPLY 125VDC-24VDC 60W	PS5R-VD24	1	1054
	CAT6 2FT SHIELD CBL 600V BLUE SUPERCEDES CAT6-2	EY6FEN1006002	1	
10699	PROT/CTRL, BUS, FUSE 6 AMPERE	73482AJ00G	3	
CB12	WRENCH ASSY, BOLTED	502A850G01	1	
CB13	RAIL EXTENSION LH/RH	7813C41G03	1	
	5/15 KV VACCLAD-W METAL-CLAD SWITCHGEAR INDOOR HOUSINGS 2010	IB02200001E	1	
	5/15KV RENEWAL PARTS LEAFLET	RP02201001E	1	
	INSTRUCTION BOOKLET FOR MR2 INSTRUCTION BOOK FOR MR2	IB022010EN	1	
	INSTRUCTIONS FOR INSTALLATION	IB022014EN	1	
	LABEL, ELEC ARC FLASH HAZARD BOS	69B1003H01	1	
	LABEL, SEISMIC IBC/CBC/UBC ASHEVILLE CONTROLLED DOCUMENT	272P088H01	1	
	MISC, PAINT, ANSI 61, 9OZ AERO 12 OZ SPRAY CAN (646548) (REF QUOTE #5258) NOTE P/N WAS 53836SF00K	32220WA00K	2	
	SEISMIC CERTIFICATE BOS	5676B22H01	1	
	VC SWGR, STORAGE INFORMATIN	700B214	1	
CB5, CB6, CB10	50 VCPWND 250, 1200A 60HZ, 3C 120VAC M&C, 120V CAP TRIP 3 CYCLES	3A75630G66	3	
CB14	DOCKABLE DOLLY, CH, VCPW, 5KV	6510C71G02	1	
CB15	LEVERING IN CRANK -CLOSED DOOR	701B601G03	1	
CB16	HANDLE ASSY ASSY	8064A02G01	1	
CB17	LIFT YOKE,NEW ND BKR & DHP-VR	691C607G12	1	

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E.HUTCHENS	3/13/2019					
APPD	DATE	TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.				
E.HUTCHENS	3/13/2019					
S.O.	MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR		CUSTOMER BOM		
PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET
6064	341756464	3	A	MDT0009310-008	MR580N1-P	3 OF 11

## CONSOLIDATED PARTS

DEVICE ID	DESCRIPTION	PART NUMBER	QTY	MARKING
CB18	TEST JUMPER, CH, VCPW, 5KV 26I	1C15331G01	1	
CB19	LIFT DEVICE, CH, BREAKER BOS	1C19086H01	1	
	ADD COMP MAN & IBS TO DETAIL B REMINDER FLAG - ADD MANUALS & IBS TO SHIP DETAIL BOX FOR ALL COMPONENTS	NEEDCOMP&IB/SS	1	
	BREAKER RAMP ROF PAN, FOR 36W ROF STYLE PAN	1C14163G08	1	
	CAT6 30FT SHIELD CBL 600V BLUE SUPERCEDES CAT6-30	EY6FEN1006030	1	
	FUSE 6AMPERE CONTROL	73482J00G	2	
	MR2 PENDANT W/ BKR OPEN/CLOSE REMOTE RACKING MR2 PENDANT	1C19848G01	1	

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E.HUTCHENS	3/13/2019					
APPD	DATE	TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.				
E.HUTCHENS	3/13/2019					
S.O.	MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR		CUSTOMER BOM		
PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET
6064	341756464	3	A	MDT0009310-008	MR580N1-P	4 OF 11

## VERTICAL SECTION 1


DEVICE ID	DESCRIPTION	PART NUMBER	QTY	MARKING
1ZG	COMPONENT, WES, CABLE CLAMP, 1 BOS	3723A23H02	1	

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		<b>DFTR</b> E.HUTCHENS	<b>DATE</b> 3/13/2019	THE INFORMATION ON THIS DOCUMENT IS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT IS SUPPLIED.			
		<b>APPD</b> E.HUTCHENS	<b>DATE</b> 3/13/2019	<b>TITLE</b> CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.			
		<b>S.O.</b> MR580N1		<b>TYPE</b> MEDIUM VOLTAGE SWITCHGEAR		<b>CUSTOMER BOM</b>	
<b>PRODUCT CODE</b> 6064	<b>CAGE CODE</b> 341756464	<b>REVISION</b> 3	<b>A</b>	<b>G.O.</b> MDT0009310-008	<b>DWG</b> MR580N1-P	<b>SHEET</b> 5 OF 11	




## VERTICAL SECTION 2

DEVICE ID	DESCRIPTION	PART NUMBER	QTY	MARKING
COM1, COM3	COMM,RJ-45,M22,ETH,BULKHEAD PASS-THROUGH RECEPTACLE W/ CAP	3A84518G02	2	1020, 1026
LT1, LT3	E34 PTT LIGHT RED 120VAC	E34FPB297LRP2A	2	1017, 1022
LT2, LT4	E34 PTT LIGHT GREEN 120VAC	E34FPB297LGP2A	2	1018, 1023
PR1, PR2	EDR-5000, 8I/11O, ZSI, 61850/MODBUS/DNP3 (RJ45) EDR-5000-2A0HA1	65D1004G26	2	1019, 1025
SS1, SS2	SWITCH, ELS, SER 24, BKR CTRL, ELECTROSWITCH	2452D	2	
11133	CAT6 15FT SHIELD CBL 600V BLUE SUPERCEDES CAT6-15	EY6FEN1006015	3	
	ALUMINUM ID LABEL VC-W SWGR GREENWOOD MV SWGR PRODUCTS MASTER DOCUMENT IS ASHEVILLE CONTROLLED	478C642H15	1	
MT1	PXM2280 METER/DISPLAY 60HZ 5A 90-265V AC/DC	PXM2280MA65105	1	1021
10440	CAT6 20FT SHIELD CBL 600V BLUE SUPERCEDES CAT6-20	EY6FEN1006020	3	
CB1, CB3	PROT/CTRL, CH, BREAKER, GHC, 1 CUTLER HAMMER	GHC1030	2	1041, 1048
CB2, CB4	WMZS BREAKER 2P 15A 240VAC ONLY	FAZ-B15/2-NA	2	1042, 1055
CR1, CR2, CR6, CR7	FINDER CAT# 22.32.0.120.1320	3A40940H01	4	1043, 1044, 1050, 1051
CTD1, CTD2	PROT/CTRL, ITI, CAP-TRIP, 120V BOS FROM ITI	CTD-2	2	1040, 1047
11133, 10440	5.2 MM TAGS PRINTED 1-10 HORIZONTAL PACK OF 10	XBMZB5H/1	2	
11133, 10440	5.2 SPRING CLIP 3 WIRE BLUE TB 28-12AWG	XBPT25D12BU	32	
11133, 10440	END COVER,TB,ETN	XBACPT25D12	2	
11133, 10440	PARTITION PLATE,TB,ETN	XBATPT4	2	
CT1, CT2, CT3	CT STD. SINGLE RATIO 800/5	3A40852G11N	3	
SS3, SS5	1 SW/MOC-26,OPER TEST & CONN WIRED	7797C24G12	2	
SS4, SS6	TOC WIRED SW 4A,3B-26 WIDE	7797C20G02	2	
CT4	ZERO SEQ CT,AMRAN,MODEL CT355, 50:5 A C10, SPEC. DES	CT355-500-01	1	
	TRML,COMPRESSION 350 KCMIL BOS T&B C# 54872BE	3A40877H12	3	

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APPD		DATE		TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.			
E.HUTCHENS		3/13/2019					
S.O.				TYPE		CUSTOMER BOM	
MR580N1				MEDIUM VOLTAGE SWITCHGEAR			
PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET	
6064	341756464	3	A	MDT0009310-008	MR580N1-P	6 OF 11	


### VERTICAL SECTION 3

DEVICE ID	DESCRIPTION	PART NUMBER	QTY	MARKING
COM4	EATON RJ45 SOCKET W/ COVER	M22-RJ45-SA	1	1027
LT5	E34, INDICATING LIGHT PUSH TO TEST GREEN LED 24VDC	E34FPB297LGP24	1	1029
LT6	E34, INDICATING LIGHT PUSH TO TEST RED LED 24VDC	E34FPB297LRP24	1	1030
PB1, PB2	PUSHBUTTON, EATON IN.O. FLUSH BLACK	10250T23B	2	1031, 1032
PLC1	PLC, EATON, HMI MOUNTED BY GREENWOOD	MR580CMH02	1	
SS7	SW,SER-24,4-STG,NP MAN-AUTO	3A84591G02	1	1028
	CAT6 10FT LONG SHIELDED CABLE SUPERCEDES CAT6-10	EY6FEN1006010	1	
C1	RELAY, CH, CN-55, 3POLE SIZE 1 120VAC/60HZ 110VAC/50	CN55DN3AB	1	1059
FU3	PROT/CTRL,CH,PULL FUSE 2P W/6 AMP	3A40335G07	1	1057
MISC1	POWER CORD NEMA 5/15R, 3 CONDU 9 FT LENGTH	079407-04949	1	
PS2	UPS,POWERWARE,5S700,700VA,420W 120VAC	5S700	1	1058
SS13	SW,SER-24,4-STG,NP BLANK	3A84591G01	1	1069
CR3, CR4, CR5, CR8, CR11, CR12	RELAY, SD, SER-219, XBXP DPDT W/SOC	3A40519G06	6	1045, 1046, 1049, 1056, 1065, 1066
	PLC, EATON, ELC MOUNTED BY GREENWOOD	MR580CMH01	1	
3CA	CPT 5 KVA 1-PH 4160/240-120V CAST COIL CPT3-60-5-4161-A	506A004H39	1	
FU6, FU7	FUSE, 5.5KV 4E .81 DIA CAT# 5NCLPT-4E	7186A29G05	2	
FU8, FU9, FU10	PRI-FUSE, CH, CLE, 5.5KV 1.0E CAT.#5NCLPT-1E-1A	5981C05G05	3	
PT1, PT2, PT3	VT PTW3 4200/120V LG,120V SEC BOS ITI# PTW3-1-60-422CWL	1C19636H23	3	
3WL	TRML,COMPRESSION 2/0 AWG BOS T&B C# 54862BE	3A40877H07	3	

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E.HUTCHENS	3/13/2019					
S.O.	MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR		CUSTOMER BOM		
PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET
6064	341756464	3	A	MDT0009310-008	MR580N1-P	7 OF 11

## VERTICAL SECTION 4

DEVICE ID	DESCRIPTION	PART NUMBER	QTY	MARKING
COM2	POWER XPERT GATEWAY 900 24 VDC CONTROL POWER	PXG900	1	1024
COM6	MOXA,ETHERNET-SW, 16 PORTS	EDS-316	1	1070
FU1	PROT/CTRL,CH,PULL FUSE 2P W/6 AMP	3A40335G07	1	1052
FU2, FU21	PROT/CTRL, CH, PULL FUSE 2P W/ 2 3 AMP FUSES	3A40335G05	2	1053, 1071
PS1	IDEC POWER SUPPLY 125VDC-24VDC 60W	PS5R-VD24	1	1054
	CAT6 2FT SHIELD CBL 600V BLUE SUPERCEDES CAT6-2	EY6FEN1006002	1	
COM5	COMM,RJ-45,M22,ETH,BULKHEAD PASS-THROUGH RECEPTACLE W/ CAP	3A84518G02	1	1039
LT7	E34 PTT LIGHT RED 120VAC	E34FPB297LRP2A	1	1036
LT8	E34 PTT LIGHT GREEN 120VAC	E34FPB297LGP2A	1	1037
MT2	PXM2280 METER/DISPLAY 60HZ 5A 90-265V AC/DC	PXM2280MA65105	1	1035
PR3	EDR-5000, 8I/11O, ZSI, 61850/MODBUS/DNP3 (RJ45) EDR-5000-2A0HA1	65D1004G26	1	1038
SS10	SWITCH, ELS, SER 24, BKR CTRL, ELECTROSWITCH	2452D	1	
10717	CAT6 20FT SHIELD CBL 600V BLUE SUPERCEDES CAT6-20	EY6FEN1006020	1	
	CAT6 10FT LONG SHIELDED CABLE SUPERCEDES CAT6-10	EY6FEN1006010	2	
CB8	PROT/CTRL, CH, BREAKER, GHC, 1 CUTLER HAMMER	GHC1030	1	1061
CB9	WMZS BREAKER 2P 15A 240VAC ONLY	FAZ-B15/2-NA	1	1062
CR9, CR10	FINDER CAT# 22.32.0.120.1320	3A40940H01	2	1063, 1064
CTD3	PROT/CTRL, ITI, CAP-TRIP, 120V BOS FROM ITI	CTD-2	1	1060
10717	5.2 MM TAGS PRINTED 1-10 HORIZONTAL PACK OF 10	XBMZB5H/1	1	
10717	5.2 SPRING CLIP 3 WIRE BLUE TB 28-12AWG	XBPT25D12BU	16	
10717	END COVER,TB,ETN	XBACPT25D12	1	
10717	PARTITION PLATE,TB,ETN	XBATPT4	1	
CT5, CT6	CT STD. SINGLE RATIO 800/5	3A40852G11N	2	
SS11	1 SW/MOC-26,OPER TEST & CONN WIRED	7797C24G12	1	
SS12	TOC WIRED SW 4A,3B-26 WIDE	7797C20G02	1	
10699	PROT/CTRL, BUS, FUSE 6 AMPERE	73482AJ00G	3	
FU11, FU12, FU13	PRI-FUSE, CH, CLE, 5.5KV 1.0E CAT.#5NCLPT-1E-1A	5981C05G05	3	
PT4, PT5, PT6	VT PTW3 4200/120V LG,120V SEC BOS ITI# PTW3-1-60-422CWL	1C19636H23	3	
4BA	CPT 5 KVA 1-PH 4160/240-120V CAST COIL CPT3-60-5-4161-A	506A004H39	1	
FU14, FU15	FUSE, 5.5KV 4E .81 DIA CAT# 5NCLPT-4E	7186A29G05	2	
CT7	ZERO SEQ CT,AMRAN,MODEL CT355, 50:5 A C10, SPEC. DES	CT355-500-01	1	
4ZL	TRML,COMPRESSION 350 KCMIL BOS T&B C# 54872BE	3A40877H12	3	

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APPD	DATE	TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.				
E.HUTCHENS	3/13/2019					
S.O.	MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR		CUSTOMER BOM		
PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET
6064	341756464	3	A	MDT0009310-008	MR580N1-P	8 OF 11


## VERTICAL SECTION 5

DEVICE ID	DESCRIPTION	PART NUMBER	QTY	MARKING
5ZG	COMPONENT, WES, CABLE CLAMP, 1 BOS	3723A23H02	1	

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		<b>S.O.</b> MR580N1		<b>TYPE</b> MEDIUM VOLTAGE SWITCHGEAR			<b>CUSTOMER BOM</b>	
<b>PRODUCT CODE</b> 6064	<b>CAGE CODE</b> 341756464	<b>REVISION</b> 3	<b>A</b>	<b>G.O.</b> MDT0009310-008	<b>DWG</b> MR580N1-P	<b>SHEET</b> 9 OF 11		


**DETAIL - ENERGIZATION**

DEVICE ID	DESCRIPTION	PART NUMBER	QTY	MARKING
CB5, CB6, CB10	50 VCPWND 250, 1200A 60HZ, 3C 120VAC M&C, 120V CAP TRIP 3 CYCLES	3A75630G66	3	
CB14	DOCKABLE DOLLY, CH, VCPW, 5KV	6510C71G02	1	
CB15	LEVERING IN CRANK -CLOSED DOOR	701B601G03	1	
CB16	HANDLE ASSY ASSY	8064A02G01	1	
CB17	LIFT YOKE,NEW ND BKR & DHP-VR	691C607G12	1	
CB18	TEST JUMPER, CH, VCPW, 5KV 26I	1C15331G01	1	
CB19	LIFT DEVICE, CH, BREAKER BOS	1C19086H01	1	
FU16, FU17, FU18	PRI-FUSE, CH, CLE, 5.5KV 1.0E CAT.#5NCLPT-1E-1A	5981C05G05	3	
FU19, FU20	FUSE, 5.5KV 4E .81 DIA CAT# 5NCLPT-4E	7186A29G05	2	
	ADD COMP MAN & IBS TO DETAIL B REMINDER FLAG - ADD MANUALS & IBS TO SHIP DETAIL BOX FOR ALL COMPONENTS	NEEDCOMPMB&IB/SS	1	
	BREAKER RAMP ROF PAN, FOR 36W ROF STYLE PAN	1C14163G08	1	
	CAT6 30FT SHIELD CBL 600V BLUE SUPERCEDES CAT6-30	EY6FEN1006030	1	
	FUSE 6AMPERE CONTROL	73482J00G	2	
	MR2 PENDANT W/ BKR OPEN/CLOSE REMOTE RACKING MR2 PENDANT	1C19848G01	1	

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PRODUCT CODE	CAGE CODE	REVISION		G.O.	DWG	SHEET
6064	341756464	3	A	MDT0009310-008	MR580N1-P	10 OF 11

## DETAIL - INSTALLATION

DEVICE ID	DESCRIPTION	PART NUMBER	QTY	MARKING
CB12	WRENCH ASSY, BOLTED	502A850G01	1	
CB13	RAIL EXTENSION LH/RH	7813C41G03	1	
	5/15 KV VACCLAD-W METAL-CLAD SWITCHGEAR INDOOR HOUSINGS 2010	IB02200001E	1	
	5/15KV RENEWAL PARTS LEAFLET	RP02201001E	1	
	INSTRUCTION BOOKLET FOR MR2 INSTRUCTION BOOK FOR MR2	IB022010EN	1	
	INSTRUCTIONS FOR INSTALLATION	IB022014EN	1	
	LABEL, ELEC ARC FLASH HAZARD BOS	69B1003H01	1	
	LABEL, SEISMIC IBC/CBC/UBC ASHEVILLE CONTROLLED DOCUMENT	272P088H01	1	
	MISC, PAINT, ANSI 61, 9OZ AERO 12 OZ SPRAY CAN (646548) (REF QUOTE #5258) NOTE P/N WAS 53836SF00K	32220WA00K	2	
	SEISMIC CERTIFICATE BOS	5676B22H01	1	
	VC SWGR, STORAGE INFORMATIN	700B214	1	

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		APPD	DATE			
E.HUTCHENS	3/13/2019	TITLE	CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.			
S.O.	MR580N1	TYPE	MEDIUM VOLTAGE SWITCHGEAR	CUSTOMER BOM		
PRODUCT CODE	CAGE CODE	REVISION	G.O.	DWG	SHEET	
6064	341756464	3	A	MDT0009310-008	MR580N1-P	11 OF 11

8	7	6	5	4	3	2	1								
REVISION STATUS		SHEET DESCRIPTION													
SHEET	REV														
000	2	REVISION SHEET													
001	2	ABBREVIATIONS & SYMBOLS													
002	2	SECTION AREA, DWG NUMBER SCHEME													
003	2	SWITCH DEVELOPMENT & DEVICE INTERNALS													
		REVISION HISTORY													
REV	REVISION DESCRIPTION				BY	APPD	DATE								
1	CREATED				BRC	EH	12/7/2018								
2	REVISED FOR MFG.				NOF	EH	04/12/2019								
		<b>Issued For Construction</b>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"><small>DFTR</small> BRADY CALLIHAM</td> <td style="width: 50%;"><small>DATE</small> 12/07/2018</td> </tr> <tr> <td><small>APPD</small> ERIC HUTCHENS</td> <td><small>DATE</small> 12/07/2018</td> </tr> <tr> <td><small>PRODUCT CODE</small> 6064</td> <td><small>S.O.</small> MR580N1</td> </tr> <tr> <td><small>REVISION</small> 2</td> <td></td> </tr> </table>		<small>DFTR</small> BRADY CALLIHAM	<small>DATE</small> 12/07/2018	<small>APPD</small> ERIC HUTCHENS	<small>DATE</small> 12/07/2018	<small>PRODUCT CODE</small> 6064	<small>S.O.</small> MR580N1	<small>REVISION</small> 2		<small>THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.</small>	
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<small>PRODUCT CODE</small> 6064	<small>S.O.</small> MR580N1														
<small>REVISION</small> 2															
		<small>The information on this document is suitable for use in establishing final installation and construction details.</small>		<small>TITLE</small> CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.		<small>TYPE</small> MEDIUM VOLTAGE SWITCHGEAR									
		<small>CAGE CODE</small> 341756464		<small>G.O.</small> MDT0009310-008		<small>DWG</small> MR580N1-E									
				<small>LEGEND</small>		<small>SHEET</small> 000									
						<small>COEF1BL_R6</small>									

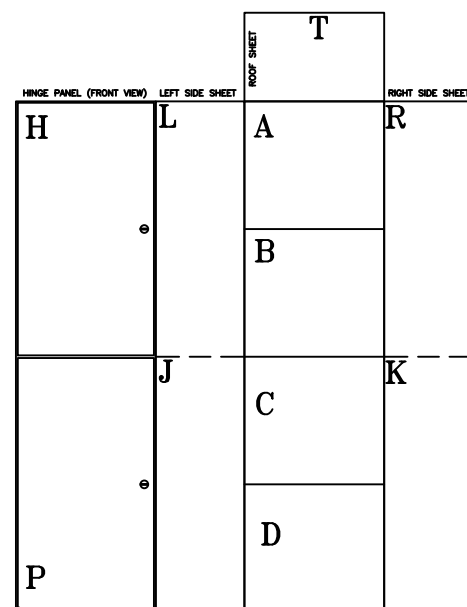
DIAGRAM ABBREVIATIONS	DIAGRAM ABBREVIATIONS	SYMBOLS																																																																																																																															
<p><b>A</b> AMMETER ; AMBER INDICATING LAMP  <b>A/T</b> ALTERNATING CURRENT  <b>ACB</b> AIR CIRCUIT BREAKER  <b>ADDR</b> ADDRESSABLE RELAY  <b>ARR</b> ARRESTOR  <b>AS</b> AMMETER SWITCH  <b>AUTO</b> AUTOMATIC  <b>B</b> BLUE INDICATING LAMP  <b>BAT</b> BATTERY  <b>BAT CHR</b> BATTERY CHARGER  <b>BKR</b> BREAKER  <b>BP</b> BY-PASS SW  <b>C</b> CLOSE ; CLEAR INDICATING LAMP  <b>CAP</b> CAPACITOR  <b>CKT</b> CIRCUIT  <b>COM</b> COMMON  <b>COMPT</b> COMPARTMENT  <b>CONN</b> CONNECTED POSITION SWITCH  <b>CPT</b> CONTROL POWER TRANSFORMER  <b>CTD</b> CAPACITOR TRIP DEVICE  <b>CS</b> CONTROL SWITCH  <b>CSW</b> CRANK SHAFT SWITCH  <b>CT</b> CURRENT TRANSFORMER  <b>CUST</b> CUSTOMER  <b>DC</b> DIRECT CURRENT  <b>DEV</b> DEVICE  <b>DIAG</b> DIAGRAM  <b>DIFF</b> DIFFERENTIAL  <b>DIR</b> DIRECTION  <b>DISC</b> DISCONNECTED POSITION SWITCH  <b>DMV</b> DIGITRIP MV (OVERCURRENT TRIP UNIT)  <b>DPDT</b> DOUBLE POLE DOUBLE THROW  <b>DPST</b> DOUBLE POLE SINGLE THROW  <b>DSW</b> DOOR SWITCH  <b>ELEM</b> ELEMENTARY  <b>EMER</b> EMERGENCY  <b>ENCL</b> ENCLOSURE  <b>EQUIP</b> EQUIPMENT  <b>ETM</b> ELAPSED TIME METER  <b>EXC</b> EXCITATION EXCITER  <b>F</b> FREQUENCY METER  <b>F/T</b> FREQUENCY TRANSUDUCER  <b>FB</b> FUSE BLOCK  <b>FDR</b> FEEDER  <b>FLD</b> FIELD  <b>FU</b> FUSE  <b>FUT</b> FUTURE  <b>FV</b> FRONT VIEW  <b>G</b> GREEN INDICATING LAMP  <b>GEN</b> GENERATOR  <b>GFI</b> GROUND FAULT INTERRUPTER  <b>GFR</b> GROUND FAULT RECEPTACLE  <b>GOV</b> GOVERNOR  <b>GRD</b> GROUND  <b>HP</b> HORSEPOWER  <b>HR</b> HEATER  <b>HZ</b> CYCLES PER SECOND  <b>INC</b> INCOMING  <b>INST</b> INSTANTANEOUS  <b>KV</b> KILOVOLT  <b>KVA</b> KILOVOLT-AMPERE  <b>LA</b> LIGHTNING ARRESTOR  <b>LC</b> LATCH CHECK SWITCH  <b>LH</b> LEFT HAND  <b>LTD</b> LOCKOUT TAGOUT SWITCH  <b>LS</b> LIMIT SWITCH  <b>LT</b> LIGHT  <b>mA</b> MILLIAMPERE  <b>MAN</b> MANUAL  <b>MECH</b> MECHANISM ; MECHANICAL  <b>MFD</b> MICROFARAD  <b>MFG</b> MANUFACTURE ; MANUFACTURING  <b>MISC</b> MISCELLANEOUS  <b>MPSR</b> MOTOR PROTECTION SYSTEM  <b>MOO</b> MESH OPER CELL SW (SHOWN FOR BREAKER IN OPEN POSITION)  <b>MOT</b> MOTOR  <b>MTD</b> MOUNTED  <b>NC</b> NORMALLY CLOSED  <b>NEG</b> NEGATIVE  <b>NEUT</b> NEUTRAL  <b>NO</b> NORMALLY OPEN  <b>NP</b> NAMEPLATE  <b>O</b> OFF  <b>OC</b> OVERCURRENT  <b>OPER</b> OPERATION ; OPERATED  <b>PB</b> PUSHBUTTON  <b>PF</b> POWER FACTOR METER  <b>PF/T</b> POWER FACTOR TRANSUDUCER  <b>PH</b> PHASE  <b>PNL</b> PANEL  <b>POS</b> POSITIVE  <b>POT</b> POTENTIAL  <b>PR</b> PRIMARY  <b>PS</b> POSITION SWITCH  <b>PT</b> POTENTIAL TRANSFORMER  <b>PROTEC-Z</b> SHIMMER  <b>R</b> RED INDICATING LAMP  <b>REAC</b> REACTOR  <b>RECL</b> RECLOSING  <b>RECP</b> RECEPTACLE  <b>REM</b> REMOTE  <b>RES</b> RESISTOR  <b>REV</b> REVERSE ; REVERSE  <b>RH</b> RIGHT HAND  <b>RHED</b> RHEOSTAT  <b>RTD</b> RESISTANCE TEMPERATURE DETECTOR  <b>RV</b> REAR VIEW  <b>SB</b> SHORT CIRCUITING TERMINAL BLOCK  <b>SC</b> OFF AFTER CLOSE  <b>SEC</b> SECONDARY  <b>SH</b> SHEET ; SHUNT ; SHIELD  <b>SO</b> SHOP ORDER</p>	<p><b>SP</b> SPARE  <b>SPDT</b> SINGLE POLE DOUBLE THROW  <b>SPST</b> SINGLE POLE SINGLE THROW  <b>SR</b> SPRING RELEASE COIL  <b>SS</b> SELECTOR SWITCH ; SYNCHRONIZING SWITCH  <b>ST</b> OFF AFTER TRIP  <b>STD</b> STANDARD  <b>SUPV</b> SUPERVISORY  <b>SW</b> SWITCH  <b>SWGR</b> SWITCHGEAR  <b>SYM</b> SYMBOL  <b>SYN</b> SYNCHRONISM ; SYNCHRONIZING ; SYNCHROSCOPE  <b>T</b> TRIP  <b>TC</b> TRIP COIL  <b>TP</b> THYRISTE PROTECTOR  <b>TDOO</b> TIME DELAY DROPOUT  <b>TDPU</b> TIME DELAY PICK UP  <b>TEMP</b> TEMPERATURE  <b>TEST</b> TEST POSITION SWITCH  <b>TOC</b> TRUCK OPER CELL SWITCH (SHOWN FOR BKR IN TEST POSITION)  <b>TS</b> TEST SWITCH  <b>UV</b> UNDERVOLTAGE  <b>V</b> VOLTMETER ; VOLTAGE  <b>V/T</b> VOLTAGE TRANSUDUCER  <b>VAR</b> VARIATOR  <b>VAR/T</b> VAR TRANSUDUCER  <b>VARH</b> VARIATOR HOUR METER  <b>VCP</b> VACUUM CIRCUIT BREAKER  <b>VS</b> VOLTMETER SWITCH ; VERTICAL SECTION  <b>VT</b> VOLTAGE TRANSFORMER  <b>W</b> WATTMETER ; WHITE INDICATING LAMP  <b>W/T</b> WATT TRANSUDUCER  <b>WH</b> WATT HOUR METER  <b>WHD</b> WATT HOUR METER DEMAND  <b>W/T</b> WATT / VAR TRANSUDUCER  <b>XFMR</b> TRANSFORMER  <b>Y</b> ANTI-PUMP RELAY ; YELLOW INDICATING LAMP</p>	<p><b>SYMBOLS</b></p> <p>Labels for symbols include: FUSE, DUMMY FUSE, OPEN CONTACT, CLOSED CONTACT, NORMALLY OPEN BREAKER CONTACT, NORMALLY CLOSED BREAKER CONTACT, MOLDED CASE BREAKER, SWITCH, THYRISTE, OPEN PUSHBUTTON, CLOSED PUSHBUTTON, COIL, LIGHT, PUSH-TO-TEST INDICATING LIGHT, RESISTOR, ADJUSTABLE RESISTOR, CAPACITOR, DIODE, DUPLEX RECEPTACLE, DC RECEPTACLE, 3-WAY SWITCH, SINGLE POLE SWITCH, SWITCH, GROUND CONNECTION, DISCONNECT, HORN, TERMINAL POINT, BATTERY, CIRCUIT BREAKER (THREE LINE), CIRCUIT BREAKER (ONE LINE), CURRENT TRANSFORMER, MULTI-RATIO CURRENT TRANSFORMER, ZERO SEQUENCE TRANSFORMER, TRANSFORMER (VOLTAGE/CURRENT), VOLTAGE TRANSFORMER, AUX CURRENT TRANSFORMER, PROTEC-Z, REMOTE CIRCUIT, ARRESTOR, CAPACITOR, SECONDARY SURGE PROTECTOR.</p>																																																																																																																															
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8 7 6 5 4 3 2 1

