REQUEST FOR PROPOSAL (RFP)
FOR
ARCHITECTURAL AND ENGINEERING SERVICES
FOR
ARCC/CR-20 - ELECTRICAL INFRASTRUCTURE REPLACEMENT
February 10, 2020

SPECIAL NOTE: This Request for Proposal (RFP) does not obligate the Minnesota State Colleges and Universities system, hereinafter referred to as “Minnesota State”, its Board of Trustees, or Anoka-Ramsey Community College to award a contract or complete the proposed project and each reserves the right to cancel this RFP if it is considered to be in its best interest. Responding vendors must include the required information called for in this RFP. Minnesota State reserves the right to reject a proposal if required information is not provided or is not organized as directed.
# Request for Proposal (RFP)

**For**

**Architectural and Engineering Services**

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SECTION I. GENERAL INFORMATION

Background

Minnesota State is the fifth-largest system of higher education in the United States. It is comprised of 31 two-year and four-year state colleges and universities with 54 campuses located in 47 Minnesota communities. The System serves approximately 430,000 students each year. Minnesota State is an independent state entity that is governed by a 15 member Board of Trustees. For more information about Minnesota State, please view its website at www.Minnesota State.edu.

Anoka-Ramsey Community College, Coon Rapids Campus is nestled on the scenic banks of the Mississippi River on the western edge of Coon Rapids, twenty miles north of the Twin Cities, and just one mile from the city of Anoka. The 101.5-acre suburban campus primarily serves the northern metropolitan Twin Cities area. The Coon Rapids Campus offers more than 50 different career and degree options and six bachelor programs.

Campus History

Anoka-Ramsey began in 1965 with 600 students in a wing of Centennial High School in Circle Pines, MN. In 1967, the college moved to the current Coon Rapids location with the newly-constructed facility opened doors to 1,373 students, becoming the first "junior college" campus in the Twin Cities Metropolitan area. Today, the facility encompasses 453,572 sq. ft.

Purpose of this Request for Proposal

The Minnesota State Board of Trustees, on behalf of Anoka Ramsey Community College, hereafter referred to as the “Owner”, is soliciting proposals from interested, qualified consultants, and intends to retain a professional consulting firm to provide Architectural/Engineering and Interior Design services, hereafter referred to as the “A/E”, to assist with the design and/or construction coordination of the described facilities improvement(s), hereafter referred to as the “Project”. This RFP is undertaken by Anoka-Ramsey Community College pursuant to the authority contained in provisions of Minnesota Statutes § 136F.581 and other applicable laws.

The purpose of this Request for Proposal (RFP) is to evaluate and select an A/E to assist the Owner in the performance of its obligations and enforcement of its rights during the design and/or construction of the Electrical Infrastructure Replacement Project located at Anoka-Ramsey Community College, Coon Rapids, MN.

The A/E shall work with the Owner’s appointed Project Manager, the Owner’s System Office Program Manager, the Owner’s Representative, related consultants and the construction contractor(s) to administer the design and/or construction contract(s) on behalf of the Owner to assure that the Project is designed and constructed in accordance with the Minnesota State Design Standards and the Contract Documents and that the Project is completed on schedule, on budget and to a level of quality commensurate with the Owner’s requirements.
**Project Information**

**Project Scope and Team**

Anoka-Ramsey Community College operates on its own primary electrical distribution system on our Coon Rapids Campus. Our electrical systems, is directly connected to the utility’s distribution lines, in this case 13,800 Volts (13.8kV). Power is than distributed around the campus by the college-owned transformers (substations) that step the voltage down in each building. The campus has 12 of these substations, each consisting of a 13.8kV switch, a transformer, and low voltage equipment. Our desire is to eliminate the 13.8kV from the campus by having the utility provide two services, one from the north and one from the south side of the campus, each will provide the necessary amperage in 480/277 volt power. We will also install a backup generation system to take care of critical campus need in the event of a power outage. Refer to the project pre-design report for more information.

Key features of the project include:
- Remove 13.8kV from campus and replace with 480/277V power distribution. This will have to be coordinated to minimally affect, the operations of the campus.
- Provide and install a backup generation system that meets the determinations in the pre-design assessment.
- Secure necessary Minnesota State Design Standard variances required to run conduit and other components on the roof of the campus buildings. We anticipate that running new power cabling through the building would be technically infeasible.

The campus desires the project to be constructed as a single project with the proper sequencing to lessen the impact on the campus. The Owner intends to use the Design/Bid/Build delivery method for this project.

The project team will interface with other concurrent projects on campus which include the renovation of the Business and Nursing Building and the renovation of the College Services and Library.

**Project Budget and Fees**

The estimated cost of construction is $3,900,000.

The design fee for all Basic and Supplemental Services is estimated to range from 8.0 - 9.5% of the estimated construction cost. Final total fees will be negotiated with the selected Design Team.

The estimated total Project cost is **$4,300,000**. This cost includes: all professional consultants, Architect/Engineer and Owner’s Representative fees, site investigations and surveys, hazardous materials removals design, construction cost, project management and fees, construction inspection and testing, furniture, fixtures and equipment, contingencies, art and inflation factors. This project is funded by Higher Education Asset Preservation and Replacement (HEAPR) funds.

Final contract amount will be negotiated with the selected Consultant. The rates provided by the Consultant in response to this RFP may be used by the Owner to add or deduct services to modify the contract as necessary.
Proposed Project Milestone Schedule

The overall project schedule is:

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schematic Design completion</td>
<td>April 15, 2020</td>
</tr>
<tr>
<td>Design Development completion</td>
<td>May 29, 2020</td>
</tr>
<tr>
<td>Construction Documents completion</td>
<td>June 30, 2020</td>
</tr>
<tr>
<td>Issue Bid Documents</td>
<td>July 1, 2020 (date of</td>
</tr>
<tr>
<td></td>
<td>anticipated funding)</td>
</tr>
<tr>
<td>Construction commencement</td>
<td>August 1, 2020</td>
</tr>
<tr>
<td>Substantial Completion</td>
<td>June 1, 2021</td>
</tr>
<tr>
<td>Final Completion</td>
<td>August 1, 2021</td>
</tr>
</tbody>
</table>

It is important to the campus to achieve the completion and occupancy dates in the above Project Schedule. Responders to this RFP must be able to execute the project within the timeline shown or propose an alternative approach in the RFP response.

Project Predesign Information

The following documents are available for review at: http://www.minnstate.edu/vendors/index.html under Facilities Opportunities.

- Pre-design report prepared by Karges-Faulconbridge, Inc (KFI), dated March 13, 2018

Selection Process

The selection committee includes the following people Anoka-Ramsey Community College and the system office Program Manager. This group will evaluate the proposals and make the final decision.

Selection and Implementation Timeline

<table>
<thead>
<tr>
<th>EVENT</th>
<th>DAY</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFP advertisement</td>
<td>Monday</td>
<td>February 10</td>
<td></td>
</tr>
<tr>
<td>Information Meeting</td>
<td>Tuesday</td>
<td>February 18, 2020</td>
<td>2:00 PM</td>
</tr>
<tr>
<td>RFP Questions due</td>
<td>Friday</td>
<td>February 21, 2020</td>
<td>2:00 PM</td>
</tr>
<tr>
<td>RFP Addendum posted</td>
<td>Monday</td>
<td>February 24, 2020</td>
<td>-</td>
</tr>
<tr>
<td>RFP Response DUE</td>
<td>Wednesday</td>
<td>February 26, 2020</td>
<td>2:00 PM</td>
</tr>
<tr>
<td>Planned selection</td>
<td>Friday</td>
<td>February 28, 2020</td>
<td></td>
</tr>
<tr>
<td>Planned contract execution</td>
<td></td>
<td>March 6, 2020</td>
<td></td>
</tr>
</tbody>
</table>

An interview would occur **February 27, 2020 at 9:00 am** if requested by the campus.

If the Owner and the vendor are unable to negotiate and sign a contract by **March 6, 2020**, the Owner reserves the right to seek an alternative vendor.
Informational Project Meeting
Minnesota State will hold a **MANDATORY** informational meeting on **February 18, 2020**, at 2:00, at Anoka Ramsey Community College 11200 Mississippi Blvd. Coon Rapids, MN 55433 Room C-270, you may park on the loading dock if space is available. It is required that all potential or interested responders attend the conference.

Questions Regarding This Project
Anoka Ramsey Community College’s agent for purposes of responding to inquiries about the RFP is:

- **Name:** Ken Karr
- **Title:** Director of Facilities
- **E-mail address:** kenneth.karr@anokaramsey.edu

Other persons are not authorized to discuss RFP requirements before the proposal submission deadline and Anoka Ramsey Community College shall not be bound by and responders may not rely on information regarding RFP requirements obtained from non-authorized persons. Questions must include the name of the questioner and his/her telephone number, fax number and/or e-mail address. Anonymous inquiries will not be answered. If appropriate, a change responding to questions or clarifications may be issued by Anoka Ramsey Community College in the form of addenda to the RFP. All addenda will be posted at [http://www.minnstate.edu/vendors/index.html](http://www.minnstate.edu/vendors/index.html).

