

**(ATTACHMENT 4) ACTION ON REQUEST TO ENTER INTO PHASE TWO OF PERFORMANCE CONTRACTS FOR ENERGY-EFFICIENCY PROJECTS AT TWENTY-SIX MPS SITES**

Purchase Requisition Number:  
Contract Number:  
Vendor Number: V0146528

**MILWAUKEE BOARD OF SCHOOL DIRECTORS  
PROFESSIONAL SERVICES CONTRACT FOR PERFORMANCE CONTRACTING SERVICES**

*[028 - Alliance School, 055 - Andrew Douglas School, 041 - Audubon Middle School, 012 - Bay View High School, 093 - Bruce Elementary School, 018 - Hamilton High School, 003 - MacDowell Montessori School, 022 - Madison High School, 062 - Milwaukee French Immersion School, 049 - Milwaukee Parkside School for the Arts, 016 - Obama School of Career and Technical Education, 026 - Pulaski High School, 029 - Riverside University High School, 059 - Roosevelt Middle School, 020 - Rufus King International High School, 032 - South Division High School, 035 - Washington High School, 044 - Wedgewood Park School]*

This Professional Services Contract (“Contract”) is being entered into this 25th day of May, 2017, by and between Trane U.S., Inc. (“Contractor”) and Milwaukee Board of School Directors (“MPS”).

**1. SCOPE OF SERVICES**

Contractor shall specifically perform the following tasks:

Contractor shall perform the “Work” set forth in **Appendix B** attached hereto. After the Work is Substantially Complete (as defined below), Contractor shall provide the assured performance guarantee (the “Assured Performance Guarantee”) and the measurement and verification services (the “M&V Services”) set forth in **Appendix C** attached hereto. Collectively, the Work and M&V Services shall be referred to as the “Project.”

Contractor shall provide, at its own expense, all resources required to perform the Work and M&V Services under this Contract. The Work and M&V Services shall be provided in accordance with the additional terms and conditions provided in **Appendix E** and **Appendix G** attached hereto, and all federal, state and local laws, ordinances, rules, regulations, permits relating to the Project and lawful orders of public authorities applicable to the Project and the performance thereof (collectively, “Laws”).

Laws include the requirement of bonds. Contractor shall execute and deliver to MPS a 100% Performance Bond and 100% Payment Bond in an amount equal to the full Contract Price at the time this Contract is executed. The bond will be written with a company licensed to transact business in the State where the work is located and has a minimum A.M. Best Rating of A VII.

Notwithstanding anything to the contrary in this Contract or otherwise, these Bonds shall not guarantee or secure any of the Contract obligations that concern: (1) any guarantees or warranties with a term beyond one (1) year from the date of completion of the installation portion of the Contract; (2) any efficiency or energy savings guarantees without regard to the term of such guarantee obligations; and (3) any support or maintenance service agreements or obligations related to the Contract.

MPS shall perform the obligations set forth in **Appendix F** attached hereto.

**2. TERM**

This Contract shall be in effect from the date of the last signature on the signature page below.

**No Work** shall commence before a Contractor receives (a) a fully executed Contract and (b) MPS’ executed Notice to Proceed. Any Work performed by the Contractor prior to obtaining a fully-executed Contract and fully executed Notice to Proceed shall not be compensated pursuant to this Contract.

Contractor shall achieve Substantial Completion of the Work based on timeline outlined in the project schedule shown in Appendix D after Contractor’s receipt of the executed Notice to Proceed from MPS, subject to adjustments as provided in this Contract (the date that Substantial Completion is achieved shall be the “Substantial Completion Date”).

For purposes of this Contract, “Substantial Completion” is as defined in Section 3 below.

The M&V Services shall commence on the first day of the month following the month in which the Substantial Completion Date occurs, and shall continue throughout the Guarantee Term (as such term is defined in **Appendix C**), subject to earlier termination of the Assured Performance Guarantee as provided in **Appendix C**.

Any continuation of the Contract beyond the terms described above must be set forth in writing and signed by the original signatories to the Contract.

Attached hereto as **Appendix D** is the initial Construction Progress Schedule for the project (the "Progress Schedule"), which shall be updated by Contractor from time to time as the need arises during the Term for MPS' approval. The Progress Schedule shall (a) clearly indicate the tentative schedule for the completion of the design and construction documents, with document reviews by MPS at the 75%, 95% and 99% completion stage of such documents (allowing one week for each MPS review); (b) identify the starting and completion dates for construction work.

### 3. **COMPENSATION**

Contractor's total compensation for the Work under this Contract shall be Twenty-Five Million Sixteen Thousand Five Hundred Ninety-Six (\$25,016,596.00), subject to adjustments as set forth herein (the "Contract Price"). MPS shall also make payments to Contractor for the M&V Services in accordance with the pricing and payment terms set forth below and in **Appendix A** attached hereto. Compensation does not include amounts indicated in the "Environmental Contingency" column in **Appendix A**.

Within ten (10) days of execution of the Contract, MPS shall pay to Contractor five percent (5.0%) of the Contract Price as a mobilization fee. Thereafter, the balance of the Contract Price shall be paid to Contractor in monthly progress payments within 20 days of receipt of an accepted invoice for the value of Work completed plus the amount of materials and equipment suitably stored, either on site or off-site the previous month, less the aggregate of previous payments to Contractor. Contractor may also submit a separate invoice for Contractor's design and project development costs. There shall be 2.5% retainage withheld from all payments made under this Contract for the Work (but excepting payments for M&V Services). MPS retains the right to negotiate the payment schedule based on the actual project schedule.

Prior to submitting its first progress payment invoice, Contractor shall submit to MPS a schedule of values allocating the entire Contract Price to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as MPS may require. This schedule of values shall be used as a basis for reviewing Contractor's invoices. Final payment, constituting the entire unpaid balance of the Contract Price, shall be due 30 days after the Work described in this Contract is Substantially Complete, except for 150% of the value of any agreed upon punch list items remaining at that time (the "Holdback").

"Substantial Completion" is defined as the stage in the progress of the Work when the Work is sufficiently complete in accordance with the Contract Documents so that MPS can occupy or utilize the Work for its intended use, and is accepted via signature by MPS through the execution of a Certificate of Substantial Completion. Upon Substantial Completion of individual Facility Improvement Measures (FIMs), the cost of such FIMs can be invoiced in full, subject to any Holdbacks. Holdbacks shall be due and payable 30 days after the punch list items are completed.

The Assured Performance Guarantee, as provided in **Appendix C**, shall not commence or become effective until such final payment is received by Contractor. No back charges or claim of MPS for services shall be valid except by the agreement in writing by Contractor before work is executed. In the event that MPS fails to make any monthly progress payment or is otherwise overdue in making such payment, and upon fourteen (14) days written notice to MPS, Contractor shall be entitled to stop work without prejudice to any other remedy it may have, and MPS shall be responsible to Contractor for any increased costs in demobilization and remobilization in stopping and re-commencing the Work. In the event of such work stoppage and start up, Contractor and MPS agree to cooperate in adjusting any schedule requirements so as to endeavor to minimize the impact on MPS's operations of its facility.

MPS reserves the right to withhold all or a portion of a payment to Contractor to the extent reasonably necessary to protect MPS if the Work and/or M&V Services have not been fully and adequately delivered in accordance with the Contract. When the reasons for withholding payment are removed, amounts previously withheld shall be promptly paid to Contractor.

Milwaukee Public Schools does not pay in advance for services. No payment shall be made until a properly submitted invoice is approved. Invoices shall be submitted to:

MPS - Dept. of Facilities and Maintenance Services  
Attn: Linda Dahl, Contract Clerk  
P.O. Box 05259  
Milwaukee, Wisconsin 53205-0259

A properly submitted invoice must include a detailed description of the Work completed, and the M&V Services performed. As a matter of practice, MPS attempts to pay all invoices in 30 days. It is mutually agreed that State Prompt pay law does not apply to this Contract. Final invoices must be marked as such.

**4. NON APPROPRIATION OF FUNDS AND LEGAL AUTHORITY**

This Contract is contingent upon the appropriation of sufficient funds by the Milwaukee Board of School Directors. If funds are not appropriated, Contractor agrees to take back any commodities furnished under the Contract, terminate any services supplied to MPS under the Contract, and relieve MPS of any further obligations under the Contract. This Contract is also contingent upon MPS possessing the legal authority to exceed the revenue limit to pay for the Work, including payment of debt service on any debt incurred to pay for the Work. If at any time after the signing of this contract MPS loses the legal authority to exceed the revenue limit to pay for the Work, including payment of debt service on any debt incurred to pay for the Work, Contractor agrees to take back any commodities furnished under the Contract, terminate any services supplied to MPS under the Contract, and relieve MPS of any further obligations under the Contract.

**5. NON-DISCRIMINATION**

In the performance of work under this Contract, Contractor shall not discriminate in any way against any employee or applicant for employment on the basis of a person's sex, race, age, religion, national origin, ancestry, creed, pregnancy, marital or parental status, sexual orientation, disability, or socio-economic status. This prohibition includes but is not limited to employment; promotions, demotions and transfers; recruitment; advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeships. Contractor is required to include a similar provision in all subcontracts to this Contract.

If MPS determines Contractor has violated this non-discrimination policy, MPS may terminate this Contract in accordance with Section 12 below without liability for undelivered services or materials. MPS may also deem the Contractor ineligible to participate in future contracts with MPS.

**6. INDEMNITY**

Contractor assumes full liability for all of its acts or omissions in the performance of this Contract, as well as the acts or omissions of its Subcontractors. Contractor shall indemnify and hold harmless MPS, its agents, officers and employees against all liabilities, losses, judgments, decrees, costs, and expenses that may be claimed against MPS by third parties as a result of the willful misconduct or the negligent actions or omissions of said Contractor, its agents, or employees. If judgment is recovered against MPS in suits of law or equity as a consequence of the willful misconduct or negligent actions or omissions of the Contractor, the Contractor assumes full liability for such judgment, not only as to any monetary award, but also as to the costs, attorneys' fees or other expenses resulting therefrom.

In accordance with applicable laws, MPS shall be responsible for defending and paying judgments on behalf of its officers, employees and agents while acting within the scope of their employment or agency for any claims that may arise out of MPS's negligence for acts, policies, or directives that affect the activities covered by this Contract.

**7. BACKGROUND CHECKS**

Contractor will conduct, at Contractor's expense, a criminal information records background check, (hereinafter referred to as "background check"), through the Wisconsin Department of Justice and other appropriate states' agencies, on all current and potential administrators, board members, officers, and employees who have, or who are anticipated to have, "direct, unsupervised contact" with MPS students in the performance of this Contract.

An out of state background check should be completed in the state(s) in which the individual resided for at least six months within the last two years and was eighteen years or older at the time.

Contractor will submit to MPS's Department of Employment Relations (DER), (via mail to Milwaukee Public Schools Background Checks, Attn: Department of Employment Relations, Room 116, 5225 West Vliet Street, Milwaukee, WI 53208, or via email at [564@milwaukee.k12.wi.us](mailto:564@milwaukee.k12.wi.us)), all completed background checks. Such records will be reviewed and MPS will notify Contractor of any individual(s) who, based on MPS standards, are unfit and should not have contact with MPS students. All determinations made by MPS with regards to whether an individual is fit to provide services pursuant to this Contract are made in MPS's sole discretion.

The following will each be a material failure to comply with the terms of this Contract and cause for immediate termination of this Contract by MPS: failure to perform background checks as outlined in this Section 7; failure to submit background checks to MPS as outlined in this Section 7; allowing services to be provided by an individual who has not been subjected to a background check; and allowing services to be performed by an individual who has been determined to be unfit by MPS as outlined in this Section 7.

**8. INSURANCE AND PROOF OF FINANCIAL RESPONSIBILITY**

Contractor and its subcontractors shall effect and maintain the following types of insurance coverage in the limits shown below: Workers' Compensation, Employers' Liability, General Liability, Contractual Liability, Professional Liability, Automobile Liability and Umbrella Liability. Contractor's indemnification obligation, however, shall not be reduced in any way by existence or non-existence, limitation, amount or type of damages, compensation, or benefits payable under Workers' Compensation laws or other insurance provisions.

The limits of insurance required of the Contractor by MPS shall be:

Workers' Compensation	Statutory Limits
Employers' Liability: -Bodily Injury by Accident -Bodily Injury by Disease -Bodily Injury by Disease	\$100,000 per each accident \$100,000 per each employee \$500,000 policy limit
Commercial General Liability: -General Aggregate Limit -Products/Completed Operations Aggregate Limit -Personal and Advertising Injury Limit -Each Occurrence Limit -Fire Damage Limit (any one fire) -Medical Expense Limit (any one person)	\$2,000,000 \$2,000,000 \$1,000,000 \$1,000,000 \$100,000 \$5,000
Professional Liability	\$1,000,000 per occurrence
Auto Liability (Owned, Hired and Non-Owned)	\$1,000,000 per occurrence
Umbrella (excess) Liability: -General Aggregate Limit - Products Completed Operations Limit - Each Occurrence Limit	\$5,000,000 \$5,000,000 \$5,000,000
Builder's Risk	Sufficient to cover the project costs at risk

The Milwaukee Board of School Directors shall be listed as an additional insured under Contractor's and subcontractors' general liability insurance and umbrella liability insurance pursuant to a Certificate of Insurance and applicable additional insured policy endorsements. Evidence of all required insurances of Contractor shall be given to MPS. Contractor shall endeavor to provide MPS with a thirty (30) day written notice of cancellation, non-renewal or material change by any of Contractor's insurers providing the coverages required by MPS for the duration of this Contract.

Contractor shall purchase Builder's Risk coverage sufficient to cover project costs at risk. Contractor shall submit the policy and/or the policy's declarations page and invoice for the actual cost of Builder's Risk coverage, which shall be passed through to and reimbursed by MPS up to a maximum reimbursement amount of \$25,000. Such reimbursement shall be in addition to the Contract Price stated above.

All materials and equipment shall be bid, purchased, and transferred to the Owner tax free upon installation in accordance with WI Act 126 "Sales and Use Tax Exemption for Building Materials That Become Part of a Nonprofit or Government Facility" and the subsequent statutory language contained in WI Statute 77.54 (9m). MPS shall provide Contractor a WI Department of Revenue form S-211 WISCONSIN SALES AND USE TAX EXEMPTION CERTIFICATE, for this purpose.

**9. SHIPPING / TAXES**

MPS is exempt from Federal Excise and Wisconsin Sales Taxes. All vendor quotes, bids and invoices must include delivery FOB destination to the MPS location receiving the goods and freight must be prepaid. This means any freight, shipping, processing, handling or like charges must be part of Contractor's compensation hereunder. Any separate line items for freight, shipping, processing, handling or like charges listed on an invoice will be deleted and NOT PAID.

MPS shall provide reasonable evidence to Contractor of the tax exempt nature of MPS and the Project.

**10. IRREPARABLE HARM**

It is mutually agreed the breach of this Contract on Contractor's part shall result in irreparable and continuing damage to MPS for which money damages may not provide adequate relief. Therefore, the breach of this Contract on Contractor's part shall entitle MPS to both preliminary and permanent injunctive relief and money damages insofar as they can be determined under the circumstances.

**11. TERMINATION BY CONTRACTOR**

Contractor may, at its option, terminate this Contract upon the failure of MPS to pay any amount which may become due hereunder for a period of sixty (60) days following submission of appropriate billing and supporting documentation. Upon said termination, Contractor shall be paid the compensation due for all services rendered through the date of termination including any retainage.

**12. TERMINATION BY MPS - BREACH BY CONTRACTOR**

If Contractor fails to fulfill its obligations under this Contract in a timely or proper manner, or violates any of its provisions, MPS shall thereupon have the right to terminate it by giving ten (10) working days written notice before the effective date of termination of the Contract, specifying the alleged violations, and effective date of termination. The Contract shall not be terminated if, upon receipt of the notice, Contractor promptly (a) cures the alleged violation within ten (10) working days, or (b) commences to cure such alleged violation within the ten (10) working day period, if the nature of the alleged violation is such that a complete cure cannot be reasonably be expected within the 10-working day period, and continues such cure until complete. In the event of termination, MPS will only be liable for services rendered through the date of termination and not for the uncompleted portion, or for any materials or services purchased or paid for by Contractor for use in completing the Contract.

**13. TERMINATION BY MPS**

MPS further reserves the right to terminate this Contract at any time for any reason by giving Contractor 20 days' advance written notice by Registered or Certified Mail of such termination. Upon receipt of notice, Contractor shall discontinue the Work or M&V Services, as the case may be, except to the extent reasonably necessary to secure the site or sites upon which the Project is to be performed ("Premises"). Upon said termination, Contractor shall be paid for all Work or M&V Services rendered through the date of termination, including any retainage. This section also applies should the Milwaukee Board of School Directors fail to appropriate additional monies required for the completion of the Contract.

**14. INDEPENDENT CONTRACTOR**

Contractor agrees and stipulates that in performing this Contract, it is acting as an Independent Contractor, and that no relationship of employer and employee, partnership or joint venture is created by this Contract. Contractor has exclusive control over work hours, location, and other details of such services, and MPS's sole interest is to ensure that said service shall be performed and rendered in a competent, safe, efficient, timely and satisfactory manner in accordance with the terms of this Contract.

Contractor has the sole obligation to provide for and pay any contribution or taxes required by federal, state or local authorities imposed on or measured by income. Contractor specifically covenant not to file any complaint, charge, or claim with any local, state or federal agency or court in which Contractor claims to be or to have been an employee of MPS during the period of time covered by this Contract and that if any such agency or court assumes jurisdiction of any complaint, charge or claim against MPS on Contractor's behalf, Contractor will request such agency or court to dismiss

such matter. MPS shall not be charged any obligation or responsibility whatsoever of extending any fringe benefits which may be extended to MPS employees, including any insurance, or pension plans.

Contractor further agrees that MPS is not to be charged with the obligation or responsibility of extending any fringe benefits such as hospital, medical and life insurance, or pension plans which may be extended to employees of MPS from time-to-time and further agree to indemnify and hold harmless MPS and all its employees, officers and agents from any liability for personal injuries, including death, or for damage to or loss of personal property, which might occur as a result of the performance of the services provided for under this Contract.

**15. ASSIGNMENT LIMITATION**

This Contract shall be binding upon and inure to the benefit of the parties and their successors and assigns; provided, however, that, other than the Subcontractor selection process described in **Appendix E** attached hereto, neither party shall assign its obligations hereunder without the prior written consent of the other.

**16. PROHIBITED PRACTICES**

- A. Contractor during the period of this Contract shall not hire, retain or use for compensation any member, officer, or employee of MPS to perform services under this Contract, or any other person who, to the knowledge of Contractor, has a conflict of interest.
- B. Contractor hereby attests it is familiar with MPS’s Code of Ethics, providing in pertinent part, “[a]n employee of Milwaukee Public Schools may not accept any gift or gratuity in excess of \$25.00 annually from any person, persons, group or any firm which does business with or is attempting to do business with MPS.”
- C. No person may enter into this Contract for services that the MPS employee would otherwise perform as an employee.
- D. No current or former MPS employee may perform services on a professional services contract without the prior written consent of the MPS Chief Human Capital Officer or his/her designee.
- E. If the Contract is for apparel for \$5,000.00 or more, the Contractor agrees to provide only items manufactured by responsible manufacturers. Contractor is required to include a similar provision in all subcontracts to this Contract.

**17. LIVING WAGE REQUIREMENT**

Contractor shall comply with, and ensure its subcontractors performing work under this Contract comply with, Milwaukee Board of School Directors’ Administrative Policy 3.09(17), which requires that employees be paid a “living wage.”

**18. NOTICES**

Notices to either party provided for in this Contract shall be sufficient if sent by Certified or Registered mail, postage prepaid, addressed to the signatories on this Contract, or to their designees.

**19. WAIVER**

The waiver or failure of either Party to exercise in any respect any rights provided for in this Contract shall not be deemed a waiver of any further right under this Contract.

**20. INTEGRATION / SEVERABILITY**

This Contract and the following Appendices, as well as any other exhibits and addenda, if any, constitute the entire Contract among the Parties with respect to the subject matter hereof and supersede all prior proposals, negotiations, conversations, discussions and Contracts among the Parties concerning the subject matter hereof. No amendment or modification of any provision of this Contract shall be effective unless the same shall be in writing and signed by both Parties:

- Appendix A – Price and Payment Terms/FIM Summary Sheet
- Appendix B – Scope of Work
- Appendix C – Assured Performance Guarantee & M&V Option per FIM
- Appendix D – Project Construction Schedule
- Appendix E – General Conditions for Work and M&V Services
- Appendix F – MPS Responsibilities
- Appendix G – Supplemental General Conditions for Work

- Attachment 1 – [RESERVED—USE AS NEEDED]
- Attachment 2 – [RESERVED—USE AS NEEDED]
- Attachment 3 – [RESERVED—USE AS NEEDED]

The District shall not be bound by any terms and conditions included in of Contractor’s packaging, service catalog, brochure, technical data sheet or other document which attempts to impose any conditions at variance with or in addition to the terms and conditions contained herein.

If any term or provision of this Contract should be declared invalid by a court of competent jurisdiction or by operation of law, the remaining terms and provisions of this Contract shall be interpreted as if such invalid Contracts or covenants were not contained herein.

**21. CHOICE OF LAW & FORUM**

The state courts of Wisconsin shall be the sole forum for all disputes arising of this Contract. The validity, construction, enforcement and effect of this Contract shall be governed solely by the laws of the State of Wisconsin. CONTRACTOR AND MPS HEREBY WAIVE THEIR RESPECTIVE RIGHTS TO A JURY TRIAL AS TO ANY CLAIM OR CAUSE OF ACTION BASED UPON, ARISING OUT OF OR DIRECTLY OR INDIRECTLY RELATED TO THIS CONTRACT, INCLUDING CONTRACT, TORT AND STATUTORY CLAIMS, AND EACH OF THE PARTIES HERETO ACKNOWLEDGES THAT THIS WAIVER IS A MATERIAL INDUCEMENT TO ENTER INTO A BUSINESS RELATIONSHIP, THAT EACH HAS RELIED ON THIS WAIVER IN ENTERING INTO THIS AGREEMENT, AND THAT EACH WILL CONTINUE TO RELY ON THIS WAIVER IN THEIR RELATED FUTURE DEALINGS UNDER THIS CONTRACT.