SECTION AREAS (TYPICAL)



DRAWING NUMBERING

EXPLANATION OF DRAWING NUMBERING SCHEME

M R580N1-E 002

TYPE OF GEAR  
M - MEDIUM VOLTAGE SWITCHGEAR

DRAWING SHEET NUMBER

SEQUENCE NUMBER  
(4 CHARACTER ORDER NUMBER)

TYPE OF ENCLOSURE  
N1 - INDOOR 26 WIDE 5KV

TYPE OF DRAWING

E - ELECTRICAL LEGEND DRAWING	R - FRONT LAYOUT	P - CUSTOMER BILL OF MATERIAL
S - SCHEMATIC DIAGRAM	I - INTERNAL LAYOUT	V - SECTION VIEW
T - THREE LINE DIAGRAM	O - OUTLINE	Y - NAMEPLATE
W - WIRING DIAGRAM	N - UNIT SCHEDULE	Z - MISC (FOR QA FORM, NOTES)
		K - KEY INTERLOCK

NOTES TO CUSTOMER

PHASOR ROTATION IS 1-2-3 (EXCEPT AS NOTED ON THREE LINE DIAG)  
ALL POWER CONNECTIONS ARE 1-2-3 FROM FRONT TO BACK, LEFT TO RIGHT, OR TOP TO BOTTOM, AS VIEWED FROM BREAKER DRAWOUT SIDE, REGARDLESS OF THE PHASOR ROTATION.

LOCATION OF APPARATUS, WIRES OR CABLES MUST NOT BE DETERMINED FROM DIAGRAM.

DIAGRAMS, DEVICE FUNCTIONS AND NUMBERS ARE ANSI STANDARD.

PANEL CONNECTIONS SHOWN AS VIEWED FROM REAR EXCEPT AS NOTED.

AUXILIARY SWITCH AND CONTACTS ARE SHOWN OPEN, OFF OR DE-ENERGIZED POSITION.

◆ SHOP TO LEAVE WIRES LONG ENOUGH TO REACH ANY POINT ON SHORT CIRCUIT TERMINAL BLOCK

1 CUSTOMER CONNECTION POINTS

1701 TERMINAL BLOCK CONNECTION

WIRE CONNECTION MADE

WIRE CONNECTION NOT MADE

CURRENT AND VOLTAGE TRANSFORMER SYMBOLS SHOW TERMINALS OF THE SAME INSTANTANEOUS POLARITY AS INDICATED AT THE RIGHT.

ALL PROGRAMMABLE CONTACTS IN CLOSE & TRIP CIRCUITS TO BE PROGRAMMED BY CUSTOMER.

SB SHORT CIRCUIT TERMINAL BLOCK

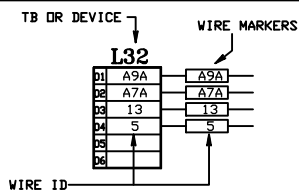
HD HEAVY DUTY TERMINAL BLOCK

TP THYRISTE PROTECTOR

P PULL FUSE

\* CAUTION: CUSTOMER TO REMOVE JUMPERS WHEN CONNECTING TO REMOTE EQUIPMENT.

WIRE ID MARKERS



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TYPE MEDIUM VOLTAGE SWITCHGEAR

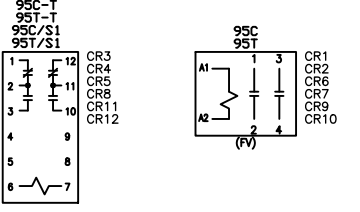
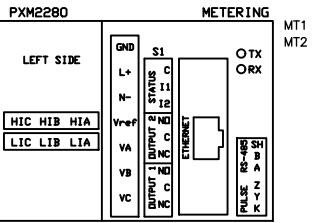
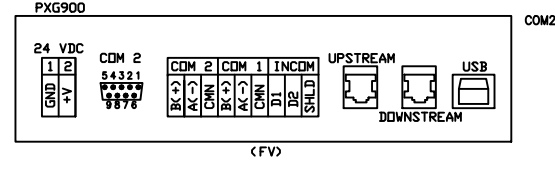
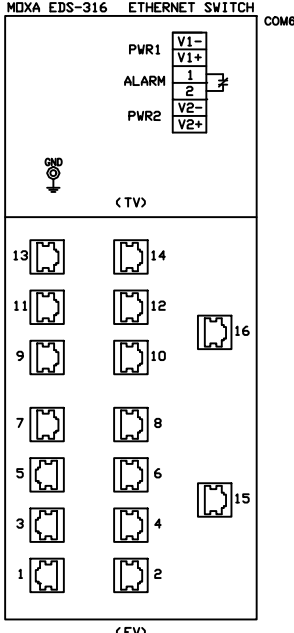
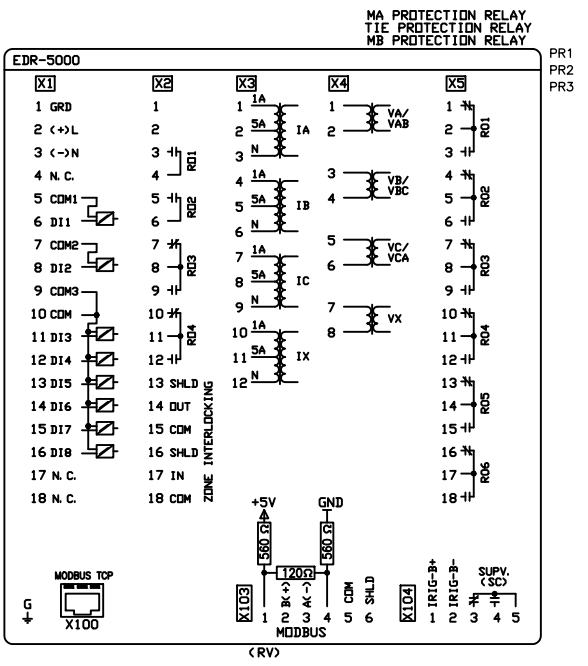
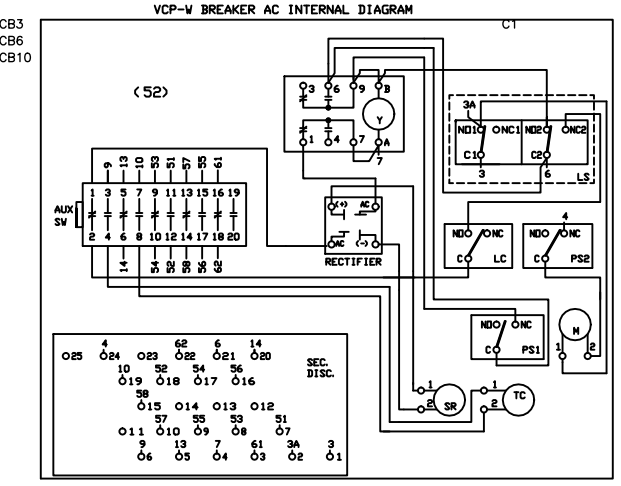
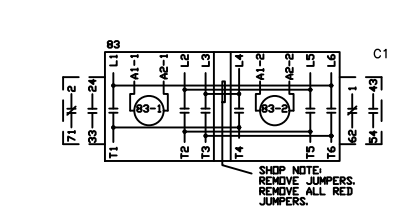
G.O. MDT0009310-008 DWG MR580N1-E

LEGEND

SHEET 002

8 7 6 5 4 3 2 1 COEFBL\_R6

8 7 6 5 4 3 2 1



SS1 SS2 SS10

**BREAKER CONTROL** CS

TRIP  CLOSE  
PULL-TO LOCK

\* = DENOTES MAKE-BEFORE-BREAK  
X INDICATES CONTACTS CLOSED IN POSITION SHOWN

DECK	CONTACTS	POSITION			
		PULL TRIP	TRIP	OFF AFTER TRIP	OFF AFTER CLOSE
1	12-11-13 C				X
	16-11-17 C				X
2	21-11-22 O		X	X	
	25-11-26 O		X	X	
3	* 31-11-38 T	X	X		
	* 41-11-48 TC	X	X		X
4	52-11-53 SC				X
	56-11-57 SC				X

SS7

**AUTO MAN** 43-1

MAN  AUTO

X INDICATES CONTACTS CLOSED IN POSITION SHOWN

DECK	CONTACTS	POSITION	
		MAN	AUTO
1	12-11-13	X	
	16-11-17	X	X
2	22-11-23	X	X
	26-11-27	X	X
3	32-11-33	X	X
	36-11-37	X	X
4	42-11-43	X	X
	46-11-47	X	X

SS13

**UPS BYPASS** UPS BYPASS

OFF  BYPASS

X INDICATES CONTACTS CLOSED IN POSITION SHOWN

DECK	CONTACTS	POSITION	
		OFF	BYPASS
1	12-11-13	X	
	16-11-17	X	X
2	22-11-23	X	X
	26-11-27	X	X
3	32-11-33	X	X
	36-11-37	X	X
4	42-11-43	X	X
	46-11-47	X	X

F  
E  
D  
C  
B  
A

8 7 6 5 4 3 2 1

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DTR BRADY CALLIHAM	DATE 12/07/2018	THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.	
APPD ERIC HUTCHENS	DATE 12/07/2018	TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.	
PRODUCT CODE 6064	S.O. MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR	LEGEND
REVISION 2		G.O. MDT0009310-008	DWG MR580N1-E SHEET 003

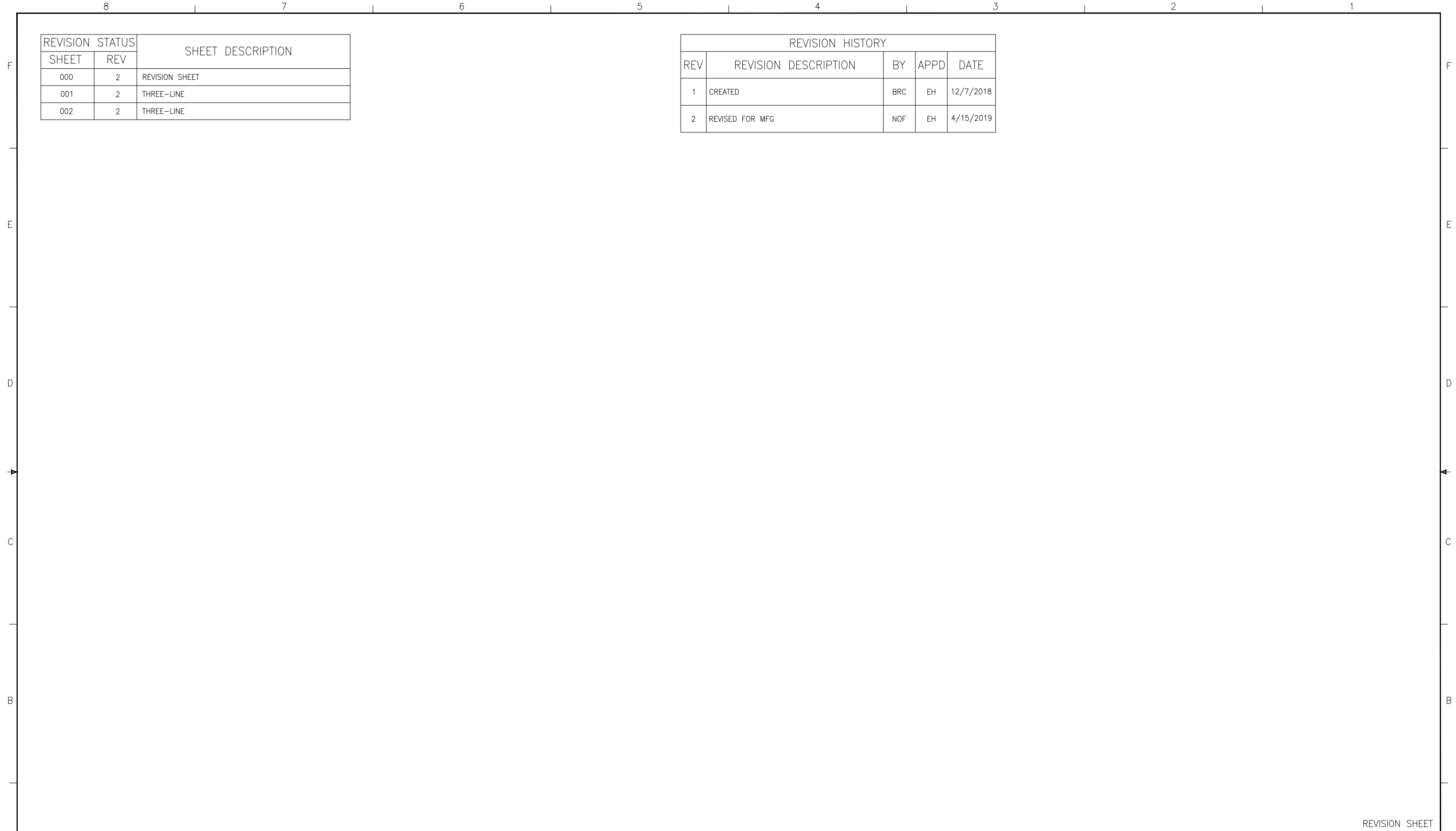
CAGE CODE 341756464



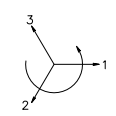

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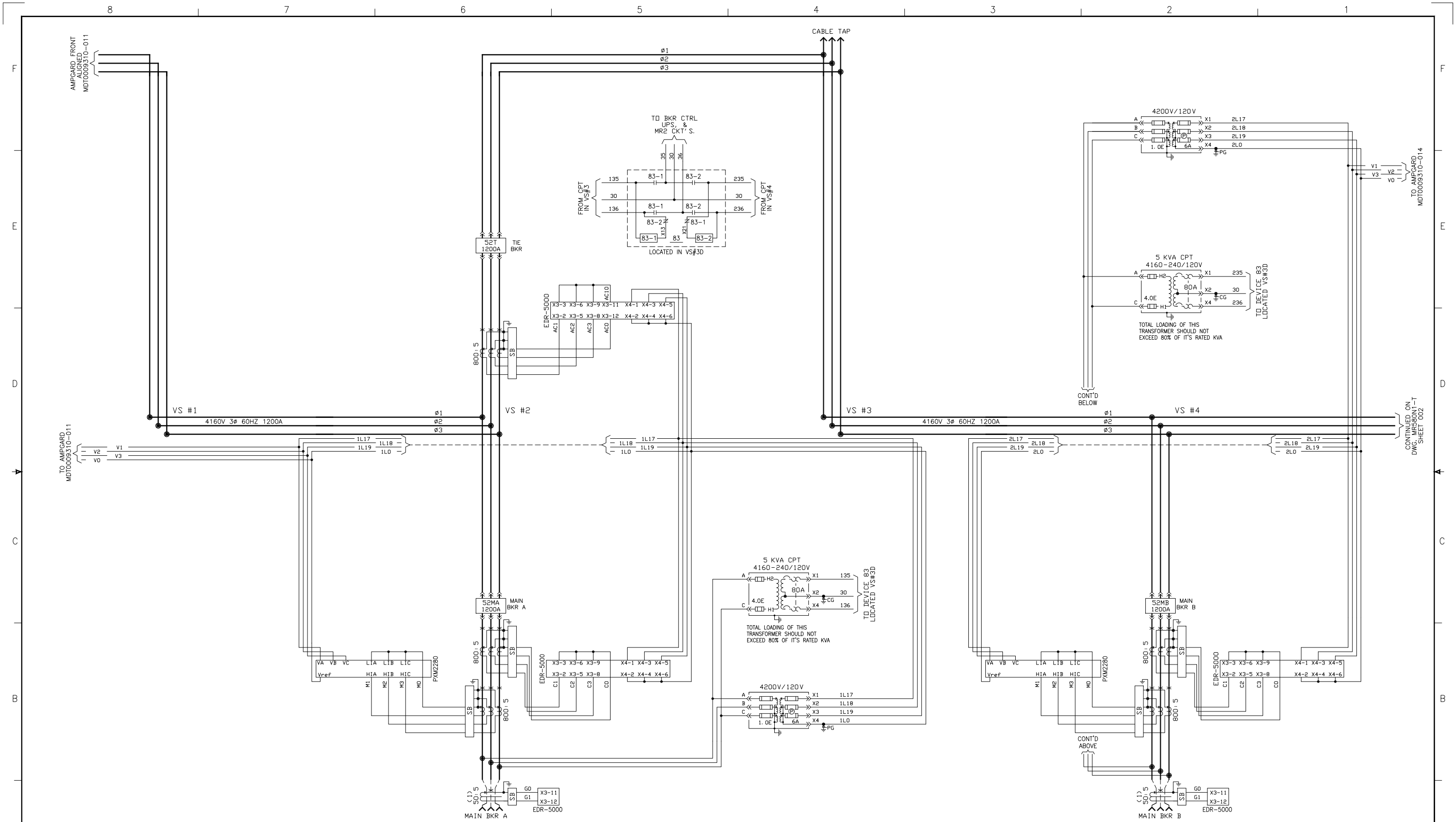
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SHEET	REV	
000	2	REVISION SHEET
001	2	THREE-LINE
002	2	THREE-LINE

REVISION HISTORY				
REV	REVISION DESCRIPTION	BY	APPD	DATE
1	CREATED	BRC	EH	12/7/2018
2	REVISED FOR MFG	NOF	EH	4/15/2019

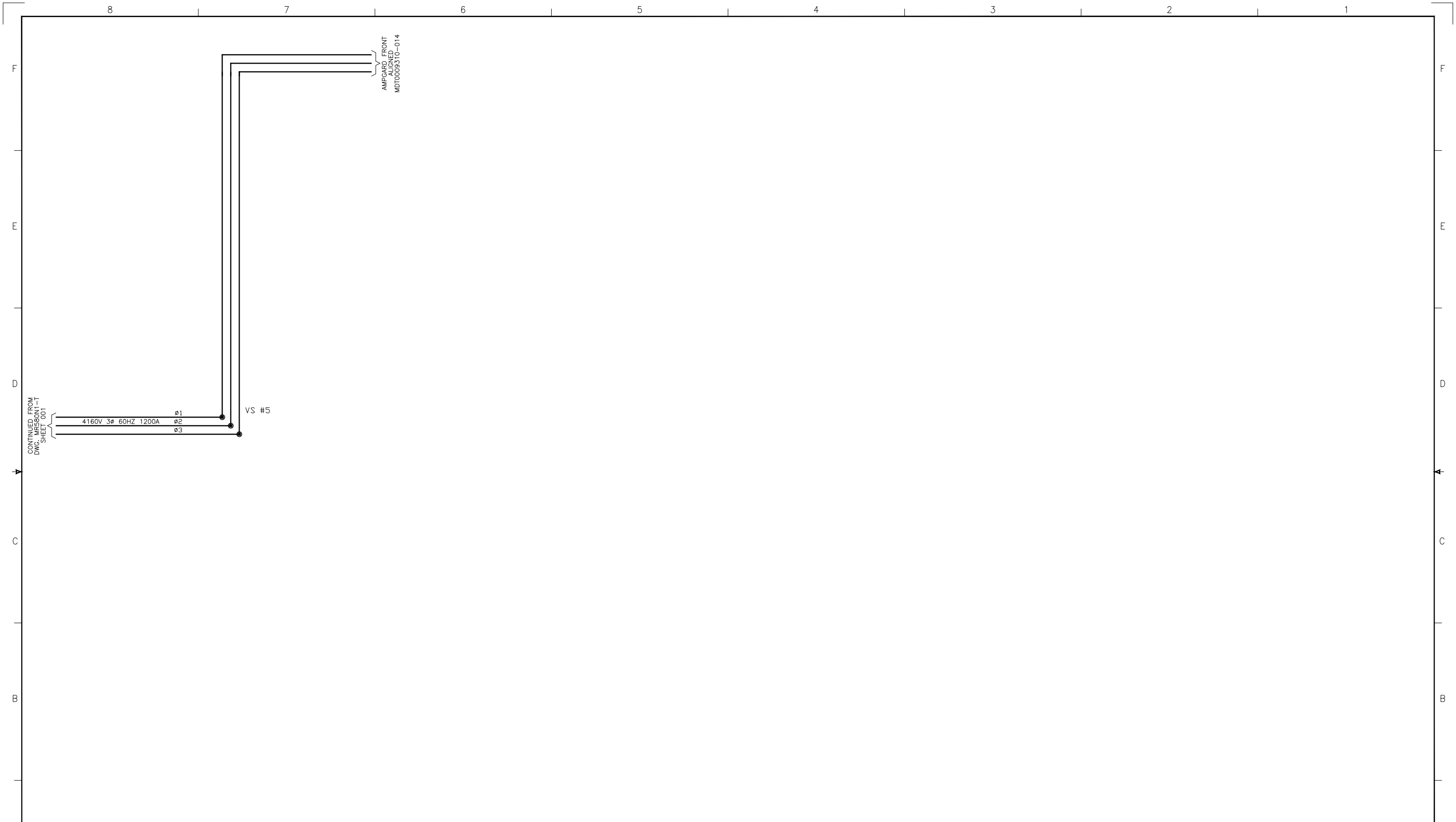


REVISION SHEET

		PHASOR ROTATION 1-2-3 		<b>Issued For Construction</b> The information on this document is suitable for use in establishing final installation and construction details.		DFTR BRADY CALLIHAM DATE 12/07/2018	DATE 12/07/2018	THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.		
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				PRODUCT CODE 6064	S.O. MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR		THREE-LINE		
				CAGE CODE 341756464	REVISION 2		G.O. MDT0009310-008	DWG MR580N1-T	SHEET 000	



PHASOR ROTATION 1-2-3 	<b>Issued For Construction</b> The information on this document is suitable for use in establishing final installation and construction details.		DFTR BRADY CALLIHAM DATE 12/07/2018	THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.		
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	CAGE CODE 341756464	PRODUCT CODE 6064	S.O. MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR		THREE-LINE
	REVISION 2	G.O. MDT0009310-008		DWG <b>MR580N1-T</b>		SHEET 001



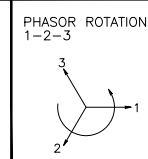
CONTINUED FROM  
DWG. MR580N1-T  
SHEET 001

4160V 3Ø 60HZ 1200A  
ø1  
ø2  
ø3

VS #5

AMPCARD FRONT  
ALIGNED  
MDT0009310-014

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	<p>CAGE CODE 341756464</p>	<p>REVISION 2</p>	<p>S.O. MR580N1</p>	<p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p>	<p>THREE-LINE</p>	<p>G.O. MDT0009310-008</p>	<p>DWG MR580N1-T</p>

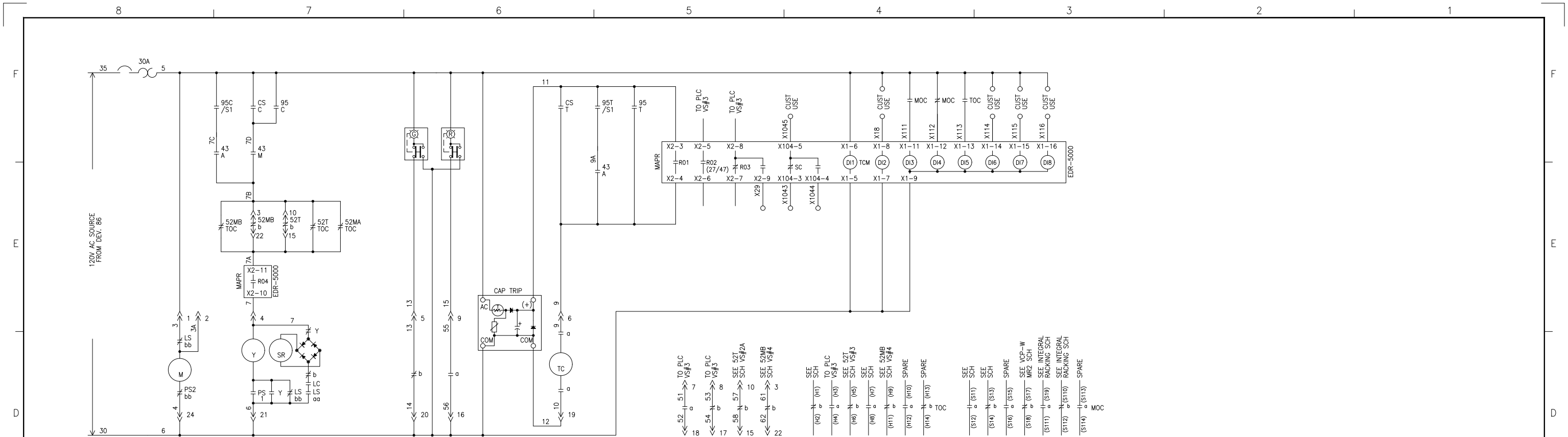
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011	1	SCHEMATIC
012	1	SCHEMATIC