Contract
The successful Respondent will be required to meet all the terms and conditions and execute the most current Minnesota State AIA Document B101 – 2017, Standard form of Agreement between Owner and Architect as amended by Minnesota State Colleges and Universities and its accompanying Project Attachment, and AIA Document A201-2017.


Parties to the Contract
Parties to this contract will be the State of Minnesota, acting through its Board of Trustees of the Minnesota State Colleges and Universities on behalf of Anoka Ramsey Community College and the successful vendor.

Duration of Offer
All proposal responses must indicate they are valid for a minimum of **thirty (30)** calendar days from the date of the proposal opening unless extended by mutual written agreement between Anoka Ramsey Community College and the CONSULTANT. Prices and terms of the proposal as stated must be valid for the length of the resulting Purchase Order.
SECTION II. VENDOR REQUIREMENTS

Required Consultant Team

- Electrical Engineer licensed in Minnesota, as project lead for the overall design, project management, and project scheduling that includes phasing concepts for construction, and construction administration.
- Architect - licensed in Minnesota, as applicable
- Structural Engineer - licensed in Minnesota, as applicable
- Mechanical Engineer - licensed in Minnesota, as applicable
- Cost Estimating – may be in-house

Services Provided by Others

The Owner may contract directly for, or arrange to provide:

- Commissioning Agent
- Hazardous materials survey, design and abatement, as needed
- Construction testing
- Roofing consultant

Scope of Services

The selected design team shall review Articles 2 and 3 of the AIA B101-2017 contract for a full description of responsibilities required of the A/E firm.

Basic Services

Some highlights are as follows:

A. General:

- Examine the project’s design documents and balance the program needs for this project with the budget.
- Evaluate existing buildings’ structural, mechanical, electrical, and telecommunications systems to verify capacities to support the existing and proposed renovated building spaces.
- Assist the campus in evaluating construction-phasing options that minimize the disruption of the academic schedule. Clearly communicate design and cost ramifications of the schedule’s impact to allow the campus a complete understanding of the design and schedule decisions.
- Investigate life cycle costs during the design process. Life cycle cost considerations include but are not limited to: energy efficiency; sustainability; and the maintainability of design, materials, and equipment.
- Meet schedule deadlines, provide accurate cost estimating, and design buildings for ease of constructability. Quality control and complete, accurate and fully coordinated Contract Documents are an important element of the selected Design Team’s services.
- All drawings and specifications shall conform to Minnesota State Colleges and Universities
Facilities Design Standards and adhere to all applicable building, life safety, and energy codes. Apply for variance requests as needed.

- The successful vendor shall utilize the Owner’s web-based enterprise project management system (EPMS), called e-Builder. This software includes real time Internet visibility of the Project status, coordination, reporting, and a central location for all Project information. The functionality of this software may include, but is not limited to the processing of: Plan Reviews, contracts, Purchase Orders, Change Orders, Invoices, Applications for Payment, and Requests for Information, Submittals and document management related to the Project. Minnesota State will provide and manage a log-in license for the vendor's designated Project representative(s) at no cost to the vendor. Minnesota State will provide initial software training to the vendor’s designated Project representative(s) at no cost to the vendor. Except for licenses and initial training, Minnesota State assumes no responsibility for any real or potential costs associated with the use of this software by the vendor.

B. **Design**: Develop and refine the design to meet Owner’s stated goals and budgeted cost of the work.
   - Develop design deliverables by phase as described in the Facilities Design Standards located at: [http://www.minnstate.edu/system/finance/facilities/design-construction/resources.html](http://www.minnstate.edu/system/finance/facilities/design-construction/resources.html).
   - Participate in Design Technical review at the system office prior to proceeding with Construction Documents.

C. **Construction Documents**: Prepare drawings and specifications per the Minnesota State Facilities Design Standards, the Minnesota State Reroofing Design Standards Manual, and the Minnesota State Exterior Masonry Design Standards Manual as minimums, all as applicable.
   - Include Division 0 documents from the Minnesota State Facilities Web site, prevailing wage rates for the county where the work is to be performed from the Department of Labor and Industry web site, and specification sections using CSI format sections as applicable to the specific Project.
   - Provide technical specifications for each division and section that applies to the project. Include a separate title page with signature block for approval, table of contents, drawing schedule, and division 0 documents.
   - All drawings and specifications necessary to convey the exact scope of the work and the full intent of the design.

D. **Bid & Award**: Coordinate bid dates and times with the campus personnel where the project is located. The campus will advertise the project following Minnesota State’s On-Line Bidding procedures via QuestCDN.
   - Prepare project documents, upload to e-Builder. Review document **DIV00.0001 Instructions for Division 00 Documents Advertised Bids** on the Minnesota State eManual for detailed instructions on the format needed for bidding.
   - Attend Pre-bid meeting and provide meeting notes.
   - Prepare addenda for the Owner to post as applicable.
   - Provide award recommendations to the Owner.
   - Provide a conformed set of documents to the Owner prior to the pre-construction meeting.

E. **Construction Administration**: Pre-construction, Construction (progress), and Pre-Installation
Meetings.
- Attend and document progress meetings. Verify all required permits are obtained by the Contractor. Review and approve submittals, review and approve Contractor’s Applications for Payment, initiate construction change directives and change orders, coordinate with campus personnel and campus schedules
- Verify construction conformance with the Contract Documents.
- Coordinate sub-consultant inspections and testing, if applicable.

F. **Project Closeout**: Conduct inspection(s) for Substantial Completion(s), provide Certificate(s) of Substantial Completion, and written punch list(s). Coordinate and document receipt of warranties, operation and maintenance manuals. Provide record documents as required by the contract. Coordinate Project Final Closeout(s) including verify completion of punch list(s) and final Application for Payment submittal.
SECTION III. RESPONSE CONTENTS AND EVALUATION

Scoring Criteria

Criteria described below, based upon the point scale, will be used to evaluate Respondents’ proposal. The evaluation may include requests for additional information, and will focus on the specifics of the Respondent’s response to the RFP and approach. The response to the RFP will be evaluated by the following criteria:

Pass / Fail requirements
- Responder’s proposal must be submitted on time.
- Attend mandatory information meeting.

Company profile – 10 points
The Respondent will submit a company profile. Factors favorable to a Respondent will be stability of the Respondent’s business and greater length of experience that would contribute to the Respondent’s performance on this project. Describe problem-solving successes on a) service and support generally, b) service and support as reflected by quality control, and c) service and support as reflected by use of information technology. Factors favorable to a Respondent are:
- Ability to demonstrate a service and support approach that serves the interests of the Owner on this project
- A detailed and wide-ranging quality assurance plan for all elements of work the Respondent would perform on this project
- Sophisticated and state-of-the art information technology in its performance of its project duties

Project team – 20 points
The Respondent will list the members of its team that will be assigned to the project, their planned responsibilities on this project, and the anticipated percentage of the time of each to be used during specified portions of the project period. The Respondent will attach summary resumes of all team members, stating the years of each with the company, as well as qualifications and special expertise, including specific experience with projects similar to the one that is the subject of this RFP. Highlight individual experience if performed under a previous firm. Factors favorable to a Respondent are the assignment of experienced and highly qualified team members with substantial expertise on similar projects.

Provide a brief statement of the Team’s past or present working relationships. Explain how each separate design sub-consultant will be utilized (e.g. major role during portions of the design, not participating during construction, etc.). Matrix or chart is suggested. For each Team personnel member, provide:
- Name and position in firm, include name of firm
- Home base (if in a multi-office firm)
- Responsibility on this project, years of experience
- Relevant recent experience (note if experience is with another firm)
- Registration – List Minnesota Registration numbers for licensed professionals,
Relevant team experience - 20 points
The Respondent will provide a brief summary of experience with projects of similar nature and scope to the project, specifically stating project description, scale and complexity, and geographic location of each. The summary should include the following:
   A. Projects at Minnesota State
   B. The members of your proposed team for the present project that worked on the previous project and in what capacity.
   C. Non-Minnesota State projects. The Respondent shall provide as to these projects the name of the Owner and the name of an Owner’s contact person with phone number and email address.

Project approach - 20 points
The Respondent should describe its understanding of the project and its approach and methodology. Describe the anticipated difficulties or challenges in providing services to the Owner on this project, how it expects to manage those difficulties or challenges, and what assistance it requires from the Owner for such management. Additionally, the Respondent should describe any special services, product characteristics, or generally other benefit or advantage to the Owner in selecting the Respondent for the project.

Fee - 25 points
Provide a lump sum fee for all basic and supplemental services. Also, list for each of the phases of the project work, the team members by name providing services, their estimated hours and hourly rate. Reimbursement for travel and subsistence expenses actually and necessarily incurred by the Respondent in performance of this contract shall be included in the Respondent’s lump sum fee. The rates listed on the RFP may be used by the Owner to add or deduct services to modify the RFP response or subsequent contract on a per hour basis.