**22. TIMING**

Time is of the essence in this Contract.

**23. CERTIFICATION REGARDING DEBARMENT OR SUSPENSION**

Contractor certifies that neither Contractor or its principals; its subcontractors or their principals; the sub-recipients (if applicable) or their principals are suspended, debarred, proposed for debarment, voluntarily excluded from covered transactions, or otherwise disqualified by any federal department or agency from doing business with the Federal Government pursuant to Executive Orders 12549 and 12689. Contractor specifically covenants that neither the Contractor or its principals, its sub-contractors or their principals, or the sub-recipients (if applicable) or their principals are included on the Excluded Parties List System (“EPLS”) maintained by the General Services Administration (“GSA”).

**24. DELAYS; FORCE MAJEURE**

If Contractor is delayed in the performance of the Work and/or M&V Services by causes beyond its control and without its fault, including but not limited to inability to access the Premises; concealed or unknown conditions encountered at the Premises that materially differ from the conditions otherwise reasonably expected or known to Contractor; a Force Majeure Event (as defined below); or a failure by MPS to perform its obligations under this Contract, Contractor shall provide written notice to MPS of the existence, extent of, and reason for such delays and impacts, and Contractor shall not be held responsible to MPS for damages, loss, injury, or delay caused by such conditions. Under such circumstances, the parties shall negotiate an equitable adjustment in the time for performance, price and payment terms, and the Assured Performance Guarantee. As used herein, the term “Force Majeure Event” shall mean or refer to conditions that are beyond the reasonable control, and without the intentional misconduct or negligence of Contractor, including without limitation acts of God, riot, war, civil unrest, flood, earthquake, outbreak of contagious disease, strikes, labor disputes, fires, explosions or other casualties, acts of terrorism, electrical power outages, interruptions or degradations in telecommunications, computer, or electronic communications systems, or changes in Laws (but excluding failure caused by Contractor’s financial condition or negligence).

**25. STUDENT DATA**

Contractor acknowledges that student data is protected by both federal and state law. *See* Wis. Stat. § 118.125; 20 U.S.C. § 1232g(b); 34 C.F.R. § 99.1 *et seq.* If MPS determines that Contractor has disclosed any student record information in violation of either federal or state law, without prejudice to any other rights or remedies the MPS may have, MPS shall be entitled to immediately terminate this and every other existing Contract without further liability. Moreover, MPS may bar Contractor from future MPS contracts for varying periods up to and including permanent debarment.

**26. NON-DISCLOSURE**

Absent prior written consent of the person listed in Section 3 or his/her designee, Contractor shall not: (1) disclose, publish, or disseminate any information, not a matter of public record, that is received by reason of this Contract, regardless of whether the Contractor is or is not under contract at the time of the disclosure; or (2) disclose, publish, or disseminate any information developed for MPS under this Contract. Contractor agrees to take all reasonable precautions to prevent any unauthorized use, disclosure, publication, or dissemination of the same information.

All information and any derivatives thereof, whether created by MPS or Contractor under this Contract remains the property of MPS and no license or other rights to such information is granted or implied hereby. For purposes of this Contract, “derivatives” shall mean: (i) for copyrightable or copyrighted material, any translation, abridgment, revision, or other form in which an existing work may be recast, transformed, or adapted; and (ii) for patentable or patented material, any improvement thereon.

Within ten business days of the earlier of receipt of MPS’ written or oral request, or final payment, Contractor will return all documents, records, and copies thereof it obtained during the development of the work product covered by this Contract.

**27. MPS LOGO/PUBLICITY**

No Contractor shall use the MPS Logo in its literature or issue a press release about the subject of this Contract without prior written notice to and written approval of MPS’s Executive Director of Communications & Outreach.

**28. ORDER OF PRIORITY**

Should Contractor and MPS sign Contractor’s Contract in addition to this Contract, the terms set forth in this Contract shall govern in the event of a conflict.

**29. PUBLIC RECORDS**

Both parties understand that the Board is bound by the Wisconsin Public Records Law, and as such, all of the terms of this Contract are subject to and conditioned on the provisions of Wis. Stat. § 19.21, *et seq.* Contractor acknowledges that it is obligated to assist the Board in retaining and producing records that are subject to Wisconsin Public Records Law, and that the failure to do so shall constitute a material breach of this Contract, and that the Contractor must defend and hold the Board harmless from liability under the law. Except as otherwise authorized, those records shall be maintained for a period of seven years after receipt of final payment under this Contract.

**30. CONTRACT COMPLIANCE REQUIREMENT**

The HUB requirement, student engagement requirement, and Career Education requirement for this Contract is as stated in Appendix G. Failure to achieve these requirements may result in the application of some or all of the sanctions set forth in Administrative Policy 3.10, which is hereby incorporated by reference.

**31. LIMITATIONS ON LIABILITY**

WITHOUT LIMITING CONTRACTOR’S EXPRESS OBLIGATIONS UNDER THE ASSURED PERFORMANCE GUARANTEE, CONTRACTOR’S LIABILITY UNDER THIS CONTRACT, REGARDLESS OF THE FORM OF ACTION, SHALL IN NO EVENT EXCEED THE AMOUNT OF THE PAYMENTS ACTUALLY RECEIVED BY CONTRACTOR UNDER THIS CONTRACT. If this Contract covers fire safety or security equipment, MPS understands that Contractor is not an insurer regarding those services, and that Contractor shall not be responsible for any damage or loss that may result from fire safety or security equipment that fails to prevent a casualty loss, except to the extent such loss resulted from the Contractor’s willful misconduct, negligence, or fraud.

TO THE EXTENT PERMITTED UNDER WISCONSIN LAW, AND EXCEPT AS SET FORTH BELOW, NEITHER MPS NOR CONTRACTOR WILL BE RESPONSIBLE TO THE OTHER FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL, REMOTE, PUNITIVE, EXEMPLARY DAMAGES FOR LOSS OF PROFITS OR REVENUE, LOSS OF USE, PRINCIPAL OFFICE EXPENSES, AND COMPENSATION OF PERSONNEL (“CONSEQUENTIAL DAMAGES”), REGARDLESS of a party having been advised of the possibility of such potential losses or relief, arising in any manner from this Contract, the Work, the Improvement Measures, the M&V Services, or otherwise.

NOTWITHSTANDING THE FOREGOING, THIS LIMITATION DOES NOT APPLY TO ANY CONSEQUENTIAL DAMAGES THAT (A) ARE COVERED BY INSURANCE CARRIED BY THE CONTRACTOR; (B) ARISE OUT OF THE WILLFUL MISCONDUCT, NEGLIGENCE, OR FRAUD OF THE CONTRACTOR; (C) ARISE OF OUT OF RELATE TO ANY OBLIGATION OF CONTRACTOR TO INDEMNIFY THE OWNER FOR THIRD-PARTY



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CLAIMS UNDER THIS CONTRACT; (D) ARISE OF OUT OF RELATE TO ANY VIOLATIONS OF LAW BY THE CONTRACTOR; OR (E) THAT ARE NOT COVERED BY INSURANCE BUT HAVE AN AGGREGATE VALUE OF LESS THAN \$ 50,000. The foregoing waivers and limitations are fundamental elements of the basis for this Contract between Contractor and Owner, and each party acknowledges that Contractor would not be able to provide the Work and M&V Services contemplated by this Contract on an economic basis in the absence of such waivers and limitations, and would not have entered into this Contract without such waivers and limitations.

**[SIGNATURES BEGIN ON FOLLOWING PAGE]**

IN WITNESS WHEREOF, the parties here to have executed this Professional Services Contract on the day, month and year first above written.

**Trane U.S., Inc** (Vendor #: XXXXX)

**MILWAUKEE BOARD OF SCHOOL DIRECTORS**

By: \_\_\_\_\_  
Authorized Representative

By: \_\_\_\_\_  
Kari H. Race, J.D./Acting Director  
Procurement and Risk Management

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**Trane U.S. Inc.**  
234 W. Florida Ave.  
Milwaukee, WI 53204

By: \_\_\_\_\_  
Darienne B. Driver Ed.D.,  
Superintendent of Schools

Date: \_\_\_\_\_

SSN / FEIN:

Budget Code:

By: \_\_\_\_\_  
Mark A. Sain, President  
Milwaukee Board of School Directors

Date: \_\_\_\_\_

Reviewed by Risk Management:

By: \_\_\_\_\_

Date: \_\_\_\_\_

**APPENDIX A**  
**Price and Payment Terms**

MPS shall make payments to Contractor for M&V Services pursuant to this Appendix A.

**M&V Services.** The price for **Trane U.S., Inc.** M&V Services, as detailed in **Appendix C** of this Contract, is \$1,259,378.00 for year 1 and is included in the \$25,016,596.00 Total Contract Price set forth in the Contract. These payments will be due and payable when MPS receives Contractor invoice and are due in advance, per the Section 3 Compensation terms, of the service Contractor is to provide, and shall be made throughout the Guarantee Term. It is acknowledged by MPS that, consistent with Appendix C below, upon the conclusion of MPS's receipt of M&V Services, the Assured Performance Guarantee shall automatically terminate and Contractor shall have no liability hereunder.

The FIM Summary Sheet will be the basis for the Schedule of Values and will be used for payment requests.

***The Contract Price in Section 3 of the Contract is derived from the APPENDIX A table shown on the following pages:***

APPENDIX A

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX

Appendix A1 - Facility Improvement Measure Listings																	
022 James Madison Academic Campus																	
PART 1																	
MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency	
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)			
	<b>HVAC</b>																
022-F-HP	Heating Plant Upgrade/Replacement	\$20,579	\$30,868	\$72,025	\$185,207	\$428,344	\$219,879	\$51,446	\$20,579	\$1,028,926	\$19,926	\$67,500	\$647	\$88,073	INC	\$91,400	
022-F-CU	Coils & Univents Upgrade/Replacement	\$23,766	\$35,649	\$83,181	\$213,895	\$351,315	\$397,317	\$59,415	\$23,766	\$1,188,304	\$4,586	\$50,000	\$8,669	\$63,255	INC	\$0	
022-F-AHU	AHU & Dampers Upgrade/Replacement	\$18,069	\$27,103	\$63,240	\$162,618	\$237,304	\$331,859	\$45,172	\$18,069	\$903,434	\$1,772	\$50,000	\$4,089	\$55,861	INC	\$265,200	
022-F-EMS	Energy Management System	\$17,708	\$26,562	\$61,978	\$159,373	\$210,018	\$347,787	\$44,270	\$17,708	\$885,404	\$8,799	\$30,000	\$15,997	\$54,796	INC	\$0	
022-F-TAB	Test, Adjust, and Air Balance	\$772	\$1,158	\$2,702	\$6,948	\$0	\$24,317	\$1,930	\$772	\$38,598	\$14,519	\$7,500	\$6,393	\$28,412	INC	\$0	
	<b>Lighting</b>																
022-F-LCORR	Corridor Upgrade/Replacement	\$7,328	\$10,992	\$7,328	\$10,992	\$153,351	\$150,756	\$18,320	\$7,328	\$366,394	\$7,470	\$75,000	\$3,975	\$86,445	INC	\$43,300	
022-F-LAUD	Auditorium Upgrade/Replacement	\$1,898	\$2,847	\$1,898	\$2,847	\$35,679	\$43,094	\$4,745	\$1,898	\$94,907	\$1,494	\$5,000	\$441	\$6,935	INC	\$0	
022-F-LCLAS	Classroom Upgrade/Replacement	\$35,999	\$53,998	\$35,999	\$53,998	\$761,726	\$732,231	\$89,997	\$35,999	\$1,799,948	\$17,928	\$85,000	\$26,951	\$129,879	INC	\$90,000	
022-F-LEXT	Exterior Upgrade/Replacement	\$2,032	\$3,047	\$2,032	\$3,047	\$53,061	\$31,247	\$5,079	\$2,032	\$101,576	\$2,989	\$12,500	\$140	\$15,629	INC	\$0	
	<b>Plumbing</b>																
022-F-PFIX	Plumbing Fixtures Upgrade/Replacement	\$3,235	\$4,852	\$3,235	\$4,852	\$55,265	\$78,980	\$8,087	\$3,235	\$161,741	\$3,341	\$3,500	\$38,218	\$45,059	INC	\$18,100	
	<b>Building Envelope</b>																
022-F-WIND	Window Upgrade/Replacement	\$7,704	\$11,556	\$26,965	\$69,339	\$126,763	\$117,085	\$19,261	\$6,543	\$385,217	\$12,875	\$80,000	\$94	\$92,969	INC	\$99,300	
022-F-DOOR	Door Upgrade/Replacement	\$3,027	\$4,540	\$10,593	\$27,239	\$44,475	\$51,318	\$7,566	\$2,570	\$151,329	\$1,672	\$17,500	\$613	\$19,785	INC	\$15,600	
	<b>Total</b>	<b>\$142,116</b>	<b>\$213,173</b>	<b>\$371,176</b>	<b>\$900,355</b>	<b>\$2,457,301</b>	<b>\$2,525,871</b>	<b>\$355,289</b>	<b>\$140,498</b>	<b>\$7,105,779</b>	<b>\$97,371</b>	<b>\$483,500</b>	<b>\$106,227</b>	<b>\$687,099</b>	<b>\$0</b>	<b>\$622,900</b>	

Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms  
 Note by J Berget: Energy Savings Savings entered were calculated using Trane Trace 700 Modeling Software  
 Note by J Berget: Part 2 removed from worksheet.

APPENDIX A

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX

Appendix A1- Facility Improvement Measure Listings																
049 Milwaukee Parkside School for the Arts		= ESCO Input Data				= MPS Input Data				FIM added or changed						
PART 1																
MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)								Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency	
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)			Total Savings (\$)
	<b>HVAC</b>															
049-F-CU	Coils & Univents Upgrade/Replacement	\$17,135	\$25,703	\$17,135	\$25,703	\$444,503	\$266,602	\$42,838	\$17,135	\$856,753	\$0	\$25,000	\$5,372	\$30,372	INC	\$145,700
049-F-AHU	AHU & Dampers Upgrade/Replacement	\$14,238	\$21,357	\$14,238	\$21,357	\$336,945	\$253,930	\$35,595	\$14,238	\$711,898	\$0	\$25,000	\$43,737	\$68,737	INC	\$81,200
049-F-EMS	Energy Management System	\$13,339	\$20,009	\$13,339	\$20,009	\$236,580	\$317,007	\$33,349	\$13,339	\$666,973	\$14,089	\$15,000	\$15,997	\$45,086	INC	\$0
049-F-TAB	Test, Adjust, and Air Balance	\$1,178	\$1,767	\$1,178	\$1,767	\$8,150	\$40,748	\$2,946	\$1,178	\$58,913	\$0	\$4,000	\$3,962	\$7,962	INC	\$0
	<b>Lighting</b>															
049-F-LCORR	Corridor Upgrade/Replacement	\$6,832	\$10,248	\$6,832	\$10,248	\$120,769	\$162,762	\$17,080	\$6,832	\$341,603	\$13,264	\$17,500	\$14,629	\$45,393	INC	\$59,200
049-F-LAUDIT	Auditorium Upgrade/Replacement	\$5,250	\$7,875	\$5,250	\$7,875	\$96,015	\$121,848	\$13,124	\$5,250	\$262,485	\$13,061	\$12,500	\$1,027	\$26,587	INC	\$51,200
049-F-LGYM	Gym Upgrade/Replacement	\$498	\$1,246	\$2,491	\$6,228	\$8,401	\$4,305	\$1,246	\$498	\$24,913	\$381	\$8,000	\$216	\$8,597	INC	\$0
049-F-LGDF	Gym Destratification Fans	\$31	\$46	\$31	\$46	\$743	\$531	\$77	\$31	\$1,535	\$244	\$50,000	\$14,422	\$64,666	INC	\$0
049-F-LCLAS	Classroom Upgrade/Replacement	\$24,318	\$36,477	\$24,318	\$36,477	\$488,826	\$520,370	\$60,795	\$24,318	\$1,215,900	\$11,721	\$50,000	\$14,422	\$76,143	INC	\$60,800
049-F-LEXT	Exterior Upgrade/Replacement	\$3,000	\$4,501	\$3,000	\$4,501	\$66,542	\$57,973	\$7,501	\$3,000	\$150,018	\$1,404	\$7,500	\$235	\$9,139	INC	\$0
	<b>Plumbing</b>															
049-F-PFIX	Plumbing Fixtures Upgrade/Replacement	\$2,017	\$3,504	\$5,245	\$12,230	\$27,853	\$42,940	\$5,042	\$2,017	\$100,848	\$40,400	\$2,000	\$18,732	\$61,132	INC	\$15,100
	<b>Building Envelope</b>															
049-F-WIND	Window Upgrade/Replacement	\$30,239	\$54,881	\$108,098	\$269,414	\$411,545	\$532,666	\$75,597	\$29,495	\$1,511,934	\$4,444	\$75,550	\$222	\$80,216	INC	\$89,700
049-F-DOOR	Door Upgrade/Replacement	\$1,845	\$2,768	\$1,845	\$2,768	\$35,687	\$41,178	\$4,614	\$1,567	\$92,274	\$24	\$10,000	\$374	\$10,398	INC	\$14,200
	<b>Total</b>	<b>\$119,921</b>	<b>\$190,381</b>	<b>\$203,001</b>	<b>\$418,622</b>	<b>\$2,282,557</b>	<b>\$2,362,861</b>	<b>\$299,802</b>	<b>\$118,899</b>	<b>\$5,996,045</b>	<b>\$99,033</b>	<b>\$302,050</b>	<b>\$133,345</b>	<b>\$534,428</b>	<b>\$0</b>	<b>\$517,100</b>
Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms																
Revision by J Berget: Corrected cell V8 by entering 0 in place of #DIV/0! formula error code																
Revision by J Berget: Corrected cell V9 by entering 0 in place of #DIV/0! formula error code																
Revision by J Berget: Corrected cell V11 by entering 0 in place of #DIV/0! formula error code																
Note by J Berget: Energy Savings for measures 049-F-CU, 049-F-AHU, and 049-F-TAB included in entry for measure 093-F-EMS																
Note by J Berget: Additional window replacement added to window upgrade/replacement measure (049-F-WIND)																
Note by J Berget: Part 2 removed from worksheet.																

APPENDIX A

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX

Appendix A1- Facility Improvement Measure Listings																
093 Bruce Elementary School																
PART 1																
MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
	<b>HVAC</b>															
093-F-HP	Heating Plant Upgrade/Replacement	\$7,378	\$11,066	\$7,378	\$11,066	\$209,798	\$96,372	\$18,444	\$7,378	\$368,879	\$10,419	\$20,000	\$647	\$31,066	INC	\$33,400
093-F-CU	Coils & Univents Upgrade/Replacement	\$7,467	\$11,200	\$7,467	\$11,200	\$127,427	\$182,443	\$18,667	\$7,467	\$373,338	\$0	\$17,500	\$1,064	\$18,564	INC	\$32,700
093-F-AHU	AHU & Dampers Upgrade/Replacement	\$7,099	\$10,649	\$7,099	\$10,649	\$132,166	\$162,460	\$17,749	\$7,099	\$354,970	\$0	\$25,000	\$4,049	\$29,049	INC	\$20,700
093-F-EMS	Energy Management System	\$8,287	\$12,431	\$8,287	\$12,431	\$170,889	\$173,029	\$20,718	\$8,287	\$414,359	\$3,426	\$15,000	\$9,598	\$28,024	INC	
093-F-TAB	Test, Adjust, and Air Balance	\$325	\$488	\$325	\$488	\$0	\$13,489	\$813	\$325	\$16,252	\$0	\$2,500	\$863	\$3,363	INC	
	<b>Lighting</b>															
093-F-LCORR	Corridor Upgrade/Replacement	\$1,823	\$2,734	\$1,823	\$2,734	\$33,559	\$42,075	\$4,556	\$1,823	\$91,125	\$3,103	\$6,000	\$1,624	\$10,727	INC	\$29,600
093-F-LGYM	Gym Upgrade/Replacement	\$169	\$254	\$169	\$254	\$4,644	\$2,388	\$424	\$169	\$8,473	\$328	\$1,500	\$81	\$1,909	INC	
093-F-LCLAS	Classroom Upgrade/Replacement	\$1,601	\$2,401	\$1,601	\$2,401	\$46,763	\$19,671	\$4,002	\$1,601	\$80,041	\$31,886	\$10,000	\$14,137	\$56,023	INC	
093-F-LEXT	Exterior Upgrade/Replacement	\$639	\$959	\$639	\$959	\$20,585	\$5,941	\$1,598	\$639	\$31,960	\$694	\$1,000	\$90	\$1,784	INC	
	<b>Plumbing</b>															
093-F-PFIX	Plumbing Fixtures Upgrade/Replacement	\$1,572	\$2,357	\$1,572	\$2,357	\$26,068	\$39,156	\$3,929	\$1,572	\$78,583	\$353	\$1,500	\$3,328	\$5,180	INC	\$8,900
	<b>Building Envelope</b>															
093-F-WIND	Window Upgrade/Replacement	\$2,498	\$3,747	\$2,498	\$3,747	\$45,900	\$58,157	\$6,246	\$2,122	\$124,915	\$753	\$13,500	\$50	\$14,303	INC	\$56,200
093-F-DOOR	Door Upgrade/Replacement	\$1,255	\$1,882	\$1,255	\$1,882	\$24,267	\$28,001	\$3,137	\$1,066	\$62,746	\$18	\$7,250	\$254	\$7,522	INC	
	<b>Total</b>	<b>\$40,113</b>	<b>\$60,169</b>	<b>\$40,113</b>	<b>\$60,169</b>	<b>\$842,066</b>	<b>\$823,182</b>	<b>\$100,282</b>	<b>\$39,547</b>	<b>\$2,005,642</b>	<b>\$50,980</b>	<b>\$120,750</b>	<b>\$35,785</b>	<b>\$207,515</b>	<b>\$0</b>	<b>\$181,500</b>
Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms																
Note by J Berget: Energy Savings for measures 093-F-CU, 093 -F-AHU, and 093-F-TAB included in entry for measure 093-F- EMS																
Note by J Berget: Part 2 removed from worksheet.																