REVISION HISTORY				
REV	REVISION DESCRIPTION	BY	APPD	DATE
1	CREATED	BRC	EH	12/7/2018
2	REVISED FOR MFG	NOF	EH	4/22/2019

REVISION SHEET

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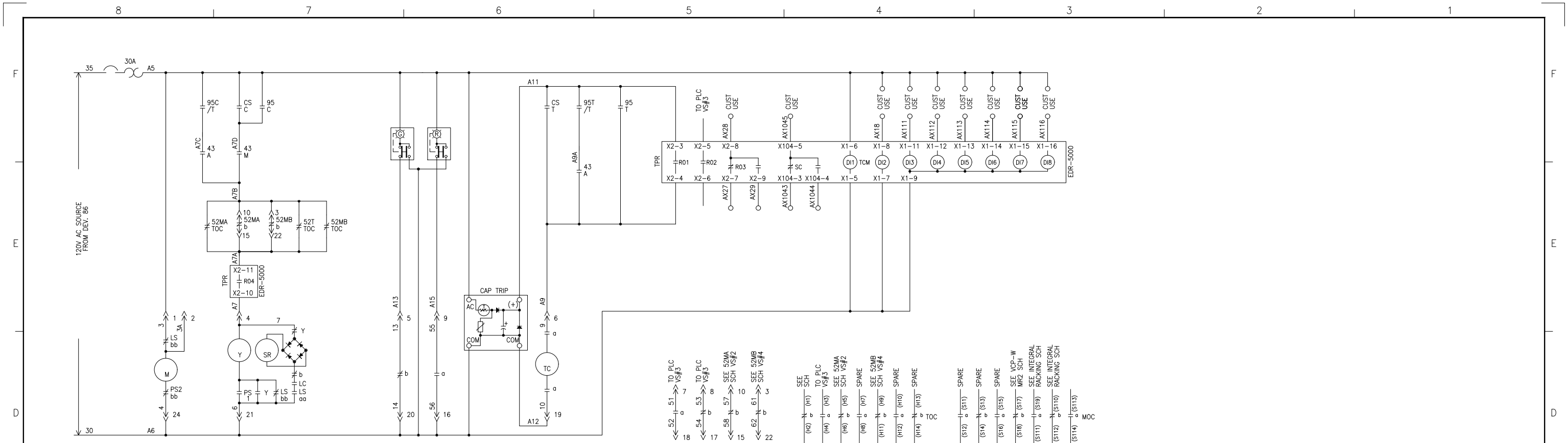
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	CAGE CODE 341756464	REVISION 2	G.O. MDT0009310-008	DWG MR580N1-S	SHEET 000



SCHEMATIC FOR MAIN BREAKER (DEV 52MA)  
VERTICAL SECTION NO. 2D

- 52-51 TO PLC VS#3
- 54-53 TO PLC VS#3
- 58-57 SEE 52T SCH VS#2A
- 62-61 SEE 52MB SCH VS#4
- (H2) SEE SCH (H1)
- (H4) TO PLC VS#3
- (H6) SEE 52T SCH VS#3
- (H8) SEE SCH
- (H11) SEE 52MB SCH VS#4
- (H12) SPARE
- (H14) SPARE
- (S2) SEE SCH (S1)
- (S4) SEE SCH
- (S6) SPARE
- (S18) SEE VCP-W MR2 SCH
- (S111) SEE INTEGRAL RACKING SCH
- (S112) SEE INTEGRAL RACKING SCH
- (S114) SPARE
- TOC
- MOC

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	<p>PRODUCT CODE 6064</p>	<p>S.O. MR580N1</p>	<p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p>		<p>SCHEMATIC</p>
	<p>CAGE CODE 341756464</p>	<p>REVISION 2</p>	<p>G.O. MDT0009310-008</p>	<p>DWG MR580N1-S</p>	<p>SHEET 001</p>

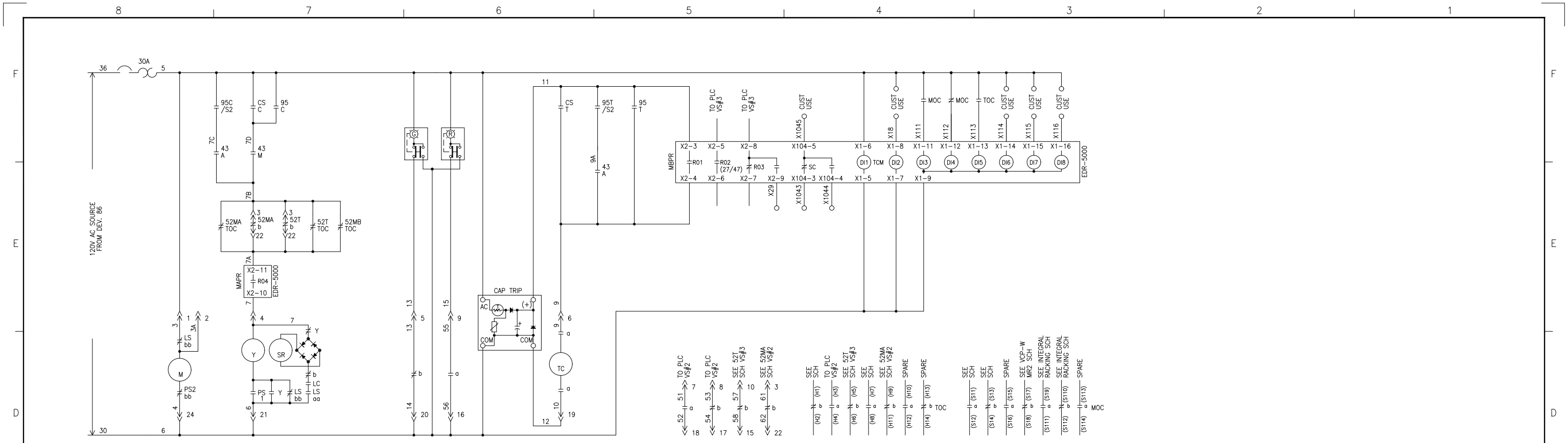


SCHEMATIC FOR TIE BREAKER (DEV 52T)  
VERTICAL SECTION NO. 2A

- 52 TO PLC VS#3 18
- 54 TO PLC VS#3 17
- 55 TO PLC VS#3 17
- 56 TO PLC VS#3 17
- 57 SEE 52MA SCH VS#2 15
- 61 SEE 52MB SCH VS#4 15
- 62 SEE 52MB SCH VS#4 22
- (H2) SEE (H1) SCH TO PLC VS#3
- (H4) SEE (H3) SCH VS#3
- (H6) SEE 52MA SCH VS#2
- (H8) SPARE
- (H11) SEE 52MB SCH VS#4
- (H12) SPARE
- (H14) SEE (H13) SPARE
- (S12) SPARE
- (S14) SPARE
- (S16) SPARE
- (S19) SEE VCP-W MR2 SCH
- (S111) SEE INTEGRAL RACKING SCH
- (S112) SEE INTEGRAL RACKING SCH
- (S114) SEE (S113) MOC

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	<p>PRODUCT CODE 6064</p>	<p>S.O. MR580N1</p>	<p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p>	<p>SCHEMATIC</p>	
	<p>CAGE CODE 341756464</p>	<p>REVISION 2</p>	<p>G.O. MDT0009310-008</p>	<p>DWG MR580N1-S</p>	

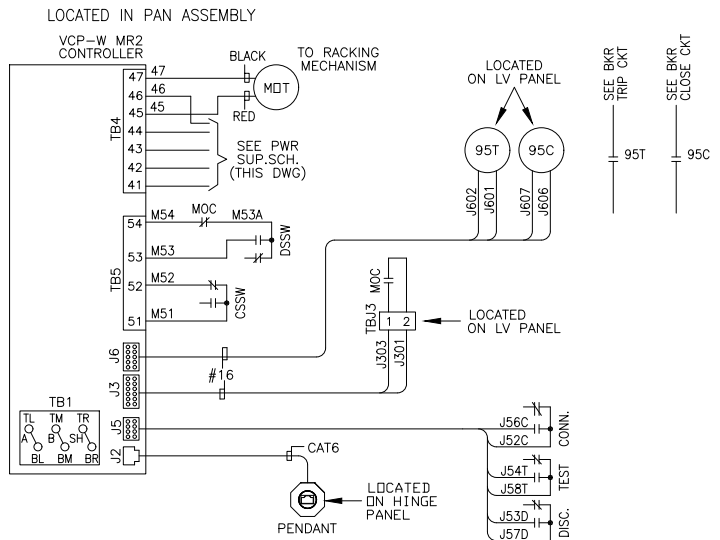
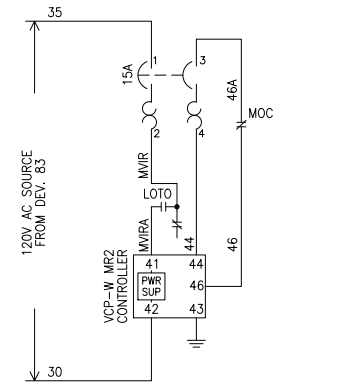
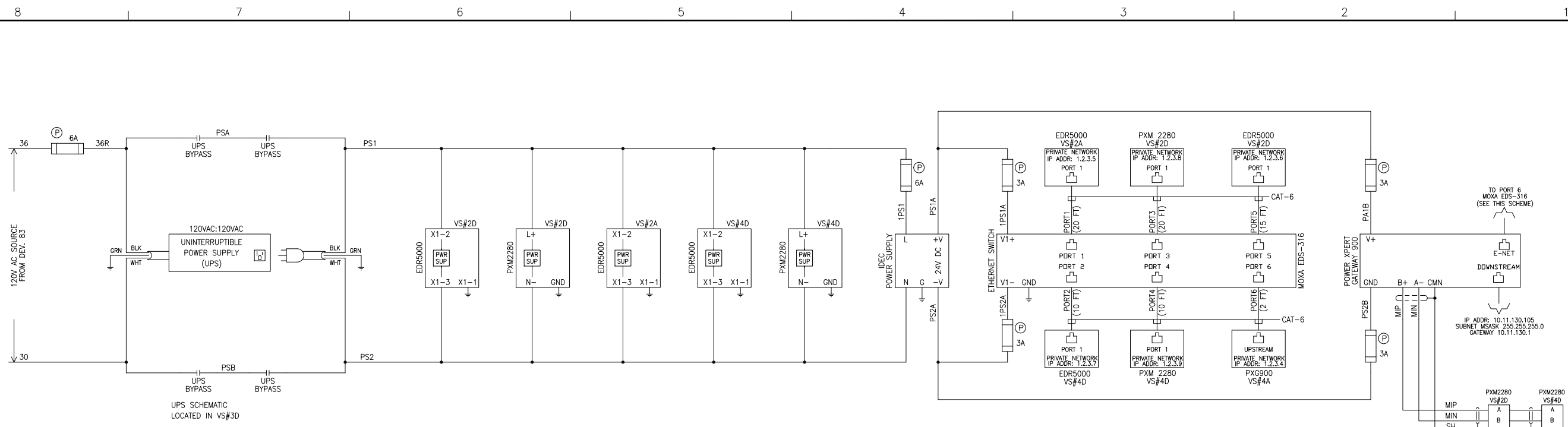




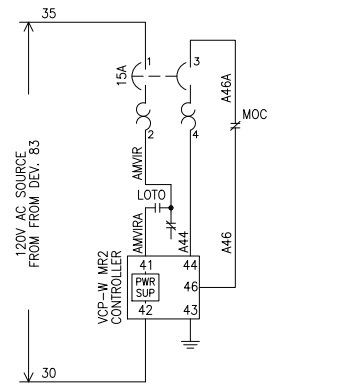
SCHEMATIC FOR MAIN BREAKER B (DEV 52B)  
VERTICAL SECTION NO. 4D

- 52 TO PLC VS#2 18
- 54 TO PLC VS#2 17
- 56 TO PLC VS#2 15
- 58 TO PLC VS#2 10
- 62 TO PLC VS#2 5
- (H2) SEE SCH VS#2
- (H4) SEE SCH VS#2
- (H6) SEE SCH VS#3
- (H8) SEE SCH VS#3
- (H11) SEE 52MA SCH VS#2
- (H12) SEE 52MA SCH VS#2
- (H14) SEE 52MA SCH VS#2
- (S2) SEE VCP-W MR2 SCH
- (S4) SEE INTEGRAL RACKING SCH
- (S6) SEE INTEGRAL RACKING SCH
- (S11) SEE INTEGRAL RACKING SCH
- (S12) SEE INTEGRAL RACKING SCH
- (S14) SEE INTEGRAL RACKING SCH
- (S16) SEE INTEGRAL RACKING SCH
- (S17) SEE INTEGRAL RACKING SCH
- (S19) SEE INTEGRAL RACKING SCH
- (S110) SEE INTEGRAL RACKING SCH
- (S113) SEE INTEGRAL RACKING SCH
- TOC
- MOC

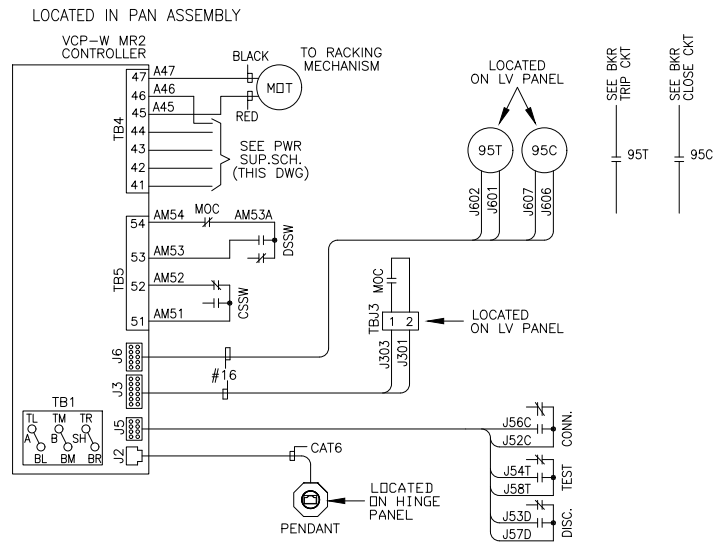
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	CAGE CODE 341756464	REVISION 2	G.O. MDT0009310-008	DWG MR580N1-S SHEET 003	



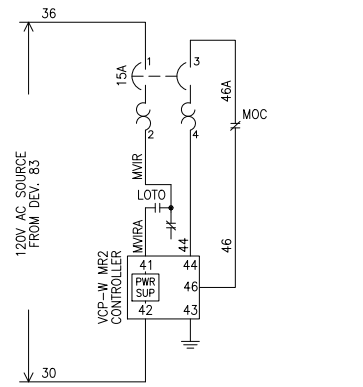
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	CAGE CODE 341756464	REVISION 2	G.O. MDT0009310-008	DWG MR580N1-S SHEET 004	



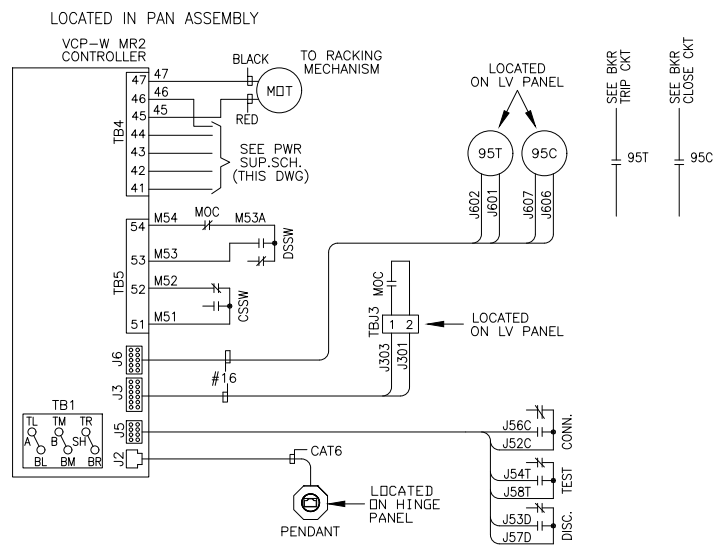
VCP-W MR2 CONTROLLER POWER SUPPLY SCHEMATIC VERTICAL SECTION NO. 2A



INTEGRAL REMOTE RACKING SCHEMATIC VERTICAL SECTION NO. 3A

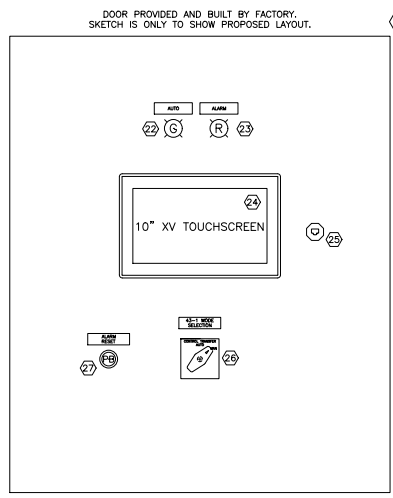
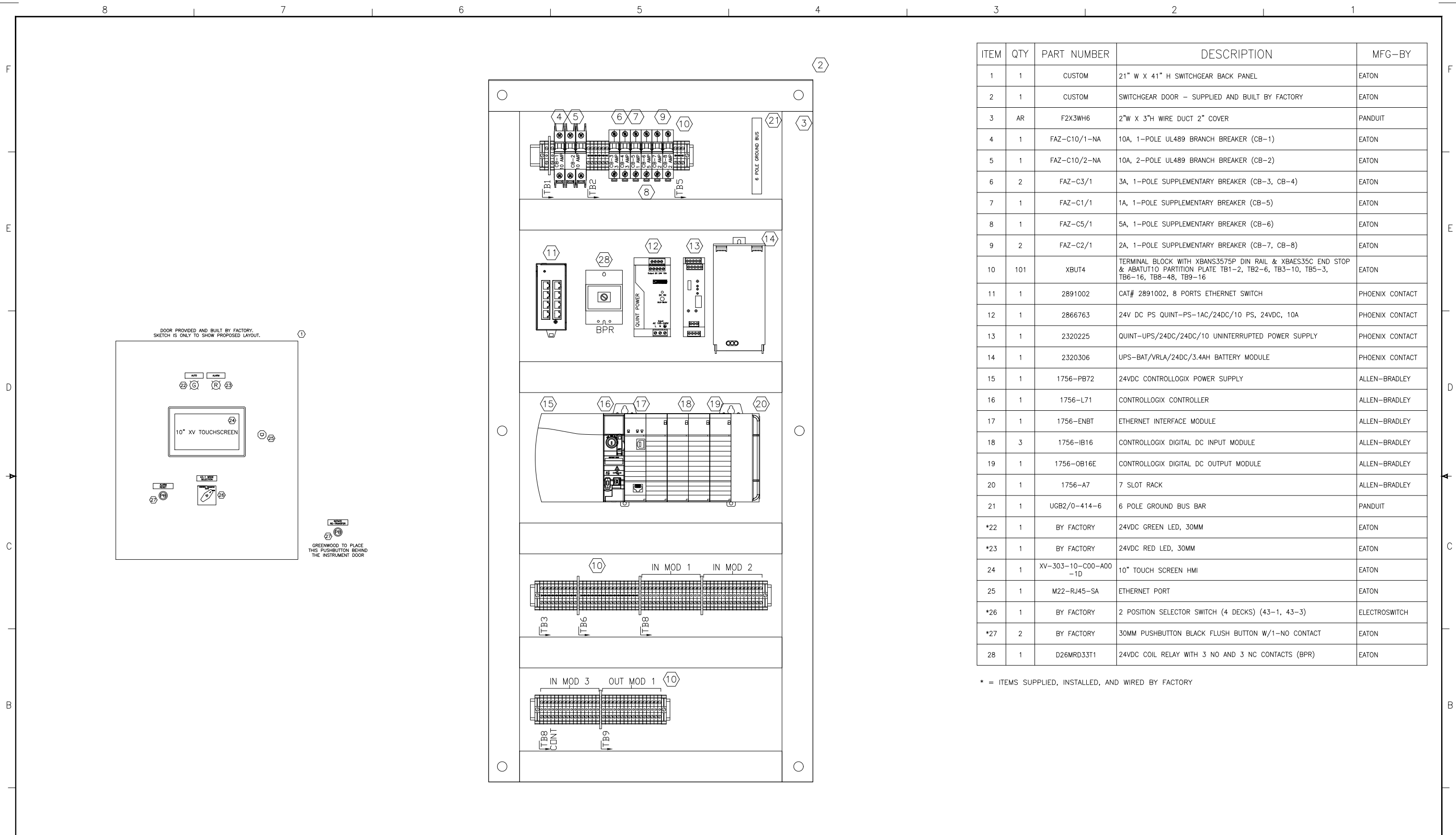


VCP-W MR2 CONTROLLER POWER SUPPLY SCHEMATIC VERTICAL SECTION NO. 4D



INTEGRAL REMOTE RACKING SCHEMATIC VERTICAL SECTION NO. 4D

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	<p>CAGE CODE 341756464</p>	<p>REVISION 2</p>	<p>G.O. MDT0009310-008</p>	<p>DWG MR580N1-S</p>	<p>SHEET 005</p>

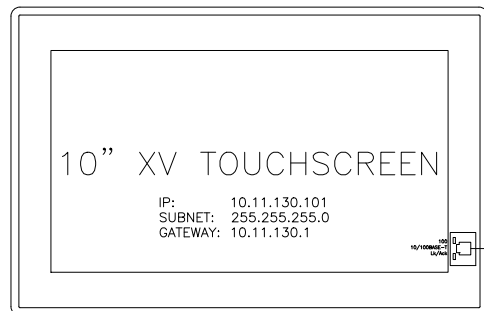


GREENWOOD TO PLACE THIS PUSHBUTTON BEHIND THE INSTRUMENT DOOR

ITEM	QTY	PART NUMBER	DESCRIPTION	MFG-BY
1	1	CUSTOM	21" W X 41" H SWITCHGEAR BACK PANEL	EATON
2	1	CUSTOM	SWITCHGEAR DOOR - SUPPLIED AND BUILT BY FACTORY	EATON
3	AR	F2X3WH6	2"W X 3"H WIRE DUCT 2" COVER	PANDUIT
4	1	FAZ-C10/1-NA	10A, 1-POLE UL489 BRANCH BREAKER (CB-1)	EATON
5	1	FAZ-C10/2-NA	10A, 2-POLE UL489 BRANCH BREAKER (CB-2)	EATON
6	2	FAZ-C3/1	3A, 1-POLE SUPPLEMENTARY BREAKER (CB-3, CB-4)	EATON
7	1	FAZ-C1/1	1A, 1-POLE SUPPLEMENTARY BREAKER (CB-5)	EATON
8	1	FAZ-C5/1	5A, 1-POLE SUPPLEMENTARY BREAKER (CB-6)	EATON
9	2	FAZ-C2/1	2A, 1-POLE SUPPLEMENTARY BREAKER (CB-7, CB-8)	EATON
10	101	XBUT4	TERMINAL BLOCK WITH XBANS3575P DIN RAIL & XBAES35C END STOP & ABATUT10 PARTITION PLATE TB1-2, TB2-6, TB3-10, TB5-3, TB6-16, TB8-48, TB9-16	EATON
11	1	2891002	CAT# 2891002, 8 PORTS ETHERNET SWITCH	PHOENIX CONTACT
12	1	2866763	24V DC PS QUINT-PS-1AC/24DC/10 PS, 24VDC, 10A	PHOENIX CONTACT
13	1	2320225	QUINT-UPS/24DC/24DC/10 UNINTERRUPTED POWER SUPPLY	PHOENIX CONTACT
14	1	2320306	UPS-BAT/VRLA/24DC/3.4AH BATTERY MODULE	PHOENIX CONTACT
15	1	1756-PB72	24VDC CONTROLLOGIX POWER SUPPLY	ALLEN-BRADLEY
16	1	1756-L71	CONTROLLOGIX CONTROLLER	ALLEN-BRADLEY
17	1	1756-ENBT	ETHERNET INTERFACE MODULE	ALLEN-BRADLEY
18	3	1756-IB16	CONTROLLOGIX DIGITAL DC INPUT MODULE	ALLEN-BRADLEY
19	1	1756-OB16E	CONTROLLOGIX DIGITAL DC OUTPUT MODULE	ALLEN-BRADLEY
20	1	1756-A7	7 SLOT RACK	ALLEN-BRADLEY
21	1	UGB2/0-414-6	6 POLE GROUND BUS BAR	PANDUIT
*22	1	BY FACTORY	24VDC GREEN LED, 30MM	EATON
*23	1	BY FACTORY	24VDC RED LED, 30MM	EATON
24	1	XV-303-10-C00-A00-1D	10" TOUCH SCREEN HMI	EATON
25	1	M22-RJ45-SA	ETHERNET PORT	EATON
*26	1	BY FACTORY	2 POSITION SELECTOR SWITCH (4 DECKS) (43-1, 43-3)	ELECTROSWITCH
*27	2	BY FACTORY	30MM PUSHBUTTON BLACK FLUSH BUTTON W/1-NO CONTACT	EATON
28	1	D26MRD33T1	24VDC COIL RELAY WITH 3 NO AND 3 NC CONTACTS (BPR)	EATON

\* = ITEMS SUPPLIED, INSTALLED, AND WIRED BY FACTORY

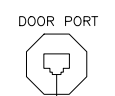
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	<p>APPD ERIC HUTCHENS DATE 12/07/2018</p>	<p>DATE 12/07/2018</p>	<p>TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.</p>		
	<p>PRODUCT CODE 6064</p>	<p>S.O. MR580N1</p>	<p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p>	<p>SCHEMATIC</p>	
	<p>CAGE CODE 341756464</p>	<p>REVISION 2</p>	<p>G.O. MDT0009310-008</p>	<p>DWG MR580N1-S</p>	



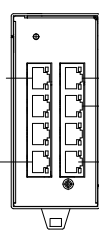
CONTROLLOGIX PLC

POWER SUPPLY	0	1	2	3	4	5	6
1756-PB72	CPU	ETH MOD	16DI 24V DC	16DI 24V DC	16DI 24V DC	16DO 24V DC	
	1756-L71	1756-ENBT	1756-IB16	1756-IB16	1756-IB16	1756-OB16E	