The evaluation for cost of services (excluding reimbursables) will award points according to the lowest fee proposal. The lowest fee proposal will receive the maximum points. Points will be awarded to each of the other proposals by dividing the lowest proposal by each of the other proposal costs. The answer will always be less than 1. Take the answer of the division and multiply by the maximum points. The answer will be the number of points (rounded to the nearest whole number) assigned to the total cost for this Respondent.

Unique Qualifications – 5 points
Describe any unique services or qualifications that may benefit the Owner in the execution of the proposed project.

Preferences – 6 points (extra)
In accordance with M.S. 16C.16, the basis of award is that eligible certified targeted group (T.G.), economically disadvantaged (E.D.), and Veteran Owned small businesses will receive a six percent (6%)
preference. Preferences are not cumulative; the total percentage of preference granted on a contract
may not exceed the highest percentage of preference allowed for that contract.

Eligible, verified, small businesses currently listed in the Directory of Certified Targeted Group,
Economically Disadvantaged and Veteran-Owned Vendors will be eligible for the preference. This
directory is located at http://www.mmd.admin.state.mn.us/mn02001.htm.

Please complete Attachment 4: Preference Form and Attachment 5: Veteran-Owned Preference form, if
applicable. Attach a copy of your firm’s letter indicating certification by the Office of Equity in
Procurement, if applicable.

Responders interested in becoming a certified vendor or to verify their T.G. eligibility and certification or
E.D. certification, should refer to the state of Minnesota, Department of Administration, Office of Equity
in Procurement Division website at https://mn.gov/admin/business/vendor-info/oep/sbcp/, or call the
division’s help line at (651) 296-2402.
SECTION IV. ADDITIONAL REQUIREMENTS

RFP Response

Rights Reserved
Notwithstanding anything to the contrary, the Minnesota State Colleges and Universities, or Anoka-Ramsey Community College reserves the right to:

1. Cancel the Request for Proposal at any time with no cost or penalty to the State.
2. Reject any and all responses received in response to this RFP;
3. Disqualify any Responder whose submittal fails to conform to the requirements of the RFP;
4. Duplicate all materials submitted for purposes of RFP evaluation, and duplicate all public information in response to data requests regarding the RFP;
5. Select for contract or for negotiations a Proposal other than that with the lowest cost or the highest evaluation score;
6. Negotiate as to any aspect of the Proposal with the selected Responder;
7. Extend the contract, not to exceed a total contract term of five (5) years;
8. Change any provisions in this RFP by posting Addenda on Minnesota State website; and
9. Waive any non-material deviations from the requirements and procedures of this RFP and waive informalities contained in the RFP.

All costs incurred in responding to this RFP will be borne by the Responder. This RFP does not obligate the Owner to award a contract or complete the project, and the Owner reserves the right to cancel the solicitation if it is considered to be in its best interest.

Attachment B: Workforce Certification
For all contracts estimated to be in excess of $100,000, Responders are required to complete the State of Minnesota – Workforce Certificate Information page and return it with the response. The form is available at Workforce Certificate / Minnesota.gov, click on "Forms." As required by Minn. R. 5000.3600, “It is hereby agreed between the parties that Minn. Stat. §363A.36 and Minn. R.5000.3400 - 5000.3600 are incorporated into any contract between these parties based upon this specification or any modification of it”. A copy of Minn. Stat. § 363.36 and Minn. R.5000.3400 - 5000.3600 are available on the website http://www.admin.state.mn.us/recs.

Attachment H: Affidavit of Non-Collusion
Respondents are required to complete Attachment H. Affidavit of Non-Collusion form and submit it with the response.

Contract

Insurance Requirements
By submission of a proposal, Responder certifies that it is in compliance with all insurance requirements specified in the proposed sample contract, see Article 2.5. The selected vendor will be required to maintain and furnish satisfactory evidence of insurance for the duration of the contract.
Notice to Vendors and Contractors
As a condition of this contract, CONTRACTOR is required by Minn. Stat. §270C.65 to provide a social security number, a federal tax identification number or Minnesota tax identification number. This information may be used in the enforcement of federal and state tax laws. These numbers will be available to federal and state tax authorities and state personnel involved in approving the contract and the payment of state obligations. Supplying these numbers could result in action to require CONTRACTOR to file state tax returns and pay delinquent state tax liabilities. This contract will not be approved unless these numbers are provided.

If you are an independent contractor, Minn. Stat. §256.998 requires the state to report your name, address and social security number to the New Hire Reporting Center of the Minnesota Department of Human Services unless your contract is for less than two months in duration with gross earnings of less than $250.00 per month. This information may be used by state or local child support enforcement authorities in the enforcement of state and federal child support laws.

State Audit
The books, records, documents and accounting practices and procedures of the vendor relevant to the contract(s) must be available for audit purposes to Minnesota State and the Legislative Auditor’s Office for six (6) years after the termination/expiration of the contract.

Minnesota Government Data Practices Act
The requirements of Minnesota Statutes § 13.05, subd. 11 apply to the contract. The vendor must comply with the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13, as it applies to all data provided by Minnesota State, its schools and the System Office in accordance with the contract and as it applies to all data created, gathered, generated or acquired in accordance with the contract. All materials submitted in response to this RFP will become property of the State of Minnesota and will become public record after the evaluation process is completed. Pursuant to the statute, completion of the evaluation process occurs when Minnesota State has completed negotiating the contract with the selected vendor. If the vendor submits information in response to this RFP that it believes to be trade secret materials as defined by the Minnesota Government Data Practices Act, the vendor must:

- mark clearly all trade secret materials in its response at the time the response is submitted;
- include a statement with its response justifying the trade secret designation for each item;
- defend any action seeking release of the materials it believes to be trade secret, and indemnify and hold harmless the State of Minnesota, Minnesota State, its agents and employees, from any judgments or damages awarded against the State or Minnesota State in favor of the party requesting the materials, and any and all costs connected with that defense. This indemnification survives Minnesota State award of a contract. In submitting a response to this RFP, the responder agrees this indemnification survives as long as the trade secret materials are in possession of Minnesota State.

Minnesota State will not consider the prices submitted by the Responder to be proprietary or trade secret materials.
Conflict of Interest
The CONSULTANT must provide a list of all entities with which it has relationships that create, or appear to create, a conflict of interest with the work that it is contemplated in this Request for Proposal. The list should indicate the names of the entity, the relationship, and a discussion of the conflict.

Organizational Conflicts of Interest
The responder warrants that, to the best of its knowledge and belief, and except as otherwise disclosed, there are no relevant facts or circumstances that could give rise to organizational conflicts of interest. An organizational conflict of interest exists when, because of existing or planned activities or because of relationships with other persons, a vendor is unable or potentially unable to render impartial assistance or advice, or the vendor’s objectivity in performing the contract work is or might be otherwise impaired, or the vendor has an unfair competitive advantage. The responder agrees that, if after award, an organizational conflict of interest is discovered, an immediate and full disclosure in writing must be made to the respective school’s chief financial officer or the System Office’s Business Manager that must include a description of the action which the vendor has taken or proposes to take to avoid or mitigate such conflicts. If an organizational conflict of interest is determined to exist, the school or System Office may, at its discretion, cancel the contract. In the event the responder was aware of an organizational conflict of interest prior to the award of the contract and did not disclose the conflict to the contracting officer, the school or System Office may terminate the contract for default. The provisions of this clause must be included in all subcontracts for work to be performed similar to the service provided by the prime contractor, and the terms “contract,” “contractor,” and “contracting officer” modified appropriately to preserve the rights of Minnesota State.

Physical and Data Security
The vendor is required to recognize that on the performance of the contract the vendor will become a holder of and have access to private data on individuals and nonpublic data as defined in the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13; and other applicable laws.

In performance of the contract, the vendor agrees it will comply with all applicable state, federal and local laws and regulations, including but not limited to the laws under Minnesota Statute Chapters 13 relating to confidentiality of information received as a result of the contract. The vendor agrees that it, its officers, employees and agents will be bound by the above confidentiality laws and that it will establish procedures for safeguarding the information.

The vendor agrees to notify its officers, employees and agents of the requirements of confidentiality and of the possible penalties imposed by violation of these laws. The vendor agrees that neither it, nor its officers, employees or agents will disclose or make public any information received by the vendor on behalf of Minnesota State and Anoka Ramsey Community College.

The vendor shall recognize the sole and exclusive right of Minnesota State to control the use of this information. The vendor further agrees it shall make no use of any of the described information, for either internal or external purposes, other than that which is directly related to the performance of the contract.