APPENDIX A

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX

Appendix A1 - Facility Improvement Measure Listings																
003 MacDowell Montessori at Juneau HS Complex																
											= ESCO Input Data			= MPS Input Data		
PART 1																
MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
Lighting																
003-F-LCORR	Corridor Upgrade/Replacement	\$5,854	\$8,781	\$5,854	\$8,781	\$123,776	\$119,165	\$14,635	\$5,854	\$292,700	\$2,658	\$25,000	\$2,243	\$29,901	INC	\$44,600
003-F-LAUDIT	Auditorium Upgrade/Replacement	\$4,627	\$6,941	\$4,627	\$6,941	\$85,862	\$106,177	\$11,569	\$4,627	\$231,372	\$9,554	\$12,500	\$495	\$22,550	INC	\$41,600
<b>Total</b>		<b>\$10,481</b>	<b>\$15,722</b>	<b>\$10,481</b>	<b>\$15,722</b>	<b>\$209,638</b>	<b>\$225,342</b>	<b>\$26,204</b>	<b>\$10,481</b>	<b>\$524,072</b>	<b>\$12,212</b>	<b>\$37,500</b>	<b>\$2,738</b>	<b>\$52,451</b>	<b>\$0</b>	<b>\$86,200</b>
Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms																

Appendix A1 - Facility Improvement Measure Listings																
Site 012 Bay View High School																
											= ESCO Input Data			= MPS Input Data		
PART 1																
MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
Lighting																
012-F-LCORR	Corridor Upgrade/Replacement	\$16,179	\$24,269	\$16,179	\$24,269	\$261,229	\$410,220	\$40,449	\$16,179	\$808,975	\$5,077	\$20,000	\$5,240	\$30,317	INC	\$70,400
012-F-LGYM	Gym Upgrade/Replacement	\$578	\$866	\$578	\$866	\$18,376	\$5,593	\$1,444	\$578	\$28,878	\$938	\$1,250	\$1,045	\$3,233	INC	\$0
012-F-LCAFE	Cafeteria Upgrade/Replacement	\$1,587	\$2,380	\$1,587	\$2,380	\$23,967	\$41,892	\$3,967	\$1,587	\$79,348	\$1,284	\$2,000	\$1,043	\$4,327	INC	\$0
<b>Total</b>		<b>\$18,344</b>	<b>\$27,516</b>	<b>\$18,344</b>	<b>\$27,516</b>	<b>\$303,572</b>	<b>\$457,705</b>	<b>\$45,860</b>	<b>\$18,344</b>	<b>\$917,200</b>	<b>\$7,299</b>	<b>\$23,250</b>	<b>\$7,327</b>	<b>\$37,877</b>	<b>\$0</b>	<b>\$70,400</b>
Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms																

APPENDIX A

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX

**Appendix A1 - Facility Improvement Measure Listings**  
**Site 016 Obama School of Career & Technical Education**      = ESCO Input Data      = MPS Input Data

**PART 1**

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
	<b>Lighting</b>															
016-F-LCORR	Corridor Upgrade/Replacement	\$11,152	\$16,727	\$11,152	\$16,727	\$206,879	\$255,913	\$27,879	\$11,152	\$557,581	\$6,405	\$35,000	\$4,708	\$46,113	INC	\$85,800
016-F-LAUDIT	Auditorium Upgrade/Replacement	\$1,090	\$1,635	\$1,090	\$1,635	\$26,423	\$18,807	\$2,725	\$1,090	\$54,494	\$480	\$6,750	\$477	\$7,707	INC	\$0
016-F-LGYM	Gym Upgrade/Replacement	\$448	\$672	\$448	\$672	\$12,308	\$6,284	\$1,120	\$448	\$22,400	\$514	\$10,000	\$279	\$10,793	INC	\$0
016-F-LGDF	Gym Destratification Fans	\$31	\$46	\$31	\$46	\$531	\$743	\$77	\$31	\$1,535	\$58	\$0	\$0	\$58	INC	\$0
016-F-LCAFE	Cafeteria Upgrade/Replacement	\$2,816	\$4,224	\$2,816	\$4,224	\$49,220	\$67,650	\$7,040	\$2,816	\$140,806	\$1,756	\$6,250	\$1,385	\$9,391	INC	\$0
	<b>Total</b>	<b>\$15,536</b>	<b>\$23,304</b>	<b>\$15,536</b>	<b>\$23,304</b>	<b>\$295,360</b>	<b>\$349,397</b>	<b>\$38,841</b>	<b>\$15,536</b>	<b>\$776,816</b>	<b>\$9,213</b>	<b>\$58,000</b>	<b>\$6,850</b>	<b>\$74,063</b>	<b>\$0</b>	<b>\$85,800</b>

Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms

**Appendix A1 - Facility Improvement Measure Listings**  
**Site 018 Alexander Hamilton High School**      = ESCO Input Data      = MPS Input Data

**PART 1**

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
	<b>Lighting</b>															
018-F-LCORR	Corridor Upgrade/Replacement	\$16,730	\$25,095	\$58,554	\$150,567	\$229,992	\$296,993	\$41,824	\$16,730	\$836,484	\$8,611	\$50,000	\$7,056	\$65,667	INC	\$71,800
018-F-LGYM	Gym Upgrade/Replacement	\$184	\$276	\$644	\$1,656	\$3,863	\$1,934	\$460	\$184	\$9,202	\$100	\$2,000	\$189	\$2,289	INC	\$0
018-F-LCAFE	Cafeteria Upgrade/Replacement	\$2,811	\$4,217	\$9,839	\$25,300	\$38,378	\$50,171	\$7,028	\$2,811	\$140,555	\$2,237	\$7,500	\$1,690	\$11,427	INC	\$0
	<b>Total</b>	<b>\$19,725</b>	<b>\$29,587</b>	<b>\$69,037</b>	<b>\$177,523</b>	<b>\$272,233</b>	<b>\$349,098</b>	<b>\$49,312</b>	<b>\$19,725</b>	<b>\$986,241</b>	<b>\$10,948</b>	<b>\$59,500</b>	<b>\$8,935</b>	<b>\$79,383</b>	<b>\$0</b>	<b>\$71,800</b>

Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms



**APPENDIX A**

**Appendix A1 - Facility Improvement Measure Listings**

Site 020 Rufus King High School

[Yellow Box] = ESCO Input Data

[Blue Box] = MPS Input Data

**PART 1**

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
	<b>Lighting</b>															
020-F-LCORR	Corridor Upgrade/Replacement	\$8,195	\$12,292	\$8,195	\$12,292	\$181,018	\$159,059	\$20,487	\$8,195	\$409,730	\$4,279	\$25,000	\$3,628	\$32,906	INC	\$50,500
020-F-LAUDIT	Auditorium Upgrade/Replacement	\$1,414	\$2,120	\$1,414	\$2,120	\$26,088	\$32,740	\$3,534	\$1,414	\$70,844	\$331	\$8,000	\$279	\$8,610	INC	\$0
020-F-LGYM	Gym Upgrade/Replacement	\$717	\$478	\$717	\$13,125	\$6,709	\$1,195	\$478	\$0	\$23,418	\$973	\$6,500	\$432	\$7,905	INC	\$0
020-F-LGDF	Gym Destratification Fans	\$31	\$46	\$31	\$46	\$531	\$743	\$77	\$31	\$1,535	\$40	\$0	\$0	\$40	INC	\$0
020-F-LCAFE	Cafeteria Upgrade/Replacement	\$3,953	\$5,930	\$3,953	\$5,930	\$73,043	\$91,022	\$9,883	\$3,953	\$197,669	\$3,454	\$10,000	\$2,436	\$15,890	INC	\$0
	<b>Total</b>	<b>\$14,309</b>	<b>\$20,866</b>	<b>\$14,309</b>	<b>\$33,514</b>	<b>\$287,388</b>	<b>\$284,759</b>	<b>\$34,459</b>	<b>\$13,592</b>	<b>\$703,196</b>	<b>\$9,077</b>	<b>\$49,500</b>	<b>\$6,775</b>	<b>\$65,352</b>	<b>\$0</b>	<b>\$50,500</b>

Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms

**Appendix A1 - Facility Improvement Measure Listings**

Site 026 Casimir Pulaski High School

[Yellow Box] = ESCO Input Data

[Blue Box] = MPS Input Data

**PART 1**

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
	<b>Lighting</b>															
026-F-LCORR	Corridor Upgrade/Replacement	\$13,145	\$19,717	\$13,145	\$19,717	\$221,436	\$324,070	\$32,862	\$13,145	\$657,236	\$5,963	\$45,000	\$4,729	\$55,692	INC	\$62,900
026-F-LAUDIT	Auditorium Upgrade/Replacement	\$1,263	\$1,895	\$1,263	\$1,895	\$19,166	\$33,421	\$3,158	\$1,263	\$63,324	\$666	\$8,000	\$486	\$9,152	INC	\$0
026-F-LGYM	Gym Upgrade/Replacement	\$822	\$1,233	\$822	\$1,233	\$22,525	\$11,591	\$2,055	\$822	\$41,104	\$1,990	\$10,000	\$738	\$12,729	INC	\$0
026-F-LGDF	Gym Destratification Fans	\$31	\$46	\$31	\$46	\$531	\$743	\$77	\$31	\$1,535	\$508	\$0	\$0	\$508	INC	\$0
026-F-LCAFE	Cafeteria Upgrade/Replacement	\$3,305	\$4,958	\$3,305	\$4,958	\$57,568	\$79,597	\$8,263	\$3,305	\$165,259	\$2,926	\$7,000	\$2,111	\$12,038	INC	\$0
	<b>Total</b>	<b>\$18,566</b>	<b>\$27,849</b>	<b>\$18,566</b>	<b>\$27,849</b>	<b>\$321,226</b>	<b>\$449,422</b>	<b>\$46,415</b>	<b>\$18,566</b>	<b>\$928,457</b>	<b>\$12,053</b>	<b>\$70,000</b>	<b>\$8,065</b>	<b>\$90,118</b>	<b>\$0</b>	<b>\$62,900</b>

Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms

**APPENDIX A**

**Appendix A1 - Facility Improvement Measure Listings**

**Site 028 Metropolitan (Alliance) High School** [Yellow Box] = ESCO Input Data [Blue Box] = MPS Input Data

**PART 1**

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
	<b>Lighting</b>															
028-F-LCORR	Corridor Upgrade/Replacement	\$1,302	\$1,954	\$4,559	\$11,722	\$16,274	\$24,754	\$3,256	\$1,302	\$65,123	\$774	\$2,000	\$0	\$2,774	INC	\$36,500
028-F-LGYM	Gym Upgrade/Replacement	\$269	\$403	\$940	\$2,417	\$5,640	\$2,820	\$671	\$269	\$13,428	\$600	\$1,250	\$270	\$2,120	INC	\$0
028-F-LGDF	Gym Destratification Fans	\$31	\$46	\$107	\$276	\$403	\$564	\$77	\$31	\$1,535	\$49	\$0	\$0	\$49	INC	\$0
	<b>Total</b>	<b>\$1,602</b>	<b>\$2,403</b>	<b>\$5,606</b>	<b>\$14,416</b>	<b>\$22,317</b>	<b>\$28,138</b>	<b>\$4,004</b>	<b>\$1,602</b>	<b>\$80,086</b>	<b>\$1,423</b>	<b>\$3,250</b>	<b>\$270</b>	<b>\$4,944</b>	<b>\$0</b>	<b>\$36,500</b>

Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms

**Appendix A1 - Facility Improvement Measure Listings**

**Site 029 Riverside University High School** [Yellow Box] = ESCO Input Data [Blue Box] = MPS Input Data

**PART 1**

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
	<b>Lighting</b>															
029-F-LCORR	Corridor Upgrade/Replacement	\$11,579	\$17,368	\$40,525	\$104,208	\$149,165	\$215,564	\$28,947	\$11,579	\$578,934	\$6,990	\$25,000	\$5,281	\$37,271	INC	\$58,900
029-F-LGYM	Gym Upgrade/Replacement	\$1,196	\$1,794	\$4,187	\$10,767	\$24,872	\$12,811	\$2,991	\$1,196	\$59,814	\$2,040	\$10,000	\$991	\$13,030	INC	\$0
029-F-LGDF	Gym Destratification Fans	\$31	\$46	\$107	\$276	\$403	\$564	\$77	\$31	\$1,535	\$123	\$0	\$0	\$123	INC	\$0
	<b>Total</b>	<b>\$12,806</b>	<b>\$19,208</b>	<b>\$44,820</b>	<b>\$115,251</b>	<b>\$174,440</b>	<b>\$228,938</b>	<b>\$32,014</b>	<b>\$12,806</b>	<b>\$640,282</b>	<b>\$9,153</b>	<b>\$35,000</b>	<b>\$6,271</b>	<b>\$50,424</b>	<b>\$0</b>	<b>\$58,900</b>

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**APPENDIX A**

**Appendix A1 - Facility Improvement Measure Listings**

Site 032 South Division Multi-Plex      = ESCO Input Data      = MPS Input Data

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
<b>Lighting</b>																
032-F-LCORR	Corridor Upgrade/Replacement	\$13,048	\$19,572	\$45,667	\$117,429	\$184,508	\$226,495	\$32,619	\$13,048	\$652,384	\$7,165	\$45,000	\$5,606	\$57,771	INC	\$62,600
032-F-LCAFE	Cafeteria Upgrade/Replacement	\$355	\$532	\$1,241	\$3,191	\$7,367	\$3,801	\$886	\$355	\$17,728	\$1,691	\$6,000	\$1,333	\$9,024	INC	\$0
<b>Total</b>		<b>\$13,402</b>	<b>\$20,103</b>	<b>\$46,908</b>	<b>\$120,620</b>	<b>\$191,875</b>	<b>\$230,296</b>	<b>\$33,506</b>	<b>\$13,402</b>	<b>\$670,112</b>	<b>\$8,856</b>	<b>\$51,000</b>	<b>\$6,939</b>	<b>\$66,795</b>	<b>\$0</b>	<b>\$62,600</b>

Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms

**Appendix A1 - Facility Improvement Measure Listings**

Site 035 Washington Complex      = ESCO Input Data      = MPS Input Data

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
<b>Lighting</b>																
035-F-LCORR	Corridor Upgrade/Replacement	\$18,024	\$27,036	\$18,024	\$27,036	\$325,837	\$422,150	\$45,059	\$18,024	\$901,190	\$9,710	\$45,000	\$6,760	\$61,471	INC	\$120,100
035-F-LAUDIT	Auditorium Upgrade/Replacement	\$19	\$29	\$19	\$29	\$594	\$212	\$49	\$19	\$972	\$70	\$7,000	\$81	\$7,151	INC	\$0
035-F-LGYM	Gym Upgrade/Replacement	\$358	\$537	\$358	\$537	\$9,856	\$5,010	\$896	\$358	\$17,911	\$715	\$12,500	\$288	\$13,504	INC	\$0
035-F-LGDF	Gym Destratification Fans	\$31	\$46	\$31	\$46	\$531	\$743	\$77	\$31	\$1,535	\$21	\$0	\$0	\$21	INC	\$0
035-F-LCAFE	Cafeteria Upgrade/Replacement	\$4,783	\$7,174	\$4,783	\$7,174	\$91,361	\$107,125	\$11,957	\$4,783	\$239,140	\$3,474	\$2,250	\$2,647	\$8,372	INC	\$23,900
<b>Total</b>		<b>\$23,215</b>	<b>\$34,822</b>	<b>\$23,215</b>	<b>\$34,822</b>	<b>\$428,179</b>	<b>\$535,241</b>	<b>\$58,037</b>	<b>\$23,215</b>	<b>\$1,160,748</b>	<b>\$13,991</b>	<b>\$66,750</b>	<b>\$9,777</b>	<b>\$90,518</b>	<b>\$0</b>	<b>\$144,000</b>

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**APPENDIX A**

**Appendix A1 - Facility Improvement Measure Listings**  
**Site 041 Audubon Multiplex**      = ESCO Input Data      = MPS Input Data

**PART 1**

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
	<b>Lighting</b>															
041-F-LCORR	Corridor Upgrade/Replacement	\$7,295	\$10,943	\$7,295	\$10,943	\$121,962	\$180,792	\$18,238	\$7,295	\$364,763	\$3,258	\$20,000	\$2,863	\$26,122	INC	\$66,500
041-F-LAUDIT	Auditorium Upgrade/Replacement	\$1,007	\$1,511	\$1,007	\$1,511	\$19,044	\$22,762	\$2,518	\$1,007	\$50,369	\$268	\$5,500	\$270	\$6,038	INC	\$5,000
041-F-LGYM	Gym Upgrade/Replacement	\$672	\$1,009	\$672	\$1,009	\$18,438	\$9,468	\$1,681	\$672	\$33,622	\$1,277	\$5,000	\$603	\$6,880	INC	\$3,400
041-F-LGDF	Gym Destratification Fans	\$31	\$46	\$31	\$46	\$531	\$743	\$77	\$31	\$1,535	\$135	\$0	\$0	\$135	INC	\$0
041-F-LCAFE	Cafeteria Upgrade/Replacement	\$2,847	\$4,270	\$2,847	\$4,270	\$47,474	\$70,668	\$7,117	\$2,847	\$142,340	\$1,788	\$7,000	\$1,504	\$10,293	INC	\$14,200
	<b>Total</b>	<b>\$11,853</b>	<b>\$17,779</b>	<b>\$11,853</b>	<b>\$17,779</b>	<b>\$207,449</b>	<b>\$284,433</b>	<b>\$29,631</b>	<b>\$11,853</b>	<b>\$592,629</b>	<b>\$6,726</b>	<b>\$37,500</b>	<b>\$5,241</b>	<b>\$49,468</b>	<b>\$0</b>	<b>\$89,100</b>

Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms

**Appendix A1 - Facility Improvement Measure Listings**  
**Site 044 Wedgewood Park Multi-Plex**      = ESCO Input Data      = MPS Input Data

**PART 1**

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
	<b>Lighting</b>															
044-F-LCORR	Corridor Upgrade/Replacement	\$7,660	\$11,489	\$7,660	\$11,489	\$127,739	\$190,137	\$19,149	\$7,660	\$382,983	\$5,923	\$30,000	\$4,307	\$40,230	INC	\$68,300
044-F-LAUDIT	Auditorium Upgrade/Replacement	\$1,090	\$1,635	\$1,090	\$1,635	\$15,808	\$212	\$2,725	\$1,090	\$25,284	\$346	\$5,500	\$342	\$6,188	INC	\$0
044-F-LGYM	Gym Upgrade/Replacement	\$403	\$605	\$403	\$605	\$11,082	\$5,647	\$1,008	\$403	\$20,155	\$737	\$3,000	\$360	\$4,097	INC	\$0
044-F-LGDF	Gym Destratification Fans	\$31	\$46	\$31	\$46	\$531	\$743	\$77	\$31	\$1,535	\$46	\$0	\$0	\$46	INC	\$0
044-F-LCAFE	Cafeteria Upgrade/Replacement	\$2,133	\$3,199	\$2,133	\$3,199	\$38,065	\$50,442	\$5,332	\$2,133	\$106,636	\$1,620	\$5,000	\$1,259	\$7,878	INC	\$10,700
	<b>Total</b>	<b>\$11,316</b>	<b>\$16,974</b>	<b>\$11,316</b>	<b>\$16,974</b>	<b>\$193,226</b>	<b>\$247,181</b>	<b>\$28,290</b>	<b>\$11,316</b>	<b>\$536,593</b>	<b>\$8,672</b>	<b>\$43,500</b>	<b>\$6,268</b>	<b>\$58,440</b>	<b>\$0</b>	<b>\$79,000</b>

Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms

**APPENDIX A**

**Appendix A1 - Facility Improvement Measure Listings**

Site 055 Douglas Community Academy = ESCO Input Data = MPS Input Data

**PART 1**

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
	<b>Lighting</b>															
055-F-LCORR	Corridor Upgrade/Replacement	\$13,202	\$19,802	\$13,202	\$19,802	\$203,021	\$344,845	\$33,004	\$13,202	\$660,079	\$3,927	\$25,000	\$3,512	\$32,439	INC	\$63,000
055-F-LGYM	Gym Upgrade/Replacement	\$648	\$972	\$648	\$972	\$17,759	\$9,129	\$1,620	\$648	\$32,395	\$1,271	\$4,500	\$594	\$6,365	INC	\$3,200
055-F-LGDF	Gym Destratification Fans	\$31	\$46	\$31	\$46	\$531	\$743	\$77	\$31	\$1,535	\$119	\$0	\$0	\$119	INC	\$0
055-F-LCAFE	Cafeteria Upgrade/Replacement	\$1,528	\$2,291	\$1,528	\$2,291	\$25,784	\$37,608	\$3,819	\$1,528	\$76,376	\$1,003	\$3,500	\$784	\$5,287	INC	\$7,600
	<b>Total</b>	<b>\$15,408</b>	<b>\$23,112</b>	<b>\$15,408</b>	<b>\$23,112</b>	<b>\$247,095</b>	<b>\$392,325</b>	<b>\$38,519</b>	<b>\$15,408</b>	<b>\$770,385</b>	<b>\$6,321</b>	<b>\$33,000</b>	<b>\$4,890</b>	<b>\$44,211</b>	<b>\$0</b>	<b>\$73,800</b>