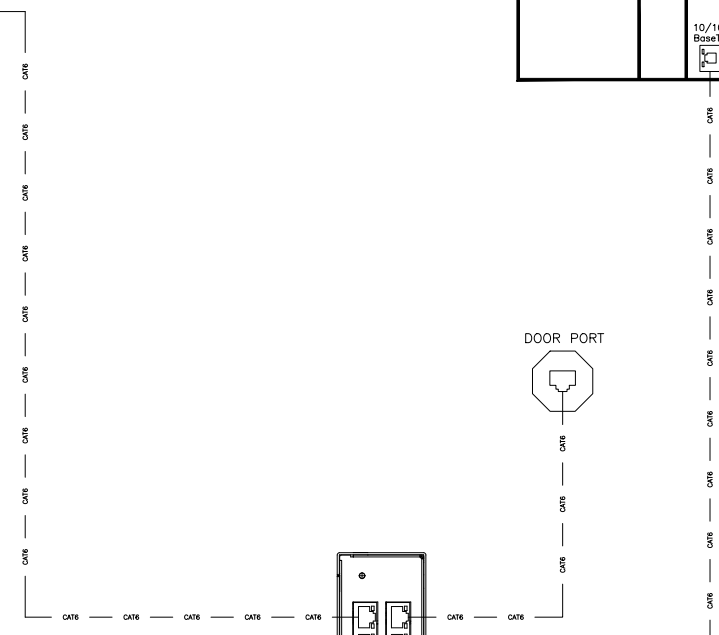
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 SUBNET: 255.255.255.0  
 GATEWAY: 10.11.130.1



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 GATEWAY: 10.11.130.1

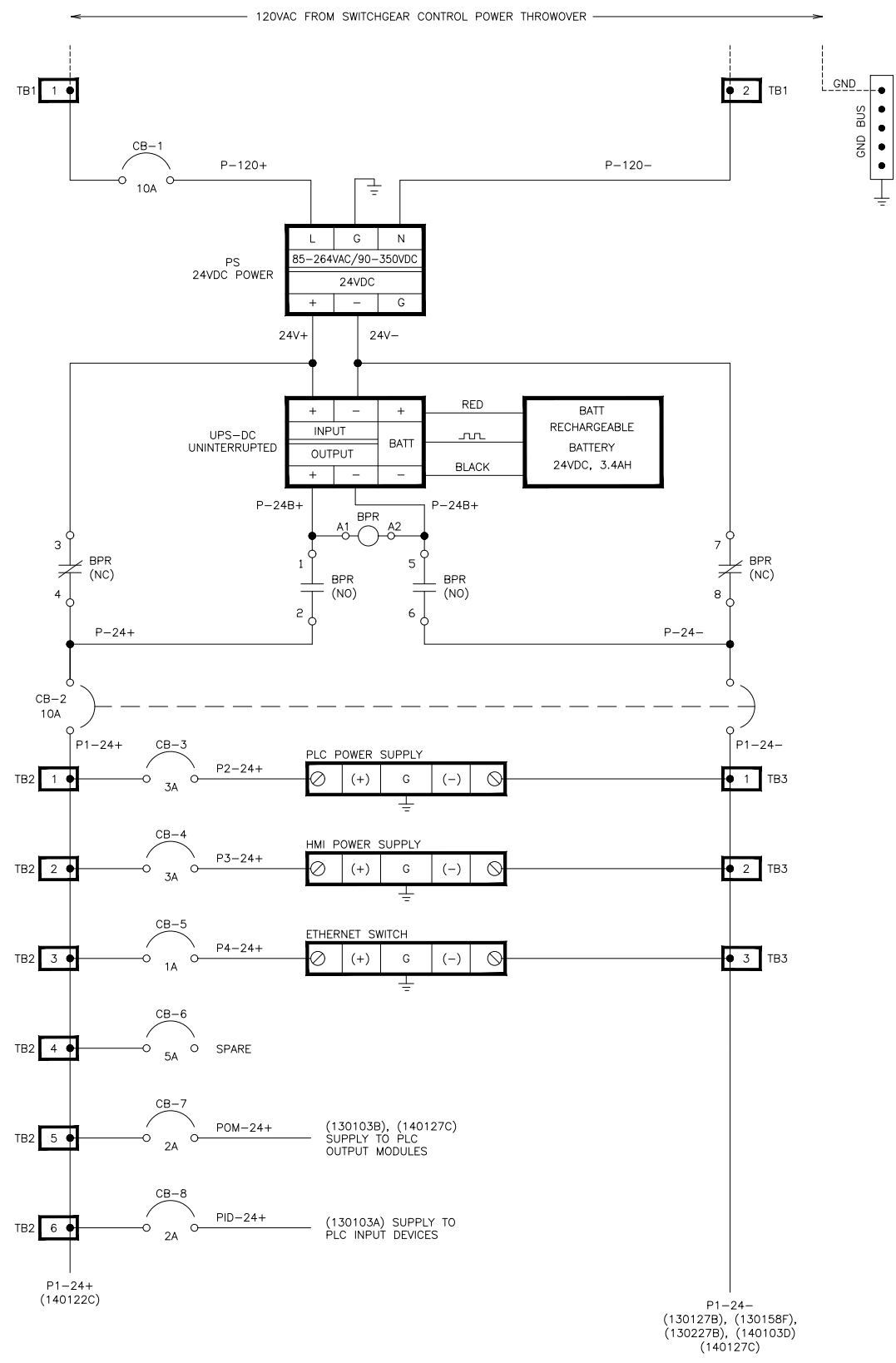


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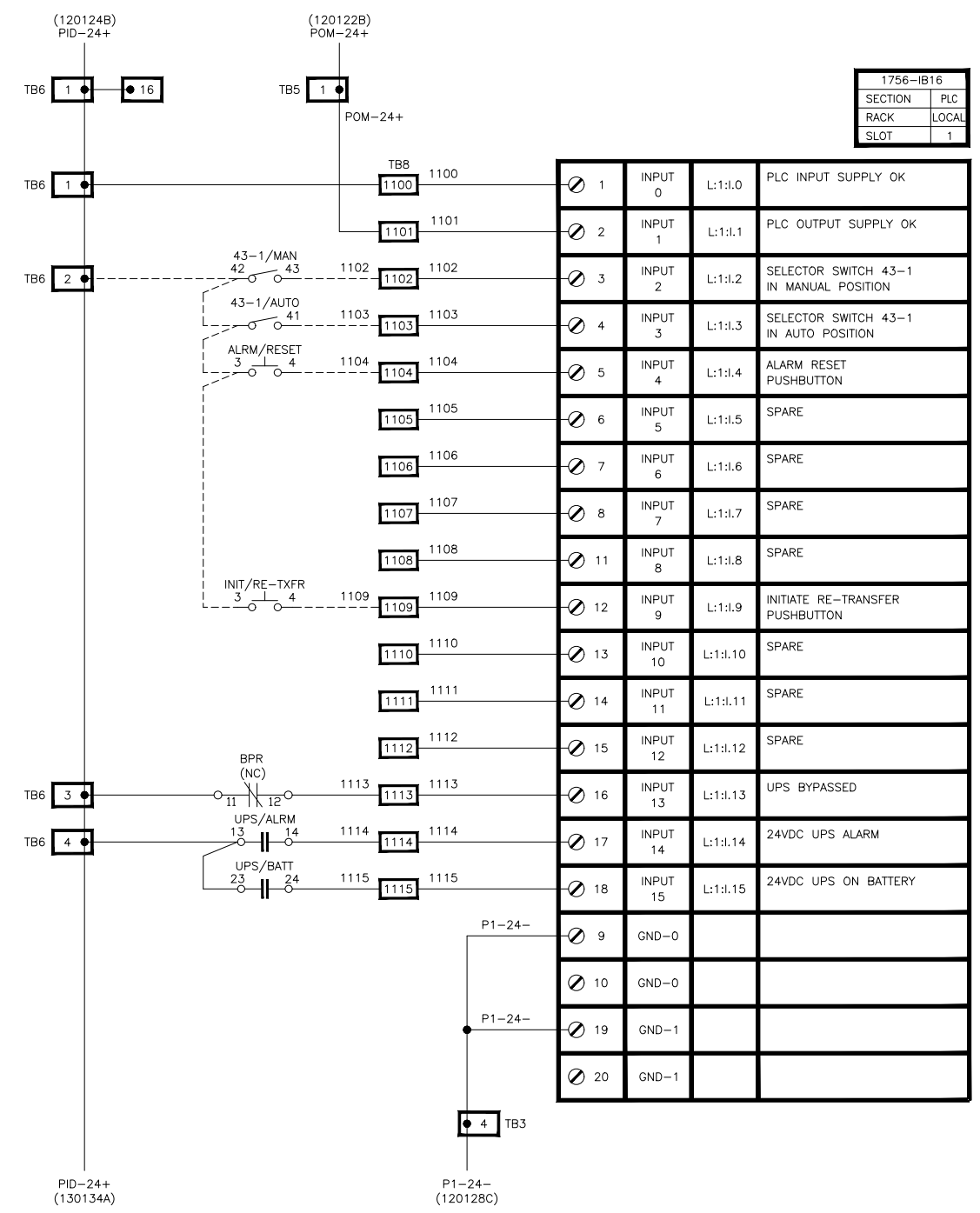


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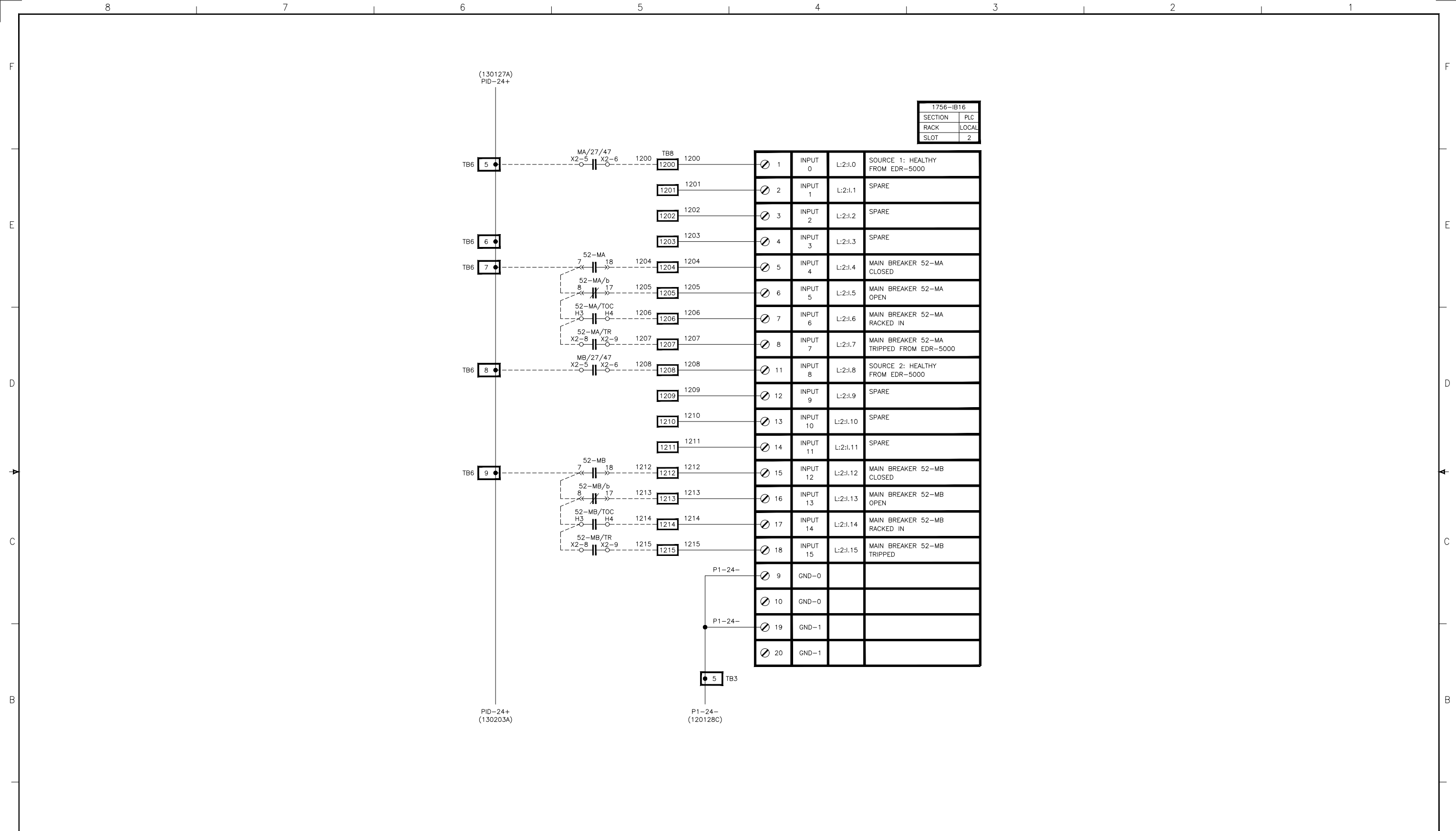
<p><b>Issued For Construction</b></p> <p>The information on this document is suitable for use in establishing final installation and construction details.</p>	<p>DFTR BRADY CALLIHAM</p>	<p>DATE 12/07/2018</p>	<p>THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.</p>		
	<p>APPD ERIC HUTCHENS</p>	<p>DATE 12/07/2018</p>	<p>TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.</p>		
	<p>PRODUCT CODE 6064</p>	<p>S.O. MR580N1</p>	<p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p>		<p>SCHEMATIC</p>
	<p>CAGE CODE 341756464</p>	<p>REVISION 2</p>	<p>G.O. MDT0009310-008</p>	<p>DWG MR580N1-S</p>	<p>SHEET 007</p>



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	APPD ERIC HUTCHENS DATE 12/07/2018	DATE 12/07/2018	TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.	
	PRODUCT CODE 6064	S.O. MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR	SCHEMATIC
	CAGE CODE 341756464	REVISION 2	G.O. MDT0009310-008	DWG MR580N1-S SHEET 008

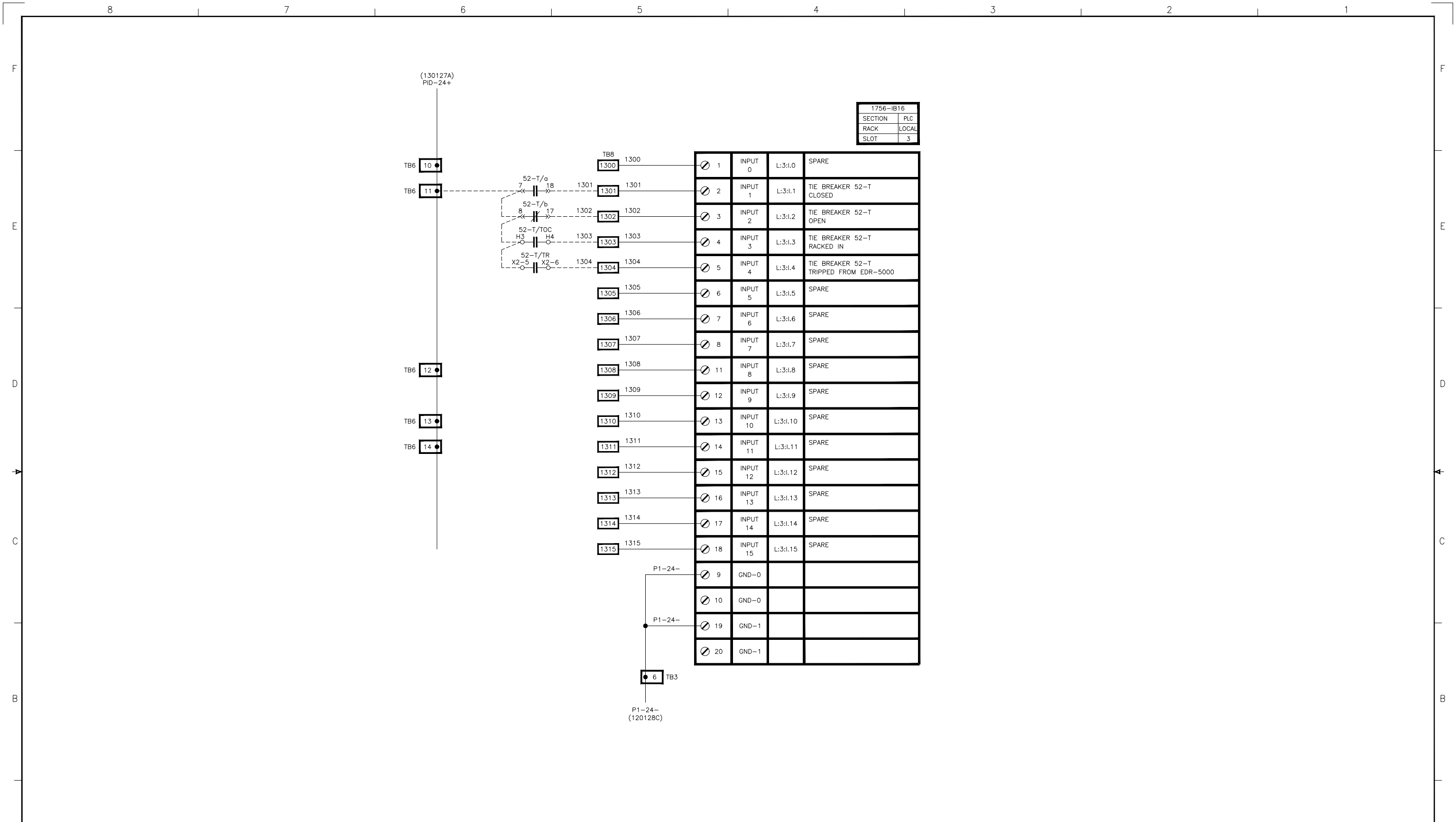


1756-IB16	
SECTION	PLC
RACK	LOCAL
SLOT	1

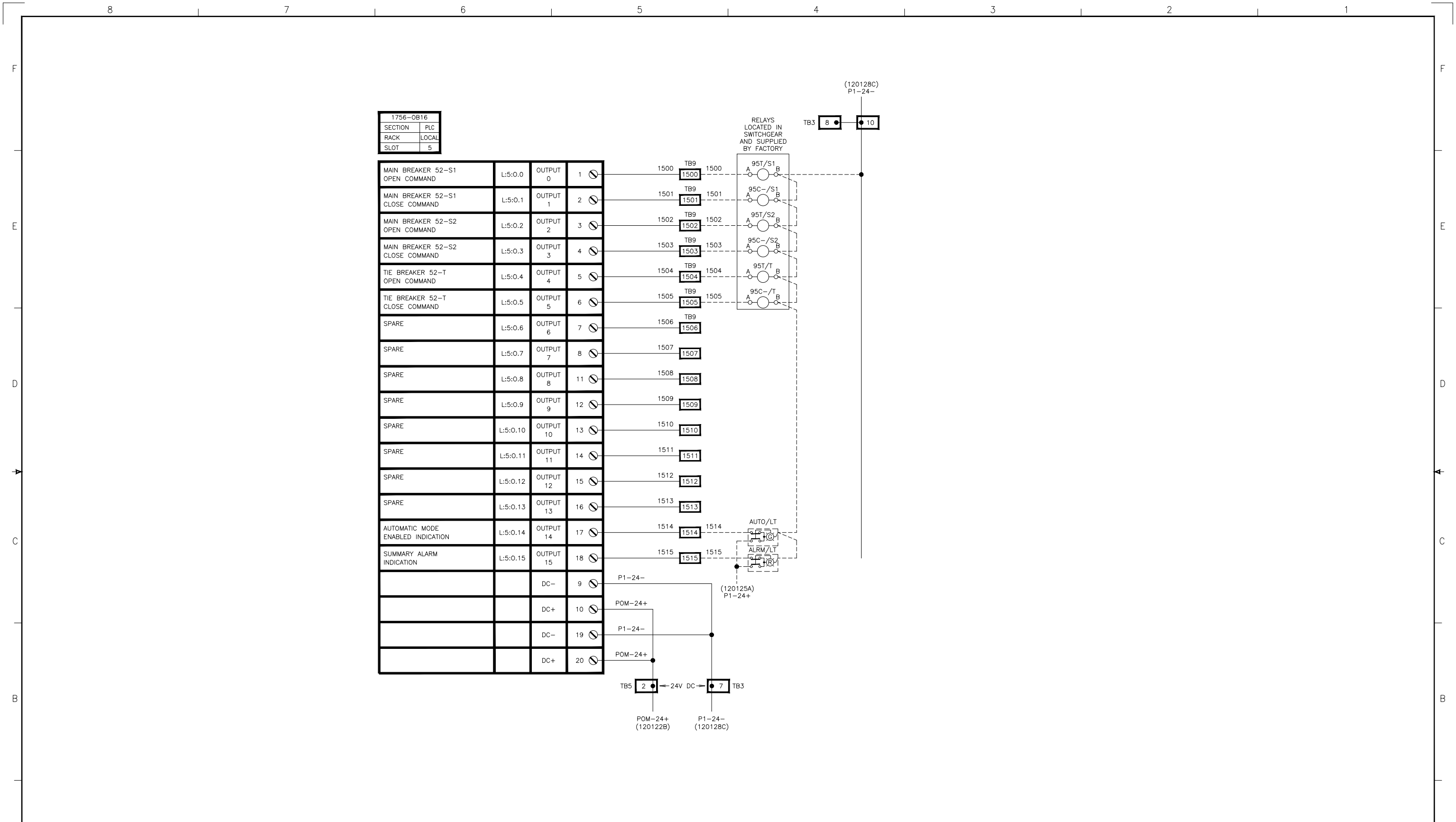


<p><b>Issued For Construction</b></p> <p>The information on this document is suitable for use in establishing final installation and construction details.</p>	<p>DFTR BRADY CALLIHAM</p>	<p>DATE 12/07/2018</p>	<p>THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.</p>		
	<p>APPD ERIC HUTCHENS</p>	<p>DATE 12/07/2018</p>			<p>TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.</p>
	<p>PRODUCT CODE 6064</p>	<p>S.O. MR580N1</p>	<p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p>	<p>SCHEMATIC</p>	
	<p>CAGE CODE 341756464</p>	<p>REVISION 2</p>	<p>G.O. MDT0009310-008</p>	<p>DWG MR580N1-S</p>	<p>SHEET 010</p>