The vendor agrees to indemnify and hold harmless the State of Minnesota, Minnesota State, and Anoka Ramsey Community College from any and all liabilities and claims resulting from the unauthorized
disclosure by the vendor, its officers, employees or agents of any information required to be held confidential under the provisions of the contract. The vendor must return all source data to the “Authorized Representative” to be identified in the contract.
SECTION IV. RFP RESPONSE

Submission

By submitting a response to the RFP for this project, your firm commits to the schedule and to dedicating the required staff for the duration of the project.

Sealed proposals must be received at the following address no later than 2:00 p.m. CT on Wednesday, February 26, 2020: Drop off at Information desk on main floor.

Name: Ken Karr
Title: Director of Facilities
Address: 11200 Mississippi Blvd. Coon Rapids, MN 55433

Quantity

The responder shall submit one [1] hard copy of its RFP response and one [1] electronic copy on media of choice in PDF format. Proposals are to be sealed in mailing envelopes or packages with the responder’s name and address clearly written on the outside.

Format

The format shall be a maximum of 20 pages, not counting the cover, cover letter, signature page, index, section divider tab sheets, and required Attachments.

Proposals received after this date and time will be returned to the responder unopened.

Proposals made in pencil will be rejected. Alterations in cost figures used to determine the lowest priced proposal will be rejected unless initialed in ink by the person responsible for or authorized to make decisions as to price quoted. The use of “white out” is considered an alteration.
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STATE OF MINNESOTA
AFFIDAVIT OF NON-COLLUSION

I swear (or affirm) under the penalty of perjury:

1. That I am the Responder (if the Responder is an individual), a partner in the company (if the Responder is a partnership), or an officer or employee of the responding corporation having authority to sign on its behalf (if the Responder is a corporation);

2. That the attached proposal submitted in response to the ________________________ Request for Proposal has been arrived at by the Responder independently and has been submitted without collusion with and without any agreement, understanding or planned common course of action with, any other Responder of materials, supplies, equipment or services described in the Request for Proposal, designed to limit fair and open competition;

3. That the contents of the proposal have not been communicated by the Responder or its employees or agents to any person not an employee or agent of the Responder and will not be communicated to any such persons prior to the official opening of the proposals; and

4. That I am fully informed regarding the accuracy of the statements made in this affidavit.

Responder’s Firm Name: ___________________________________________

Authorized Signature: _____________________________________________

Date: __________________________________________________________

Subscribed and sworn to me this _______ day of ___________

Notary Public: _________________________________________

My commission expires: ________________________________
ATTACHMENT 2

MINNESOTA STATE COLLEGES AND UNIVERSITIES
NOTICE TO CONTRACTORS
WORKFORCE CERTIFICATION OF COMPLIANCE

It is hereby agreed between the parties that Minnesota State will require that affirmative action requirements be met by contractors in relation to Minnesota Statutes §363A.36 and Minnesota Rules, 5000.3400 to 5000.3600. Failure by a contractor to implement an affirmative action plan or make a good faith effort shall result in revocation of its certificate or revocation of the contract (Minnesota Statutes §363A.36, subdivisions 3 and 4).

Under the Minnesota Human Rights Act, §363A.36, businesses or firms entering into a contract over $100,000 which have more than forty (40) full-time employees within the state of Minnesota on a single working day during the previous twelve (12) months, or businesses or firms employing more than forty (40) full-time employees on a single working day during the previous twelve (12) months in a state in which its primary place of business is domiciled and that primary place of business is outside of the State of Minnesota but within the United States, must have submitted an affirmative action plan that was received by the Commissioner of Human Rights for approval prior to the date and time the responses are due. A contract over $100,000 will not be executed unless the firm or business having more than forty (40) full-time employees, either within or outside the State of Minnesota, has received a certificate of compliance signifying it has an affirmative action plan approved by the Commissioner of Human Rights. The Certificate is valid for four (4) years. For additional information, contact the Department of Human Rights, Freeman Building, 625 Robert Street North, Saint Paul, MN 55155.

Effective July 1, 2003. The Minnesota Department of Human Rights is authorized to charge a $150.00 fee for each Certificate of Compliance issued. A business or firm must submit its affirmative action plan along with a cashier's check or money order in the amount of $150.00 to the Minnesota Department of Human Rights or you may contact the Department for additional information at the Compliance Services Unit, Freeman Building, 625 Robert Street North, Saint Paul MN 55155.
STATE OF MINNESOTA – WORKFORCE CERTIFICATE INFORMATION
Required by state law for ALL bids or proposals that could exceed $100,000

Complete this form and return it with your bid or proposal. The State of Minnesota is under no obligation to delay proceeding with a contract until a company becomes compliant with the Workforce Certification requirements in Minn. Stat. §363A.36.

<table>
<thead>
<tr>
<th>BOX A – MINNESOTA COMPANIES that have employed more than 40 full-time employees within this state on any single working day during the previous 12 months, check one option below:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Attached is our current Workforce Certificate issued by the Minnesota Department of Human Rights (MDHR).</td>
</tr>
<tr>
<td>☐ Attached is confirmation that MDHR received our application for a Minnesota Workforce Certificate on ______________________ (date).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BOX B – NON-MINNESOTA COMPANIES that have employed more than 40 full-time employees on a single working day during the previous 12 months in the state where it has its primary place of business, check one option below:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Attached is our current Workforce Certificate issued by MDHR.</td>
</tr>
<tr>
<td>☐ We certify we are in compliance with federal affirmative action requirements. Upon notification of contract award, you must send your federal or municipal certificate to MDHR at <a href="mailto:compliance.MDHR@state.mn.us">compliance.MDHR@state.mn.us</a>. If you are unable to send either certificate, MDHR may contact you to request evidence of federal compliance. The inability to provide sufficient documentation may prohibit contract execution.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BOX C – EXEMPT COMPANIES that have not employed more than 40 full-time employees on a single working day in any state during the previous 12 months, check option below if applicable:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ We attest we are exempt. If our company is awarded a contract, we will submit to MDHR within 5 business days after the contract is fully signed, the names of our employees during the previous 12 months, the date of separation, if applicable, and the state in which the persons were employed. Send to <a href="mailto:compliance.MDHR@state.mn.us">compliance.MDHR@state.mn.us</a>.</td>
</tr>
</tbody>
</table>

By signing this statement, you certify that the information provided is accurate and that you are authorized to sign on behalf of your company.

Name of Company: _______________________________________ Date _________________________________
Authorized Signature: _________________________________ Telephone number: ______________________
Printed Name: ___________________________________________ Title: _________________________________

For Assistance with this form, contact:

Minnesota Department of Human Rights, Compliance Services

Email: compliance.mdhr@state.mn.us TTY: 651-296-1283
The amended Minnesota Human Rights Act (Minnesota Statutes §363A.36) divides the contract compliance program into two categories. Both categories apply to any contracts for goods or services in excess of $100,000.

The first category applies to businesses that have had more than 40 full-time employees within Minnesota on a single working day during the previous 12 months. The businesses in this category must have submitted an affirmative action plan to the Commissioner of the Department of Human Rights prior to the due date and time of the response and must have received a Certificate of Compliance prior to execution of the contract or agreement.

The secondary category applies to businesses that have had more than 40 full-time employees on a single working day in the previous 12 months in the state in which its primary place of business is domiciled. The businesses in this category must certify to Minnesota State that it is in compliance with federal affirmative action requirements before execution of the contract.

Minnesota State is under no obligation to delay the award or the execution of a contract until a vendor has completed the Human Rights certification process. It is the sole responsibility of the vendor to apply for and obtain a Human Rights certificate prior to contract execution.

It is hereby agreed between the parties that Minnesota State will require affirmative action requirements be met by vendors in relation to Minnesota Statutes §363A.36 and Minnesota Rules, 5000.3400 to 5000.3600.

Under the Minnesota Human Rights Act, §363A.36, subdivision 1, no department or agency of the state shall execute an order in excess of $100,000 with any business within the State of Minnesota having more than 40 full-time employees in a single working day during the previous 12 months unless the firm or business has an affirmative action plan for the employment of minority persons, women, and the disabled that has been approved the Commissioner of Human Rights. Receipt of a Certificate of Compliance issued by the Commissioner shall signify that a firm or business has an affirmative action plan approved by the Commissioner.

Failure by the vendor to implement an affirmative action plan or make a good faith effort shall result in revocation of its certificate or revocation of the order (Minnesota Statutes §363A.36, subdivisions 3 and 4). A certificate is valid for a period of four (4) years.
STATE OF MINNESOTA
MINNESOTA STATE PREFERENCE FORM

Preference to Targeted Group and Economically Disadvantaged Business and Individuals in accordance with Minnesota Rules, part 1230.1810, subpart B and Minnesota Rules, part 1230.1830, certified Targeted Group (TG) businesses and individuals submitting proposals as prime contractors will receive a six percent preference in the evaluation of their proposal, and certified Economically Disadvantaged (ED) businesses and individuals submitting proposals as prime contractors will receive a six percent preference in the evaluation of their proposal. Eligible TG businesses and ED businesses must be currently certified by the Office of Equity in Procurement (OEP) prior to the solicitation opening date and time. For information regarding certification, contact OEP at 651-201-2402 or procurement.equity@state.mn.us. For TTY/TDD communications, contact the Helpline through the Minnesota Relay Services at 1.800.627.3529.