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**Appendix A1 - Facility Improvement Measure Listings**

Site 059 Roosevelt School of the Arts = ESCO Input Data = MPS Input Data

**PART 1**

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
	<b>Lighting</b>															
059-F-LCORR	Corridor Upgrade/Replacement	\$6,006	\$9,009	\$6,006	\$9,009	\$108,636	\$140,602	\$15,014	\$6,006	\$300,287	\$6,206	\$22,500	\$4,742	\$33,448	INC	\$60,000
059-F-LAUDIT	Auditorium Upgrade/Replacement	\$262	\$393	\$262	\$393	\$5,125	\$5,750	\$655	\$262	\$13,102	\$66	\$7,500	\$63	\$7,629	INC	\$0
059-F-LGYM	Gym Upgrade/Replacement	\$438	\$658	\$438	\$658	\$12,037	\$6,157	\$1,096	\$438	\$21,920	\$821	\$7,500	\$414	\$8,736	INC	\$0
059-F-LGDF	Gym Destratification Fans	\$31	\$46	\$31	\$46	\$531	\$743	\$77	\$31	\$1,535	\$54	\$0	\$0	\$54	INC	\$0
	<b>Total</b>	<b>\$6,737</b>	<b>\$10,105</b>	<b>\$6,737</b>	<b>\$10,105</b>	<b>\$126,329</b>	<b>\$153,252</b>	<b>\$16,842</b>	<b>\$6,737</b>	<b>\$336,845</b>	<b>\$7,148</b>	<b>\$37,500</b>	<b>\$5,219</b>	<b>\$49,867</b>	<b>\$0</b>	<b>\$60,000</b>

Revision by J Berget: Removed Worksheet Data Value Definitions and Algorithms

**APPENDIX A**

**Appendix A1 - Facility Improvement Measure Listings**

**Site 062 Milw. French Immersion at Steuben Complex**

  = ESCO Input Data

  = MPS Input Data

**PART 1**

MPS Requested Facility Improvement Measures		Costs (and proposed payment application allocation)									Annual Savings				Sum of CCS Costs (sum from all cost lines) (\$)	Environmental Contingency
MPS FIM ID	MPS FIM Description	Design Development (\$)	Pre Measurement & Verification (\$)	95% Design CD's (\$)	99% Design CD's (\$)	Equipment & Material (\$)	Labor & Installation (\$)	Closeout & Training (\$)	Post Measurement & Verification (\$)	Total Cost	Utility & Energy (\$)	Major Maintenance Deferred Cost Avoidance (\$)	Maintenance Operations Cost Avoidance (\$)	Total Savings (\$)		
	<b>Lighting</b>															
062-F-LCORR	Corridor Upgrade/Replacement	\$5,649	\$8,473	\$5,649	\$8,473	\$109,614	\$124,807	\$14,122	\$5,649	\$282,434	\$3,235	\$15,000	\$2,575	\$20,810		\$44,100
062-F-LAUDIT	Auditorium Upgrade/Replacement	\$262	\$393	\$262	\$393	\$594	\$212	\$655	\$262	\$3,034	\$94	\$10,000	\$99	\$10,193		\$30,200
	<b>Total</b>	<b>\$5,911</b>	<b>\$8,866</b>	<b>\$5,911</b>	<b>\$8,866</b>	<b>\$110,208</b>	<b>\$125,019</b>	<b>\$14,777</b>	<b>\$5,911</b>	<b>\$285,468</b>	<b>\$3,329</b>	<b>\$25,000</b>	<b>\$2,674</b>	<b>\$31,003</b>	<b>\$0</b>	<b>\$74,300</b>

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**APPENDIX B  
SCOPE OF WORK**

**Site 022: James Madison Academic Campus (JMAC)**

**Project No. 022-F-AHU**

**Air Handling Unit Replacement Project**

**Site 022 James Madison Academic Campus**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:**

**Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2001)
2. Building has:
  - a. 303,000 SF (413,000 SF BOMA)
  - b. Hot water heating plant with (2) Cleaver Brooks gas-fired fire-tube 350 HP boilers
  - c. Emergency and back-up power generator Kohler 150REZGC (2014)
  - d. Siemens Apogee Intranet (2003) Over Andover Over JCI Pneumatic
  - e. Electrical service consist of a primary/secondary with:
    - i. 1390A 120/208V 3PH 4W
    - ii. 2080A 120/208V 3PH 4W
    - iii. 832A 120/208V 3PH 4W
    - iv. Substation purchased 2001
  - f. Fire alarm system consist of a combination 110V Simplex/EST-2 – not remotely monitored

**Mechanical:**

1. Replace (19) air handling units and associated piping, valves, control valves, etc. New units to have DDC controllers and electric actuation. Any respective return/exhaust fans are to remain and be re-used if they meet the current ventilation requirements
2. Replace (4) heating and ventilating units and associated piping, valves, control valves, etc. New units to have DDC controllers and electric actuation. Any respective return/exhaust fans are to remain and be re-used if they have the proper capacity.
3. Replace R22 cooling coil and condensing unit associated with AHU-13-64 (Offices) with new R410A coil and condensing unit and associated piping.
4. Any automatic dampers serving air handling units shall be replaced with respective air handling unit system.
5. Insulation all new, existing and abated piping as required.

**Testing, Adjusting and Balancing:**

1. Test, adjust and balance all new equipment – See TAB scope.

**Controls:**

1. See EMS Scope
2. See Mechanical Scope above
3. Replace/Upgrade existing DDC system to as required to provide complete DDC with electric actuation for new equipment

**Plumbing:**

1. Add condensate drain piping to unit vents with cooling coils.

**APPENDIX B****Electrical:**

1. Demolition of electrical circuits, conduit, wiring, breakers, etc. made obsolete by the project
2. New or modified circuiting, wiring, starters, etc. as required for replacement of the air handling and heating and ventilating units.

**General:**

1. Any required general work as required for equipment ingress and egress including but not limited to; door and door frame removal and replacement, wall and roof opening and repair, etc.

**Abatement (by MPS):**

1. Selective abatement in rooms 133D, 136B, 142N, 209A as required to facilitate AHU/HV replacement
2. Whole room abatement in rooms: 139A, 137B, 142S, 161, 213, 290, 306A

**Project No. 022-F-HP****FY18 Cyclic Heating Plant Replacement Project****Site 022 James Madison Academic Campus****Budgeted Project Cost:**

The budget for the entire project cost has been estimated as stated with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing costs for all phases.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2001)
2. Building has:
  - a. 303,000 SF (413,000 SF BOMA)
  - b. Hot water heating plant with (2) Cleaver Brooks gas-fired fire-tube 350 HP boilers
    - i. Cleaver Brooks+CB266-350+B21273+SN:L-34986+350 BHP+1965+NG
    - ii. Cleaver Brooks+CB266-350+B21274+SN:L-34987+350 BHP+1965+NG
    - iii. (8) Circulation Pumps; (2) primary, (2) Unit Vent, (2) Domestic, (2) Pool
  - c. Emergency and back-up power generator Kohler 150REZGC (2014)
  - d. Siemens Apogee Intranet (2003) over Andover over JCI Pneumatic
  - e. Electrical service consists of a primary/secondary with:
    - i. 1390A 120/208V 3PH 4W
    - ii. 2080A 120/208V 3PH 4W
    - iii. 832A 120/208V 3PH 4W
    - iv. Substation purchased 2001
  - f. Fire alarm system consist of a combination 110V Simplex/EST-2 – not remotely monitored

**Div. 15500:**

1. Cut-up and remove (2) obsolete boilers with gas/oil burners and associated piping, motors, etc. as required for new work.
2. Remove of obsolete boiler breeching up to chimney (See asbestos and general work). Seal opening in the boiler room with brick and mortar, level the chimney to 24" above the roof and cap the opening with stainless steel
3. Remove (2) primary and (2) unit vent pumps and associated valves, fittings, piping, etc.
4. Remove obsolete oil pumps, filters, day tank, fittings, etc.
5. Remove horizontal mounted expansion tank, fill assembly, chemical feeder, air separator, etc.
6. Remove any obsolete gas piping
7. Remove air handling unit blank-off unused portion of louver with insulated sheetmetal
8. Remove relief air assembly and blank-off unused portion of louver with insulated sheetmetal
9. Cut-up and remove obsolete domestic heat exchanger, storage tank and associated control valve and remove (2) DHW primary circulation pumps
10. Remove pool heat exchanger associated piping, control valve, etc. in pool equipment room. Remove (2) obsolete pool pumps and associated valves, piping, etc.



**APPENDIX B**

11. Install of (5) 3000 MBH (verify load) high efficiency fully condensing direct vented gas fired boilers and all associated accessories, controls, piping, fittings, valves, etc. (building heating)
12. Install of (2) base mounted HW pumps with variable frequency drives and associated, piping, valves, fittings, etc. to radiation and coils HW systems (not pool or DWH)
13. Install new circuit setters and associated piping, fittings, etc. on HW system to balance flow
14. Install (2) 75% redundant (+/-) heat exchangers and associated piping, etc. for the DHW system.
15. Install of (2) base mounted HW pumps and associated, piping, valves, fittings, etc. to serve the DHW system
16. Install 3-way control valve with electric actuation and associated sensors for DHW system control.
17. Install (1) heat exchanger and associated piping, etc. for the PHW system in the pool room.
18. Install of (2) vertical inline or base mounted HW pumps and associated, piping, valves, fittings, etc. to serve the PHW system in the boiler room.
19. Install 3-way control valve with electric actuation and associated sensors for PHW system control in the pool room.
20. Install of floor mounted bladder style expansion tank, fill assembly, chemical feeder, air separator, etc.
21. Install hot water unit heater and associated controls, electrical, etc. to serve the boiler room
22. Install of a combustion air intake from existing louver to individual tank-offs to each boiler
23. Install independent vent assemblies for each boiler
24. Install exhaust fan with damper and actuator for boiler room ventilation in existing louver left from removal of relief air assembly
25. Install outside air intake with damper and actuator for room ventilation in existing louver left from air handling unit assembly removal
26. Modify current HW piping arrangement for new heating plant layout
27. Install any sensors as required by controls including; temperature, pressure, etc.
28. Insulate all new and modified existing HVAC piping and ductwork as required.
29. Replace all control and shut-off valves serving radiant ceiling panels and other radiation.

**Div. 15950 - Testing Adjusting and Balancing:**

1. See TAB Work
2. Test, adjust and air and water balance all new equipment

**Div. 15500 - Controls:**

1. Remove all controls on all obsolete equipment; pumps, boilers, etc.
2. Extend controls from existing Siemens control panel. Replace or add panel if the current panel is not sufficient to accommodate new controls.
3. Extend DDC system to boiler plant operation including; HWS and HWR main temperature, entire plant modulation from high to low fire based on OA Temp with PHW & DHW system override, Stop/Start, Status via preliminary firing sequence
4. Extend DDC system to HW pumps including; VFD modulation, Lead/Lag, Stop/Start, Status and system pressure
5. Extend DDC system to DWH plant including; DHW system temp, control valve modulation, pump Lead/Lag, Stop/Start and Status
6. Extend DDC system to PHW system including; system temp, control valve modulation, Lead/Lag, Stop/Start, Status and system pressure.
7. Connect room exhaust system (damper and fan operation) to reverse acting line voltage thermostat and HOA switch.

**Div. 15400 - Plumbing:**

1. Install piping between heat exchangers and DHW storage tanks
2. Install at least (2) DHW storage tanks and associated piping, etc. in the domestic tank room
3. Install (2) inline DHW pumps and associated, piping, valves, fittings, etc. to serve the DHW return system in the boiler room
4. Route new piping between boiler room and tank room
5. Removal of domestic water fill piping arrangement and obsolete BFP valve
6. Installation of RPBFP and automatic fill water assembly for heating plant. Contractor shall be responsible for the complete submittal to State of Wisconsin for the RPBFP including the fee and all paperwork with copies to MPS.
7. Add all required floor drains and associated plumbing piping as required for both boilers so there are no tripping hazards.
8. Insulate all new and modified existing plumbing piping as required.

**APPENDIX B****Div. 16000 - Electrical:**

1. Remove of all obsolete disconnects, starters, circuits, breakers, etc. associated with removed equipment. Turnover any removed starter from the MCC to MPS
2. Remove all exposed conduits and wiring back to source. Cap and plug any conduits left in floor.
3. Install all required disconnects, starters in MCC, VFD's, circuits, breakers, etc. associated with installed equipment
4. Installation of new LED lighting system for boiler room layout and adjacent fan room 325A.
5. Installation of any receptacles and associated conduit and wiring as required for new work and temperature controls

**Div. 01000 - General:**

1. All required general work as required for demotion and new work associated with the heating including but not limited to: removal, extension and/or installation of equipment curbs, cutting and patching of roofs, floors, walls, etc.
2. Remove concrete pad below obsolete chiller and repair the floor equal to surround surfaces.
3. Review equipment and material egress into room. Provide openings, enlarge door openings, etc. as required
4. Cutting and patching of floor as required for plumbing work
5. Installation and extension of concrete equipment pads for new equipment
6. Painting and sealing of the entire Boiler Room floor and any new/existing concrete pads

**Hazardous Material (by MPS):**

1. Abate the entire Boiler room 142R and adjacent domestic water tank room 142T and associated piping
2. Remove gasketed flanges
3. Remove Mercury latent devices

**Project No. 022-F-CU****Coil and Unit Vent Replacement Project****Site 022 James Madison Academic Campus****Budgeted Project Cost:**

The budget for the entire project cost has been estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2001)
2. Building has:
  - a. 303,000 SF (413,000 SF BOMA)
  - b. Hot water heating plant with (2) Cleaver Brooks gas-fired fire-tube 350 HP boilers
  - c. Emergency and back-up power generator Kohler 150REZGC (2014)
  - d. Siemens Apogee Intranet (2003) Over Andover Over JCI Pneumatic
  - e. Electrical service consist of a primary/secondary with:
    - i. 1390A 120/208V 3PH 4W
    - ii. 2080A 120/208V 3PH 4W
    - iii. 832A 120/208V 3PH 4W
    - iv. Substation purchased 2001
  - f. Fire alarm system consist of a combination 110V Simplex/EST-2 – not remotely monitored

**Mechanical:**

1. Replace (93) unit vents and associated piping, valves, etc. New units to have DDC controllers and electric actuation. Modify radiation elements and cabinet as required to accommodate new unit vents.
2. Replace (70) duct mounted heating coils and associated piping, valves, control valves, etc. Replace respective thermostats with thermostat/sensor to reset AHU temperature.
3. Replace (20) cabinet unit heaters and associated piping, valves, etc. Replace control valves controls so fan operates to maintain thermostat setpoint.
4. Insulation all new, existing and abated piping as required.

## **APPENDIX B**

### **Testing Adjusting and Balancing:**

1. See TAB Work
2. Test, adjust and balance all new equipment

### **Controls:**

1. See EMS Scope
2. See Mechanical Scope above
3. Replace/Upgrade existing DDC system to as required to provide complete DDC with electric actuation for new equipment

### **Electrical:**

1. Demolition of electrical circuits, conduit, wiring, breakers, etc. made obsolete by the project
2. New or modified circuiting and wiring from unit vents to panelboards so each unit vent is served by a separate breaker.

### **General:**

1. Ceiling tile removal and replacement to facilitate duct-mounted heating coil replacement
2. Wall remodeling as required to facilitate cabinet unit heater replacement
3. Any required general work as required for equipment ingress and egress including but not limited to; door and door frame removal and replacement, wall and roof opening and repair, etc.
4. Touch-up painting at (93) unit vent locations
5. Floor tile installation at (93) vert. unit vent locations

### **Abatement (by MPS):**

1. Selective abatement at (93) unit vents locations, (20) cabinet unit heater locations and (70) duct mounted coil locations to facilitate replacement
2. Selective floor tile abatement in (61) rooms with vertical style unit vents.

### **Project No. 022-F-DOOR**

#### **Exterior Door Replacement Project**

#### **Site 022 James Madison Academic Campus (JMAC)**

### **Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

### **Proposed Scope of Work:**

#### **Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2001)
2. Building has: 303,000 SF (413,000 SF BOMA)
3. Building has (41) exterior doors

#### **Scope:**

1. Replace (41) exterior doors with new insulated doors to match operation.

### **Project No. 022-F-EMS**

#### **Energy Management System Replacement Project**

#### **Site 022 James Madison Academic Campus**

### **Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

### **Proposed Scope of Work:**

#### **Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2001)

**APPENDIX B**

2. Building has:
  - a. 303,000 SF (413,000 SF BOMA)
  - b. Hot water heating plant with (2) Cleaver Brooks gas-fired fire-tube 350 HP boilers
  - c. Emergency and back-up power generator Kohler 150REZGC (2014)
  - d. Siemens Apogee Intranet (2003) Over Andover Over JCI Pneumatic
  - e. Electrical service consist of a primary/secondary with:
    - i. 1390A 120/208V 3PH 4W
    - ii. 2080A 120/208V 3PH 4W
    - iii. 832A 120/208V 3PH 4W
    - iv. Substation purchased 2001
  - f. Fire alarm system consist of a combination 110V Simplex/EST-2 – not remotely monitored

**Mechanical:**

1. Turnover all control valves, devices, sensors, etc. to Mechanical/Electrical Contractor for installation
2. Any piping modifications to accommodate new devices
3. Any ductwork modification as required for new devices
4. Install any access panels for duct smoke detectors
5. Replace any remaining pneumatic damper actuators with electric

**Controls:**

1. The intent is to replace all pneumatic controlled devices with new electrically controlled devices
2. Replace server at MPS Site 451 DFMS and associated server software to the most current version. Update all other Siemen's controlled site software to the current software version and perform any software migration so all sites are operating on the same platform.
3. Upgrade the Siemens DDC system and extend system to all AHU's, UV's, HV's, heating plant, cabinet unit heaters, radiation, lighting, etc.
4. Upgrade/modify the system graphics and programming to incorporate all connected new and existing equipment for one contiguous system.
5. Extend wiring to any new actuators as required for DDC operation
6. Integrate the lighting systems into the DDC system
7. Integrate Fire Alarm system to the DDC system.
8. Replace thermostats associated with duct mounted reheat coils, unit vents, radiation, etc. with electric
9. Replace all the control valves with electrically actuated valves and connect to new control system
10. Install new thermostat sensor for any areas serviced by air handling units
11. Add any heating plant equipment and devices to the DDC system
12. Remove air compressors, filter dryer, etc. and turnover to MPS
13. Plug all abandoned air lines. Install wall plates where pneumatic thermostats have been removed.

**Communications:**

1. Install data ports and associated control wiring and conduit as required from local communication closet to control panel. Up to (5) addresses/ports will be provided by MPS.

**Electrical:**

1. New circuits as required for controls, control devices, thermostats, valves, etc.
3. Review the existing fire alarm system. The intent of the project is to replace the current system with a state-of-the-art, code compliant VOICE mass notification system with MPS enhancements.
4. Remove all obsolete wiring serving the obsolete system. Conduit, boxes, etc. can remain and be reused if they are large enough and intact for the new system. Contactor will assume all responsibility for entire system.
5. Replace and re-label any breakers and associated wiring serving the new system devices, panels, etc. Conduit, boxes, etc. can remain and be reused if they are large enough for the new system
6. Remove/replace/add all initiation, audio/visual, visual devices as required to meet the current code requirements
7. Specific requirements:
  - a. Remove FACP in Boiler room. Remove FAAP in office. Remove Elevator recall panel and interface to FACP in office

**APPENDIX B**

- b. Install FACP in Engineer's office Coordinate exact position in room with MPS.
- c. Install FAAP's in main office and north entrance. Coordinate exact position in room with MPS.
- d. Add NAC panels as required. Coordinate exact position in room with MPS.
- e. Install SD's at top of all stairwells.
- f. Install heat detectors in the boiler room and kitchen.
- g. Install sprinkler system flow and tamper switches and connect to FACP.
8. Duct Detectors:
  - a. Provide and install all the duct detectors serving air handling units and connect to the FA system and existing DDC system. Detectors locations are identified on the air handling unit replacement project CD's. Access doors with be installed by Butters-Fetting as part of the air handling unit replacement project
9. Install wireless remote monitoring system and connect to the FA system (similar to "Guetzke")
10. Install new circuit for remote monitoring panel from the same emergency power panelboard as the FACP and FAAP's.
11. Remove/replace/add any required control modules.
12. Provide any modules for interconnection duct smoke detectors and fire alarm system to DDC system.
13. Elevator:
  - a. Replace elevator lobby smoke detectors with addressable detectors and install (3) control modules for the elevator machine and connect to the respective elevator control panel.
  - b. 3<sup>rd</sup> module to be dormant if elevator control panel is not capable of receiving it.
14. Area of Rescue Assistance
  - a. Remove obsolete "Area of Rescue Assistance" system including panel and call stations
  - b. Install a code compliance system with call stations, appropriate signage and a monitoring panel in the main office area.
15. Since the building will be occupied during the FA system replacement a Fire Watch will be required. Include the cost of a Fire Walker between the time the obsolete system is deactivated and the new system is operational. Obtain requirements from MPS.