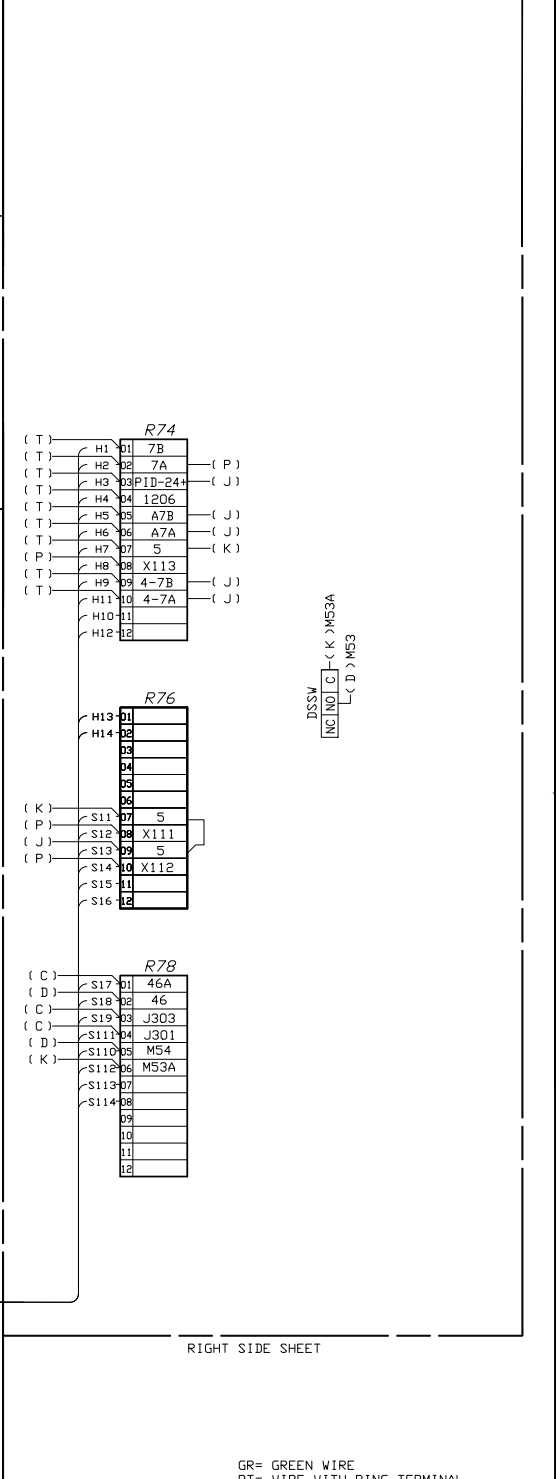
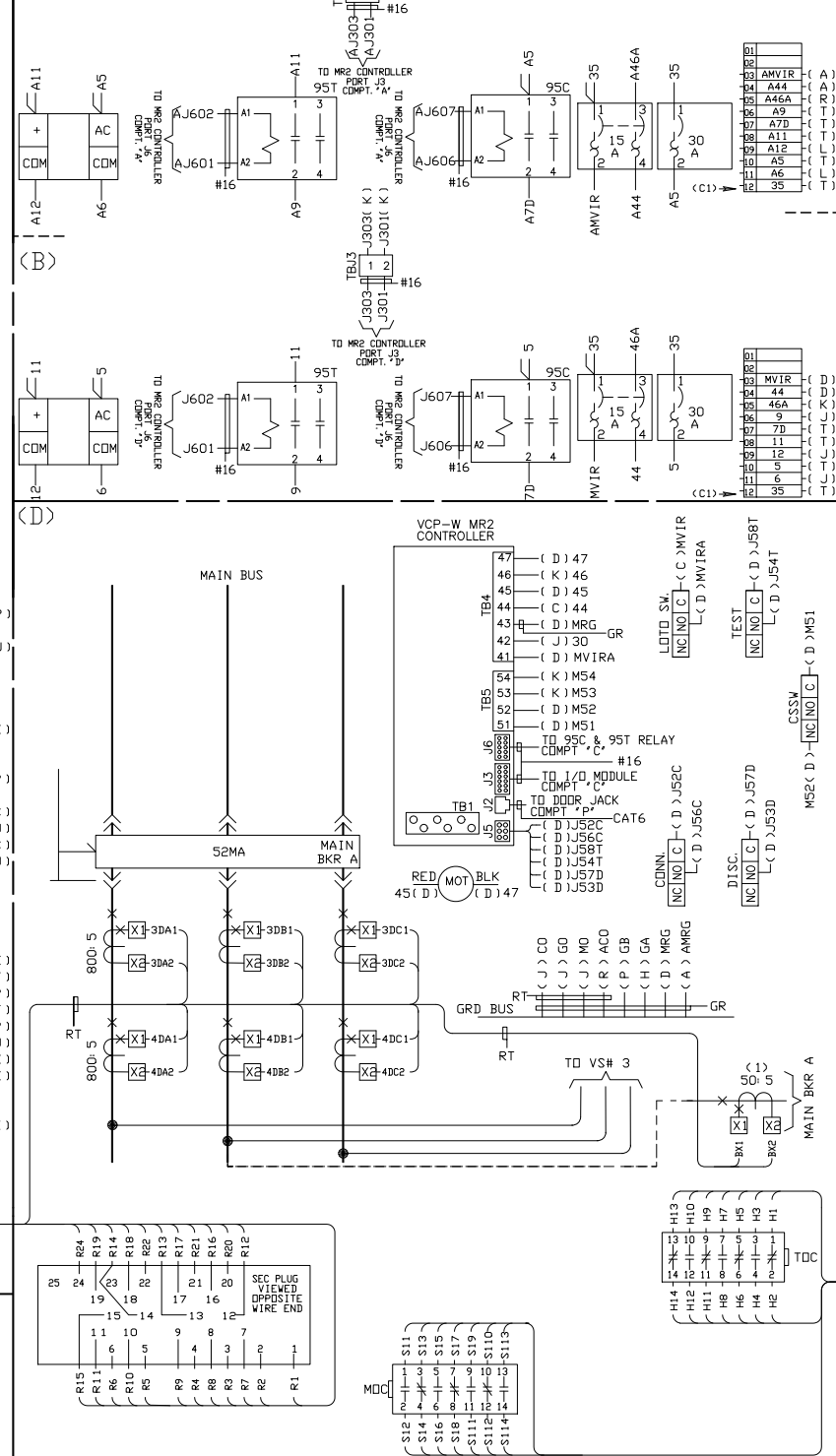
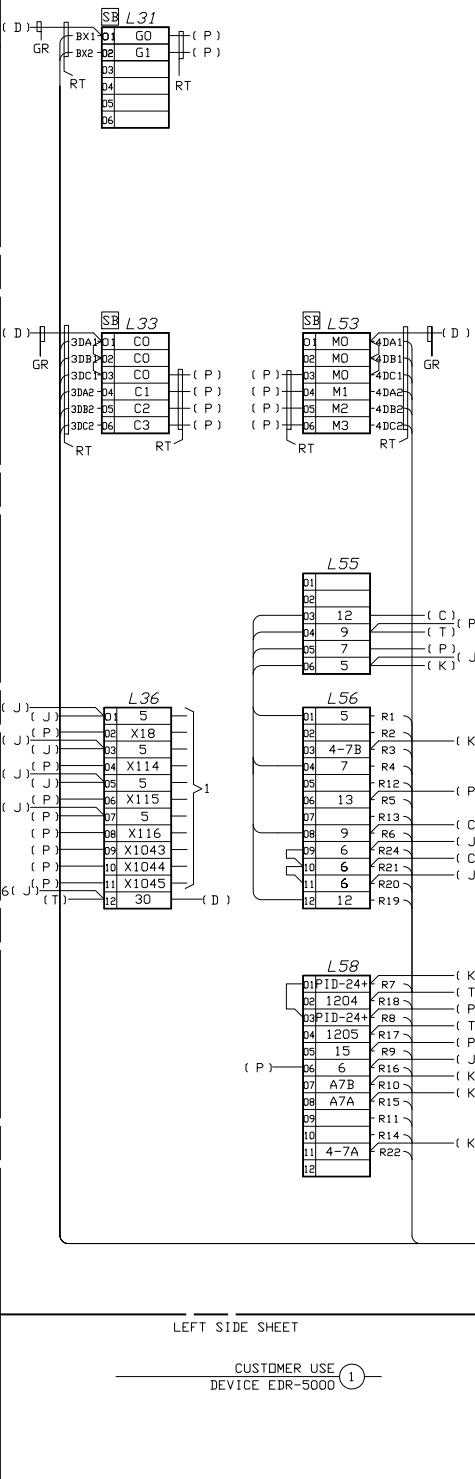
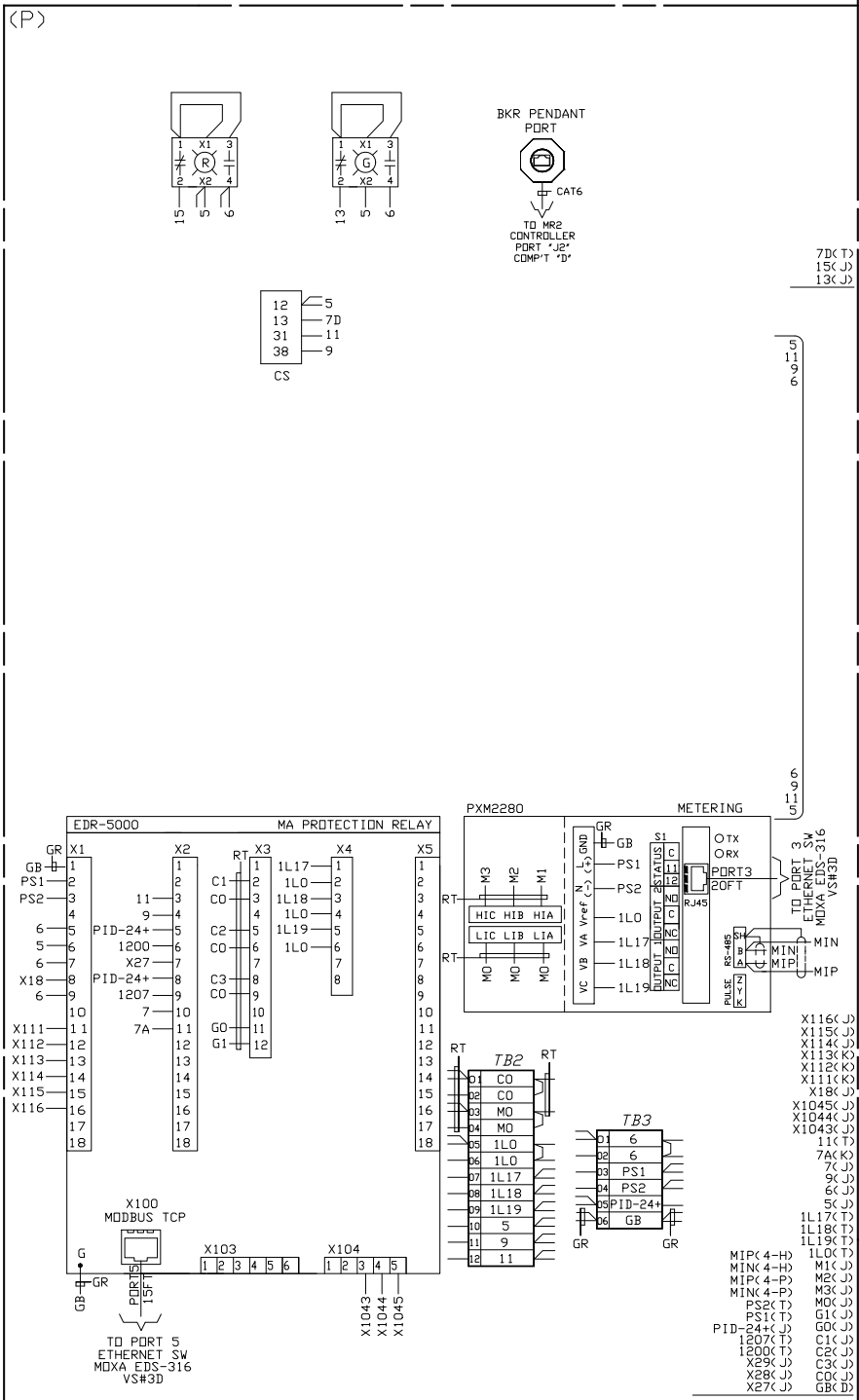
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	APPD ERIC HUTCHENS DATE 12/07/2018	DATE 12/07/2018	TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.	
	PRODUCT CODE 6064	S.O. MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR	SCHEMATIC
	CAGE CODE 341756464	REVISION 2	G.O. MDT0009310-008	DWG MR580N1-S SHEET 011



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	<p>APPD ERIC HUTCHENS</p>	<p>DATE 12/07/2018</p>	<p>TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.</p>		
	<p>PRODUCT CODE 6064</p>	<p>S.O. MR580N1</p>	<p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p>		<p>SCHEMATIC</p>
	<p>CAGE CODE 341756464</p>	<p>REVISION 2</p>	<p>G.O. MDT0009310-008</p>	<p>DWG MR580N1-S</p>	<p>SHEET 012</p>

VERTICAL SECTION # 2  
LOWER COMPARTMENT

HINGED PANEL (REAR VIEW)



LEFT SIDE SHEET

RIGHT SIDE SHEET

CUSTOMER USE  
DEVICE EDR-5000

GR= GREEN WIRE  
RT= WIRE WITH RING TERMINAL

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	PRODUCT CODE: 6064 REVISION: 1	S.O.: MR580N1	G.O. MDT0009310-008		
	PRODUCT CODE: 6064 REVISION: 1		S.O.: MR580N1		
	PRODUCT CODE: 6064 REVISION: 1		S.O.: MR580N1		



CITY OF FLINT-3RD AVE. PUMP STATION  
FLINT, MI.

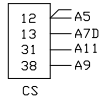
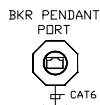
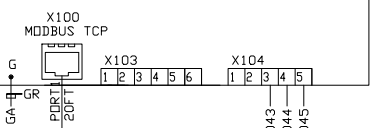
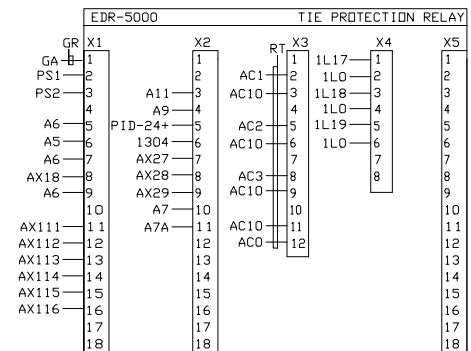
MEDIUM VOLTAGE SWITCHGEAR  
CDNN DIAG VERT SECT 1&2

MDT0009310-008  
MR580N1-W011  
001

VERTICAL SECTION # 2  
UPPER COMPARTMENT

HINGED PANEL (REAR VIEW)

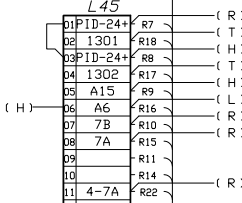
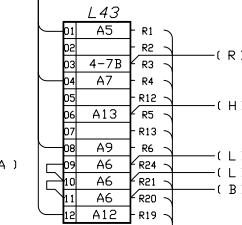
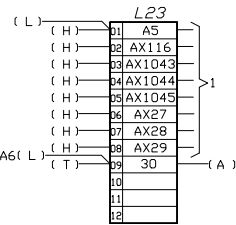
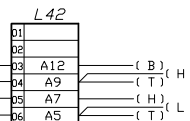
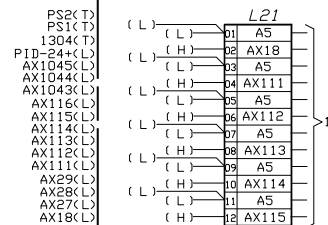
(H)



TRANSITION UNIT: VERT. SECT. #1  
LOCATED LEFT OF VERT. SECT. #2

LEFT SIDE SHEET

(L)



A5  
A11  
A9  
A6

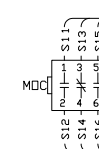
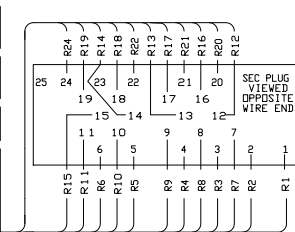
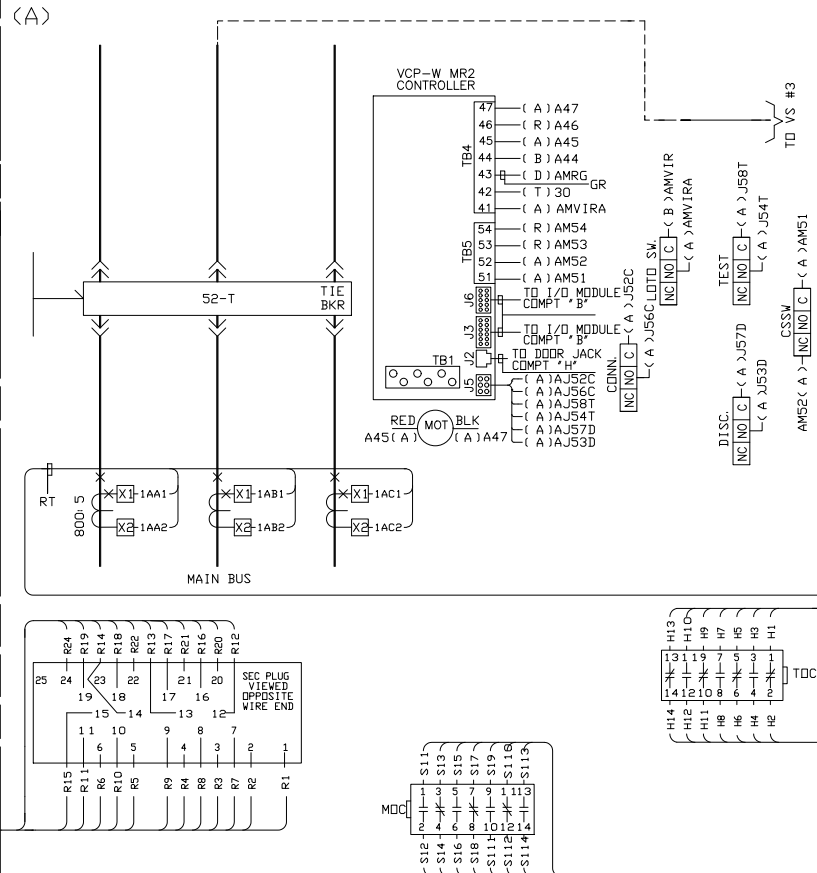
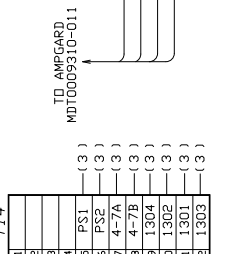
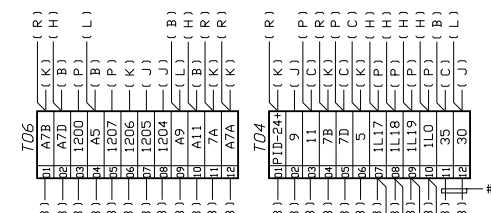
A7D(T)  
A15(L)  
A13(L)

ROOF SHEET

(A)

A COMPARTMENT (FRONT VIEW)

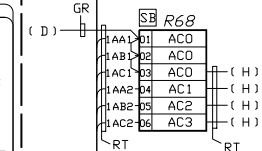
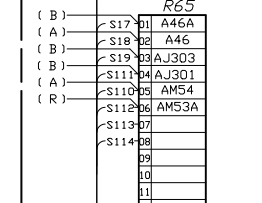
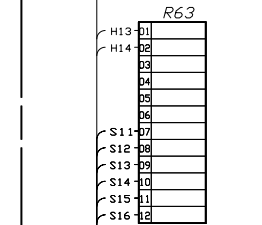
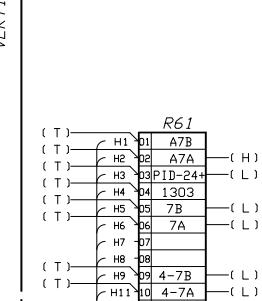
SHIPPING BREAK



(R)

VERTICAL SECTION # 2

RIGHT SIDE SHEET



CUSTOMER USE  
DEVICE EDR-5000

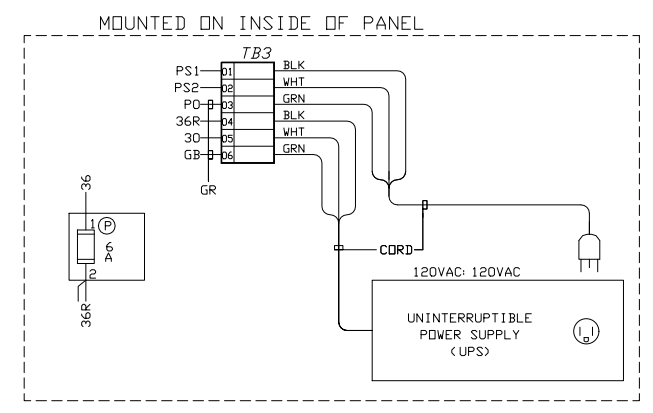
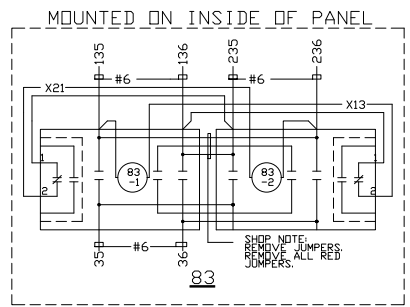
GR= GREEN WIRE  
RT= WIRE WITH RING TERMINAL

<b>Issued For Construction</b> The information on this document is suitable for use in establishing final installation and construction details. CAGE CODE 341756464	DFT: KANCHANI APPD: ERIC HUTCHENS PRODUCT CODE: 6064 REV: 1	DATE: 05/13/2019 DATE: 05/13/2019 S.D.: MR580N1 REVISION: 1	THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED. <b>EATON</b> TITLE: CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI. TYPE: MEDIUM VOLTAGE SWITCHGEAR G.O.: MDT0009310-008 DWG: MR580N1-W012	SHEET 001 CD EFT-DL_R6
	TITLE: CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI. TYPE: MEDIUM VOLTAGE SWITCHGEAR G.O.: MDT0009310-008 DWG: MR580N1-W012	SHEET 001 CD EFT-DL_R6		
	THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED. <b>EATON</b>		SHEET 001 CD EFT-DL_R6	

VERTICAL SECTION # 3  
LOWER COMPARTMENT  
HINGED PANEL (REAR VIEW)

- 12 36R
- 13 PSA
- 16 PSA
- 17 PS1
- 22 30
- 23 PSB
- 26 PSB
- 27 PS2

UPS BYPASS

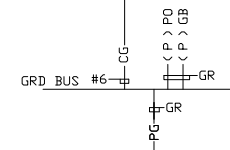
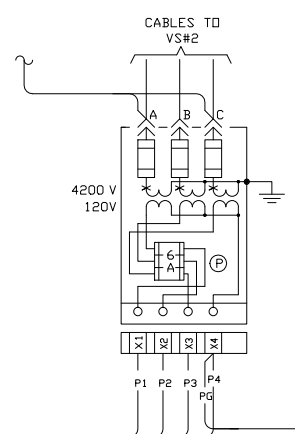
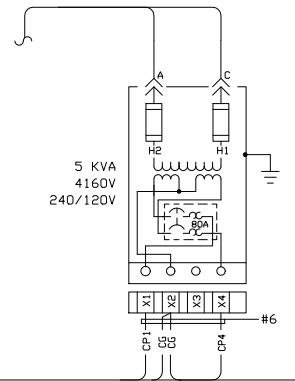


- H1 L53 #6
- D1 135 CP1 (P)
- D2 136 CP4 (T)
- D3 30 CG (T)

- 36R (T)
- PS1 (T)
- 30 (T)
- 35 (R)
- 36 (R)
- 235 (T)
- 236 (T)
- 135 (J)
- 136 (J)

- 36 (T)
- PS1 (D)
- GR (D)

- L58
- D1 1L17 F1 (T)
- D2 1L18 F2 (T)
- D3 1L19 F3 (T)
- D4 1L0 F4 (T)



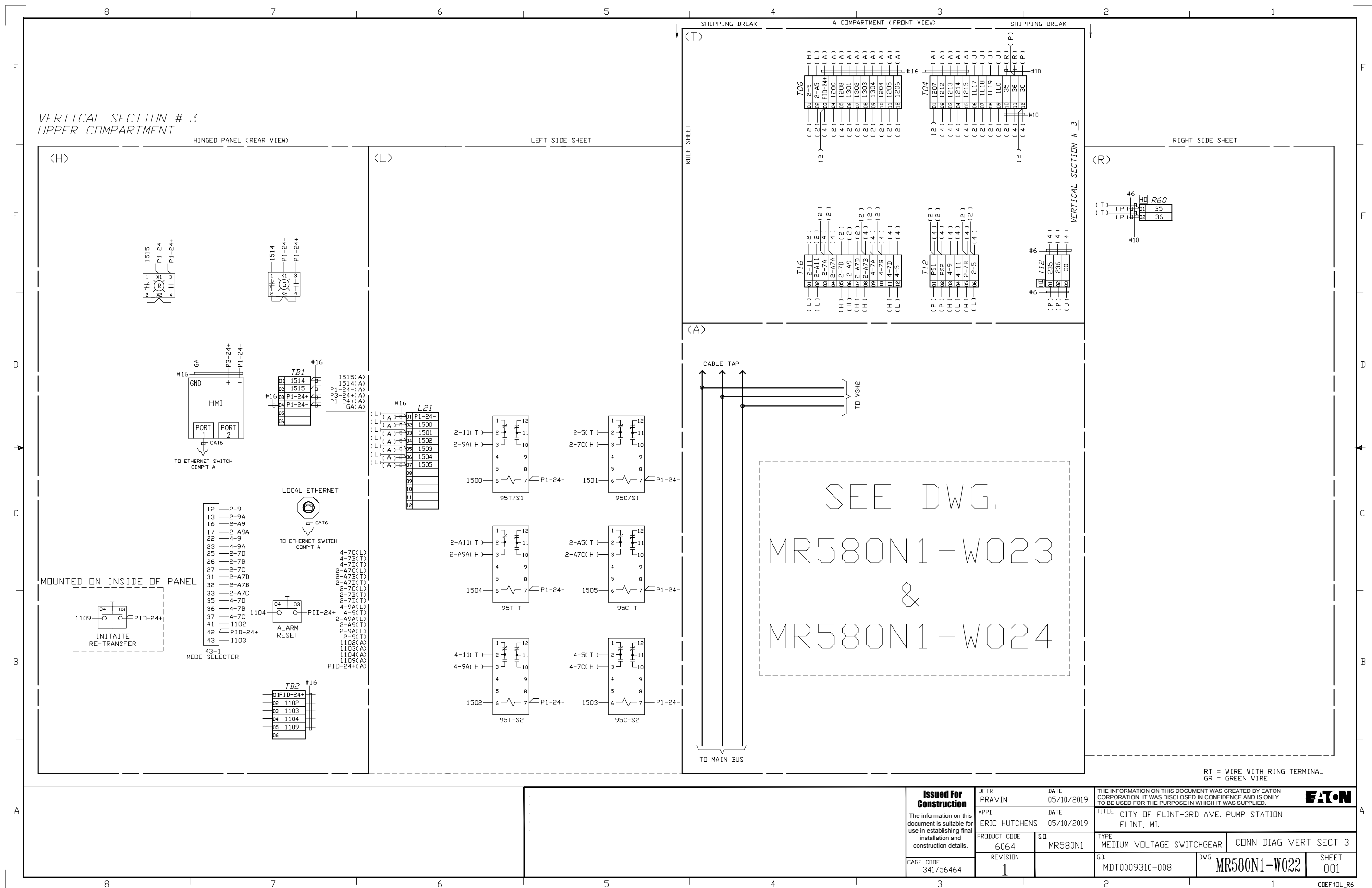
LEFT SIDE SHEET

RIGHT SIDE SHEET

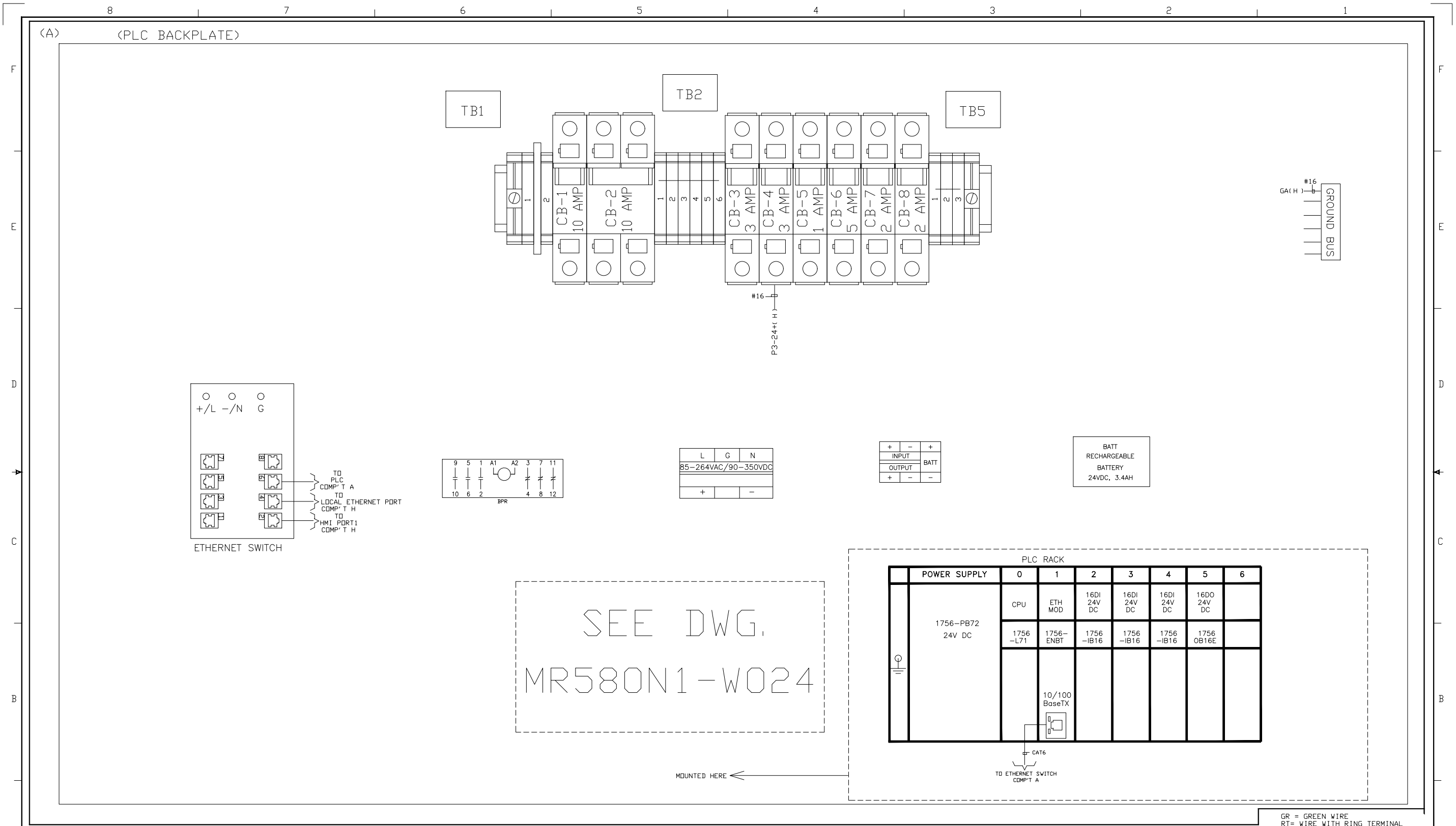
RT = WIRE WITH RING TERMINAL  
GR = GREEN WIRE

<p><b>Issued For Construction</b></p> <p>The information on this document is suitable for use in establishing final installation and construction details.</p> <p>CAGE CODE 341756464</p>	<p>DFTR PRAVIN</p> <p>APPD ERIC HUTCHENS</p> <p>PRODUCT CODE 6064</p> <p>REVISION 1</p>	<p>DATE 05/10/2019</p> <p>DATE 05/10/2019</p> <p>S.D. MR580N1</p>	<p>THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.</p> <p>TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.</p> <p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p> <p>G.O. MDT0009310-008</p>	<p>CDNN DIAG VERT SECT 3</p> <p>DWG MR580N1-W021</p>	<p>SHEET 001</p>
	<p>DATE 05/10/2019</p>		<p>DATE 05/10/2019</p>		
	<p>S.D. MR580N1</p>		<p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p>		
	<p>REVISION 1</p>		<p>G.O. MDT0009310-008</p>		