ARE YOU A CERTIFIED, TARGETED GROUP PRIME CONTRACT BIDDER?  ___Yes  ___No

ARE YOU A CERTIFIED, ECONOMICALLY DISADVANTAGED PRIME CONTRACTOR?  ___Yes  ___No

Statutory requirements and appropriate documentation must be met by the solicitation response due date and time to be awarded the targeted group or economically disadvantaged preference.

Claim the Preference

By signing below I confirm that:

My company is claiming targeted group or economically disadvantaged preference afforded by Minn. Stat. § 16C.16. By making this claim, I verify that:

• The business has been certified by the Office of Equity in Procurement as being a targeted group (T.G.) or an economically disadvantaged (E.D.) business.

Name of Company: _____________________________ Date: __________________________
Authorized Signature: ___________________________ Telephone: _____________________
Printed Name:  ___________________________  Title: __________________________

Attach a copy of your firm’s letter indicating certification by the Office of Equity in Procurement and sign and return this form with your solicitation response to claim the TG/ED preference.
ATTACHMENT 5

STATE OF MINNESOTA
VETERAN-OWNED PREFERENCE FORM

Unless a greater preference is applicable and allowed by law, in accordance with Minn. Stat. §16C.16, subd. 6a, the state will award a 6% preference on state procurement to certified small businesses that are majority owned and operated by veterans.

Veteran-Owned Preference Requirements - See Minn. Stat. § 16C.19(d):

1) The business has been certified by the Office of Equity in Procurement as being a veteran-owned or service-disabled veteran-owned small business.

or

2) The principal place of business is in Minnesota AND the United States Department of Veterans Affairs verifies the business as being a veteran-owned or service-disabled veteran-owned small business under Public Law 109-461 and Code of Federal Regulations, title 38, part 74 (Supported By Documentation).

ARE YOU A CERTIFIED, VETERAN OWNED OR DISABLED VETERAN OWNED SMALL BUSINESS PER EITHER REQUIREMENT ABOVE?  ____Yes  ____No

Name of Company:  _____________________________

Authorized Signature:  _____________________________

Statutory requirements and appropriate documentation must be met by the solicitation response due date and time to be awarded the veteran-owned preference.

Claim the Preference

By signing below I confirm that:

My company is claiming the veteran-owned preference afforded by Minn. Stat. § 16C.16, subd. 6a. By making this claim, I verify that:

- The business has been certified by the Office of Equity in Procurement as being a veteran-owned or service-disabled veteran-owned small business.

  or

- My company’s principal place of business is in Minnesota and the United States Department of Veteran’s Affairs verifies my company as being a veteran-owned or service-disabled veteran-owned small business (Supported By Attached Documentation)

Name of Company:  _____________________________  Date:  _____________________________

Authorized Signature:  _____________________________  Telephone:  _____________________________

Printed Name:  _____________________________  Title:  _____________________________

Attach documentation, sign, and return this form with your solicitation response to claim the veteran-owned preference.

Information regarding certification by the United States Department of Veterans Affairs may be found at: https://www.va.gov/osdbu/
Electrical Assessment Final Report

Project Number 17-290.00

Prepared for:

Anoka Ramsey Community College
11200 Mississippi Boulevard
Coon Rapids, Minnesota 55433

March 13, 2018
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Certification

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

[Signature]

Timothy James Coyle
Registration No. 18266

3/13/2018
1.0 Executive Summary

1.1 Background

Anoka Ramsey Community College operates their own primary electrical distribution system. Karges-Faulconbridge, Inc. (KFI) was retained to conduct an assessment of the existing primary electrical distribution system on the Anoka Ramsey Community College campus in Coon Rapids, Minnesota. In a primary system, rather than the serving utility furnishing transformers to provide electrical service at the voltages used within the buildings (secondary service) such as 480 Volts or 208 Volts, the customer’s system is directly connected to the utility’s distribution lines, in this case at 13,800 Volts (13.8kV). Power is then distributed around the campus by the college to college-owned transformers (substations) that step the voltage down for use within the buildings. The campus has twelve of these substations, each consisting of a 13.8kV switch, a transformer, and low voltage distribution equipment.

The age of the 13.8kV equipment on the campus varies. The six oldest substations were installed in 1967 with others added since and the newest installed in 2012. The oldest equipment has reached the end of its life expectancy and, should any of the transformers fail, will likely result in a loss of power to the area served for multiple days while repairs are made or a temporary supply is installed. Much of the equipment is installed in locations with poor maintenance access that is likely to increase the time required to restore service after a failure and the difficulty of replacing a failed transformer. The six substations that fall into this category should be replaced as soon as possible.

The existing 13.8kV system is supplied by two Xcel sources and incorporates an automatic throw-over (ATO) switch intended to automatically transfer the campus from the normal source to the alternate source if the normal source fails. This switch is no longer operable automatically and due to its age it is impractical to repair it. Replacement with a new ATO switch is cost prohibitive because of an Xcel requirement that all new installations meet their current design standards. The cost of replacing this switch was estimated by Xcel at $338,000. Of that amount, $238,000 is associated with conductor replacement required by the new standards that would provide no direct benefit to the college.

1.2 Recommendations

While there can be economic advantages to a primary distribution system for facilities with large loads or a spread-out campus, the peak load of the campus is less than 2000 kW, all but two of the structures on campus are contiguous and in our opinion the campus does not receive a benefit from primary service corresponding to the costs and risks of being responsible for maintenance and replacement of the 13.8kV equipment. There is no electrician on staff at the campus and the contractor used for maintenance of the electrical system is not qualified to work on 13.8kV equipment.

We recommend that, rather than replace the existing substations with new 13.8kV equipment, the campus be converted from primary service to 480/277V service from Xcel Energy owned transformers at one or more locations on the campus. In the case of the six oldest substations, the 13.8kV equipment and the low voltage distribution equipment would be removed and a new low voltage distribution panel
installed that would be fed from one of the new Xcel secondary service. In the case of the newer substations, the 13.8kV equipment would be removed, but the low voltage distribution equipment would be remain and be reconnected to one of the new secondary service.

### 1.3 Construction Schedule and Phasing

This project is anticipated to be completed in two steps: Install and commission the new secondary service without removing the existing 13.8kv service or equipment and run the conduits and conductors necessary to reconnect the existing loads to their destinations during the school year. The existing substations would then be removed and their loads reconnected to the new service one at a time during the summer when the required outages, estimated at one week per substation, can be scheduled. This sequence depends upon being able to secure a variance from MNSCU construction standards that would installation of the new circuits across the roof of the building. Without this, there would be substantial impact to academic operations and significantly higher cost to install conduits above the ceilings of corridors and other spaces in the building.

If funding constraints prevent completing all of the work as a single project, the six oldest substations can be replaced with new low voltage equipment connected to the newer substations that have adequate capacity to accommodate additional load and installation of secondary service and removal of the balance of the 13.8kv system deferred until additional funding is available. This would eliminate the equipment most likely to experience a failure in the near term and reduce the risk to the campus substantially. The work of a first phase project would be designed and installed in such a way as to readily integrate with future conversion of the campus to secondary service.

### 1.4 Backup Generation

If either the complete project or only the first phase is executed, the campus will end up supplied by only a single source from Xcel instead of the dual sources that currently exist. As an alternative to dual utility sources, we evaluated the installation of a backup generator sized to maintain the critical loads on campus which include the boilers and heating water distribution system, the data center, selected cold rooms and freezers in the science department and glass kilns in the Visual Arts Building. This generator can also be increased in size to allow for future migration of emergency loads such as emergency lighting and exit lights from local batteries which require frequent maintenance and may be unreliable, to direct connection to the generator.

If the college elects to include backup generation in the project, we recommend that it be installed and commissioned early in the construction sequence to allow it to provide backup to the critical loads during the building outages that will be required during removal of the existing substations.

### 1.5 Opinion of Probable Cost

The probable cost of the constructing the recommendations of this report are provided below. These estimate are based on vendor budget pricing and Means Electrical and General Construction Cost Data and KFI’s experience with similar projects. These costs include major equipment, material and labor, design and construction contingencies, permits and professional fees. They do not include Owner’s contingency or Owner’s administrative costs. Costs are in 2018 dollars and will require escalation based on when the project is able to be funded and constructed.
Xcel costs associated with the new secondary service are not available as of this draft report, so the estimate includes a $200,000 allowance for this item at this time.