**General:**

1. Ceiling tile removal and replacement to facilitate control work

**Abatement (by MPS):**

1. See other scopes of work

**Project No. 022-F-LCORR + 022-F-LCLASS + 022-F-LAUDIT + 022-F-LEXT****Lighting Upgrade/Remodeling Project****Site 022 James Madison Academic Campus (JMAC)****Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2001)
2. Building has: 303,000 SF (413,000 SF BOMA)
3. 1<sup>st</sup> floor corridor has ceilings consisting of 12"x24" concealed spline tiles with 1'x4' and 2'x4' light fixtures with either T8 or T12 fluorescent lamps
4. 2<sup>nd</sup> and 3<sup>rd</sup> floor corridor ceilings and lighting has been upgraded in 2016 & 2017.
5. Gym and Pool lighting was modified in 2009
6. Cafeteria has 2'x4' lay in tile ceiling with 2'x4' fluorescent fixtures
7. Classrooms, offices, library, etc. have ceilings consisting of 12"x24" concealed spline tiles with 1'x4' and 2'x4' light fixtures with either T8 or T12 fluorescent lamps
8. Storage areas, mechanical rooms, shops, etc. have exposed stem mounted fluorescent fixtures with either T8 or T12 fluorescent lamps and incandescent fixtures
9. Auditorium lighting consist of incandescent cans with fluorescent side lighting

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10. Exterior fixtures consist of a combination of HPS wall packs, incandescent canopy cans fixtures and We Energies HPS pole lighting in the parking lot

**Scope:**

1. For purposes of this project; classrooms, storage rooms, mechanical rooms, cafeteria, library shall be considered part of 022-F-CLASS
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
3. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
4. Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 12"x24" ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - g. Replace all exit light fixtures with Extreme LED fixtures
5. Auditorium:
  - a. Replace can style fixtures with dimmable LED fixtures.
  - b. Integrate new fixtures into house lighting panel for dimming capability.
  - c. Remove ballasts and replace fluorescent side lighting with LED lamps.
  - d. Remove task lighting fixtures
6. Cafeteria:
  - a. Install direct/indirect LED recessed troffer fixtures in new grid. Fixtures equal to Lithonia BLT Series.
7. Storage areas, shops, etc.:
  - a. Replace fluorescent and incandescent fixtures with LED fixtures
  - b. Replace all exit light fixtures with Extreme LED fixtures
8. Classrooms, Library, Offices, etc.:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 12"x24" ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install direct/indirect LED recessed troffer fixtures in new grid.
  - g. Fixtures equal to Lithonia BLT Series.
  - h. Replace all exit light fixtures with Extreme LED fixtures
9. Exterior:
  - a. Remove all wall mounted HPS fixtures and install new cut off LED fixtures equal to Lithonia D-Series Size 2 with back boxes as required to provide consistent light level around the entire building perimeter
  - b. Remove all canopy mounted can style light fixtures and install new LED canopy fixtures equal to Trace Lite model TLED-C-P fixtures as required to provide consistent light levels
  - c. Coordinate with We Energies to have all their exterior poles, fixtures, wiring removed
  - d. Install new aluminum poles with double LED fixtures and arms in the parking lot to provide consistent light levels while minimizing pole locations and obstructions to plowing. Cut asphalt and route wiring underground from building power source to new poles and connect to the DDC system for programming.

**Project No. 022-F-TAB****Testing, Adjusting and Balancing Project****Site 022 James Madison Academic Campus****Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:**

**APPENDIX B****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2001)
2. Building has:
  - a. 303,000 SF (413,000 SF BOMA)
  - b. Hot water heating plant with (2) Cleaver Brooks gas-fired fire-tube 350 HP boilers
  - c. Emergency and back-up power generator Kohler 150REZGC (2014)
  - d. Siemens Apogee Intranet (2003) Over Andover Over JCI Pneumatic
  - e. Electrical service consist of a primary/secondary with:
    - i. 1390A 120/208V 3PH 4W
    - ii. 2080A 120/208V 3PH 4W
    - iii. 832A 120/208V 3PH 4W
    - iv. Substation purchased 2001
  - f. Fire alarm system consist of a combination 110V Simplex/EST-2 – not remotely monitored

**Testing Adjusting and Balancing:**

1. The intent is to attain a completely balanced facility with all mechanical systems balanced within standard tolerances
2. Test, adjust and balance all new equipment indicated in other scopes of work
3. Test, adjust and balance any water circuits as required to attain proper flow rates
4. Review and modify as required building relief scheme to assure proper operation when all equipment is in economizer mode. Add Relief fans or hoods with automatic dampers as required
5. Inspect all existing equipment to remain and be reused. Repair or replace equipment as required to properly balance the entire facility.
6. Test, adjust and balance all existing equipment to be reused; fans, pumps, boilers, circuit setters, etc.
7. Test, adjust and balance all existing inlets, outlets, louvers, hoods, etc.

**Electrical:**

1. New or modified circuiting, wiring motor starter changes, etc. for any motor replacements as required for proper balancing of existing equipment to be reused.

**General:**

1. Ceiling tile removal and replacement to facilitate complete TAB work

**Abatement (by MPS):**

1. See other scopes of work

**Project No. 022-F-PFIX****Water Efficiency Project****Site 022 James Madison Academic Campus (JMAC)****Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2001)
2. Building has: 303,000 SF (413,000 SF BOMA)
3. Most of the plumbing fixtures are original to the facility

**Div. 15400 Plumbing Scope:**

1. The intent is to modify all the water closets, sinks, urinals, shower heads, drinking fountains to reduce water consumption.
2. Modify all water closet and urinal flush valves with new diaphragm replacement assemblies
3. Modify all classroom, lounge, etc. sinks by replacing all the aerators with pressure independent aerators
4. For gang urinals, remove timeclocks and install motion detectors connected to solenoid valves to automate the flushing.

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5. Replace all the shower heads with low-flow shower heads.
6. Replace all the drinking fountains with Elkay water stations with internal filtration.
7. Insulate any new piping
8. Extra filters to the nearest case.

### **Div. 16000 Electrical:**

1. New circuit and wiring from panelboards to each to motion detectors and solenoid valves as require for gang urinals
2. New circuiting and wiring from panelboards to each water station so each single unit or duplex scenario is served by a separate breaker.

### **Abatement (by MPS):**

1. Selective ACM removal as required for new water stations installation

### **Project No. 020-F-WIND**

#### **Window Replacement Project**

#### **Site 022 James Madison Academic Campus (JMAC)**

### **Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

### **Proposed Scope of Work:**

#### **Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2001)
2. Building has: 303,000 SF (413,000 SF BOMA)
3. Building has 16,200 square feet of window area

#### **Scope:**

1. Replace all windows with double pane insulated glass windows
2. Install security screens on any windows at grade level

[End JMAC]



**APPENDIX B****Site 049: Milwaukee Parkside School of the Arts****Project No. 049-F-AHU****Air Handling Unit Replacement Project****Site 049 Parkside School of the Arts****Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2012)
2. Building has:
  - a. 172,000 SF (200,658 BOMA)
  - b. MPS calculated occupant load is 960
  - c. Heating Plant: Updated in 2014
    - i. (3) Fulton 300 MBH HE gas-fired boilers installed in 2014
    - ii. (2) hot water pumps on VFD's installed in 2014
  - d. Domestic Heating Plant: Updated 2014
    - i. (2) HE Water Heaters
    - ii. (2) Storage Tanks
    - iii. (2) Primary and (2) secondary circulation pumps
  - e. No generator
  - f. Siemens Apogee updated 2014 Over Siemens Insite Over Andover
  - g. Electrical service is 1600A 277-480V/3 Ph
  - h. Fire alarm system is Faraday MPC 2000 – not remotely monitored
  - i. Hydraulic elevator with 2500 LB capacity

**Mechanical:**

1. Replace (12) air handling units and associated piping, valves, control valves, etc. New units to have DDC controllers and electric actuation. Any respective return/exhaust fans are to remain and be re-used.
2. Replace R22 cooling coil and condensing unit associated with AHU-2C-61 (Offices) with new R410A coil and condensing unit and associated piping. Reuse roof curb if large enough for new unit
3. Any automatic dampers serving air handling units shall be replaced with respective air handling unit system.
4. Test, adjust and balance all new equipment – See TAB scope.
5. Insulate all new, existing and abated piping as required. See abatement work below.

**Testing, Adjusting and Balancing:**

1. Test, adjust and balance all new equipment
2. See TAB scope.

**Controls:**

1. See EMS Scope
2. See Mechanical Scope above
3. Replace/Upgrade existing DDC system to as required to provide complete DDC with electric actuation for new equipment

**Plumbing:**

1. Add condensate drain piping to units with cooling coils or future cooling coils.

**Electrical:**

1. Demolition of electrical circuits, conduit, wiring, breakers, etc. made obsolete by the project
2. Power modifications to accommodate replacement of remote air cooled condenser/compressor.
3. New or modified circuiting, wiring, starters, etc. as required for replacement of the air handling units.

## **APPENDIX B**

### **General:**

1. Any required general work as required for equipment ingress and egress including but not limited to; door and door frame removal and replacement, wall and roof opening and repair, etc.

### **Abatement (by MPS):**

1. Selective abatement in rooms 109B & 150B & Stair #7 as required to facilitate AHU replacement
2. Whole room abatement in rooms: 10E, 140G, 211 & 226

### **Project No. 049-F-CU**

#### **Coils and Unit Ventilator Unit Replacement Project**

#### **Site 049 Parkside School of the Arts**

### **Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

### **Proposed Scope of Work:**

#### **Notes:**

See digital deliverable engineering data spreadsheet for this building (circa 2012)

1. Building has:
  - a. 172,000 SF (200,658 BOMA)
  - b. MPS calculated occupant load is 960
  - c. Heating Plant: Updated in 2014
    - i. (3) Fulton 300 MBH HE gas-fired boilers installed in 2014
    - ii. (2) hot water pumps on VFD's installed in 2014
  - d. Domestic Heating Plant: Updated 2014
    - i. (2) HE Water Heaters
    - ii. (2) Storage Tanks
    - iii. (2) Primary and (2) secondary circulation pumps
  - e. No generator
  - f. Siemens Apogee updated 2014 Over Siemens Insite Over Andover
  - g. Electrical service is 1600A 277-480V/3 Phase
  - h. Fire alarm system is Faraday MPC 2000 – not remotely monitored
  - i. Hydraulic elevator with 2500 LB capacity

#### **Mechanical:**

1. Replace (61) unit vents and associated piping, valves, etc. New units to have DDC controllers and electric actuation. No control valves in unit vents. Use face and bypass valves for room temp control.
2. Modify existing finned-tube radiation cabinet and elements as required to accommodate new unit vents.
3. Replace (50) duct-mounted heating coils with required piping, valves, controls, access doors, etc.
4. Replace (10) cabinet unit heaters and associated shut-off valves. Remove any control valves and install spool piece.
5. Replace (125) control valves in stand-alone radiation with new electrically actuated control valves
6. Review and modify as required the building relief scheme to assure proper operation when in economizer mode.
7. Modify radiation and install a new unit vent or fan coil unit in rooms 6 and 12A with all required piping, valves, insulation etc. Leaving the unit vent and installing a fan coil unit with heating coil is an acceptable option.
8. Insulation all new, existing and abated piping as required. See abatement work below.

#### **Testing Adjusting and Balancing:**

1. See TAB Work
2. Test, adjust and balance all new equipment both air and water systems

#### **Controls:**

1. See EMS Scope

## **APPENDIX B**

2. See Mechanical Scope above
3. Replace/Upgrade existing DDC system to as required to provide complete DDC with electric actuation for new equipment

### **Electrical:**

1. Demolition of electrical circuits, conduit, wiring, breakers, etc. made obsolete by the project
2. New or modified circuiting and wiring from unit vents to panelboards so each unit vent is served by a separate breaker.
3. Power wiring modifications as required for replaced cabinet unit heaters

### **General:**

1. Wall openings with lentils for new unit vents in rooms 6 and 12A.
2. Ceiling tile removal and replacement to facilitate duct-mounted heating coil replacement
3. Wall remodeling as required to facilitate cabinet unit heater replacement
4. Any required general work as required for equipment ingress and egress including but not limited to; door and door frame removal and replacement, wall and roof opening and repair, etc.
5. Touch up painting at (61) unit vent replacement locations
6. Floor tile installation at (61) vertical unit vent locations
7. Ceiling tile removal and replacement for ACM removal only at (50) duct mounted heating coils locations

### **Abatement (by MPS):**

1. Selective abatement at (61) unit vents locations, (10) cabinet unit heater locations and (125) convector and radiation control valve locations and (50) duct mounted coil locations to facilitate replacement
2. Selective floor tile abatement in (61) rooms with vertical style unit vents.

### **Project No. 049-F-DOOR**

#### **Exterior Door Replacement Project**

#### **Site 049 Parkside School of the Arts**

### **Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

### **Proposed Scope of Work:**

#### **Notes:**

See digital deliverable engineering data spreadsheet for this building (circa 2012)

1. Building has: 172,000 SF (200,658 BOMA)
2. Building has (25) exterior doors

#### **Scope:**

1. Replace (25) exterior doors with new insulated doors to match operation.

### **Project No. 049-F-EMS**

#### **Controls Upgrade/Replacement Project**

#### **Site 049 Parkside School of the Arts**

### **Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

### **Proposed Scope of Work:**

#### **Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2012)
2. Building has:

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- a. 172,000 SF (200,658 BOMA)
- b. MPS calculated occupant load is 960
- c. Heating Plant: Updated in 2014
  - i. (3) Fulton 300 MBH HE gas-fired boilers installed in 2014
  - ii. (2) hot water pumps on VFD's installed in 2014
- d. Domestic Heating Plant: Updated 2014
  - i. (2) HE Water Heaters
  - ii. (2) Storage Tanks
  - iii. (2) Primary and (2) secondary circulation pumps
- e. No generator
- f. Siemens Apogee updated 2014 Over Siemens Insite Over Andover
- g. Electrical service is 1600A 277-480V/3 Phase
- h. Fire alarm system is Faraday MPC 2000 – not remotely monitored
- i. Hydraulic elevator with 2500 LB capacity

**Mechanical:**

1. Turnover all control valves, actuators, devices, sensors, etc. to Mechanical/Electrical Contractor for installation
2. Any piping modifications to accommodate new devices
3. Any ductwork modification as required for new devices
4. Install any access panels for duct smoke detectors
5. Replace any remaining pneumatic damper actuators with electric

**Controls:**

1. The intent is to replace all pneumatic controlled devices with new electrically controlled devices
2. Upgrade the Siemens DDC system and extend system to all AHU's, UV's, HV's, heating plant, cabinet unit heaters, radiation, lighting, etc.
3. Upgrade/modify the system graphics and programming to incorporate all connected new and existing equipment for one contiguous system.
4. Extend wiring to any new actuators as required for DDC operation
5. Integrate the lighting systems into the DDC system
6. Integrate Fire Alarm system to the DDC system.
7. Replace thermostats associated with duct mounted reheat coils, unit vents, radiation, etc. with occupant adjustable electric/sensors.
8. Replace all the control valves with electrically actuated valves and connect to new control system
9. Install new thermostat sensors for any areas serviced by air handling units
10. Remove air compressors, filter dryer, etc. and turnover to MPS
11. Plug all abandoned air lines. Install wall plates where pneumatic thermostats have been removed.

**Communications:**

1. Install data ports and associated control wiring and conduit as required from local communication closet to control panel. Up to (3) addresses/ports will be provided by MPS.

**Electrical:**

1. New circuits as required for controls, control devices, thermostats, valves, etc.
2. Review the existing fire alarm system. The intent of the project is to replace the current system with a state-of-the-art, code compliant VOICE mass notification system with MPS enhancements.
3. Remove all obsolete wiring serving the obsolete system. Conduit, boxes, etc. can remain and be reused if they are large enough and intact for the new system. Contactor will assume all responsibility for entire system.
4. Replace and re-label any breakers and associated wiring serving the new system devices, panels, etc. Conduit, boxes, etc. can remain and be reused if they are large enough for the new system
5. Remove/replace/add all initiation, audio/visual, visual devices as required to meet the current code requirements
6. Specific requirements:
  - a. Remove FACP in Boiler room. Remove FAAP in office. Remove Elevator recall panel and interface to FACP in office

**APPENDIX B**

- b. Install FACP in Engineer's office Coordinate exact position in room with MPS.
- c. Install FAAP's in main office and north entrance. Coordinate exact position in room with MPS.
- d. Add NAC panels as required. Coordinate exact position in room with MPS.
- e. Install SD's at top of all stairwells.
- f. Install heat detectors in the boiler room and kitchen.
- g. Install sprinkler system flow and tamper switches and connect to FACP.
7. Duct Detectors:
  - a. Provide and install all the duct detectors serving air handling units and connect to the FA system and existing DDC system.
  - b. Detectors locations are identified on the air handling unit replacement project CD's.
8. Install wireless remote monitoring system and connect to the FA system (similar to "Guetzke")
9. Install new circuit for remote monitoring panel from the same emergency power panelboard as the FACP and FAAP's.
10. Remove/replace/add any required control modules.
11. Provide any modules for interconnection duct smoke detectors and fire alarm system to DDC system.
12. Elevator:
  - a. Replace elevator lobby smoke detectors with addressable detectors and install (3) control modules for the elevator machine and connect to the respective elevator control panel.
  - b. 3<sup>rd</sup> module to be dormant if elevator control panel is not capable of receiving it.
13. Area of Rescue Assistance
  - a. Remove obsolete "Area of Rescue Assistance" system including panel and call stations
  - b. Install a code compliance system with call stations, appropriate signage and a monitoring panel in the main office area.
14. Since the building will be occupied during the FA system replacement a Fire Watch will be required. Include the cost of a Fire Walker between the time the obsolete system is deactivated and the new system is operational. Obtain requirements from MPS.

**General:**

1. Ceiling tile removal and replacement to facilitate control work

**Abatement (by MPS):**

1. See other scopes of work

**Project No.**

**049-F-LEXT, 049-F-LCLASS + 049-F-LCORR + 049-F-LGYM + 049-F-LAUDIT**

**Lighting Upgrade/Replacement Project**

**Site 049 Parkside School of the Arts**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2012)
2. Building has: 172,000 SF (200,658 BOMA)
3. Corridor have ceilings consisting of various sizes of peg board or lay-in tile below 12"x12" concealed spline supported by back iron with single row light fixtures down the middle with either T8 or T12 fluorescent lamps
4. Cafeteria has 12"x12" concealed spline tiles with 1'x4' and 2'x4' light fixtures with either T8 or T12 fluorescent lamps
5. Classrooms, offices, library, etc. have ceilings consisting of 12"x12" concealed spline tiles with 2'x4' light fixtures with either T8 or T12 fluorescent lamps
6. Storage areas, mechanical rooms, shops, etc. have exposed stem mounted fluorescent fixtures with either T8 or T12 fluorescent lamps and incandescent fixtures
7. Auditorium lighting consist of incandescent cans
8. Gyms and gym storage areas have stem mounted HPS fixtures

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9. Exterior fixtures consist of a combination of HPS wall packs, incandescent canopy cans fixtures and We Energies HPS pole lighting in the parking lot

**Scope:**

1. For purposes of this project; classrooms, storage rooms, mechanical rooms, cafeteria, library shall be considered part of 049-F-LCLASS
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas.
3. See attached spreadsheet for details of areas to be modified (high-lighted)
4. Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove obsolete ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - g. Replace all exit light fixtures with Lithonia Extreme LED fixtures
5. Auditorium:
  - a. Replace can style fixtures with dimmable LED fixtures.
  - b. Integrate new fixtures into new house lighting control panel for dimming capability.
  - c. Replace stage lighting, lighting control and sound system as indicated on proposal from Main Stage
  - d. Locate new lighting control panel in center of the Auditorium.
6. Gym:
  - a. Replace all fixtures in the Gym with cable hung LED fixtures
  - b. Lighting arrangement such that there is 110 FC on court surfaces.
  - c. Install air de-stratification fans in Gym with sensors, wiring, etc. connect to centralized control panel that is connected to the DDC system
7. Cafeteria
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove obsolete ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install direct/indirect LED recessed troffer fixtures in new grid. Fixtures equal to Lithonia BLT Series.
  - g. Replace all exit light fixtures with Lithonia Extreme LED fixtures
8. Storage areas, shops, etc.:
  - a. Replace fluorescent and incandescent fixtures with LED fixtures
  - b. Replace all exit light fixtures with Extreme LED fixtures
9. Classrooms, Library, Offices, etc.:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove obsolete ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install direct/indirect LED recessed troffer fixtures in new grid. Fixtures equal to Lithonia BLT Series.
  - g. Replace all exit light fixtures with Lithonia Extreme LED fixtures
10. Exterior
  - a. Remove all wall mounted HPS fixtures and install new cut off LED fixtures equal to Lithonia D-Series Size 2 with back boxes as required to provide consistent light level around the entire building perimeter
  - b. Remove all canopy mounted can style light fixtures and install new LED canopy fixtures equal to Trace Lite model TLED-C-P fixtures as required to provide consistent light levels
  - c. Coordinate with We Energies to have all their exterior poles, fixtures, wiring removed
  - d. Install new aluminum poles with double LED fixtures and arms in the parking lot to provide consistent light levels while minimizing pole locations and obstructions to plowing. Cut asphalt and route wiring underground from building power source to new poles and connect to the DDC system for programming.

## **APPENDIX B**

### **Project No. 049-F-TAB Testing, Adjusting and Balancing Project Site 049 Parkside School of the Arts**

#### **Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

#### **Proposed Scope of Work:**

##### **Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2012)
2. Building has:
  - a. 172,000 SF (200,658 BOMA)
  - b. MPS calculated occupant load is 960
  - c. Heating Plant: Updated in 2014
    - i. (3) Fulton 300 MBH HE gas-fired boilers installed in 2014
    - ii. (2) hot water pumps on VFD's installed in 2014
  - d. Domestic Heating Plant: Updated 2014
    - i. (2) HE Water Heaters
    - ii. (2) Storage Tanks
    - iii. (2) Primary and (2) secondary circulation pumps
  - e. No generator
  - f. Siemens Apogee updated 2014 Over Siemens Insite Over Andover
  - g. Electrical service is 1600A 277-480V/3 Ph
  - h. Fire alarm system is Faraday MPC 2000 – not remotely monitored
  - i. Hydraulic elevator with 2500 LB capacity

#### **Div. 15950 - Testing Adjusting and Balancing:**

1. The intent is to attain a completely balanced facility with all mechanical systems balanced within standard tolerances
2. Test, adjust and balance all new equipment indicated in other scopes of work
3. Test, adjust and balance any water circuits as required to attain proper flow rates
4. Review and modify as required building relief scheme to assure proper operation when all equipment is in economizer mode. Add Relief fans or hoods with automatic dampers as required
5. Inspect all existing equipment to remain and be reused. Repair or replace equipment as required to properly balance the entire facility.
6. Test, adjust and balance all existing equipment to be reused; fans, pumps, boilers, circuit setters, etc.
7. Test, adjust and balance all existing inlets, outlets, louvers, hoods, etc.