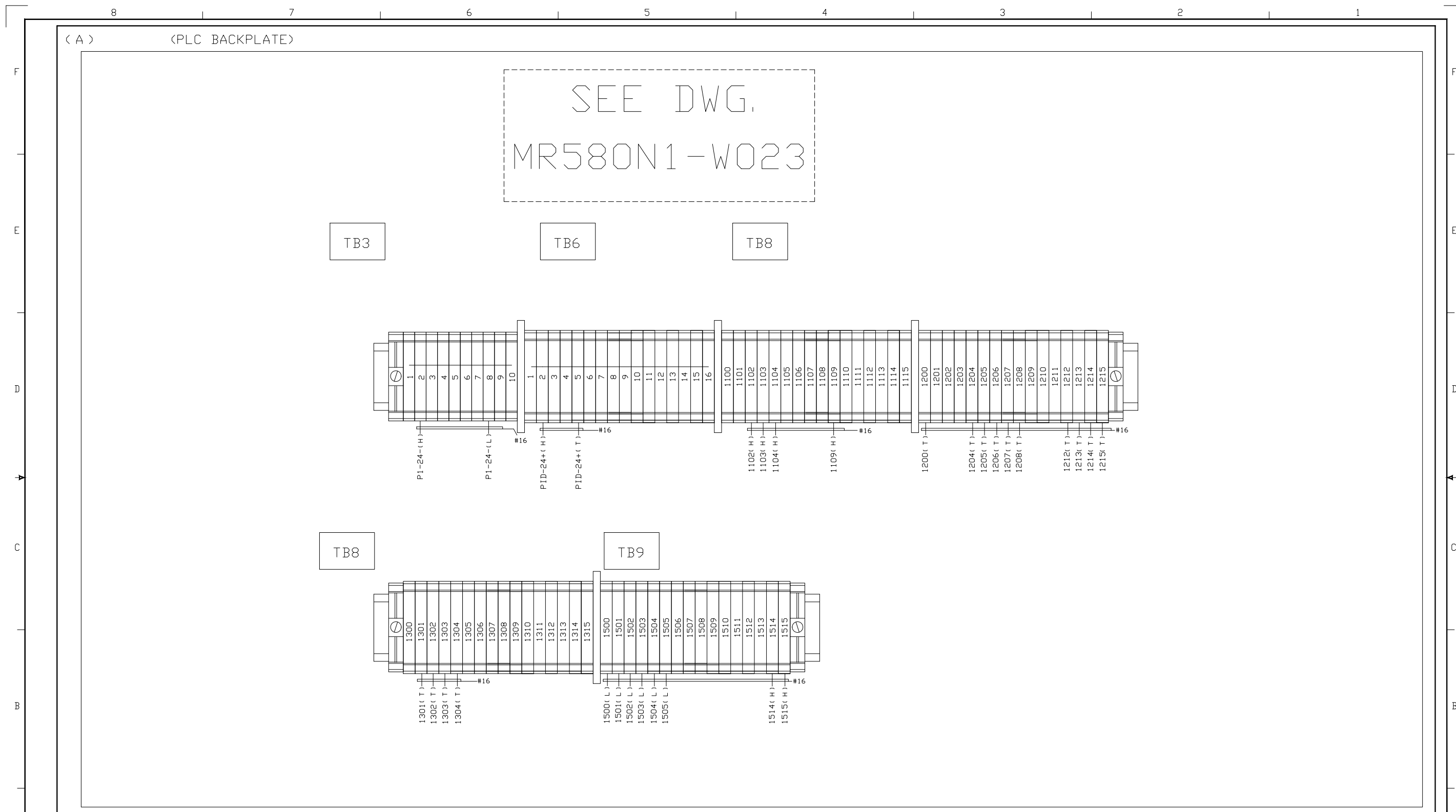


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	PRODUCT CODE 6064 REVISION 1	S.D. MR580N1	CDNN DIAG VERT SECT 3	
	DWG MR580N1-W022		SHEET 001	
	CDEF+DL_R6			



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	APPD ERIC HUTCHENS	DATE 05/10/2019	TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.	
	PRODUCT CODE 6064	S.D. MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR	CDNN DIAG VERT SECT 3
	CAGE CODE 341756464	REVISION 1	G.O. MDT0009310-008	DWG MR580N1-W023





GR = GREEN WIRE  
RT = WIRE WITH RING TERMINAL



**Issued For Construction**

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CAGE CODE  
341756464

DFTR  
PRAVIN

APPD  
ERIC HUTCHENS

PRODUCT CODE  
6064

REVISION  
1

DATE  
05/10/2019

DATE  
05/10/2019

S.D.  
MR580N1

G.O.  
MDT0009310-008

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TITLE  
CITY OF FLINT-3RD AVE. PUMP STATION  
FLINT, MI.

TYPE  
MEDIUM VOLTAGE SWITCHGEAR

DWG  
MR580N1-W024

CDNN DIAG VERT SECT 3

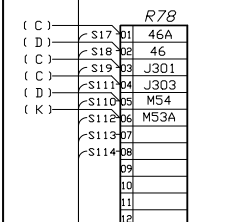
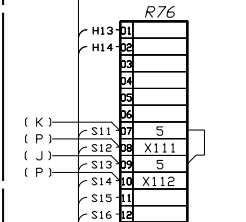
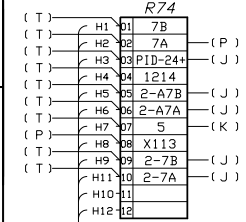
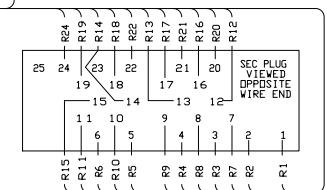
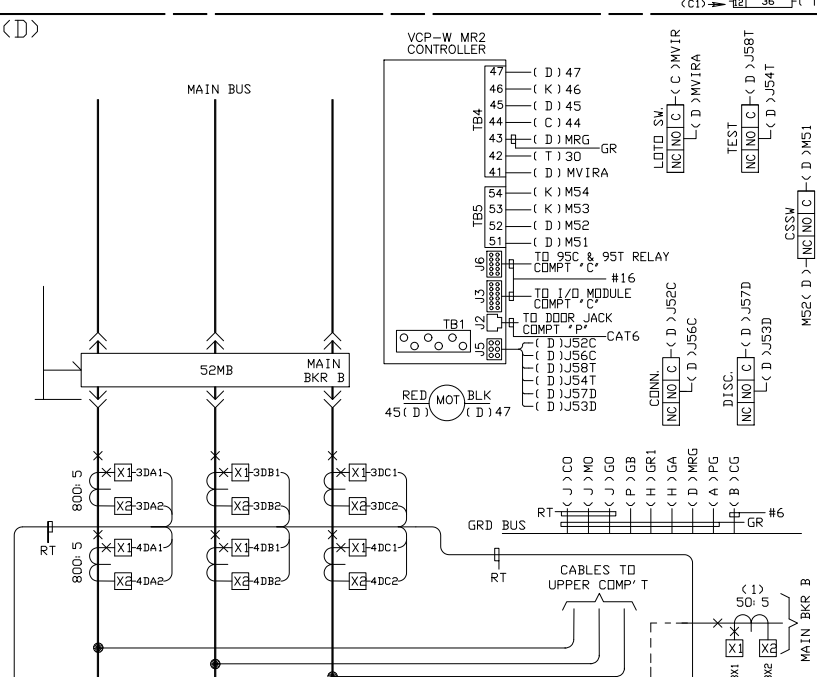
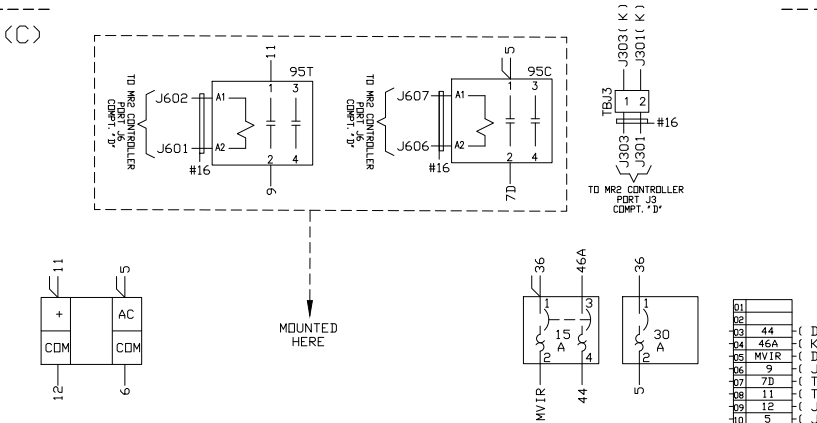
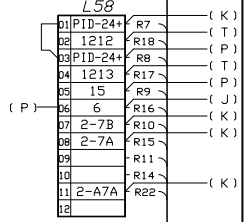
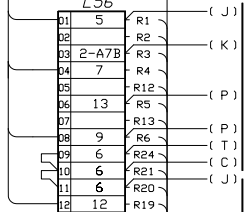
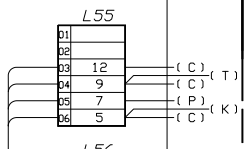
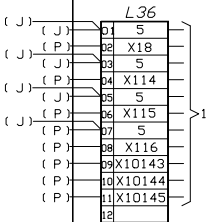
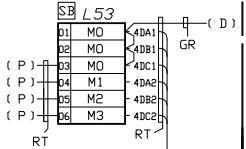
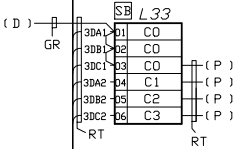
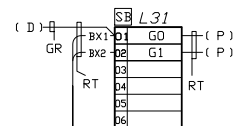
SHEET  
001

CDEF+DL\_R6



VERTICAL SECTION # 4  
LOWER COMPARTMENT HINGED PANEL (REAR VIEW)

SEE DWG.  
MR580N1-W033



LEFT SIDE SHEET

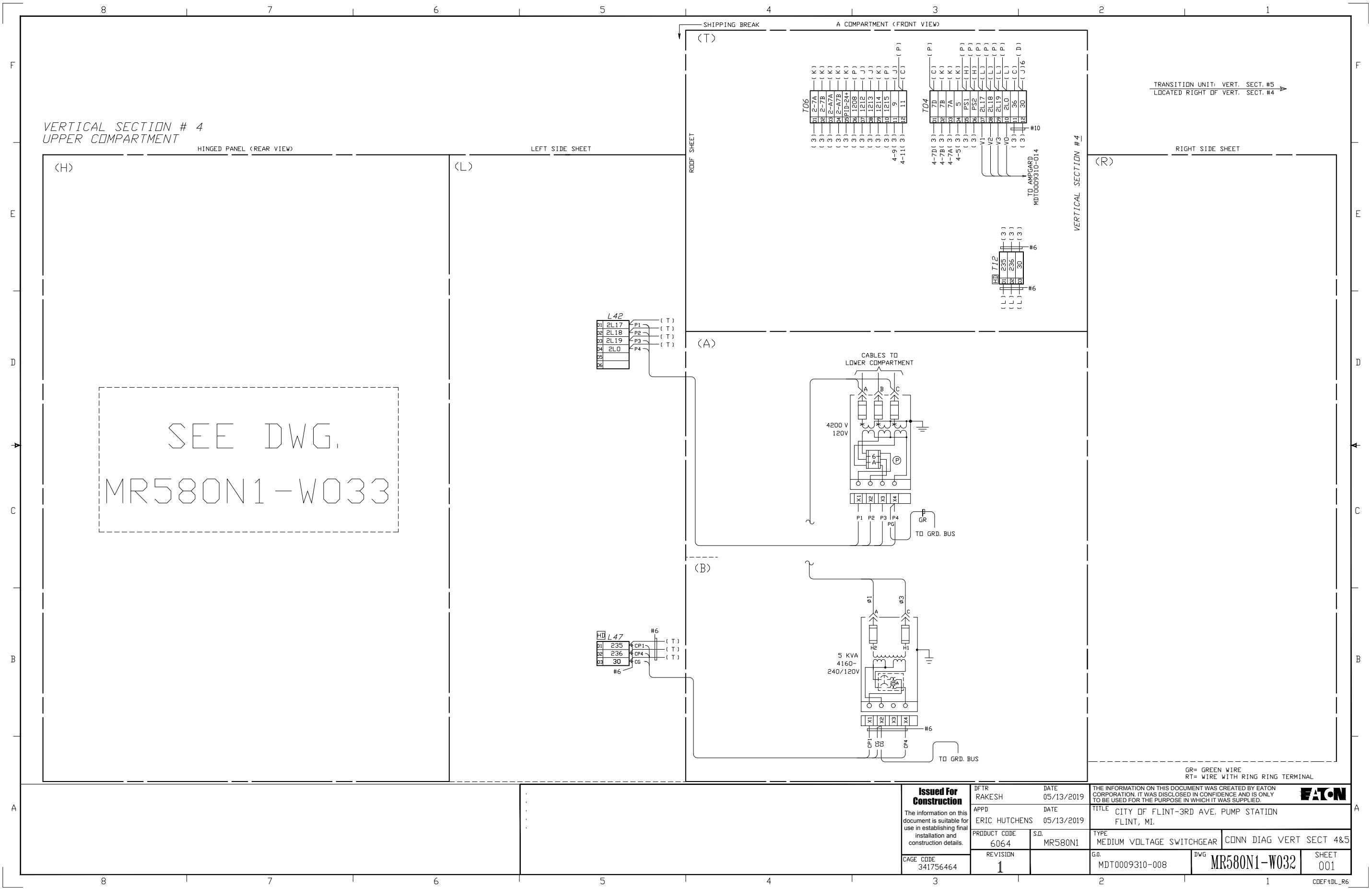
RIGHT SIDE SHEET

CUSTOMER USE  
DEVICE EDR5000

GR= GREEN WIRE  
RT= WIRE WITH RING RING TERMINAL

<b>Issued For Construction</b> The information on this document is suitable for use in establishing final installation and construction details.	DFTR RAKESH	DATE 05/13/2019	THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.	
	APPD ERIC HUTCHENS	DATE 05/13/2019	TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.	
CAGE CODE 341756464	PRODUCT CODE 6064	S.D. MR580N1	TYPE MEDIUM VOLTAGE SWITCHGEAR	CDNN DIAG VERT SECT 4&5
	REVISION 1	G.O. MDT0009310-008	DWG MR580N1-W031	SHEET 001





VERTICAL SECTION # 4  
UPPER COMPARTMENT

HINGED PANEL (REAR VIEW)

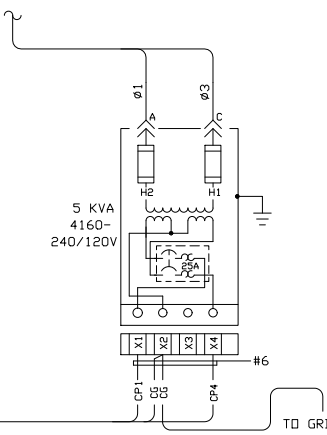
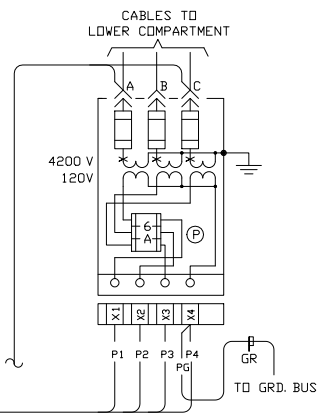
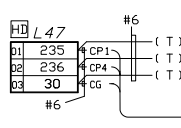
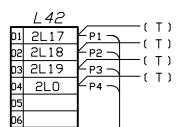
LEFT SIDE SHEET

A COMPARTMENT (FRONT VIEW)

RIGHT SIDE SHEET

TRANSITION UNIT: VERT. SECT. #5  
LOCATED RIGHT OF VERT. SECT. #4

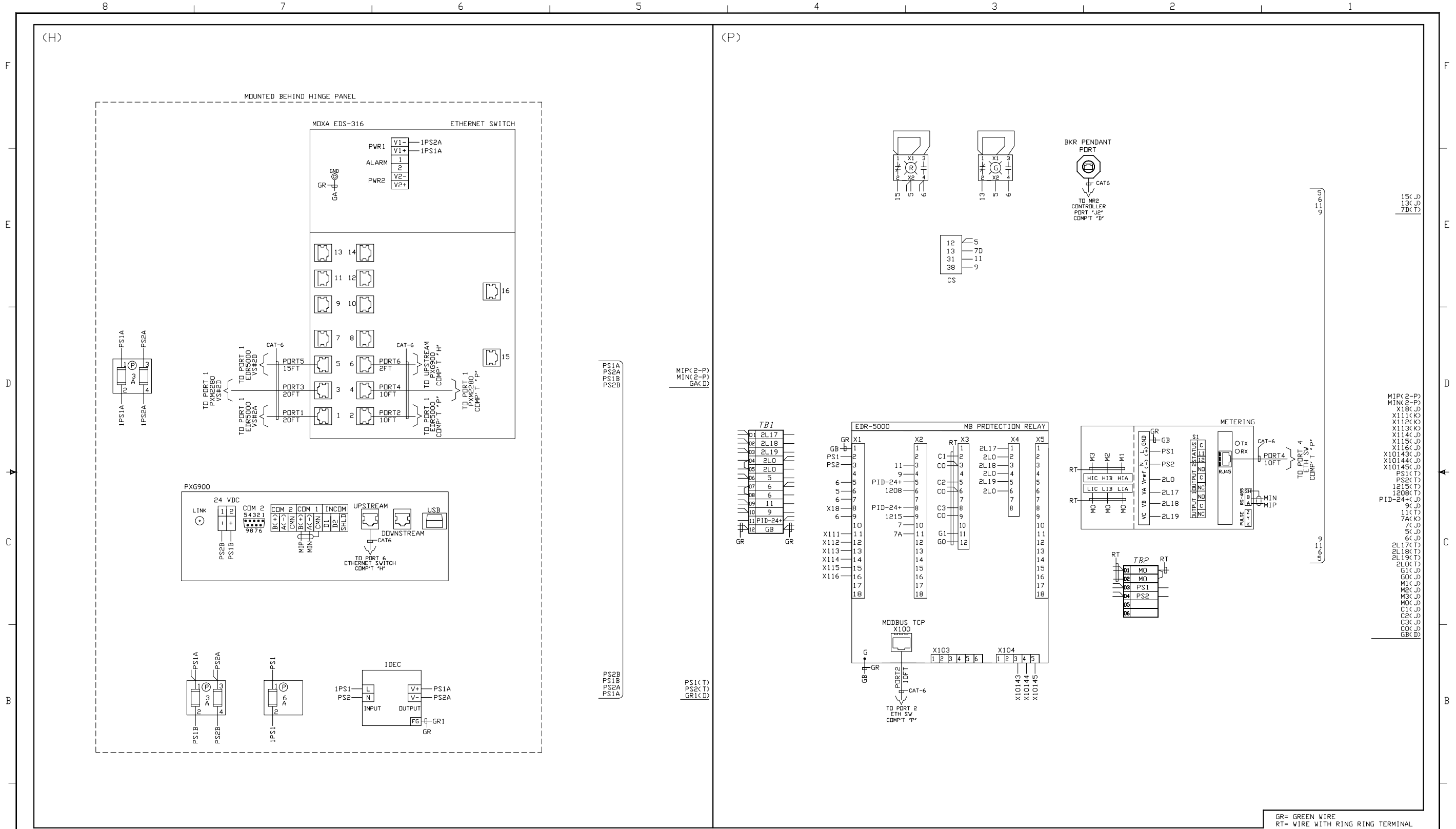
SEE DWG.  
MR580N1-W033



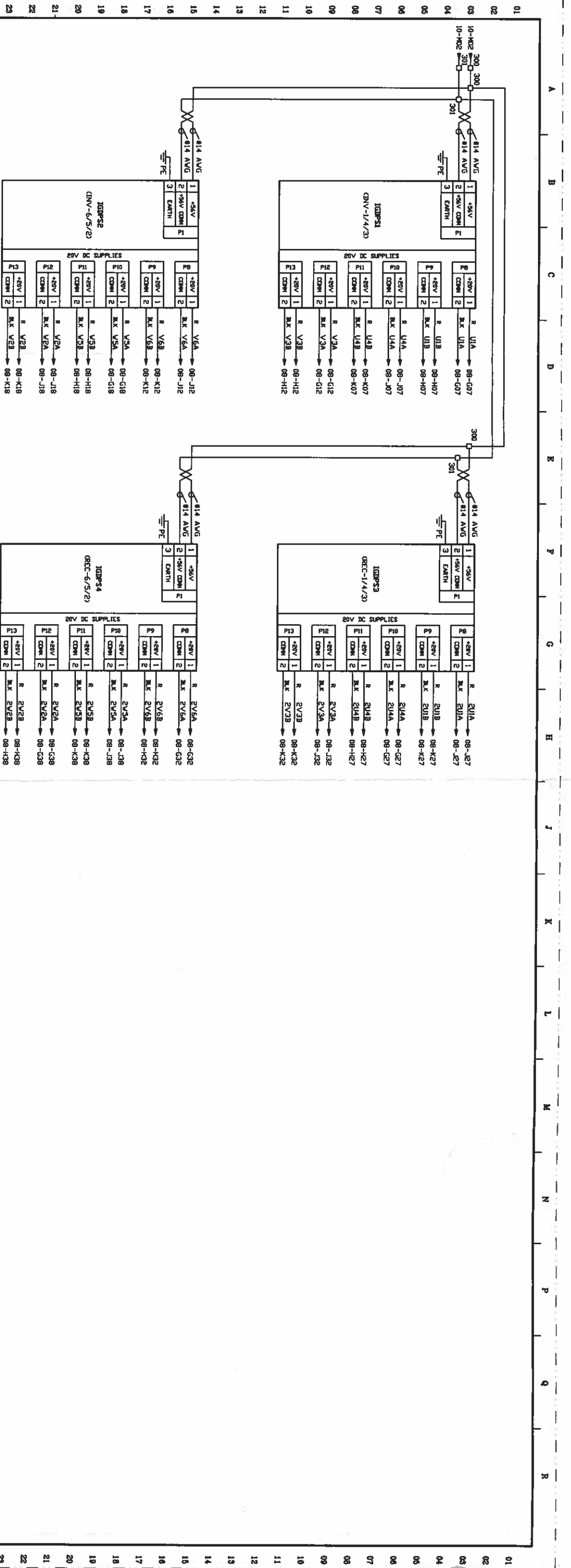
<p><b>Issued For Construction</b></p> <p>The information on this document is suitable for use in establishing final installation and construction details.</p> <p>CAGE CODE 341756464</p>	<p>DFTR RAKESH</p> <p>APPD ERIC HUTCHENS</p> <p>PRODUCT CODE 6064</p> <p>REVISION 1</p>	<p>DATE 05/13/2019</p> <p>DATE 05/13/2019</p> <p>S.D. MR580N1</p>	<p>THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.</p> <p>TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.</p> <p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p> <p>G.O. MDT0009310-008</p>	<p><b>EATON</b></p> <p>CDNN DIAG VERT SECT 4&amp;5</p> <p>DWG MR580N1-W032</p> <p>SHEET 001</p>	
	<p>DATE 05/13/2019</p>		<p>CDNN DIAG VERT SECT 4&amp;5</p>	<p>SHEET 001</p>	
	<p>REVISION 1</p>		<p>S.D. MR580N1</p>	<p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p>	<p>DWG MR580N1-W032</p>
	<p>CAGE CODE 341756464</p>		<p>DATE 05/13/2019</p>	<p>TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.</p>	<p>SHEET 001</p>

GR= GREEN WIRE  
RT= WIRE WITH RING RING TERMINAL





<p><b>Issued For Construction</b></p> <p>The information on this document is suitable for use in establishing final installation and construction details.</p> <p>CAGE CODE 341756464</p>		<p>DFTR RAKESH DATE 05/13/2019</p> <p>APPD ERIC HUTCHENS DATE 05/13/2019</p> <p>PRODUCT CODE 6064 S.O. MR580N1</p> <p>REVISION 1</p>	<p>DATE 05/13/2019</p> <p>TITLE CITY OF FLINT-3RD AVE. PUMP STATION FLINT, MI.</p> <p>TYPE MEDIUM VOLTAGE SWITCHGEAR</p> <p>G.O. MDT0009310-008</p>	<p>THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.</p> <p><b>EATON</b></p> <p>CDNN DIAG VERT SECT 4&amp;5</p> <p>DWG <b>MR580N1-W033</b> SHEET 001</p>
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NO.	DESCRIPTION	DATE	BY	REVISION	REVISION DESCRIPTION
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41	INSTALLER	2002-04-13	R. VANNER	2	AS BUILT

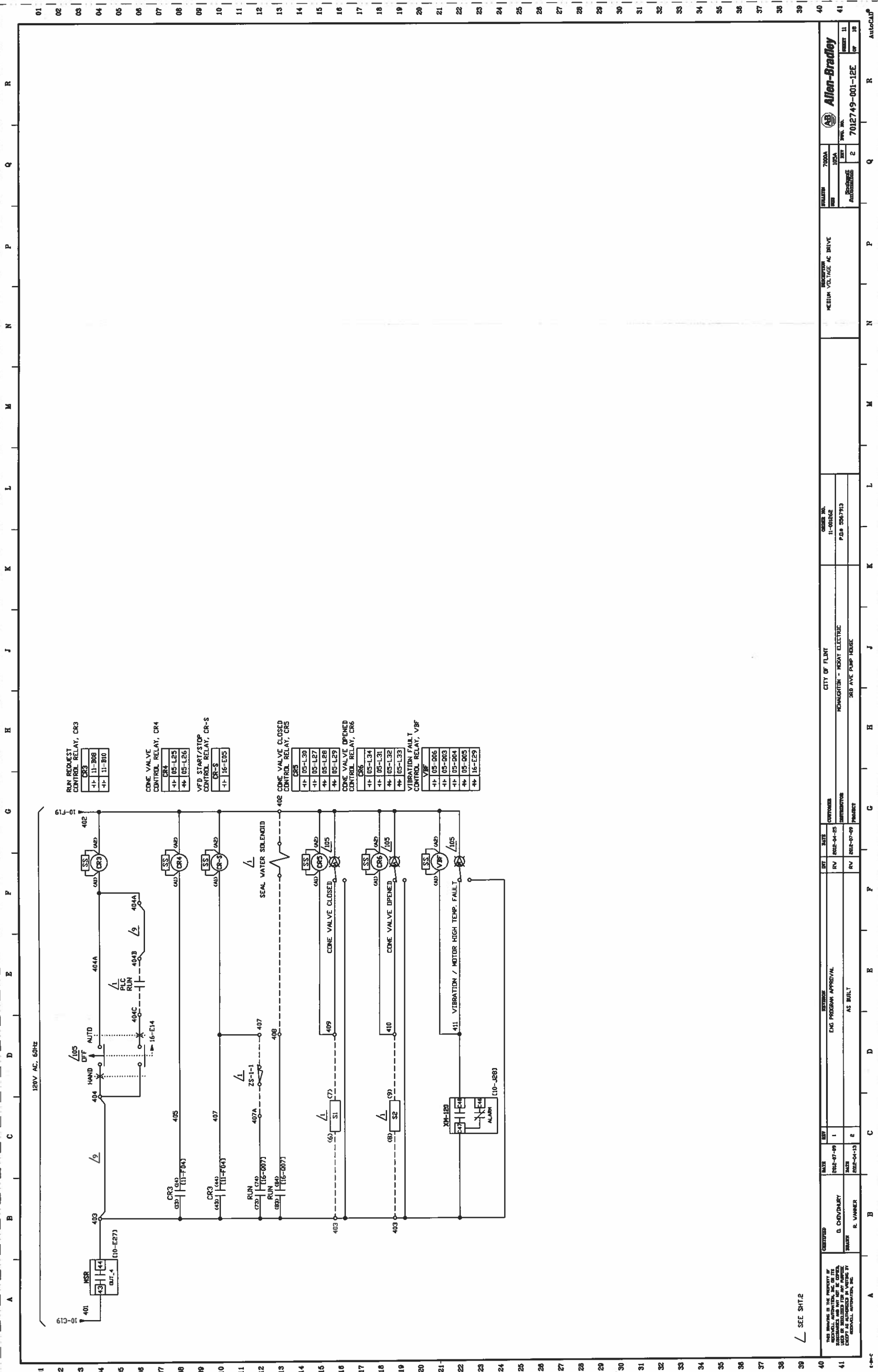
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PROJECT NO. 7012749-001-12E	SHEET NO. 12 OF 18
--------------------------------	-----------------------------