**Base Project**

- Complete Conversion to Secondary Service $3,450,000

**Alternates**

- Phase One Substation Replacement Only $2,000,000
- Standby Generation Option $630,000
- Emergency Generation Option $160,000
2.0 Introduction

2.1 Background

Anoka Ramsey Community College operates their own primary electrical distribution system on the Coon Rapids campus. In a primary system, rather than the serving utility furnishing transformers to provide electrical service at the voltages used within the buildings (secondary service) such as 480 Volts or 208 Volts, the customer’s system is directly connected to the utility’s distribution lines, in this case at 13,800 Volts, which is then distributed around the campus to customer-owned and operated transformers that step down to secondary voltage for use within the buildings. This arrangement is common for large campuses and facilities with high electrical loads that can be served more efficiently at a higher voltage and in locations where the customer wants to control the routing and location of electrical equipment and avoid providing the utility with easements through the campus. Electric rates for primary service are lower than for secondary service because the customer, not the utility, bears the capital and operating and maintenance costs of the step-down transformers.

Much of the 13.8kV-rated equipment at the college is nearing the end of its life expectancy and is installed in locations which make repair or replacement difficult. For this reason, Karges-Faulconbridge, Inc. (KFI) was retained to conduct an assessment of the existing electrical distribution system on the campus and provide recommendations for addressing the age of the equipment before failures begin to occur.

2.2 Scope

The specific scope of this assessment includes:

- Review available drawings of the electrical distribution system, building electrical construction drawings and maintenance and testing records for the equipment.
- Review existing utility metering data to determine loading on the system.
- Contact Xcel Energy to obtain information on the characteristics, condition, reliability and available fault current of the feeders serving the campus.
- Conduct a field inspection of the equipment to obtain nameplate data, observe conditions of installation and verify the configuration against the reviewed documentation.
- Estimate the remaining life expectancy of conductors and equipment.
- Identify failure modes, effects and duration to repair or replace equipment and components.
- Review compliance of the existing installations with NEC and OSHA requirements.
- Prioritize identified deficiencies based on safety, probability of failure and effects of failure.
- Evaluate options for mitigating deficiencies, replacing aging equipment and improving reliability.
- Develop conceptual level single line diagrams and equipment layout for selected options.
- Develop order of magnitude (+25%, -0%) opinions of probable construction costs of selected options.
3.0 Findings

3.1 Service

The campus primary distribution system is supplied by two 13.8kV Xcel Energy feeders which enter an automatic throw-over (ATO) switch located on the northwest corner of the site, from which a single 13.8kV circuit is extended to fusible load-interrupter type Main Switchgear located in the College Services Building. The switch is 60 years old, has failed in the past, and the automatic controls are no longer functional, restricting it to manual operation. It was serviced in September, 2017 and high-potential tested with acceptable results.

Replacement of the ATO switch with a new unit that would be owned and operated by Xcel was pursued, but the cost determined to be prohibitive because Xcel’s current construction standards require that both feeders into the switch be re-conducted to main size cables for either an automatic or manual switch between two feeders. This added approximately $300,000 to their estimated cost for this work with no added benefit to The College. This requirement would also apply if ARCC chose to replace the switch itself.

The 15kV cables between the switch and the Main Switchgear are copper-tape shielded and were run without an equipment grounding conductor, which does not comply with code. No markings are visible on the cable jackets at the switch to identify their size, insulation type or manufacturer. There are two spare conduits run from the ATO into the Main Switchgear.

3.2 Distribution

A 13.8kV feeder circuit in a loop configuration is installed in rigid steel conduit run through the interior of the campus buildings. Nine unit substations in the building, each consisting of a fused primary switch, a dry-type 13.8kV-480/277 transformer and a secondary distribution switchboard, are tapped to this feeder. One 13.8kV-208/120V padmount transformer, located outside the Performing Arts Center is also tapped to this feeder. Two other dry-type unit substations are fed directly from the main switchgear by radial feeders routed through the interior of the building.

Six of the twelve unit substations in the system are approximately 50 years old, at the end of their life expectancy, and have secondary distribution circuit breakers that no longer have replacements available or are supported by the manufacturer. Four of these units located in penthouses, and one in a basement mechanical room cannot be directly replaced with new unit substations, which require a larger footprint due to UL and code requirements that were not in effect at the original construction of the building. Maintenance and equipment access to these five installations is via steep stairs or ships ladders.

In many cases ductwork or piping has been run above the existing switchboards which is prohibited by the National Electrical Code (NEC) and would have to be corrected if the substations were replaced. There also a number of instances in which the doors that provide access to the working space do not comply with the NEC; they are required to swing outward and be equipped with hardware that opens under simple pressure (installations prior to the 2014 edition) or with listed panic hardware (newer installations).
The other six unit substations are newer, installed in compliance with current codes and in locations where they can be readily accessed for maintenance and/or future replacement.

### 3.3 Metering

The Xcel Energy service meter is connected to potential transformers and current transformers located in the Main Switchgear. There is also a non-functioning electronic power meter in the Main Switchgear that registers voltage, but not current or power and it is suspected that factory-installed shorting screws may have been left on the current transformer circuits. The following load information was taken from billing records for the period from September 2016 through August 2017 by Xcel:

- **Highest Monthly Peak Demand (September 2016):** 1232 kW
- **Lowest Monthly Peak Demand (January 2017):** 784 kW
- **Total Usage:** 4,625,600 kWh
- **Average Monthly Load Factor:** 53%
- **Average Monthly Power Factor:** 97.8%

With a total building area of approximately 450,000 square feet, the reported peak load of 1232 KW represents 2.7 W/SF, which is lower than we would expect for this type of facility by enough to raise concern for the accuracy of the data. We have asked Xcel to verify the accuracy of their meter readings to assure that we have accurate load data moving forward, but have not received confirmation from them yet.

The older unit substations are provided with analog voltmeters, analog ammeters, and watthour meters with demand registers, but many of these meters appear to be inoperative. Some of the newer substations have analog or electronic meters, but there have been no records maintained of meter readings within the campus so there is no reliable means of allocating the campus peak demand reported by Xcel among the unit substations.

### 3.4 Equipment Data

The following summarizes the information obtained on the existing electrical distribution equipment.

#### 13.8kV Main Switchgear

- **Location:** College Services Ground Floor
- **Manufacturer:** Eaton Cutler Hammer
- **Ratings:** 15kV, 600A
- **Date Manufactured:** 1992 (Estimated)
- **Working Clearances:** Good
- **Condition:** Good
- **Other Considerations:** Customer main meter not working; nearest door swings into room.

#### 13.8kV Loadbreak Junction Cabinets

- **Location:** Multiple locations
- **Manufacturer:** ElectroMechanical Industries
- **Ratings:** 15kV, 200A
- **Date Manufactured:** 2010
- **Working Clearances:** Good, except across aisle from Substation A
Condition: Good
Other Considerations: None.

Substation A
Location: Administration Ground Floor
Manufacturer: Federal Pacific
Ratings: 1500kVA, 2000A at 480/277V
Date Manufactured: 1967 (Estimated)
Working Clearances: Good, except between primary switch and junction cabinets
Condition: Near end of life
Other Considerations: Likely significantly oversized for load; doors swing into room

Substation B
Location: Business/Nursing Penthouse
Manufacturer: Federal Pacific
Ratings: 300kVA, 400A at 480/277V
Date Manufactured: 1967 (Estimated)
Working Clearances: Good
Condition: Near end of life
Other Considerations: Access via ship's ladder.

Substation C
Location: Student Center Mechanical Room
Manufacturer: Federal Pacific
Ratings: 300kVA, 500A at 480/277V
Date Manufactured: 1967 (Estimated)
Working Clearances: Good
Condition: Aged
Other Considerations: Ductwork and piping above and/or around equipment; access via stairs.

Substation F
Location: Music Penthouse
Manufacturer: General Electric
Ratings: 300kVA, 600A at 480/277V
Date Manufactured: 2012
Working Clearances: Good
Condition: Good
Other Considerations: Electronic meter on main.

Substation G
Location: Health & Wellness Center Penthouse
Manufacturer: General Electric
Ratings: 500kVA, 800A at 480/277V
Date Manufactured: 2012
Working Clearances: Good
Condition: Good
Other Considerations: Electronic meter on main.
Substation H
Location: Humanities Penthouse
Manufacturer: Federal Pacific
Ratings: 150kVA, 200A at 480/277V
Date Manufactured: 1967 (Estimated)
Working Clearances: Good
Condition: Near end of life
Other Considerations: Piping around equipment; access via ships ladder.

Substation L
Location: Library Penthouse
Manufacturer: Federal Pacific
Ratings: 300kVA, 400A at 480/277V
Date Manufactured: 1967 (Estimated)
Working Clearances: Good
Condition: Near end of life
Other Considerations: Adequate space for new equipment elsewhere in penthouse.

Substation S
Location: Technology Penthouse
Manufacturer: Federal Pacific
Ratings: 150kVA, 200A at 480/277V
Date Manufactured: 1967 (Estimated)
Working Clearances: Good
Condition: Near end of life
Other Considerations: Access via ship’s ladder.