#### **Electrical:**

1. New or modified circuiting, wiring motor starter changes, etc. for any motor replacements as required for proper balancing of existing equipment to be reused.

#### **General:**

1. Ceiling tile removal and replacement to facilitate complete TAB work

#### **Abatement (by MPS):**

1. See other scopes of work

### **Project No. 049-F-PFIX Water Efficiency Project Site 049 Parkside School of the Arts**

#### **Budgeted Project Cost:**

## APPENDIX B

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

### **Proposed Scope of Work:**

#### **Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2012)
2. Building has: 172,109 SF (200,658 SF BOMA)
3. Most of the plumbing fixtures are original to the facility

### **Div. 15400 Plumbing Scope:**

1. The intent is to modify all the water closets, sinks, urinals, shower heads, drinking fountains to reduce water consumption.
2. Modify all water closet and urinal flush valves with new diaphragm replacement assemblies
3. Modify all classroom, lounge, etc. sinks by replacing all the aerators with pressure independent aerators
4. For gang urinals, remove timeclocks and install motion detectors connected to solenoid valves to automate the flushing.
5. Replace all the shower heads with low-flow shower heads.
6. Replace all the drinking fountains with Elkay water stations with internal filtration.
7. Insulate any new piping
8. Extra filters to the nearest case.

### **Div. 16000 Electrical:**

1. New circuit and wiring from panelboards to each to motion detectors and solenoid valves as require for gang urinals
2. New circuiting and wiring from panelboards to each water station so each single unit or duplex scenario is served by a separate breaker.

### **Abatement (by MPS):**

1. Selective ACM removal as required for new water stations installation

### **Project No. 049-F-WIND**

#### **Exterior Window Replacement Project**

#### **Site 049 Parkside School of the Arts**

### **Budgeted Project Cost:**

The budget for the entire project cost was as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

### **Proposed Scope of Work:**

#### **Notes:**

3. See digital deliverable engineering data spreadsheet for this building (circa 2012)
4. Building has: 172,109 SF (200,658 SF BOMA)
5. Building has 3,800 square feet of *viewable* window area (*vendor gave an updated price which was accepted by MPS to replace all windows estimated at 16,000+ square feet*)

#### **Scope:**

2. Replace all windows with double pane insulated glass windows per MPS master specification
3. Install security screen on any windows at grade level and on any windows that face the playground.

[End Parkside]



**APPENDIX B****Site 093: William George Bruce Elementary****Project No. 093-F-AHU****Air Handling Unit Replacement Project****Site 093 William George Bruce Elementary School****Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2002)
2. Building size: 56,197 SF Original building in 1961 with addition in 1988
3. MPS estimated occupancy: 536 people
4. Primary AHU's:
  - a. (1) Air handling units with heating hot water coil installed in 1960 (MP Room)
  - b. (3) Packaged air handling units with heating hot water coils installed in 1988 (1988 Classrooms)
  - c. (1) Packaged cooling only rooftop unit install in 1988 (Office)
  - d. (1) packaged cooling only rooftop unit install in 1999 (Library)
5. Heating Plant:
  - a. (2) 80 BHP National hot water boilers installed in 1962
  - b. (2) 5 HP 120 GPM primary/secondary pumps installed in 1962
  - c. (2) 3 HP secondary pumps installed in 1988
6. Controls: Siemens Insite DDC controls over Andover on all air handling units, exhaust fans heating plant, etc. and D/N switching of unit vents
  - a. Control valve replacement project in 2010
  - b. Automatic damper and actuator replacement project in 2002
7. TAB: Started in 2002 completed in 2012
8. Electrical Service: Original MPP 200A 240V ground B phase + MLP 600A 120/240 V 1 PH 3 W
9. Fire alarm: Faraday MPC 2000 – not remotely monitored

**Mechanical:**

1. AHU-1-88 and AHU-2-88:
  - a. Replace heating and ventilating units and associated piping, shut-off valves, dampers, 3-way control valves, etc.
  - b. New units to space for future cooling coils and access panel, DDC controllers with electric actuation.
  - c. Any respective return/exhaust fans are to remain and be re-used if they have the proper capacity, replace controls to match respective air handling unit.
  - d. Any automatic dampers serving air handling units and return exhaust fans shall be replaced with new damper with electric actuation and connect to the new DDC system
2. AHU-4-88:
  - a. Remove rooftop unit and unit vent UV-100E-62 and install a packaged rooftop unit and required ductwork with duct mounted electric heating coils, control, etc. to serve rooms 100A, 100B, 100C, 100D, 100E, 100-1, 100-2 and 100-3
3. AHU-1-60:
  - a. Remove obsolete AHU-1-60
  - b. Install a packaged rooftop unit with minimum electric heat and required ductwork
  - c. Install duct mounted hot water heating coil, controls, etc. with 3-way control valve.
  - d. Reconnect to and reuse the existing underground supply ductwork.
  - e. Reconnect to return ductwork
  - f. Blank-off outside air intake louver with 2" thick EPS insulated sheetmetal sandwich panel.
  - g. Replace relief hoods and control dampers. Connect dampers to RTU control for minimum and economizer operation
4. Insulation all new, existing and abated piping as required.

**Testing, Adjusting and Balancing:**

1. Test, adjust and balance all new and reused equipment – See TAB scope.

**APPENDIX B****Controls:**

1. See EMS Scope
2. See Mechanical Scope above
3. Replace/Upgrade existing DDC system to as required to provide complete DDC with electric actuation for new equipment

**Plumbing:**

1. Add condensate drain piping to unit vents with cooling coils.

**Electrical:**

1. Demolition of electrical circuits, conduit, wiring, breakers, etc. made obsolete by the project
2. New or modified circuiting, wiring, starters, etc. as required for replacement of the air handling and heating and ventilating units, rooftop units, etc.

**General:**

1. Any required general work as required for equipment ingress and egress including but not limited to; door and door frame removal and replacement, wall and roof opening and repair, etc.

**Abatement (by MPS):**

1. Whole room abatement in rooms: 153C

**Project No. 093-F-HP****FY18 Cyclic Heating Plant Replacement Project****Site 093 William George Bruce Elementary School****Budgeted Project Cost:**

The budget for the entire project was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing costs for all phases.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2002)
2. Building size: 56,197 SF Original building in 1961 with addition in 1988
3. MPS estimated occupancy: 536 people
4. Unit Ventilators/Cabinet unit heats/Radiation:
  - a. (20) hot water unit vents most with finned-tube radiation on both sides of each unit vent
  - b. (8) cabinet unit heaters with pneumatic control valves and thermostats
  - c. Casework is removable (not built-in) in classrooms
  - d. Various standalone radiation with pneumatic control valves and thermostats
5. Heating Plant:
  - a. (2) 80 BHP National hot water boilers installed in 1962
  - b. (2) 5 HP 120 GPM primary/secondary pumps installed in 1962
  - c. (2)3 HP secondary pumps installed in 1988
6. Controls: Siemens Insite DDC controls over Andover on all air handling units, exhaust fans heating plant, etc. and D/N switching of unit vents
  - a. Control valve replacement project in 2010
  - b. Automatic damper and actuator replacement project in 2002
7. TAB: Started in 2002 completed in 2012
8. Electrical Service: Original MPP 200A 240V ground B phase + MLP 600A 120/240 V 1 PH 3 W
9. Fire alarm: Faraday MPC 2000 – not remotely monitored

**Div. 15500:**

1. Remove (2) obsolete boilers, burners and associated valves, piping, motors, etc.
2. Remove (2) 1961 and (2) 1988 pumps and associated valves, piping, motors, etc.
3. Completely remove of obsolete boiler breeching from boilers up through roof

**APPENDIX B**

4. Remove horizontal mounted expansion tanks, fill assembly, chemical feeder, air separator, etc.
5. Remove any obsolete gas piping. Coordinate with We Energies for new connected load to verify gas metering requirements. Identify work as required if meter need to be replaced
6. Install boilers (3) 2000 MBH high efficiency boilers and all required accessories, controls, piping, fittings, valves, etc. Boiler equal to Fulton Vantage 2000.
7. Installation of independent vent assemblies for new boilers - Discharge of vents to be located so as not to interfere with operable windows
8. Install outside air intake ductwork arrangement for new boilers from existing louver - Blank-off unused portion of louver(s) with insulated sheetmetal panel
9. Install a roof exhaust fan and reverse acting thermostat to provide Boiler Room ventilation – reuse roof opening from removal of HV unit
10. Remodel hot water piping system as required for heating plant replacement.
11. Install (2) pumps with adjustable speed control and required valves, strainers, etc. and required circuit setters for each hot water circuit
12. Install floor mounted bladder style expansion tank(s); fill assembly, chemical feeder with bypass, air/dirt separator, etc.
13. Insulate all new, existing and abated HVAC piping and ductwork as required.
14. Cut-out and set aside any identified flanged gasketed assemblies for removal by MPS

**Div. 15950 - Testing Adjusting and Balancing:**

1. See TAB Work
2. Test, adjust and air and water balance all new equipment and remodeled systems

**Div. 15500 - Controls:**

1. Remove all controls on all obsolete equipment; pumps, boilers, etc.
2. Install new JCI control panel in boiler room for heating and domestic heating plants
  - a. HWS and HWR main temperature
  - b. Entire plant modulation from high to low fire based on OA Temp, Stop/Start, Status via preliminary firing sequence
  - c. HW pumps including; VFD modulation, Lead/Lag, Stop/Start, Status and system pressure
  - d. DWH plant including; DHW system temp, control valve modulation, pump Lead/Lag, Stop/Start and Status
3. Connect room exhaust system (damper and fan operation) to reverse acting line voltage thermostat and HOA switch.

**Div. 15400 - Plumbing:**

1. Remove obsolete domestic what heating plant and associated pumps, valves, controls, piping, venting, etc.
2. Install (2) DHW units and associated piping, valves, controls, direct intake/vent assemblies, etc. Heaters to be equal to HTP Phoenix PH-130-119.
3. Install of (2) inline HW recirculation pumps and associated, piping, valves, fittings, etc. to serve the DHW system. Mount/rack pumps/piping at service height form support assemble on floor.
4. Remove domestic water fill piping arrangement and obsolete BFP valve
5. Install RPBF and automatic fill water assembly for heating plant. Contractor shall be responsible for the complete submittal to State of Wisconsin for the RPBF including the fee and all paperwork with copies to MPS.
6. Add all required floor drains and associated plumbing piping as required so there are no tripping hazards.
7. Insulate all new and modified existing plumbing piping as required.

**Div. 16000 - Electrical:**

1. Remove of all obsolete disconnects starters, circuits, breakers, etc. associated with removed equipment.
2. Remove panelboard P1
3. Install breaker in main service, transformer and 120 single phase panelboard and extend power to any boiler room single phase loads
4. Install breaker in main service and a new 240V ground B panelboard and extend power to any boiler room 3-phase loads
5. Remove all exposed conduits and wiring back to source. Cap and plug any conduits left in floor.
6. Install all required disconnects, starters in VFD's, circuits, breakers, etc. associated with installed equipment
7. Installation of new LED up/down lighting system for boiler room layout
8. Installation of any receptacles and associated conduit and wiring as required for new work and temperature controls

**APPENDIX B****Div. 01000 - General:**

1. All required general work as required for demotion and new work associated with the heating including but not limited to: removal, extension and/or installation of equipment curbs, cutting and patching of roofs, floors, walls, etc.
2. Remove concrete pad below obsolete chiller and repair the floor equal to surround surfaces.
3. Review equipment and material egress into room. Provide openings, enlarge door openings, etc. as required
4. Cut and patch floor as required for plumbing work
5. Cutting and patching of the roof due to new and demolition work
6. Install/extend of concrete equipment pads for new equipment
7. Painting and sealing of the entire Boiler Room floor and any new/existing concrete pads

**Hazardous Material (by MPS):**

1. ACM abatement of the entire Boiler room 150
2. Label all gasketed flanges for removal by Contractor
3. Remove Mercury latent devices

**Project No. 093-F-CU****Coil and Unit Vent Replacement Project****Site 093 William George Bruce Elementary School****Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2002)
2. Building size: 56,197 SF Original building in 1961 with addition in 1988
3. MPS estimated occupancy: 536 people
4. Unit Ventilators/Cabinet unit heats/Radiation:
  - a. (20) hot water unit vents most with finned-tube radiation on both sides of each unit vent
  - b. (8) cabinet unit heaters with pneumatic control valves and thermostats
  - c. Casework is removable (not built-in) in classrooms
  - d. Various standalone radiation with pneumatic control valves and thermostats
5. Heating Plant:
  - a. (2) 80 BHP National hot water boilers installed in 1962
  - b. (2) 5 HP 120 GPM primary/secondary pumps installed in 1962
  - c. (2) 3 HP secondary pumps installed in 1988
6. Controls: Siemens Insite DDC controls over Andover on all air handling units, exhaust fans heating plant, etc. and D/N switching of unit vents
  - a. Control valve replacement project in 2010
  - b. Automatic damper and actuator replacement project in 2002
7. TAB: Started in 2002 completed in 2012
8. Electrical Service: Original MPP 200A 240V ground B phase + MLP 600A 120/240 V 1 PH 3 W
9. Fire alarm: Faraday MPC 2000 – not remotely monitored

**Mechanical:**

1. Unit Ventilators: (1962)
  - a. Replace (20) unit vents and associated piping, valves, etc.
  - b. New units to have DDC controllers and electric actuation.
  - c. Modify radiation elements and cabinet as required to accommodate new unit vents. Replace of control valves serving radiation with electric control valves connected to the DDC system.
2. Replace (8) cabinet unit heaters and associated piping, valves, etc.
  - a. Turnover control valves to MPS.
  - b. Units to have standalone thermostat and control valves with electric actuation

**APPENDIX B**

3. Relief system modifications: (Assure unit ventilators can operate in economizer mode)
  - a. Replace relief hoods and gravity backdraft dampers
  - b. Install new relief hoods with automatic and backdraft dampers
  - c. Automatic dampers to have electric actuators connected to the DDC system
  - d. Replace and/or enlarge all door grilles as required
4. Duct mounted heating coils (1988)
  - a. Replace (8) coils and associated piping, valves, control valves, etc.
  - b. Replace respective thermostats with DDC thermostat/sensor to reset AHU temperature.
5. Standalone radiation: (finned-tube and convectors)
  - a. Toilets, Storage Areas, etc.; Replace all pneumatic control valves with electric control valves and connect to standalone electric thermostats. Turnover valves to MPS
  - b. Classrooms served by AHU's; Replace all pneumatic control valves with electric control valves and connect to DDC thermostats to reset AHU discharge air temp. Turnover valves to MPS
6. Insulate all new, existing and abated piping as required.

**Testing Adjusting and Balancing:**

1. See TAB Work
2. Test, adjust and balance all new and reused equipment

**Controls:**

1. See EMS Scope
2. See Mechanical Scope above
3. Replace/Upgrade existing DDC system to as required to provide complete DDC with electric actuation for new equipment

**Electrical:**

1. Demolition of electrical circuits, conduit, wiring, breakers, etc. made obsolete by the project
2. New or modified circuiting and wiring from unit vents to panelboards so each unit vent is served by a separate breaker.

**General:**

1. Ceiling tile removal and replacement to facilitate duct-mounted heating coil replacement
2. Wall remodeling as required to facilitate cabinet unit heater replacement
3. Any required general work as required for equipment ingress and egress including but not limited to; door and door frame removal and replacement, wall and roof opening and repair, etc.
4. Touch-up painting at unit vent locations
5. Floor tile installation at vertical unit vent locations

**Abatement (by MPS):**

1. Selective abatement at (20) unit vents locations, (8) cabinet unit heater locations and (8) duct mounted coil locations to facilitate replacement
2. Selective floor tile abatement in (20) rooms with vertical style unit vents.

**Project No. 093-F-DOOR****Exterior Door Replacement Project****Site 093 William George Bruce Elementary School****Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2002)
2. Building size: 56,197 SF Original building in 1961 with addition in 1988
3. MPS estimated occupancy: 536 people

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- a. (20) hot water unit vents most with finned-tube radiation on both sides of each unit vent
- b. (8) cabinet unit heaters
- c. Casework is removable (not built-in) in classrooms
4. Heating Plant;
  - a. (2) 80 BHP National hot water boilers installed in 1962
  - b. (2) 5 HP 120 GPM primary/secondary pumps installed in 1962
  - c. (2)3 HP secondary pumps installed in 1988
5. Controls; Siemens Insite DDC controls over Andover on all air handling units, exhaust fans heating plant, etc. and D/N switching of unit vents
  - a. Control valve replacement project in 2010
  - b. Automatic damper and actuator replacement project in 2002
6. TAB: Started in 2002 completed in 2012
7. Electrical Service: Original MPP 200A 240V ground B phase + MLP 600A 120/240 V 1 PH 3 W
8. Fire alarm: Faraday MPC 2000 – not remotely monitored
9. Building has (17) exterior doors

**Scope:**

1. Replace (17) exterior doors with new insulated doors to match existing type and operation.
2. Replace all exterior door hardware with new MPS specified hardware
3. Replace any exterior wood doors with FRP doors with security/observation windows.
4. Color selected by MPS.

**Project No. 093-F-EMS****Energy Management System Replacement Project****Site 093 William George Bruce Elementary School****Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2002)
2. Building size: 56,197 SF Original building in 1961 with addition in 1988
3. MPS estimated occupancy: 536 people
4. Unit Ventilators/Cabinet unit heaters/Radiation:
  - a. (20) hot water unit vents most with finned-tube radiation on both sides of each unit vent
  - b. (8) cabinet unit heaters with pneumatic control valves and thermostats
  - c. Casework is removable (not built-in) in classrooms
  - d. Various standalone radiation with pneumatic control valves and thermostats
5. Heating Plant:
  - a. (2) 80 BHP National hot water boilers installed in 1962
  - b. (2) 5 HP 120 GPM primary/secondary pumps installed in 1962
  - c. (2)3 HP secondary pumps installed in 1988
6. Controls; Siemens Insite DDC controls over Andover on all air handling units, exhaust fans heating plant, etc. and D/N switching of unit vents
  - a. Control valve replacement project in 2010
  - b. Automatic damper and actuator replacement project in 2002
7. TAB: Started in 2002 completed in 2012
8. Electrical Service: Original MPP 200A 240V ground B phase + MLP 600A 120/240 V 1 PH 3 W
9. Fire alarm: Faraday MPC 2000 – not remotely monitored

**Mechanical:**

1. Turnover all control valves, devices, sensors, etc. to Mechanical/Electrical Contractor for installation

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2. Provide any piping modifications to accommodate new devices
3. Provide ductwork modification as required for new devices
4. Install any access panels for duct smoke detectors
5. Replace any remaining pneumatic damper actuators with electric associated with exhaust fans.

**Controls:**

1. The intent is to replace all pneumatic controlled devices with new electrically controlled devices and connect all devices and identified systems to a new JCI Metasys DDC system
2. Server:
  - a. Replace JCI server at MPS Site 451 DFMS and associated server software to the most current version. Server to have the capacity for all JCI sites + This Site 093 + 40 future sites of the same system size as site 093
  - b. Update all other JCI controlled site software to the current software version and perform any software migration so all JCI DDC sites are operating on the same platform.
3. Local:
  - a. Remove all existing Siemens Insite equipment, devices, etc., place in plastic storage containers, move containers to the school receiving area and contact the project PM for pick-up by MPS
  - b. Extend new DDC system to all AHU's, UV's, HV's, heating plant, domestic heating plant, pumps, radiation, lighting, exhaust fans, relief system, etc. for optimal control
  - c. Provide state of the art, fully animated system graphics and programming to incorporate all connected new and existing equipment for one contiguous system.
  - d. Extend wiring to all devices, sensors, actuators etc. as required for DDC operation
  - e. Integrate the lighting systems into the DDC system
  - f. Integrate Fire Alarm system to the DDC system.
  - g. Replace all pneumatic thermostats with DDC or electric thermostats
  - h. Replace all the control valves with electrically actuated valves and connect to new control system
  - i. Remove air compressors, filter dryer, etc. and turnover to MPS
  - j. Plug all abandoned air lines. Install stainless steel wall plates where pneumatic thermostats have been removed.

**Communications:**

1. Install data ports and associated control wiring and conduit as required from local communication closet to control panel. Up to (3) addresses/ports will be provided by MPS.