AutoCAD®



RUN REQUEST CONTROL RELAY, CR3  
 CR3  
 +1 11-B08  
 -1 11-B10

CONE VALVE CONTROL RELAY, CR4  
 CR4  
 +1 05-L25  
 -1 05-L26

VFD START/STOP CONTROL RELAY, CR-S  
 CR-S  
 +1 11-F04  
 -1 11-F04

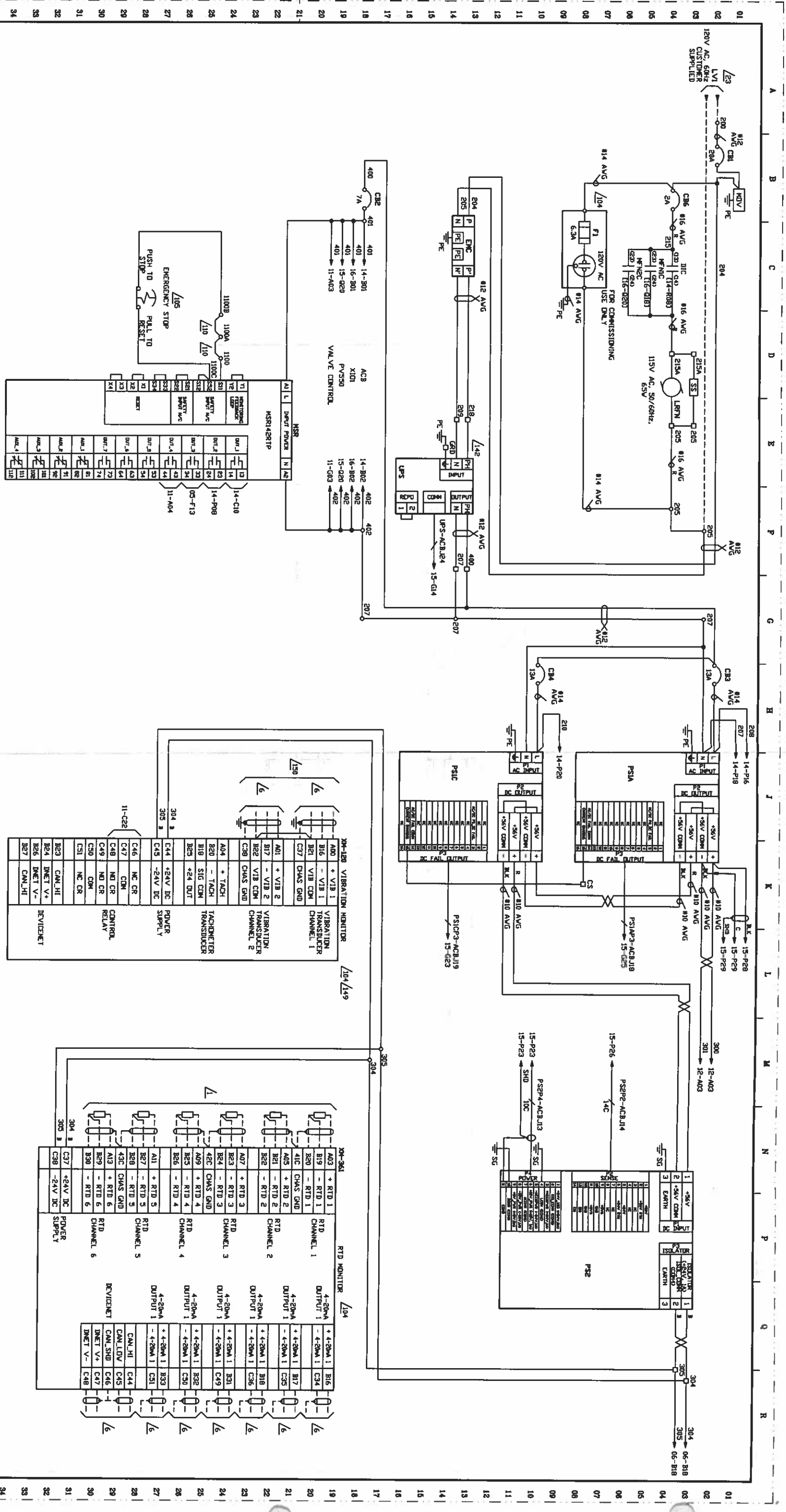
CONE VALVE CLOSED CONTROL RELAY, CR5  
 CR5  
 +1 05-L30  
 -1 05-L27  
 -1 05-L28  
 -1 05-L29

CONE VALVE OPENED CONTROL RELAY, CR6  
 CR6  
 +1 05-L34  
 -1 05-L31  
 -1 05-L32  
 -1 05-L33

VIBRATION FAULT CONTROL RELAY, VBF  
 VBF  
 +1 05-006  
 -1 05-003  
 -1 05-004  
 -1 05-005  
 -1 16-E29

SEE SHIT.2

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
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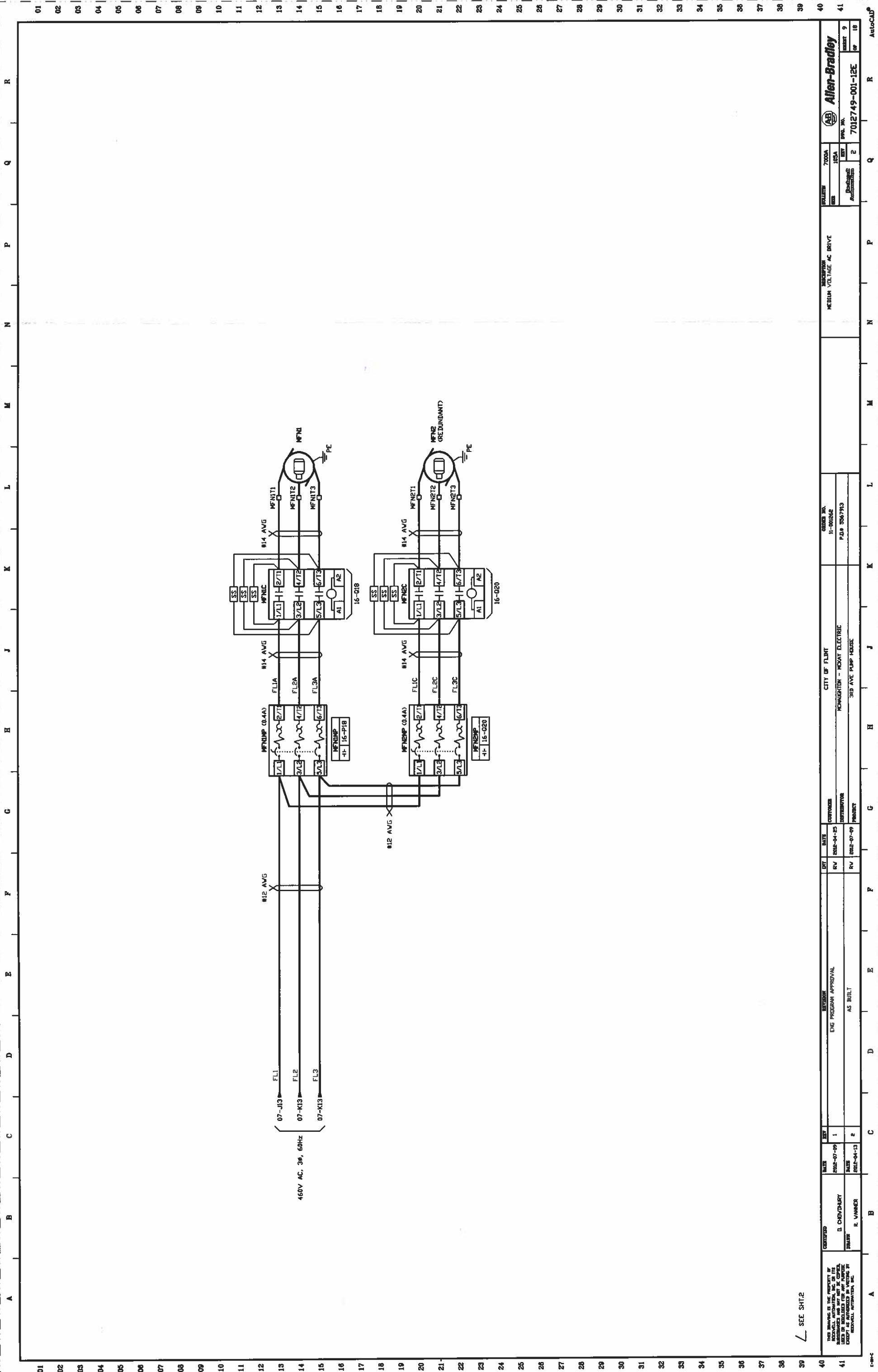


SEE SH12

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38	DESIGNED	2012-04-13	2	
37	DESIGNED	2012-04-13	2	
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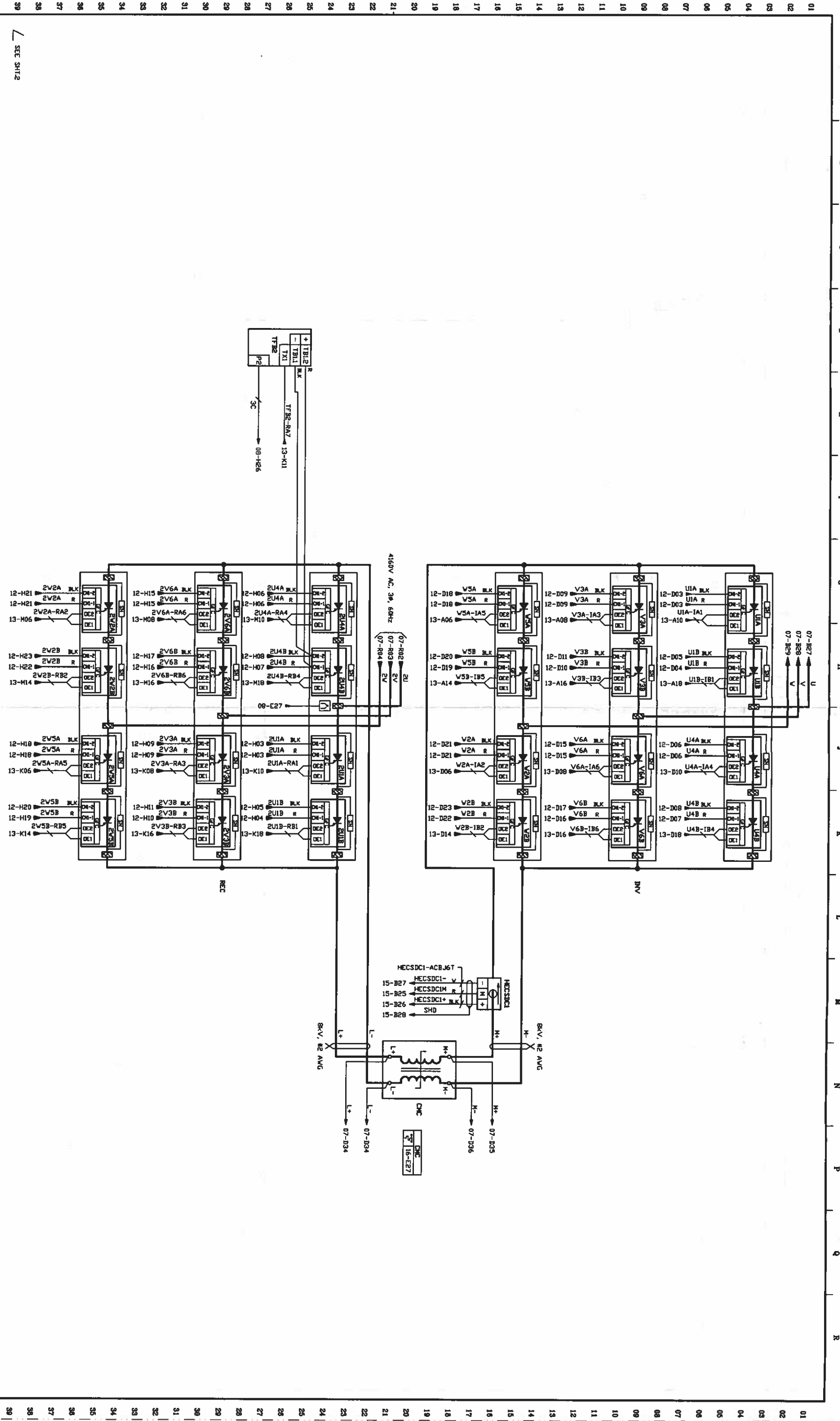
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7012749-001-12C



SEE SHEET 2

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DATE 08-07-09	BY RV	DATE 04-25	BY RV	DATE 07-09	BY RV	DATE 04-13	BY RV	DATE 04-13	BY RV
ENGINEER ENG PROGRAM APPROVAL AS BUILT	CHECKED D. CHRYSTALY R. VANICKER	DATE 08-07-09	BY RV	DATE 04-25	BY RV	DATE 07-09	BY RV	DATE 04-13	BY RV

SEE SH12



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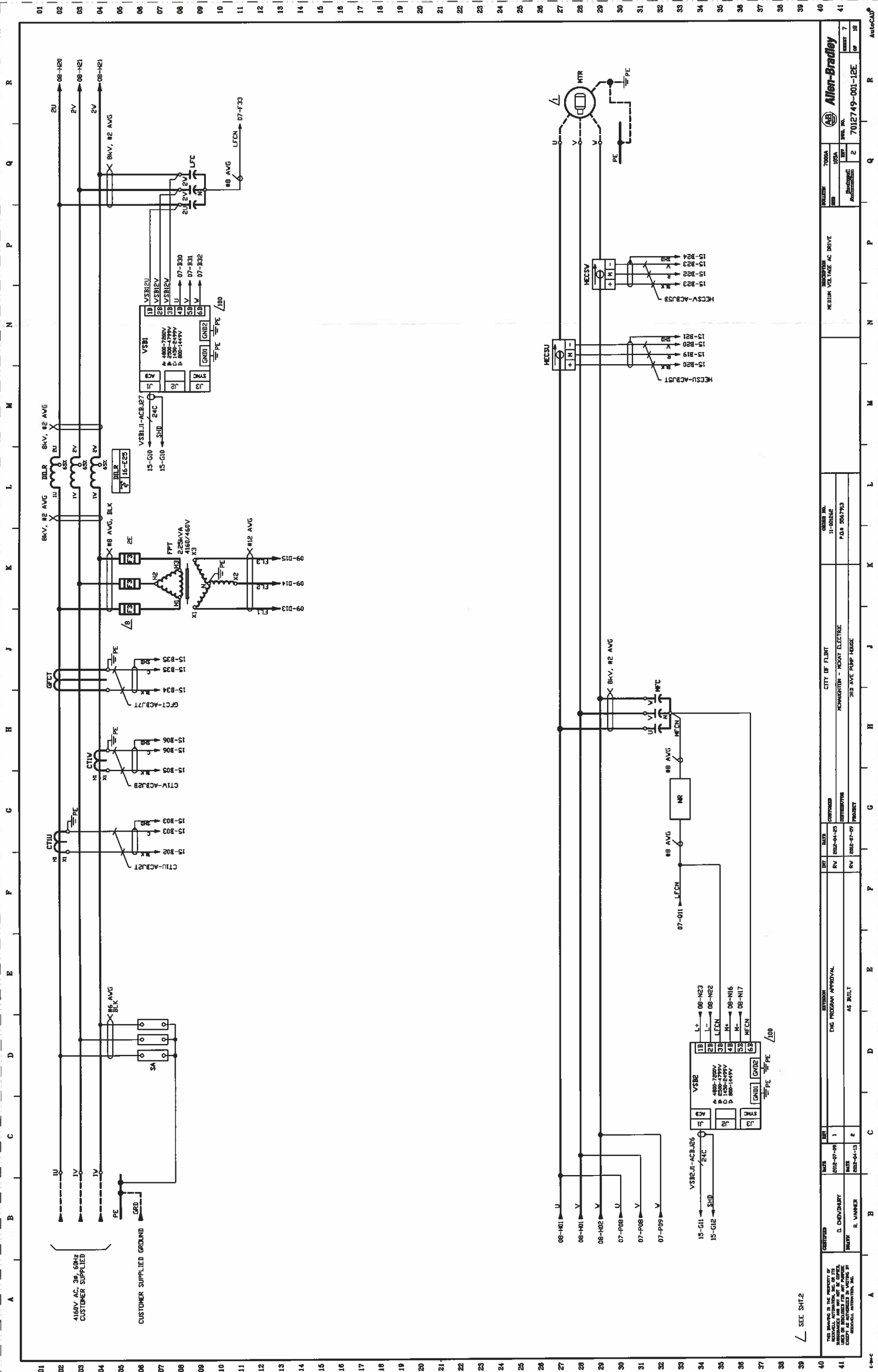
  

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7012749-001-12E



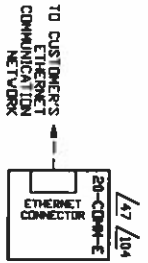
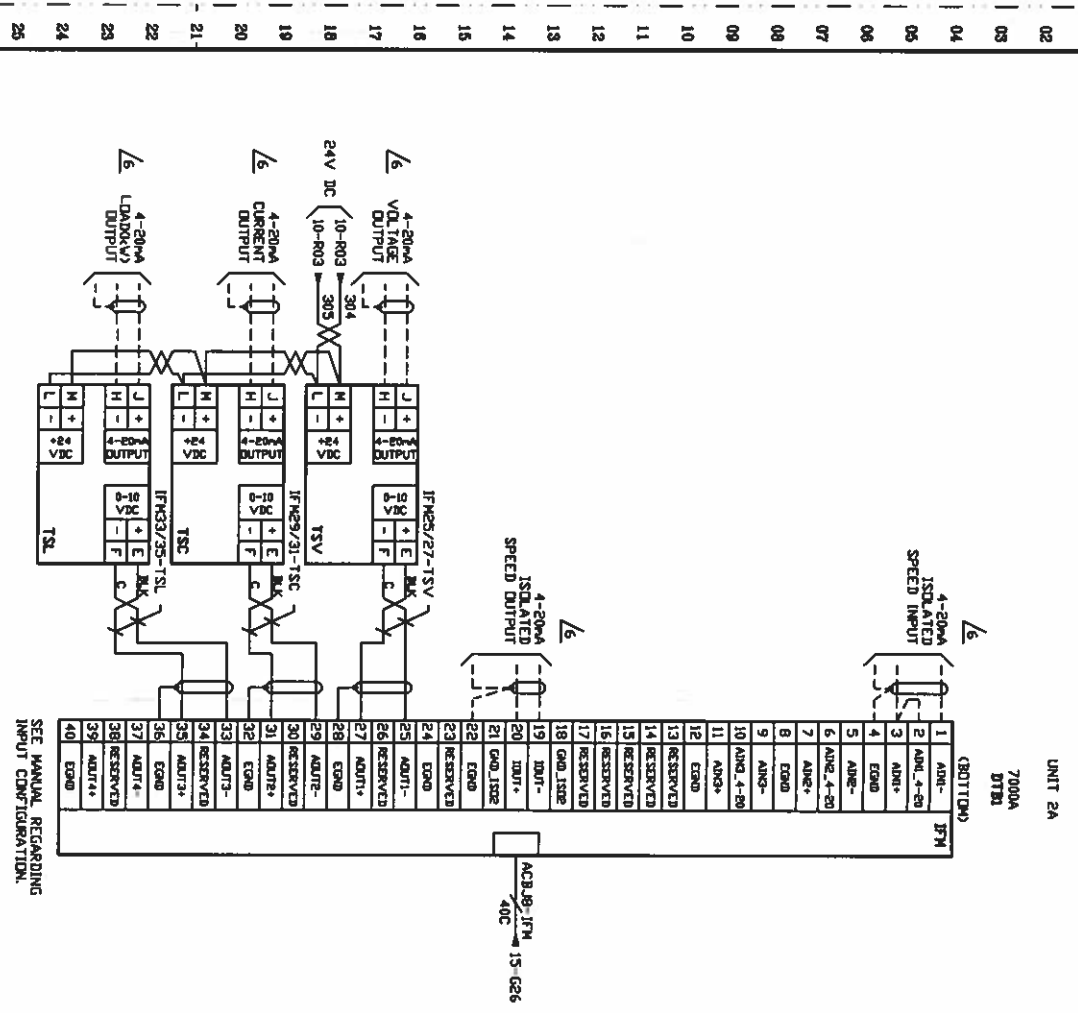


SEE SH1.2

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MEDIUM VOLTAGE DRIVE

SERIES 7012749-001-12



DRICKWELL AUTOMATION USE TERMINAL BLOCKS

UNIT 1A

207
209
210
GRD
400

UNIT 1A

205
206
215A
215A

UNIT 2A

300
300
300
301
301
301

UNIT 2A

MFN11
MFN12
MFN13
MFN21
MFN22
MFN23
CS

UNIT 2A

304
304
305
305

SEE SH12

REV	DATE	BY	DESCRIPTION
1	2002-07-09	D. CHEN/SHURY	DESIGN
2	2002-04-13	R. VANNER	REVISED

DESIGNED BY	D. CHEN/SHURY
DATE	2002-07-09
DESIGNED BY	R. VANNER
DATE	2002-04-13

ENGINEER	ENG PROGRAM APPROVAL
AS BUILT	

REV	DATE	BY	DESCRIPTION
R/V	2002-04-23	R/V	APPROVED
R/V	2002-07-09	R/V	REVISED

CITY OF FLINT	300 AVE PUMP HOUSE
CONSTRUCTION - ROYAL ELECTRIC	

ORDER NO.	11-000562
P.O. NO.	5647913

DRICKWELL AUTOMATION	DRICKWELL AUTOMATION USE TERMINAL BLOCKS
----------------------	--

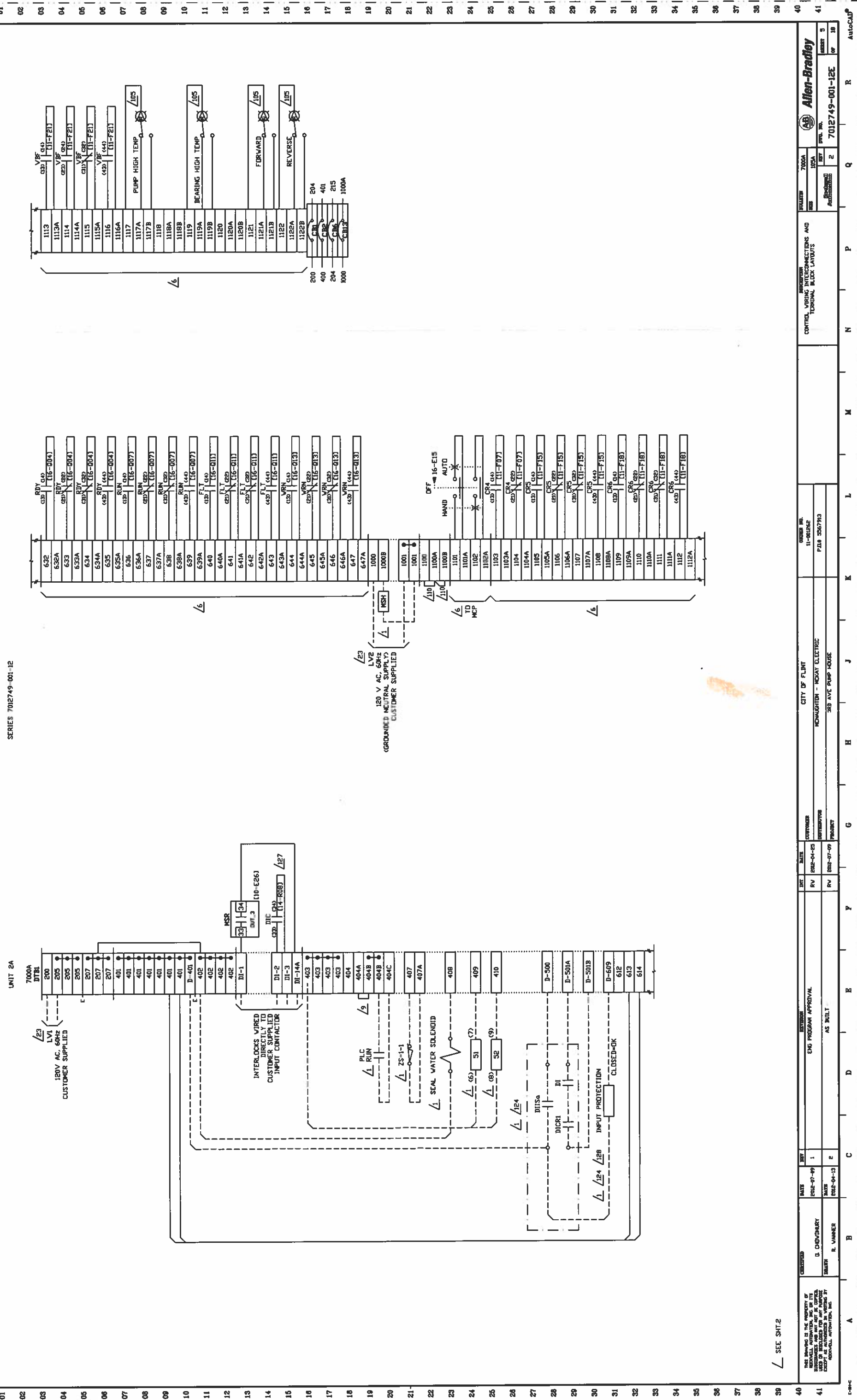
  

7000A	UNIT 2A
7012749-001-12E	



MEDIUM VOLTAGE DRIVE

SERIES 7012749-001-12



SEE SHIT 2

DATE	REV	BY	CHKD	DESCRIPTION	DATE	REV	BY	CHKD	DESCRIPTION
08-27-99	1	D. CHOUHARY		ENG PROGRAM APPROVAL	08-04-00				
08-29-13	2	R. VANDER		AS BUILT	08-07-99				