Substation SB
Location: New Science Ground Floor
Manufacturer: Cutler Hammer
Ratings: 300kVA, 800A at 480/277V
Date Manufactured: 1997
Working Clearances: Good
Condition: Good
Other Considerations: None.

Substation SS
Location: College Services Ground Floor
Manufacturer: Cutler Hammer
Ratings: 1000kVA, 1600A at 480/277V
Date Manufactured: 1997
Working Clearances: Good
Condition: Good
Other Considerations: None.

Substation T
Location: Performing Arts Center Ground Floor
Manufacturer: Square D
Ratings: 1200A at 480/277V
Date Manufactured: Unknown
Working Clearances: Good
Condition: Good
Other Considerations: Transformer is padmount outside the building; doors swing into room.

**Substation V**
Location: Visual Arts Building
Manufacturer: General Electric
Ratings: 750kVA, 1200A at 480/277V
Date Manufactured: 2010
Working Clearances: Good
Condition: Good
Other Considerations: Electronic meter on main.
4.0 Discussion and Recommendations

4.1 General

The primary concern with the existing distribution system is the age and condition of the six oldest unit substations that are at the end of their useful life and no longer supported with replacement breakers and spare parts by the manufacturer. A secondary concern is the long repair time associated with a failure of a 13.8kV cable, switch or transformer. While temporary circuits or portable generation could potentially be used during the repair time, there would likely still be significant impact to college activities in the event of a failure.

The location of many of the existing unit substations in cramped spaces, including penthouses accessible only by ship’s ladder, does not readily facilitate maintenance of the equipment. A crane would be required to remove and replace a failed transformer in any of the penthouse installations due to limited access through the building interior.

4.2 Primary vs. Secondary Service

While the concerns discussed above for the older unit substations could be addressed by replacing them with new equipment and leaving the campus distribution system in the current configuration, we are recommending that The College convert from the existing primary distribution system to secondary distribution for the following reasons.

1. The campus load does not require primary voltage for efficient power distribution. The reported peak demand of 1232 kW can be supplied by a single 3000A, 480/277V service or by multiple smaller services.
2. Failure of a 13.8kV – 480/277V transformer would result in an extended outage to the affected areas of the building. Repair of the transformer by re-winding could take 1-2 weeks including logistics time. Transformers of this type are not a stock item and we estimate it would take 12 to 16 weeks to design and manufacture a replacement unit. Even a temporary unit might require several days to locate, ship and install.
3. The college does not have an electrician on staff and the Electrical Contractor that performs most maintenance and construction on the campus does not have expertise in the 13.8kV rated equipment. A specialty contractor is must be used for required periodic preventive maintenance and emergency response to any failures.
4. Newer 13.8kV rated transformers require a larger footprint due to greater internal clearances and in most cases will not fit in the space occupied by the existing equipment.

Xcel Energy has indicated that their costs of installing secondary service would be considered revenue neutral and not assessed to the college unless unusual construction conditions were encountered or the college requested that construction occur during the winter months. Xcel has indicated that their feeders to the new transformers will be directionally-bored, eliminating the need for trenching and restoration.

As discussed in the introduction, there is an electrical rate advantage to primary service which the college would be giving up. The increased electrical billings for secondary service based on 2016-2017 billing data would be approximately $15,000 per year, or about 3% of the current annual bill.
4.3 Secondary Service Location

Drawing ELE-0202 shows a preliminary design for refeeding the existing loads from two new secondary services: a 1000A, 480/277V service at the Visual Arts Building and a 3000A, 480/277V service from Xcel located near the facilities garage in the northwest area of the site. The College has identified that space within the garage can be used to create a new electrical equipment room and that an Xcel transformer can be located on grade directly north of the garage.

A third service at the south end of campus may also be feasible and would be investigated during the design phase of the project to determine whether it reduces the overall cost of the conversion.

4.4 Scope of Construction

The new service to Visual Arts will include an outdoor transformer pad for the Xcel transformer, an outdoor connection and current transformer cabinet for Xcel metering, and a 1000A service disconnect located inside the building on the west end. From there, conduits will be extended inside the building to the existing electrical substation room.

The new service at the Facilities Building will include an outdoor transformer pad for the Xcel transformer, an outdoor connection and current transformer cabinet for Xcel metering, and a 3000A service switchboard with metering located inside the north end of the garage. General construction to enclose the service switchboard and provide heating and ventilation of the space is also included. This new electrical room will be provided with adequate space for a future second service and for the distribution equipment associated with the standby generation option discussed later in this report.

Two other new distribution switchboards will be provided as points to sub-feed the smaller loads of the individual unit substations, one in the Administration Wing and one in the Library Penthouse. Approximately 130 SF of new space in the Administration Wing will be required to allow the switchboard to be installed and energized prior to taking existing Substation A out of service. Once the existing substation is demolished, a similar amount of space will become available for other uses. There is adequate space in the Library Penthouse to install the proposed new switchboard there without taking the existing substation out of service.

Feeders consisting of 600V copper Type XHHW-2 conductors in EMT conduit will be routed from the new service switchboard to the two sub-feed switchboards and from there to the individual substation locations. In the absence of load data within the building, we have sized these feeders at or slightly higher than, the continuous current rating of the existing unit substations’ 480V switchboard sections. Feeders from the new switchboard in the Library Penthouse will be routed over the roof to the other substations that are located in penthouses and to the substation on the ground floor of the New Science Wing. In the case of the Performing Arts Center, a new 480V-208/120V dry type transformer will be installed inside the building and will re-feed the existing 208V switchboard located there from a new 480V feeder.

Installing feeder circuits across the roof will require a variance from MNSCU construction standards prohibit this practice. We feel that there are strong grounds for such a variance as routing the required conduits internal to the building would be disruptive to academic operations, difficult to accomplish due to crowded ceilings and shafts and likely cost significantly more than rooftop installation.
The other 1967-era substations have small enough capacities that it is practical to replace them with a standard 480/277V distribution panelboard. The existing circuits will then be extended as required and reconnected to the new panelboard. The primary switch and transformer will be disconnected and removed. If necessary, the enclosure of the existing secondary switchboard will be retained and used as a junction cabinet to splice conductors that are extended to the new panelboard. In most cases, there is also a 480V-208/120V transformer and 208/120V distribution panel incorporated into the substation. These will be replaced with separate dry-type transformers and 208/120V distribution panelboards.

It is recognized that splicing these circuits would not be desirable in a new installation, however we do not feel that the cost and extended downtime associated with completely replacing the existing circuit conductors is justified. All splices will be made using long-barrel copper compression connectors to assure reliability.

The newer substations have secondary switchboards that are in good condition and can be re-used. In these cases, the primary switch and transformer will be removed and a cable connection cabinet installed on the end of the existing switchboard. A field evaluation of these modifications by UL or an independent Registered Professional Electrical Engineer will be required to obtain approval of the installation by the inspector.

4.5 Sequence of Construction

The college has identified that outages to the building of approximately one week per substation to cutover loads to the new equipment can be accommodated over the summer break period. To allow all of this work to take place within a single summer, the new secondary service will be installed prior to disconnecting the existing primary service. Conduit and conductors can then be installed from the new service to the vicinity of the new distribution equipment location at each substation in advance, minimizing the amount of work that has to occur during each outage.

When all of the substation loads have been transferred to the new 480/277V service, the remaining 13.8kV equipment consisting of the main switchgear and loadbreak junction cabinets will be removed. The medium voltage conductors will be pulled out of the existing conduits and the conduits abandoned in place above the ceiling.

4.6 On-Site Backup Generation

To address the reduction of electrical service reliability resulting from loss of multiple sources and the automatic throw-over (ATO) function at the Xcel service, we have included options for on-site backup generation in the design of the secondary service.

The standby power option provides a 400 kW packaged diesel engine-generator set in an outdoor insulated and sound-attenuated enclosure with an integral double-wall sub-base fuel tank with 24 hours of capacity at full load. This unit was sized to supply the optional standby loads in Table 4.6 which were identified as critical by the college. An automatic transfer switch and a standby power distribution panelboard would be provided in the same electrical room as the new service switchboard and distribution feeders routed to branch circuit panelboards located at the Boiler Room, Data Center, New Science Wing, and Visual Arts Building.
<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>HP/kVA</th>
<th>Voltage/PH</th>
<th>FLA</th>
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<tbody>
<tr>
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<td>460/3</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Primary heating water pump</td>
<td>2</td>
<td>460/3</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Secondary heating water pump</td>
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<td>460/3</td>
<td>20</td>
<td>18.5</td>
</tr>
<tr>
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<td>208/3</td>
<td>18</td>
<td>21.5</td>
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<tr>
<td>Air Dryer</td>
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<td>208/3</td>
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<tr>
<td>UPS System</td>
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<td>Computer Room Air Conditioner</td>
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<tr>
<td>Condensing Unit</td>
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<td>208/1</td>
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<td>Glass Kiln</td>
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<td>208/3</td>
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</table>

**Table 4.6 – Standby Generator Loads**

An alternate is provide emergency (life safety) power distribution throughout the building that can be used in the future to migrate emergency and exit lighting from local batteries to the generator. The NEC requires separation of emergency loads from standby loads so the additional cost for this option includes increasing the rating of the generator to 500kW, providing a second generator circuit breaker, a separate automatic transfer switch and separate network of panelboards. This cost estimate includes only the required infrastructure (feeders and panelboards) and does not include the costs of segregating and reconnecting emergency lighting fixtures to the new panelboards.