**Electrical:**

1. New circuits as required for controls, control devices, thermostats, valves, etc.
2. Review the existing fire alarm system. The intent of the project is to replace the current system with a state-of-the-art, code compliant **VOICE** system with MPS enhancements.
3. Remove all obsolete wiring serving the obsolete system. Conduit, boxes, etc. can remain and be reused if they are large enough and intact for the new system. Contactor will assume all responsibility for entire system.
4. Remove all existing MPC 2000 equipment, panels, devices, etc., place in plastic storage containers, move containers to the school receiving area and contact the project PM for pick-up by MPS
5. Replace and re-label any breakers and associated wiring serving the new system devices, panels, etc. Conduit, boxes, etc. can remain and be reused if they are large enough for the new system
6. Remove/replace/add all initiation, audio/visual, visual devices as required to meet the current code requirements
7. Specific requirements:
  - a. Remove obsolete FACP and FAAP.
  - b. Install FACP in Engineer's office Coordinate exact position in room with MPS.
  - c. Install FAAP's in main office and main entrance. Coordinate exact position in room with MPS.
  - d. Add NAC panels as required. Coordinate exact position in room with MPS.
  - e. Install heat detectors in the boiler room and kitchen.
8. Duct Detectors:
  - a. Provide and install all code required the duct detectors serving air handling units and connect to the FA system and existing DDC system.
  - b. Provide any modules for interconnection duct smoke detectors and fire alarm system to DDC system.
9. Remote Monitoring:

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- a. Install wireless remote monitoring system and connect to the FA system (similar to “Guetzke”)
  - b. Install new circuit for remote monitoring panel from the same emergency power panelboard as the FACP and FAAP’s.
10. Fire Watch:
- a. Since the building will be occupied during the FA system replacement a Fire Watch will be required.
  - b. Include the cost of a Fire Walker between the time the obsolete system is deactivated and the new system is operational. Obtain requirements from MPS.

**General:**

1. Ceiling tile removal and replacement to facilitate control work

**Abatement (by MPS):**

1. See other scopes of work

**Project No. 093-F-LCORR + 093-F-LCLASS + 093-F-LAUDIT + 093-F-LEXT**  
**Lighting Upgrade/Remodeling Project**  
**Site 093 William George Bruce Elementary School**

**Budgeted Project Cost:**

The budget for the entire project was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2002)
2. Building size: 56,197 SF Original building in 1961 with addition in 1988
3. MPS estimated occupancy: 536 people
4. Unit Ventilators/Cabinet unit heats/Radiation:
  - a. (20) hot water unit vents most with finned-tube radiation on both sides of each unit vent
  - b. (8) cabinet unit heaters with pneumatic control valves and thermostats
  - c. Casework is removable (not built-in) in classrooms
  - d. Various standalone radiation with pneumatic control valves and thermostats
5. Heating Plant:
  - a. (2) 80 BHP National hot water boilers installed in 1962
  - b. (2) 5 HP 120 GPM primary/secondary pumps installed in 1962
  - c. (2) 3 HP secondary pumps installed in 1988
6. Controls: Siemens Insite DDC controls over Andover on all air handling units, exhaust fans heating plant, etc. and D/N switching of unit vents
  - a. Control valve replacement project in 2010
  - b. Automatic damper and actuator replacement project in 2002
7. TAB: Started in 2002 completed in 2012
8. Electrical Service: Original MPP 200A 240V ground B phase + MLP 600A 120/240 V 1 PH 3 W
9. Fire alarm: Faraday MPC 2000 – not remotely monitored

**Scope:**

1. For purposes of this project; classrooms, storage rooms, mechanical rooms, cafeteria, library shall be considered part of 093-F-CLASS
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in all areas of the facility
3. 1962 Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2’x4’ lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system



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- f. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
- g. Replace all exit light fixtures with Extreme LED fixtures
- 4. 1988 Corridors:
  - a. Replace fluorescent fixtures with recessed troffer fixtures.
  - b. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - c. Replace all exit light fixtures with Extreme LED fixtures
- 5. Cafeteria/Gym/Lunch room (093-F-GYM):
  - a. Remove obsolete stem mounted fixtures
  - b. Install wire mounted LED high/medium bay fixtures with cord and plug so there is 90-100 FC on the floor surfaces
  - c. Fixtures equal to Hubel HBL with protective lens.
- 6. Storage areas, shops, etc.:
  - a. Replace fluorescent and incandescent fixtures with LED fixtures
  - b. Replace all exit light fixtures with Extreme LED fixtures
- 7. Existing 2x4 lay in tile system in Classrooms, Library, Offices, etc.;
  - a. Remove obsolete fluorescent fixtures
  - b. Install direct/indirect LED recessed troffer fixtures grid.
  - c. Fixtures equal to Lithonia BLT Series.
  - d. Replace all exit light fixtures with Extreme LED fixtures
- 8. Exposed fixtures in Classrooms, Library, Offices, etc.:
  - a. Remove obsolete stem mounted fluorescent fixtures
  - b. Install direct/indirect stem mounted LED fixtures grid
  - c. Fixtures equal to Lithonia Grad Linear up/down 4000°K.
  - d. Replace all exit light fixtures with Extreme LED fixtures
- 9. Exterior:
  - a. Remove all wall mounted HPS fixtures
  - b. Install new cut off LED fixtures equal to Lithonia D-Series Size 2 with back boxes as required to provide consistent light level around the entire building perimeter
  - c. Remove all canopy mounted can style light fixtures and install new LED canopy fixtures equal to Trace Lite model TLED-C-P fixtures as required to provide consistent light levels
  - d. Coordinate with We Energies to have all their exterior poles, fixtures, wiring removed.

**Project No. 093-F-TAB****Testing, Adjusting and Balancing Project****Site 093 William George Bruce Elementary School****Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2002)
2. Building size: 56,197 SF Original building in 1961 with addition in 1988
3. MPS estimated occupancy: 536 people
4. Unit Ventilators/Cabinet unit heats/Radiation:
  - a. (20) hot water unit vents most with finned-tube radiation on both sides of each unit vent
  - b. (8) cabinet unit heaters with pneumatic control valves and thermostats
  - c. Casework is removable (not built-in) in classrooms
  - d. Various standalone radiation with pneumatic control valves and thermostats
5. Heating Plant:
  - a. (2) 80 BHP National hot water boilers installed in 1962
  - b. (2) 5 HP 120 GPM primary/secondary pumps installed in 1962
  - c. (2) 3 HP secondary pumps installed in 1988

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6. Controls: Siemens Insite DDC controls over Andover on all air handling units, exhaust fans heating plant, etc. and D/N switching of unit vents
  - a. Control valve replacement project in 2010
  - b. Automatic damper and actuator replacement project in 2002
7. TAB: Started in 2002 completed in 2012
8. Electrical Service: Original MPP 200A 240V ground B phase + MLP 600A 120/240 V 1 PH 3 W
9. Fire alarm: Faraday MPC 2000 – not remotely monitored

**Testing Adjusting and Balancing:**

1. The intent is to attain a completely balanced facility with all mechanical systems balanced within MPS stated tolerances.
2. Test, adjust and balance all new equipment indicated in other scopes of work
3. Test, adjust and balance any water circuits as required to attain proper flow rates
4. Inspect all existing equipment to remain and be reused. Repair or replace equipment as required to properly balance the entire facility.
5. Test, adjust and balance all existing equipment to be reused.
6. Test, adjust and balance all existing inlets, outlets, louvers, hoods, etc.
7. Coordinate with DDC and Mechanical Contractors as required for dampers, sensors, adjustments as required balancing systems and the building.

**Electrical:**

1. New or modified circuiting, wiring motor starter changes, etc. for any motor replacements as required for proper balancing of existing equipment to be reused.

**General:**

1. Ceiling tile removal and replacement to facilitate complete TAB work

**Abatement (by MPS):**

1. See other scopes of work

**Project No. 093-F-TAB****Testing, Adjusting and Balancing Project****Site 093 William George Bruce Elementary School****Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2002)
2. Building size: 56,197 SF Original building in 1961 with addition in 1988
3. MPS estimated occupancy: 536 people
4. Unit Ventilators/Cabinet unit heats/Radiation:
  - a. (20) hot water unit vents most with finned-tube radiation on both sides of each unit vent
  - b. (8) cabinet unit heaters with pneumatic control valves and thermostats
  - c. Casework is removable (not built-in) in classrooms
  - d. Various standalone radiation with pneumatic control valves and thermostats
5. Heating Plant:
  - a. (2) 80 BHP National hot water boilers installed in 1962
  - b. (2) 5 HP 120 GPM primary/secondary pumps installed in 1962
  - c. (2) 3 HP secondary pumps installed in 1988
6. Controls: Siemens Insite DDC controls over Andover on all air handling units, exhaust fans heating plant, etc. and D/N switching of unit vents
  - a. Control valve replacement project in 2010

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- b. Automatic damper and actuator replacement project in 2002
- 7. TAB: Started in 2002 completed in 2012
- 8. Electrical Service: Original MPP 200A 240V ground B phase + MLP 600A 120/240 V 1 PH 3 W
- 9. Fire alarm: Faraday MPC 2000 – not remotely monitored

**Testing Adjusting and Balancing:**

- 1. The intent is to attain a completely balanced facility with all mechanical systems balanced within MPS stated tolerances.
- 2. Test, adjust and balance all new equipment indicated in other scopes of work
- 3. Test, adjust and balance any water circuits as required to attain proper flow rates
- 4. Inspect all existing equipment to remain and be reused. Repair or replace equipment as required to properly balance the entire facility.
- 5. Test, adjust and balance all existing equipment to be reused.
- 6. Test, adjust and balance all existing inlets, outlets, louvers, hoods, etc.
- 7. Coordinate with DDC and Mechanical Contractors as required for dampers, sensors, adjustments as required balancing systems and the building.

**Electrical:**

- 1. New or modified circuiting, wiring motor starter changes, etc. for any motor replacements as required for proper balancing of existing equipment to be reused.

**General:**

- 1. Ceiling tile removal and replacement to facilitate complete TAB work

**Abatement (by MPS):**

- 1. See other scopes of work

**Project No. 093-F-PFIX****Water Efficiency Project****Site 093 William George Bruce Elementary School****Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

- 1. See digital deliverable engineering data spreadsheet for this building (circa 2002)
- 2. Building size: 56,197 SF Original building in 1961 with addition in 1988
- 3. MPS estimated occupancy: 536 people
- 4. Unit Ventilators/Cabinet unit heats/Radiation:
  - a. (20) hot water unit vents most with finned-tube radiation on both sides of each unit vent
  - b. (8) cabinet unit heaters with pneumatic control valves and thermostats
  - c. Casework is removable (not built-in) in classrooms
  - d. Various standalone radiation with pneumatic control valves and thermostats
- 5. Heating Plant:
  - a. (2) 80 BHP National hot water boilers installed in 1962
  - b. (2) 5 HP 120 GPM primary/secondary pumps installed in 1962
  - c. (2) 3 HP secondary pumps installed in 1988
- 6. Controls: Siemens Insite DDC controls over Andover on all air handling units, exhaust fans heating plant, etc. and D/N switching of unit vents
  - a. Control valve replacement project in 2010
  - b. Automatic damper and actuator replacement project in 2002
- 7. TAB: Started in 2002 completed in 2012
- 8. Electrical Service: Original MPP 200A 240V ground B phase + MLP 600A 120/240 V 1 PH 3 W

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9. Fire alarm: Faraday MPC 2000 – not remotely monitored

**Div. 15400 Plumbing Scope:**

1. The intent is to modify all the water closets, sinks, urinals, shower heads, drinking fountains to reduce water consumption.
2. Modify all water closet and urinal flush valves with new diaphragm replacement assemblies
3. Modify all classroom, lounge, etc. sinks by replacing all the aerators with pressure independent aerators
4. For gang urinals, remove timeclocks and install motion detectors connected to solenoid valves to automate the flushing.
5. Replace all the shower heads with low-flow shower heads.
6. Replace all the drinking fountains with Elkay water stations with internal filtration. Provide extra filters to the nearest case
7. Insulate any new piping.

**Div. 16000 Electrical:**

1. New circuit and wiring from panelboards to each motion detectors and solenoid valves as require for gang urinals
2. New circuiting and wiring from panelboards to each water station so each single unit or duplex scenario is served by a separate breaker.

**Abatement (by MPS):**

1. Selective ACM removal as required for new water stations installation

**Project No. 093-F-WIN****Window Replacement Project****Site 093 William George Bruce Elementary School****Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2002)
2. Building size: 56,197 SF Original building in 1961 with addition in 1988
3. MPS estimated occupancy: 536 people
4. Unit Ventilators/Cabinet unit heats/Radiation:
  - a. (20) hot water unit vents most with finned-tube radiation on both sides of each unit vent
  - b. (8) cabinet unit heaters with pneumatic control valves and thermostats
  - c. Casework is removable (not built-in) in classrooms
  - d. Various standalone radiation with pneumatic control valves and thermostats
5. Heating Plant:
  - a. (2) 80 BHP National hot water boilers installed in 1962
  - b. (2) 5 HP 120 GPM primary/secondary pumps installed in 1962
  - c. (2)3 HP secondary pumps installed in 1988
6. Controls: Siemens Insite DDC controls over Andover on all air handling units, exhaust fans heating plant, etc. and D/N switching of unit vents
  - a. Control valve replacement project in 2010
  - b. Automatic damper and actuator replacement project in 2002
7. TAB: Started in 2002 completed in 2012
8. Electrical Service: Original MPP 200A 240V ground B phase + MLP 600A 120/240 V 1 PH 3 W
9. Fire alarm: Faraday MPC 2000 – not remotely monitored
10. Approximately 2220 SF of window area in the original 1960 section of the building
11. Existing 1988 windows are to remain

**Scope:**

1. 1960 Original Building:
  - a. Replace all window assemblies with new assemblies

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- b. Windows to be double pane insulated glass per MPS specifications
  - c. Replace operable hopper window sections with insulated hopper sections
  - d. Install security screens on any windows at grade level
2. 1988 Portion of the Building:
- a. Inspect, test and make repairs as necessary to make all operable windows operations
  - b. Replace any damaged security screens and window panes
  - c. Caulk any gaps in window assemblies
  - d. Clean windows

**[End Bruce]**

**APPENDIX B****Limited Scope Sites**

**Project No. 003-F-LCORR + 003-F-LAUDIT**  
**Lighting Upgrade/Remodeling Project**  
**Site 003 MacDowell at Juneau**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as indicated in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. 1929 Corridors have ceilings consisting of 2x4 lay-in tiles with stem mounted single row light fixtures with T8 fluorescent lamps
2. 1975 addition has corridors ceilings consisting of 2x4 lay-in tiles with 2x4 lay-in light fixtures with T8 fluorescent lamps
3. Auditorium Lobby has stem mounted decorative fixtures
4. Auditorium has cable mounted incandescent fixtures

**Scope:**

1. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
2. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
3. 1929 Corridors:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Remove obsolete 2'x4' grid, supports, lights, stems, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install new 2'x4' ceiling grid with 2'x4' tectum ceiling tiles to hide the majority of conduit.
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - g. Replace all exit light fixtures with Extreme LED fixtures
  - h. Replace all decorative fixtures in the lobby with stem mounted decorative LED fixtures equal to Winona 4920 LED.
4. 1975 Corridors:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Replace all ceiling tiles with new tectum tiles
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Replace all exit light fixtures with Extreme LED fixtures
5. Auditorium:
  - a. Replace all the fixtures with decorative stem mounted dimmable LED fixtures.
  - b. Integrate new fixtures into new house lighting panel for dimming capability.
  - c. Fixtures to be equal to Winona 4920 LED.
  - e. Replace stage lighting, lighting control and sound system as indicated on proposal from Main Stage (system to be similar to that at site 049 Parkside)
  - f. Locate new lighting control panel in center of the Auditorium.

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**Project No. 012-F-LCORR + 012-F-LGYM + 012-F-LCAFE  
Lighting Upgrade/Remodeling Project  
Site 012 Bay View High School**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. 1929 Building has corridor ceilings consisting of 2x4 lay-in tiles with a combination of stem mounted single row light fixtures with either T8 or T12 fluorescent lamps.
2. 1974 Addition has corridor ceilings consisting of 2'x4' lay-in tile with 2'x4' lay-in fixtures with either T8 or T12 fluorescent lamps.
3. Cafeteria has (116) 4'L wrap around fixtures with florescent lamps
4. Weight room has (16) 4'L fixtures with florescent lamps
5. Kitchen and surrounding areas have (44) 4'L fixtures with florescent lamps
6. Gym lighting was remodeling in 2010 with T5 High Bay fluorescents

**Scope:**

1. For purposes of this project; cafeteria, weight room and kitchen shall be considered part of 012-F-LCAFE
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
3. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
4. 1929 Corridors:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Remove obsolete 2'x4' grid, supports, lights, stems, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install new 2'x4' ceiling grid with 2'x4' tectum ceiling tiles to hide the majority of conduit.
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - g. Replace all exit light fixtures with Extreme LED fixtures
5. 1974 Corridors:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Replace all ceiling tiles with new tectum tiles
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Replace all exit light fixtures with Extreme LED fixtures
6. Cafeteria:
  - a. Replace all ceiling tiles with new tectum tiles
  - b. Properly support any cable sitting on old ceiling grid as required
  - c. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - d. Install direct/indirect LED recessed troffer fixtures in new grid to attain consistent light levels
  - e. Replace all exit light fixtures with Extreme LED fixtures
7. Kitchen and Surrounding Areas:
  - a. Replace light fixtures with 2'x4' lay-in LED fixtures. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - b. Replace all exit light fixtures with Extreme LED fixtures
8. Weight Room (lower Girls Gym) and Cafeteria extension (lower Boys Gym):
  - a. Replace all stem mounted light fixtures with 2'x4' lay-in LED fixtures. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - b. Replace all exit light fixtures with Extreme LED fixtures

**APPENDIX B**

**Project No. 016-F-LCORR + 016-F-LGYM + 016-F-LAUDIT + 016-F-LCAFE**  
**Lighting Upgrade/Remodeling Project**  
**Site 016 Barack Obama School of Career and Technical Education**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. Original Corridors have ceilings consisting of 12"x12" concealed spline tiles with a 1'x4' and 2'x4' light fixtures with T8 and/or T12 fluorescent lamps
2. Remodeled corridors have ceilings consisting of 2x4 lay-in tiles with 2x4 lay-in light fixtures with T8 and/or T12 fluorescent lamps
3. Cafeteria/Kitchen have ceilings consisting of 12"x12" concealed spline tiles with a 1'x4' and 2'x4' light fixtures with T8 and/or T12 fluorescent lamps
4. Gym has HPS fixtures with an exposed ceiling
5. Auditorium lighting consist of incandescent cans

**Scope:**

1. For purposes of this project; cafeteria, weight room and kitchen shall be considered part of 016-F-LCAFE
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
3. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
4. Original Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 12"x12" corridor ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - g. Replace all exit light fixtures with Extreme LED fixtures
5. Remodeled Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Replace all ceiling tiles with new tectum tiles
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Replace all exit light fixtures with Extreme LED fixtures
6. Gym:
  - a. Replace all fixtures in the Gym with cable hung LED fixtures
  - b. Lighting arrangement such that there is 110 FC on court surfaces.
  - c. Install air de-stratification fans in Gym with sensors, wiring, etc. connect to centralized control panel that is connected to the DDC system
7. Auditorium:
  - a. Replace can style fixtures with dimmable LED fixtures.
  - b. Integrate new fixtures into new house lighting panel for dimming capability.
8. Cafeteria/Kitchen:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 12"x12" corridor ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Install direct/indirect LED recessed troffer fixtures in new grid. Fixtures equal to Lithonia BLT Series.
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system



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- g. Replace all exit light fixtures with Extreme LED fixtures

**Project No. 018-F-LCORR + 018-F-LGYM + 018-F-LCAFE**  
**Lighting Upgrade/Replacement Project**  
**Site 018 Hamilton High School**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. Corridor has ceilings consisting of 24"x12" concealed spline metal pans with 1'x4' and 2'x4' light fixtures with either T8 or T12 fluorescent lamps
2. Cafeteria has ceilings consisting of 24"x12" concealed spline metal pans with 1'x4' and 2'x4' light fixtures with either T8 or T12 fluorescent lamps
3. Aux Gym has exposed ceiling with rows of retrofitted fluorescent fixtures

**Scope:**

1. For purposes of this project; cafeteria, kitchen, dishwashing, shall be considered part of 018-F-LCAFE
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
3. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
4. Corridors:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Remove 24"x12" metal pan ceiling system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Replace all exit light fixtures with Extreme LED fixtures
  - g. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
5. Cafeteria/Kitchen/Dishwashing:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Remove 24"x12" metal pan ceiling system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Replace all exit light fixtures with Extreme LED fixtures
  - g. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
6. Aux Gyms:
  - a. Remove rows of retrofitted fixtures and replace with cable mounted LED fixtures
  - b. Reconfigure layout as required for consistent 100 FC on courts surfaces
  - c. Replace any 2x4 lay-in light fixtures with florescent lamps with LED fixtures

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**Project No. 020-F-LCORR + 020-F-LGYM + 020-F-LAUDIT + 020-F-LCAFE**  
**Lighting Upgrade/Replacement Project**  
**Site 020 Rufus King IB School**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. The 1933 original building corridors have ceilings consisting of 2x4 lay-in tiles with a combination of stem mounted single row light fixtures with either T8 and T12 fluorescent lamps and (2) lamp and 2x4 lay-in light fixtures with either T8 and T12 fluorescent lamps
2. The 1980 addition has corridors ceilings consisting of 2x4 lay-in tiles with 2x4 lay-in light fixtures with T8 fluorescent lamps
3. Auditorium Lobby has stem mounted decorative fixtures
4. Auditorium has cable mounted incandescent fixtures
5. The Cafeteria and Kitchen have ceilings consisting of 12"x12" concealed spline tiles with rows of 1'x4' stem mounted light fixtures with either T8 or T12 fluorescent lamps
6. Gym has stem mounted HPS fixture with an exposed ceiling

**Scope:**

1. For the purpose of this project kitchen and surrounding areas shall be considered part of 020-F-LCAFE
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
3. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
4. 1933 Corridors:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Remove obsolete 2'x4' grid, supports, lights, stems, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install new 2'x4' ceiling grid with 2'x4' tectum ceiling tiles to hide the majority of conduit.
  - e. Install direct/indirect LED recessed troffer fixtures in new grid to attain consistent light levels
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - g. Replace all exit light fixtures with Extreme LED fixtures
  - h. Replace all decorative fixtures in the lobby with stem mounted decorative LED fixtures equal to Winona 4920 LED.
5. 1980 Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Replace all ceiling tiles with new tectum tiles
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - e. Install direct/indirect LED recessed troffer fixtures in new grid to attain consistent light levels
  - f. Replace all exit light fixtures with Extreme LED fixtures
6. Auditorium:
  - a. Replace all the fixtures with decorative stem mounted dimmable LED fixtures. Integrate new fixtures into house lighting panel for dimming capability. Fixtures shall be equal to Winona 4920 LED.
7. Gym:
  - a. Replace all fixtures in the Gym with cable hung LED fixtures
  - b. Lighting arrangement such that there is 110 FC on court surfaces.
  - c. Install air de-stratification fans in Gym with sensors, wiring, etc. connect to centralized control panel that is connected to the DDC system
8. Cafeteria:
  - a. Remove 12"x12" ceiling tile system, black-iron support grid, light fixtures, etc.
  - b. Temporarily support any speaker, fire alarm devices, cameras, etc.