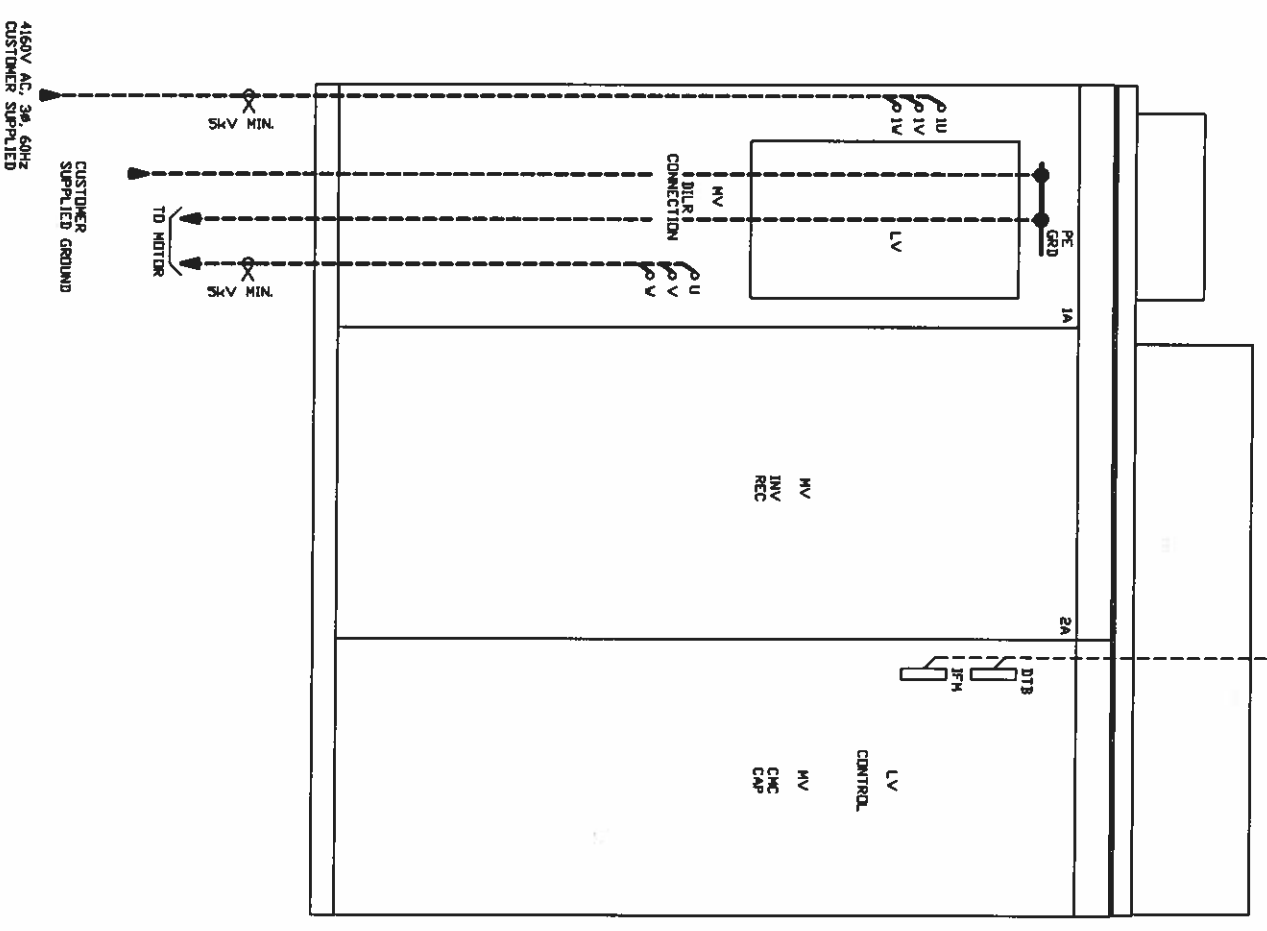
CITY OF FLINT	11-001242	11-001242
MONTAIGN - HOSEA ELECTRIC	FILE 3567913	FILE 3567913
383 AVE PUMP HOUSE		

7000A	7000A	7000A
115A	115A	115A
115B	115B	115B
115C	115C	115C

MEDIUM VOLTAGE AC DRIVE  
 7000A-AUSDED-RPDTD  
 SERIES 7012749-001-1E

CONTROL, SIGNAL  
 AND COMMUNICATION



01	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
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 STORAGE AND RETRIEVAL SYSTEM, WITHOUT  
 THE WRITTEN PERMISSION OF METCALLE  
 ELECTRIC, INC.

DATE	DESCRIPTION	BY	CHKD
02-27-99	1	D. CHANDLER	
02-24-99	2	R. VANNER	

REVISIONS

ENGINEER: D. CHANDLER  
 CHECKED: R. VANNER

DATE: 02-27-99

PROJECT: ENR PROJECT APPROVAL  
 AS BUILT

REV: 02-04-99  
 02-27-99

CITY OF FLINT  
 HOUGHTON - HOAY ELECTRIC  
 382 AVE PUMP HOUSE

11-08-98  
 P.D. 5857913

POWER VENDOR INTERCONNECTIONS

7000A  
 15A  
 2

7012749-001-1E

Allen-Bradley  
 Autocad

KEY INTERLOCK SYSTEM SUPPLIED BY ROCKWELL AUTOMATION

**DANGER**

SYSTEM INTEGRITY DEPENDS ON HAVING ONLY ONE KEY FOR EACH INTERCHANGE DESIGNATION. IF MORE KEYS ARE AVAILABLE, THE INTERLOCKING INTEGRITY IS LOST. SAFETY OF PERSONNEL AND EQUIPMENT WILL BE AFFECTED. THE CUSTOMER MUST ENSURE THAT HIS CONFIGURATION OF THIS EQUIPMENT INTO HIS SYSTEM DOES NOT VIOLATE THE FUNCTION DESCRIBED BELOW.

**DANGER**  
OBSERVE CAPACITOR DANGER LABELS ON DOORS. EXTERNAL CONTROL VOLTAGES WILL BE PRESENT. SEE DIAGRAMS.

**FUNCTION**

THE KEY INTERLOCK SYSTEM PREVENTS ACCESS TO THE MEDIUM VOLTAGE SECTIONS OF THE POWERFLEX 7000 DRIVE UNTIL THE MEDIUM VOLTAGE SUPPLY IS LOCKED OFF AT THE DRIVE INPUT CONTACTOR/BREAKER UNIT.

**TO GAIN ACCESS TO THE DRIVE MEDIUM VOLTAGE SECTIONS**

- 1) IF THE DRIVE IS RUNNING THE MOTOR, FIRST STOP THE MOTOR.
- 2) OPEN THE INPUT CONTACTOR/BREAKER BY PRESSING DRIVE EMERGENCY STOP.
- 3) OPEN THE INPUT ISOLATING SWITCH OR RACK OPEN THE BREAKER. LOCK IT OPEN AND REMOVE KEY K1.
- 4) INSERT KEY K1 INTO THE DOUBLE KEY DOOR LOCK IN THE DRIVE INVERTER/RECTIFIER SECTION.
- 5) THIS DOOR CAN NOW BE UNLOCKED AND THE K2 KEY CAN BE REMOVED.
- 6) TO RESTORE EQUIPMENT TO ORIGINAL SERVICE POSITION, REVERSE THE ABOVE STEPS.

**LEGEND**

L-O LOCKED OPEN

L-C LOCKED CLOSED

(K) KEY INTERLOCK ON ISOLATION SWITCH

[K] KEY INTERLOCK ON HV DOOR

(K)(K) MULTIPLE BARREL KEY INTERLOCK ON ISOLATION SWITCH

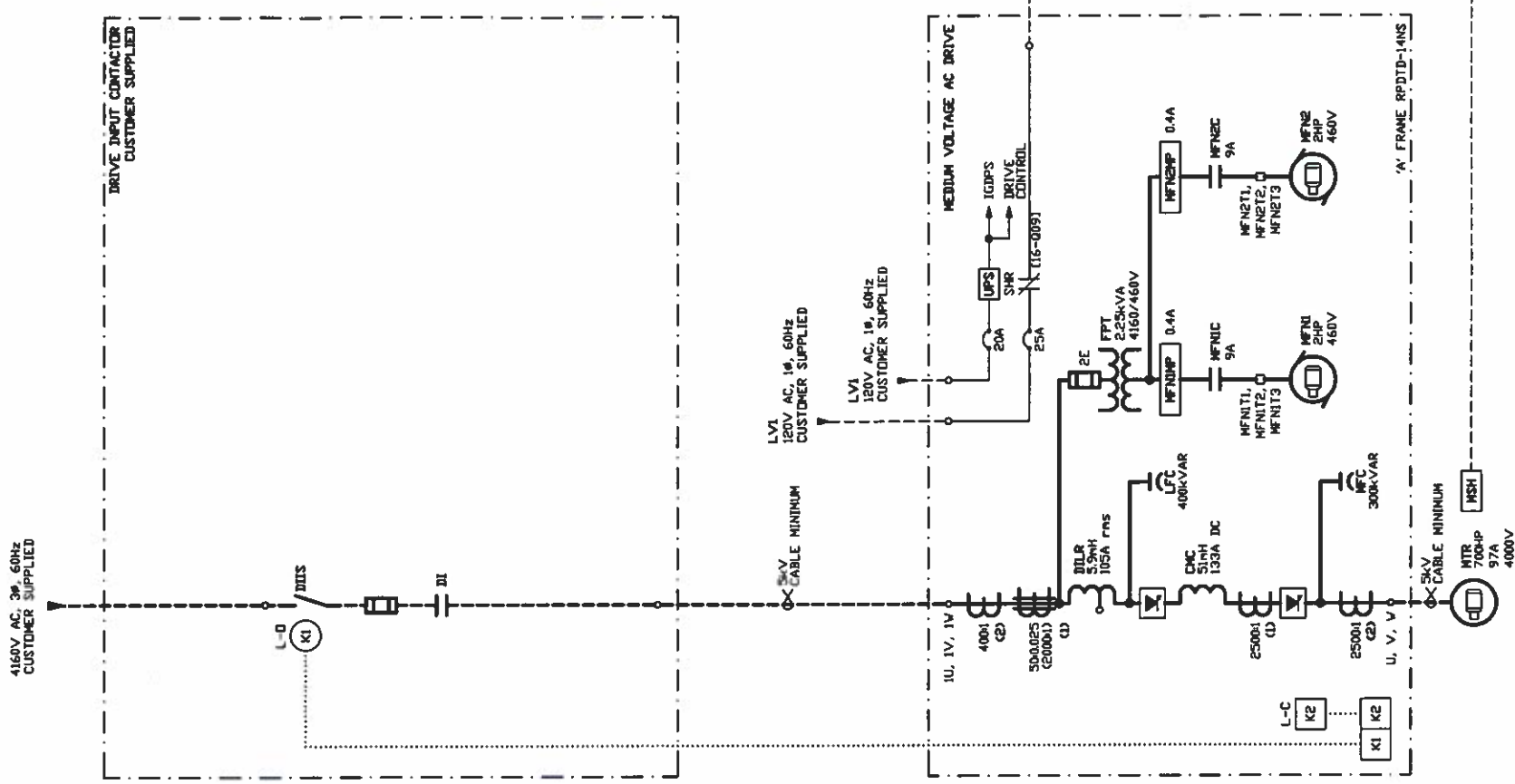
[K][K] MULTIPLE BARREL KEY INTERLOCK ON HV DOOR

[K][K][K] TRANSFER BLOCK

THE CUSTOMER IS RESPONSIBLE FOR INSTALLING A KEY INTERLOCK IN THE INPUT DEVICE, WHICH INTEGRATES WITH THE ROCKWELL AUTOMATION DRIVE KEY INTERLOCK SYSTEM, TO PREVENT ACCESS TO THE DRIVE MEDIUM VOLTAGE SECTIONS WITH INPUT POWER STILL APPLIED. SEE THIS SHEET FOR A DESCRIPTION OF THE KEY INTERLOCK SYSTEM.

**DANGER**

THE MEDIUM VOLTAGE DRIVE IS ONE COMPONENT IN THIS SYSTEM WHICH INCLUDES AN INPUT DEVICE SUPPLIED BY OTHERS. THE SUPPLIER OF THE INPUT DEVICE IS RESPONSIBLE FOR ENSURING THAT THERE IS SAFE ACCESS TO THE INPUT DEVICE AND SAFE ACCESS TO THE DRIVE.



DATE	REV	DESCRIPTION
08-07-99	1	ENG PROGRAM APPROVAL
08-01-13	2	AS BUILT

DATE	REV	DESCRIPTION
08-07-99	1	REVISED
08-01-13	2	AS BUILT

DESIGNED BY	11-00162
CHECKED BY	P.O. 3567913
CITY OF FLINT	FLINT, MI 48906
FORNATION - MCKAY ELECTRIC	250 AVE PUMP HOUSE

7000A	USA
REV	2
7012749-001-12E	

DESCRIPTION	ONE LINE DIAGRAM AND KEY INTERLOCKING
7000A	USA
REV	2
7012749-001-12E	

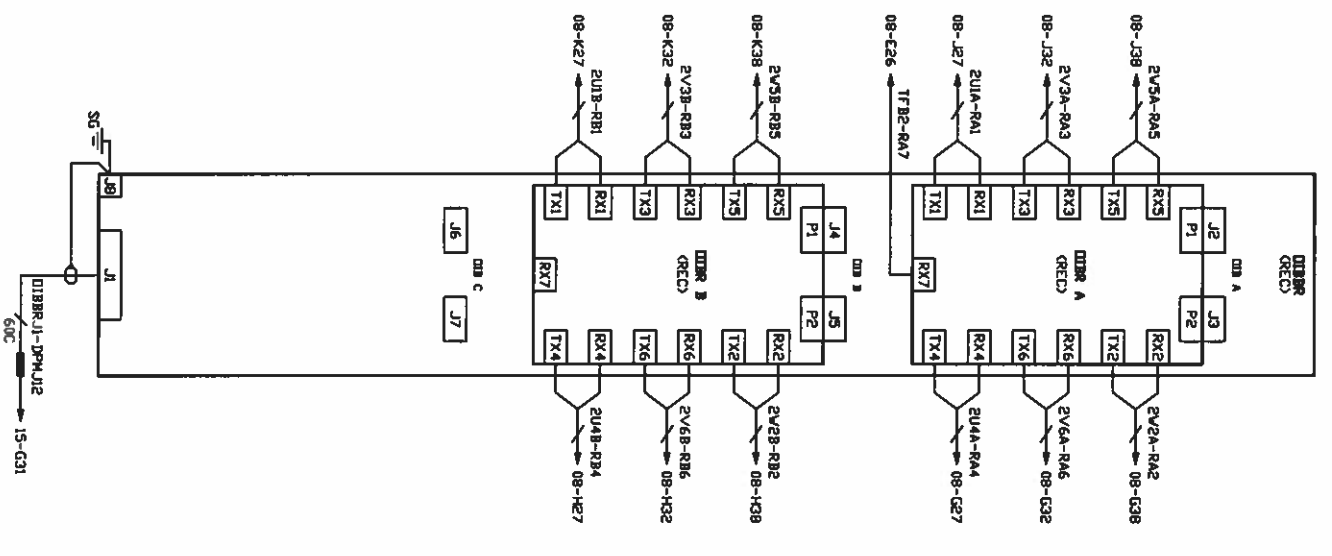
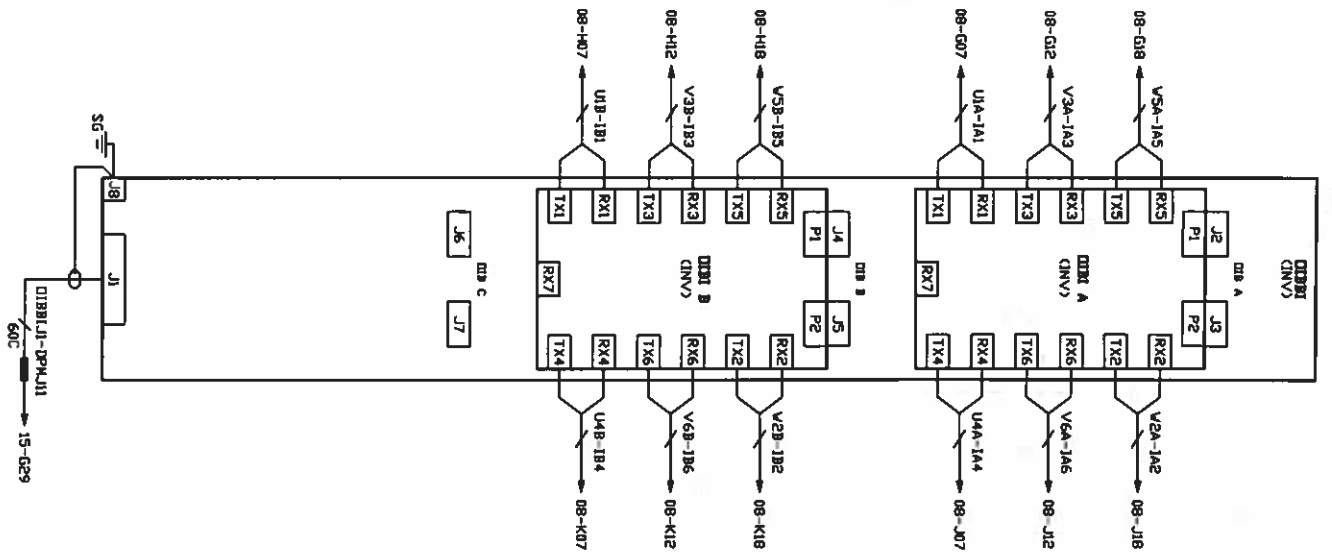
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REV	2
7012749-001-12E	

7000A	USA
REV	2
7012749-001-12E	

7000A	USA
REV	2
7012749-001-12E	

7000A	USA
REV	2
7012749-001-12E	

7000A	USA
REV	2
7012749-001-12E	



NO.	DATE	BY	REVISION
1	02-07-49	1	REVISED FOR APPROVAL
2	02-04-53	2	REVISED FOR APPROVAL

NO.	DATE	BY	REVISION
1	02-07-49	1	REVISED FOR APPROVAL
2	02-04-53	2	REVISED FOR APPROVAL

NO.	DATE	BY	REVISION
1	02-07-49	1	REVISED FOR APPROVAL
2	02-04-53	2	REVISED FOR APPROVAL

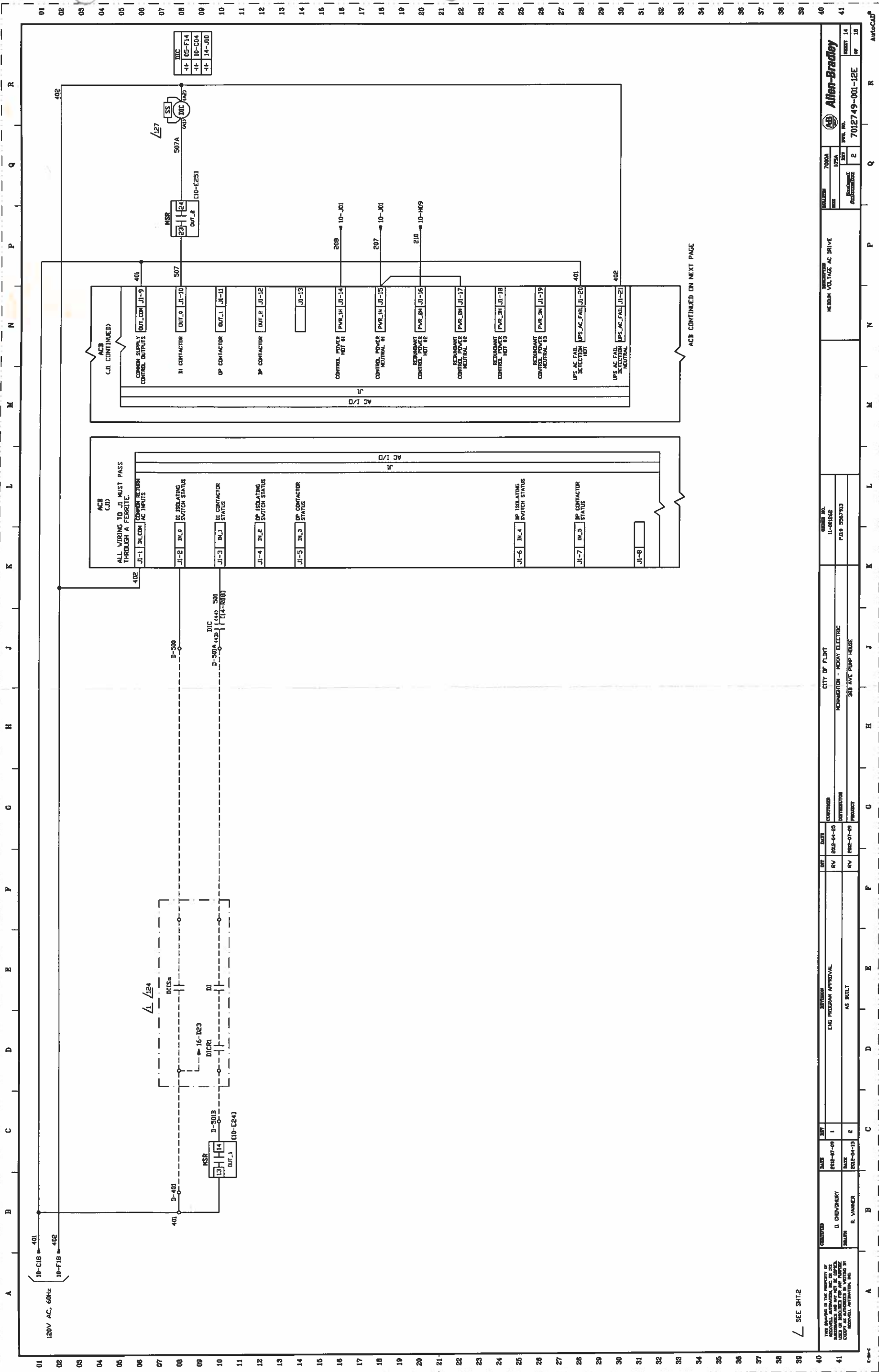
NO.	DATE	BY	REVISION
1	02-07-49	1	REVISED FOR APPROVAL
2	02-04-53	2	REVISED FOR APPROVAL

CITY OF FLINT  
 303 AVE. PUMP HOUSE  
 FLINT, MICHIGAN  
 48802

ENGINEER: D. CHURCH  
 DRAWN: R. WALKER

60C DPN J1 - DPN J12  
 60C DPN J2 - DPN J12

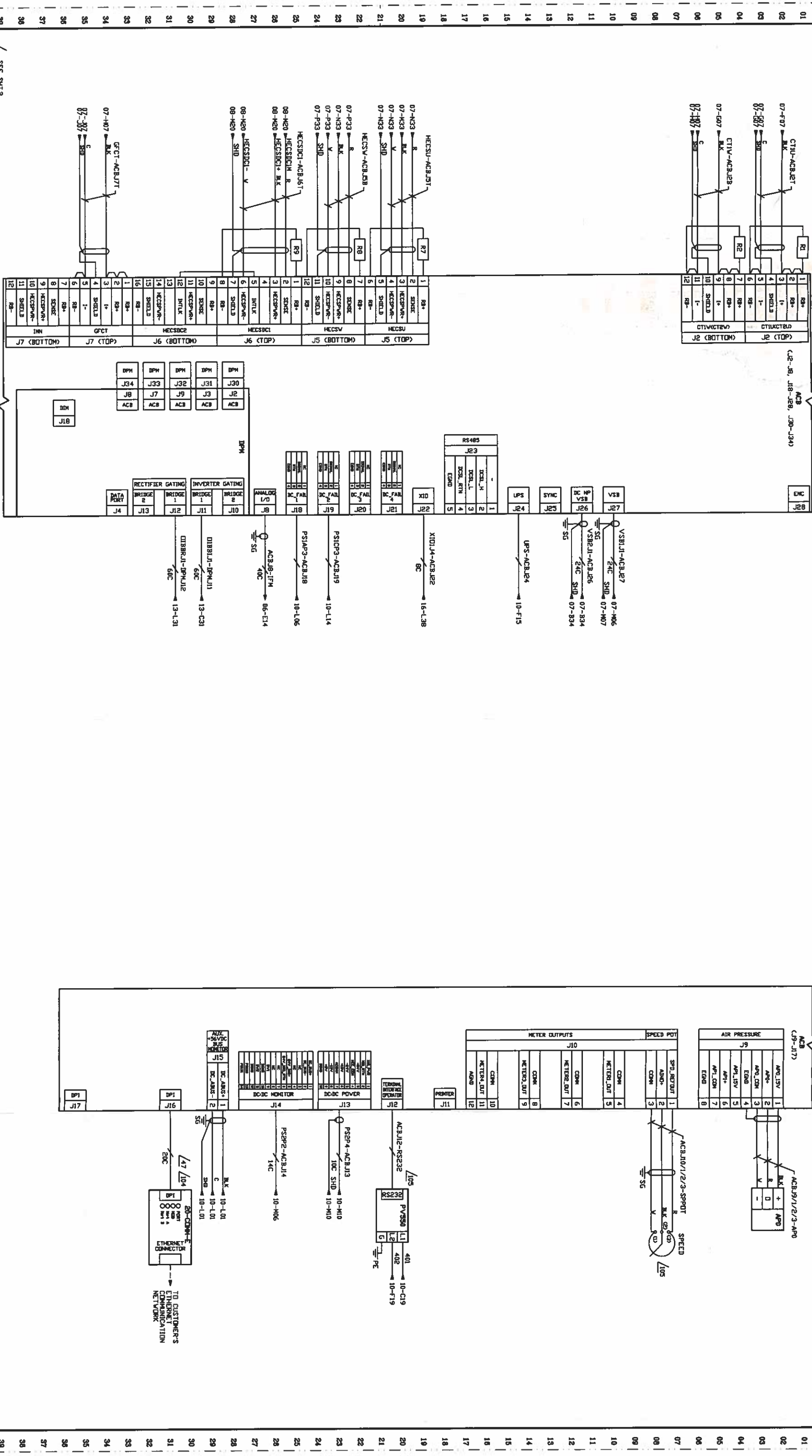
60C DPN J1 - DPN J12  
 60C DPN J2 - DPN J12



SEE SHEET 2

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	<p>AS BUILT</p>	<p>05-07-80</p>	<p>RV</p>	<p>PRODUCT</p>	<p>7012749-001-12E</p>	<p>REVISED          14</p>						

ACS CONTINUED FROM PREVIOUS SHEET



SEC SH12

40	DESIGNED BY	DATE	REV	DESCRIPTION	APPROVED BY	DATE
39	L. CHOPRA	07-01-99	1	ENCL PROGRAM APPROVAL	AS BUILT	
38	R. VANDER	08-04-03	2			
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7012749-001-12E