A standby generator that is operated only during utility outages and for periodic testing does not require extensive pollution control equipment or environmental permitting, an amendment to the college’s existing air emissions permit is likely to be required.

**4.7 Metering**

To facilitate energy management and provide accurate load data for future electrical system additions and revisions, we recommend that electronic metering of the new service and sub-metering of feeders be provided integral to the new distribution equipment and interfaced to the Building Automation System. We have included a multi-function power quality level power meter at the service at the service and electronic trip units with basic power metering capability on the feeder breakers. We have also included retrofitting meters to those existing switchboards that will be re-used and do not currently have meters with communications capability.

**4.8 Phased Construction**

Drawing ELE-0203 presents a preliminary single line diagram for a reduced scope of construction that is recommended if the entire project cannot be funded at once. This option addresses the most urgent concern with the existing system by providing for the replacement of the six oldest unit substations in a
first phase of construction and deferring installation of the new secondary service and replacement of the remaining unit substations and the 13.8kV service and distribution system to a future date.

In this option, Substation A in the Administration Wing would be replaced with a new unit substation of slightly larger capacity. This substation would feed a new panelboard to replace Substation C in the Student Center and also feed a new switchboard in the Library Penthouse which would replace Substation L and provide capacity to feed new panelboards which would replace the other three unit substations in the same manner as described above.

The 13.8kV system and the newer unit substations would remain in service until additional funding is available.

If this option is implemented, it is recommended that the existing ATO switch be removed completely and the Xcel service conductors be extended directly into the 13.8kV Main Switchgear inside the building. In conjunction with this work, the existing electronic metering in the main switchgear should be repaired or replaced.
<table>
<thead>
<tr>
<th>Drawing Code</th>
<th>Description</th>
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<tr>
<td>ELE-0201</td>
<td>Campus Single Line Diagram – Existing Conditions</td>
</tr>
<tr>
<td>ELE-0202</td>
<td>Campus Single Line Diagram – Proposed Secondary Service</td>
</tr>
<tr>
<td>ELE-0203</td>
<td>Campus Single Line Diagram – Phased Implementation</td>
</tr>
<tr>
<td>ELE-0401</td>
<td>Existing Electrical Distribution Equipment Locations</td>
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</table>
## Opinión de Probable Costo de Construcción

### Elemento Propuesto: Servicio Secundario Propuesto

<table>
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<tr>
<th>Item</th>
<th>Descripción</th>
<th>Cantidad</th>
<th>Unidades</th>
<th>Costo por Unidad</th>
<th>Costo Extendido</th>
</tr>
</thead>
</table>

### Conversión de 13,8 kV a 480 V Servicio

- **Civil construcción**: 1 LOT $75,000.00 $75,000.00
- **Mayor Equipamiento**: 1 LOT $81,800.00 $81,800.00
- **Ex收取 13,8 kV Equipamiento**: 1 LOT $28,800.00 $28,800.00

### Subestación A (Administración)

- **Remodelado para Nuevo Espacio Eléctrico**: 130 SF $150.00 $19,500.00
- **Mayor Equipamiento**: 1 LOT $38,150.00 $38,150.00
- **Feeder de Nuevo Servicio**: 1 LOT $92,625.29 $92,625.29
- **Reconexión Cargas Actuales**: 1 LOT $24,000.00 $24,000.00
- **Demolición Eléctrica**: 1 LOT $9,600.00 $9,600.00
- **Reemplazo Puerta Existente y Hardware**: 1 LOT $6,000.00 $6,000.00
- **Padres de Equipamiento**: 48 SF $15.00 $720.00

### Subestación B (Penthouse de Negocios)

- **Mayor Equipamiento**: 1 LOT $31,575.00 $31,575.00
- **Feeder de Nuevo Switchboard L**: 1 LOT $169,279.77 $169,279.77
- **Reconexión Cargas Actuales**: 1 LOT $24,000.00 $24,000.00
- **Arreglo Mecánico**: 1 LOT $5,000.00 $5,000.00
- **Soportes de Conduita y Techo**: 1 LOT $60,000.00 $60,000.00
- **Alquiler de Grúa con Operadores**: 2 Días $3,600.00 $7,200.00
- **Demolición Eléctrica**: 1 LOT $9,600.00 $9,600.00

### Subestación C (Centro para Estudiantes)

- **Remodelado para Nuevo Espacio Eléctrico**: 100 SF $150.00 $15,000.00
- **Mayor Equipamiento**: 1 LOT $17,375.00 $17,375.00
- **Feeder de Nuevo Switchboard A**: 1 LOT $37,526.42 $37,526.42
- **Reconexión Cargas Actuales**: 1 LOT $20,000.00 $20,000.00
- **Demolición Eléctrica**: 1 LOT $9,600.00 $9,600.00
- **Demolición General y Mecánica**: 1 LOT $5,000.00 $5,000.00

### Subestación F (Penthouse de Música)

- **Modificación Switchboard Existente**: 1 LOT $9,350.00 $9,350.00
- **Feeder de Switchboard SS**: 1 LOT $16,689.95 $16,689.95
- **Soportes de Conduita y Techo**: 1 LOT $10,000.00 $10,000.00
# OPINION OF PROBABLE CONSTRUCTION COST

**Project Element:** Proposed Secondary Service

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<tr>
<th>Item</th>
<th>Description</th>
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<th>Units</th>
<th>Unit Cost</th>
<th>Extended Cost</th>
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**Substation G (Gym Penthouse)**

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**Substation H (Humanities Penthouse)**

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**Substation L (Library Penthouse)**

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**Substation S (Technology Penthouse)**

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# OPINION OF PROBABLE CONSTRUCTION COST

### Proposed Secondary Service

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<tr>
<th>Item</th>
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<th>Units</th>
<th>Unit Cost</th>
<th>Extended Cost</th>
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<tr>
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**Substation SB (New Science)**

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<th>Unit Cost</th>
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**Substation SS (College Services)**

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**Substation T (Performing Arts)**

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Client: Anoka Ramsey Community College - Coon Rapids
Project: Electrical Assessment
Project No: 017-290.00
Date: 26-Feb-18
Estimate Level: Order-of-Magnitude
**OPINION OF PROBABLE CONSTRUCTION COST**

**Client:** Anoka Ramsey Community College - Coon Rapids  
**Project:** Electrical Assessment  
**Project No:** 017-290.00  
**Date:** 26-Feb-18  
**Estimate Level:** Order-of-Magnitude

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Client: Anoka Ramsey Community College - Coon Rapids
Project: Electrical Assessment
Project No: 017-290.00
Date: 26-Feb-18
Estimate Level: Order-of-Magnitude
## Project: Electrical Assessment

**Client:** Anoka Ramsey Community College - Coon Rapids  
**Project No:** 017-290.00  
**Date:** 26-Feb-18  
**Estimate Level:** Order-of-Magnitude

### Substation L (Library Penthouse)

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### Substation S (Technology Penthouse)

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### Subtotal Construction Cost

$1,546,919.95

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**Project Cost**

$2,188,891.73
## OPINION OF PROBABLE CONSTRUCTION COST

**Project: Electrical Assessment**

**Project Element:** Backup Generation

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**Subtotal Construction Cost**

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**Subtotal Construction Cost**

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<td>Major Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$158,116.35</td>
</tr>
</tbody>
</table>
CAMPUS SINGLE LINE DIAGRAM
EXISTING CONDITIONS

B

15 KV, 600A ATO SWITCH
PT'S AND CONTROLS
DISCONNECTED

15 KV, 95 KVBIL

600A

15 KV, 95 KVBIL

600A

1000 KVA
480/277V

15 KV, 200A JUNCTIONS

AT SUB A

ROOM L101

ROOM T115

ROOM T131

SUB V

VISUAL ARTS

750 KVA
1000A
480/277V

SUB A

ADMIN

1500 KVA
480/277V, 500A

SUB C

STUDENT CENTER

300 KVA

SUB F

MUSIC

300 KVA

SUB G

GYM

500 KVA

800A
480/277V

SUB L

LIBRARY

300 KVA

480/277V, 400A

SUB B

BUSINESS

300 KVA

480/277V, 200A

SUB H

HUMANITIES

150 KVA

480/277V, 200A

SUB S

TECHNOLOGY

150 KVA

PADMOUNT

TRANSFORMER

SUB T

THEATRE

1200A
208/120V

SUB SB

NEW SCIENCE

500 KVA

800A
480/277V

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