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- c. Properly support any cable sitting on old ceiling grid as required
- d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
- e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
- f. Replace all exit light fixtures with Extreme LED fixtures
- g. Install direct/indirect LED recessed troffer fixtures in new grid. Fixtures equal to Lithonia BLT Series.

**Project No. 026-F-LCORR + 026-F-LGYM + 026-F-LCAFE + 026-F-LAUDIT**  
**Lighting Upgrade/Replacement Project**  
**Site 026 Pulaski High School**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. Original building has corridor ceilings consisting of 2x4 lay-in tiles with stem mounted single row light fixtures with either T8 or T12 fluorescent lamps.
2. West addition has corridor ceilings consisting of 2'x4' lay-in tile with 2'x4' lay-in fixtures with either T8 or T12 fluorescent lamps.
3. Cafeteria has ceilings consisting of 2'x4' lay-in tile with stem mounted 1'x4' lay-in fixtures in rows with T8 fluorescent lamps.
4. Kitchen and surrounding areas have ceilings consisting of 12"x24" metal pan ceilings with 2'x4' lay-in fixtures with either T8 or T12 fluorescent lamps.
5. Auditorium has a combination of stem mounted HPS and incandescent can fixtures

**Scope:**

1. For purposes of this project; cafeteria, kitchen and surrounding areas shall be considered part of 026-F-LCAFE
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
3. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
4. Original Building 1929 Corridors:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Remove obsolete 2'x4' grid, supports, lights, stems, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install new 2'x4' ceiling grid with 2'x4' tectum ceiling tiles to hide the majority of conduit.
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - g. Replace all exit light fixtures with Extreme LED fixtures
  - h. Replace all decorative fixtures in the lobby with stem mounted decorative LED fixtures equal to Winona 4920 LED.
5. West Addition Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Replace all ceiling tiles with new tectum tiles
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Replace all exit light fixtures with Extreme LED fixtures
6. Cafeteria:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Remove obsolete 2'x4' grid, supports, lights, stems, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install new 2'x4' ceiling grid with 2'x4' tectum ceiling tiles to hide the majority of conduit.
  - e. Install direct/indirect LED recessed troffer fixtures in new grid. Fixtures equal to Lithonia BLT Series.
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system

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- g. Replace all exit light fixtures with Extreme LED fixtures
- 7. Kitchen and Surrounding Areas
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 24"x12" ceiling metal pan system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Replace all exit light fixtures with Extreme LED fixtures
  - g. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
- 8. Auditorium
  - a. Replace HPS fixtures with dimmable LED decorative.
  - b. Fixtures equal to Winona 4920 LED.
  - c. Replace can style incandescent fixtures with dimmable LED can fixtures
  - d. Integrate new fixtures into lighting control panel for dimming capability.
- 9. Gym and Aux Gyms;
  - a. Replace all fixtures in the Gym with cable mounted LED fixtures
  - b. Lighting arrangement such that there is 110 FC on court surfaces.
  - c. Install air de-stratification fans in Gym with sensors, wiring, etc. connect to centralized control panel that is connected to the DDC system
  - d. Replace all exit light fixtures with Extreme LED fixtures

**Project No. 028-F-LCORN + 028-F-LGYM**  
**Lighting Upgrade/Remodeling Project**  
**Site 028 Alliance School**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. Original Corridors have ceilings consisting of 12"x12" concealed spline tiles with a 1'x4' and 2'x4' light fixtures with T8 fluorescent lamps
2. Remodeled corridors have ceilings consisting of 2x4 lay-in tiles with 2x4 lay-in light fixtures with T8 fluorescent lamps
3. Gym has stem mounted HPS fixtures

**Scope:**

1. For purposes of the this project lobbies shall be considered part of 028-F-LCORN
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
3. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
4. Original Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 12"x12" corridor ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - g. Replace all exit light fixtures with Extreme LED fixtures
5. Remodeled Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Replace all ceiling tiles with new tectum tiles
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system

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- e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Replace all exit light fixtures with Extreme LED fixtures
6. Gym;
- a. Replace all fixtures in the Gym with cable hung LED fixtures
  - b. Lighting arrangement such that there is 110 FC on court surfaces.
  - c. Install air destratification fans in Gym with sensors, wiring, etc. connect to centralized control panel that is connected to the DDC system

**Project No. 029-F-LCORR + 029-F-LGYM**  
**Lighting Upgrade/Replacement Project**  
**Site 029 Riverside**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. Corridors in original building have ceilings consisting of 2x4 lay-in tiles with a combination of stem mounted single row light fixtures with either T8 and T12 fluorescent lamps and (2) lamp and 2x4 lay-in light fixtures with either T8 and T12 fluorescent lamps
2. 1977 Corridors in west addition have ceilings consisting of 2x4 lay-in tiles with 2x4 lay-in light fixtures with either T8 and T12 fluorescent lamps
3. Auditorium Lobby has stem mounted decorative fixtures
4. Gyms and Aux Gym have stem mounted HPS fixtures. Gym has ceilings consisting of exposed concrete deck.

**Scope:**

1. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
2. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
3. Original Building Corridors:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Remove obsolete 2'x4' grid, supports, lights, stems, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install new 2'x4' ceiling grid with 2'x4' tectum ceiling tiles to hide the majority of conduit.
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - g. Replace all exit light fixtures with Extreme LED fixtures
  - h. Replace all decorative fixtures in the lobby with stem mounted decorative LED fixtures equal to Winona 4920 LED.
4. 1977 West Addition Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Replace all ceiling tiles with new tectum tiles
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Replace all exit light fixtures with Extreme LED fixtures
5. Gym and Aux Gyms;
  - a. Replace all fixtures in the Gym with cable mounted LED fixtures
  - b. Adjust the lighting layout as required to attain 110 FC on the court surfaces
  - c. Install air destratification fans in Gym with sensors, wiring, etc. connect to centralized control panel that is connected to the DDC system
  - d. Replace all exit light fixtures with Extreme LED fixtures

## APPENDIX B

### Project No. 032-F-LCORR + 032-F-LCAFE Lighting Upgrade/Replacement Project Site 032 South Division High School

#### **Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

#### **Proposed Scope of Work:**

#### **Notes:**

1. Corridor has ceilings consisting of 12"x24" concealed spline metal pans with a cove lighting along the perimeter with either T8 or T12 fluorescent lamps
2. Cafeteria has ceilings consisting of 12"x24" concealed spline metal pans with a cove lighting along the perimeter with either T8 or T12 fluorescent lamps

#### **Scope:**

1. For purposes of this project lobby lighting shall be considered as part of 032-F-LCORR
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
3. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
4. Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 24"x12" corridor ceiling metal pan system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - g. Replace all exit light fixtures with Extreme LED fixtures
  - h. Lobby: Replace HPS can style fixtures with LED fixtures
5. Cafeteria:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 12"x12" concealed spline ceiling system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install dimmable direct/indirect LED recessed troffer fixtures in new grid. Fixtures equal to Lithonia BLT Series.
  - g. Install new remote dimming panel and extend dimming control to remote control panel.
  - h. Replace all exit light fixtures with Extreme LED fixtures.

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**Project No. 035-F-LCORR + 035-F-LGYM + 035-F-LAUDIT + 035-F-LCAFE**  
**Lighting Upgrade/Replacement Project**  
**Site 035 Washington High School**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. Original 1930 Building has corridor ceilings consisting of 2x4 lay-in tiles with stem mounted single row light fixtures with either T8 or T12 fluorescent lamps.
2. 1969 North Addition has corridor ceilings consisting of 12"x12" concealed spline tile with 1'x4' fixtures with either T8 or T12 fluorescent lamps.
3. 1982 South Addition has 1<sup>st</sup> floor corridor ceilings consisting of 12"x24" metal pan with 2'x2' fixtures with U-Tube T8 or T12 fluorescent lamps.
4. 1982 South Addition has 2nd floor corridor ceilings consisting of 24"x24" lay-in ceiling tiles with 2'x4' fixtures with T8 or T12 fluorescent lamps.
5. Cafeteria has ceilings consisting of 12"x24" metal pan with 4'x4' and 1'x4' fixtures with T8 or T12 fluorescent lamps.
6. Kitchen and surrounding areas have ceilings consisting of 24"x24" lay-in ceiling tiles with 2'x4' fixtures with T8 or T12 fluorescent lamps.
7. South Gym has stem mounted HPS fixtures
8. Auditorium has stem hung decorative incandescent fixtures

**Scope:**

1. For purposes of this project kitchen and surrounding areas shall be considered as part of 035-F-LCAFE
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
3. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
4. 1930 Corridors:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Remove obsolete 2'x4' grid, supports, lights, stems, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install new 2'x4' ceiling grid with 2'x4' tectum ceiling tiles to hide the majority of conduit.
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - g. Replace all exit light fixtures with Extreme LED fixtures
  - h. Replace all decorative fixtures in the lobby with stem mounted decorative LED fixtures equal to Winona 4920 LED.
5. 1969 Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 12"x12" concealed spline tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - g. Replace all exit light fixtures with Extreme LED fixtures
6. 1982 1<sup>st</sup> Floor Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 24"x12" metal pan ceiling system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - g. Replace all exit light fixtures with Extreme LED fixtures

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7. 1982 2nd Floor Corridors:
  - a. Remove 24"x24" ceiling system, black-iron support grid, light fixtures, etc.
  - b. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - g. Replace all exit light fixtures with Extreme LED fixtures
8. Cafeteria:
  - a. Remove 24"x12" metal pan ceiling system, black-iron support grid, light fixtures, etc.
  - b. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install direct/indirect LED recessed troffer fixtures in new grid. Fixtures equal to Lithonia BLT Series.
  - g. Replace all exit light fixtures with Extreme LED fixtures
9. Kitchen and Surrounding Area:
  - a. Remove 24"x24" ceiling system, black-iron support grid, light fixtures, etc.
  - b. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Replace all exit light fixtures with Extreme LED fixtures
  - g. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
10. South Gym and Surrounding Areas:
  - a. Replace all fixtures in the Gym with cable hung LED fixtures
  - b. Lighting arrangement such that there is 110 FC on court surfaces.
  - c. Install air destratification fans in Gym with sensors, wiring, etc. connect to centralized control panel that is connected to the DDC system
11. Auditorium:
  - a. Replace all the fixtures with decorative stem mounted dimmable LED fixtures.
  - b. Integrate new fixtures into house lighting panel for dimming capability.
  - c. Fixtures equal to Winona 4920 LED.



**APPENDIX B**

**Project No. 041-F-LCORR + 041-F-LCAFE + 041-F-LAUDIT + 041-F-LGYM**  
**Lighting Upgrade/Replacement Project**  
**Site 041 Audubon School**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. Corridor has ceilings consisting of 12"x12" concealed spline tiles with 1'x4' and 2'x4' light fixtures with either T8 or T12 fluorescent lamps
2. Gym has stem mounted HPS fixtures
3. Cafeteria/Kitchen has ceilings consisting of 2'x2' lay-in tile with 2'x4' light fixtures with T8 fluorescent lamps
4. Auditorium has a combination of stem mounted fixtures with incandescent lamps and recessed 12"x12" can style fixtures with incandescent lamps.

**Scope:**

1. For purposes of this project kitchen lighting shall be considered as part of 041-F-LCAFE
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
3. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
4. Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 12"x12" ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - g. Replace all exit light fixtures with Extreme LED fixtures
5. Auditorium:
  - a. Replace stem mounted fixtures with decorative stem mounted dimmable LED fixtures.
  - b. Replace the can style fixtures with round recessed dimmable LED can style fixtures and new plates
  - c. Integrate new fixtures into house lighting panel for dimming capability.
  - d. Stem mounted fixtures to be equal to Winona 4920 LED.
6. Gyms:
  - a. Replace all fixtures in the Gyms with cable hung LED fixtures
  - b. Lighting arrangement such that there is 110 FC on court surfaces.
  - c. Install air de-stratification fans in Main Gyms with sensors, wiring, etc. connect to centralized control panel that is connected to the DDC system
7. Cafeteria/Kitchen
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 24x24 ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install direct/indirect LED recessed troffer fixtures in new grid. Fixtures equal to Lithonia BLT Series.
  - g. Replace all exit light fixtures with Extreme LED fixtures

**APPENDIX B**

**Project No. 044-F-LCORR + 044-F-LCAFE + 044-F-LAUDIT + 044-F-LGYM**  
**Lighting Upgrade/Replacement Project**  
**Site 044 Wedgewood Park School**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. Corridor has ceilings consisting of 12"x12" concealed spline tiles with 1'x4' light fixtures with either T8 or T12 fluorescent lamps
2. Gym and Aux Gyms have stem mounted HPS fixtures
3. Cafeteria/Kitchen has ceilings consisting of 12"x12" concealed spline tiles with 1'x4' and 2'x4' light fixtures with either T8 or T12 fluorescent lamps
4. Auditorium has can style fixtures with incandescent lamps

**Scope:**

1. For purposes of this project kitchen lighting shall be considered as part of 044-F-LCAFE
2. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
3. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
4. Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 12"x12" ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - g. Replace all exit light fixtures with Extreme LED fixtures
5. Auditorium:
  - a. Replace all the fixtures with can style dimmable LED fixtures.
  - b. Integrate new fixtures into house lighting panel for dimming capability.
6. Gyms:
  - a. Replace all fixtures in the Gyms with cable hung LED fixtures
  - b. Lighting arrangement such that there is 110 FC on court surfaces.
  - c. Install air de-stratification fans in Main Gyms with sensors, wiring, etc. connect to centralized control panel that is connected to the DDC system
7. Cafeteria/Kitchen:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 12"x12" ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install direct/indirect LED recessed troffer fixtures in new grid. Fixtures equal to Lithonia BLT Series.
  - g. Replace all exit light fixtures with Extreme LED fixtures

**APPENDIX B**

**Project No. 055-F-LCORR + 055-F-LGYM + 055-F-LCAFE - Revised**  
**Lighting Upgrade/Replacement Project**  
**Site 055 Douglas Community Academy (Leased)**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented in the RFP and all addenda to the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. See digital deliverable engineering data spreadsheet for this building (circa 2002)
2. Corridors have ceilings consisting of various sizes of peg board or lay-in tile below 12"x12" concealed spline supported by back iron with single row light fixtures down the middle with either T8 or T12 fluorescent lamps
3. Cafeteria has 12"x12" concealed spline tiles with 1'x4' and 2'x4' light fixtures with either T8 or T12 fluorescent lamps
4. Gym area has recessed 2'x4' fluorescent fixtures.

**Scope:**

1. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas.
2. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
3. Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove obsolete ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - g. Replace all exit light fixtures with Lithonia Extreme LED fixtures
4. Gym:
  - a. Remove all obsolete 2'x4' fluorescent fixtures and install tectum panels or repair ceiling equal to existing surfaces.
  - b. Install cable hung high bay LED fixtures so that there is 110 FC on court surfaces.
  - c. Install air destratification fans in Gym, wiring, etc. and connect to centralized control with security cover
5. Cafeteria:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove obsolete ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - f. Install direct/indirect LED recessed troffer fixtures in new grid. Fixtures equal to Lithonia BLT Series.
  - g. Replace all exit light fixtures with Lithonia Extreme LED fixtures

**APPENDIX B**

**Project No. 059-F-LCORR + 059-F-LAUDIT + 059-F-LGYM**  
**Lighting Upgrade/Remodeling Project**  
**Site 059 Roosevelt School of the Arts**

**Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

**Proposed Scope of Work:****Notes:**

1. 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> floor corridors have ceilings consisting of 2x4 lay-in tiles with stem mounted single row light fixtures with T8 fluorescent lamps
2. Ground floor has corridors ceilings consisting of 12"x12" concealed spline tiles with a 1'x4' and 2'x4' light fixtures with T8 fluorescent lamps
3. Auditorium has a combination of fluorescent fixtures and newer stem mounted incandescent fixtures
4. Gyms have stem mounted fixtures with compact fluorescent lamps

**Scope:**

1. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
2. No spreadsheet available for this site (vendors are responsible for all counts)
3. Ground Floor Corridors:
  - a. Temporarily support any speaker, fire alarm devices, cameras, etc.
  - b. Remove 12"x12" corridor ceiling tile system, black-iron support grid, light fixtures, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install 2'x4' lay-in ceiling grid with tectum tiles and clips
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
4. Replace all exit light fixtures with Extreme LED fixtures 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Floor Corridors:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Remove obsolete 2'x4' grid, supports, lights, stems, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install new 2'x4' ceiling grid with 2'x4' tectum ceiling tiles to hide the majority of conduit.
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - g. Replace all exit light fixtures with Extreme LED fixtures
  - h.
5. Auditorium:
  - a. Remove the fluorescent fixtures.
  - b. Replace all the stem mounted fixtures with decorative stem mounted dimmable LED fixtures.
  - c. Integrate new fixtures into house lighting panel for dimming capability.
  - d. Stem mounted fixtures to be equal to Winona 4920 LED.
  - e. Add (2) LED Lithonia T Series Recessed LED Troffer fixtures to the stage on a separate switch
6. Gym:
  - a. Replace all fixtures in the Gym with cable hung LED fixtures
  - b. Lighting arrangement such that there is 110 FC on court surfaces.
  - c. Install air de-stratification fans in Gym with sensors, wiring, etc. connect to centralized control panel that is connected to the DDC system

## APPENDIX B

**Project No. 062-F-LCORR + 062-F-LAUDIT  
Lighting Upgrade/Replacement Project  
Site 062 Milwaukee French Immersion School**

### **Budgeted Project Cost:**

The budget for the entire project cost was estimated as presented with the RFP and includes any equipment and all mechanical, electrical, structural, general, plumbing, etc. costs for all phases of work.

### **Proposed Scope of Work:**

#### **Notes:**

1. 1931 Corridors have ceilings consisting of 2x4 lay-in tiles with a combination of stem mounted single row light fixtures with either T8 and T12 fluorescent lamps
2. Auditorium Lobby has stem mounted decorative fixtures
3. Auditorium has cable mounted fluorescent fixtures in the Auditorium attic
4. Lighting in the Gyms and Cafeteria was remodeled in 2011

#### **Scope:**

1. The intent is to replace all the lighting fixtures with LED fixtures type fixtures in identified areas
2. See digital deliverable spreadsheet for details of areas to be modified (high-lighted)
3. 1931 Corridors:
  - a. Temporarily support all speakers, fire alarm system devices, etc.
  - b. Remove obsolete 2'x4' grid, supports, lights, stems, etc.
  - c. Properly support any cable sitting on old ceiling grid as required
  - d. Install new 2'x4' ceiling grid with 2'x4' tectum ceiling tiles to hide the majority of conduit.
  - e. Install recessed troffer fixtures in new grid. Fixtures equal to Lithonia T Series Recessed LED Troffer
  - f. Re-install any speaker, fire alarm system devices, etc. into new ceiling tile system
  - g. Replace all exit light fixtures with Extreme LED fixtures
  - h. Replace all decorative fixtures in the auditorium lobby with stem mounted decorative LED fixtures equal to Winona 4920 LED.
4. Auditorium:
  - a. Remove all the fluorescent fixtures in the attic
  - b. Install fixtures with decorative stem mounted dimmable LED fixtures.
  - c. Integrate new fixtures into new house lighting panel for dimming capability.
  - d. Fixtures to be equal to Winona 4920 LED.
  - g. Replace stage lighting, lighting control and sound system as indicated on proposal from Main Stage (system to be similar to that at site 049 Parkside)
  - h. Locate new lighting control panel in center of the Auditorium.

**APPENDIX C**  
**ASSURED PERFORMANCE GUARANTEE**  
**Measurement & Verification Plan per FIM**

MPS FIM ID *	MPS FIM Description	M&V Option **				
		A	B	C	D	Non-Measured
<b>HVAC</b>						
XXX-F-HP	Heating Plant Upgrade/Replacement		X	X		
XXX-F-CU	Coils & Unit Ventilators Upgrade/Replacement			X		
XXX-F-AHU	AHU & Dampers Upgrade/Replacement		X	X		
XXX-F-EMS	Energy Management System			X		
XXX-F-TAB	Test, Adjust, and Air Balance			X		
<b>Lighting</b>						
XXX-F-LCORR	Corridor Upgrade/Replacement	X				
XXX-F-LAUD	Auditorium Upgrade/Replacement	X				
XXX-F-LGYM	Gym Upgrade/Replacement	X				
XXX-F-LGDF	Gym Destratification Fans			X		
XXX-F-LCLAS	Classroom Upgrade/Replacement	X				
XXX-F-LEXT	Exterior Upgrade/Replacement	X				
<b>Plumbing</b>						
XXX-F-PFIX	Plumbing Fixtures Upgrade/Replacement			X		
<b>Building Envelope</b>						
XXX-F-WIND	Window Upgrade/Replacement			X		
XXX-F-ROOF	Roof Upgrade/Replacement			X		
XXX-F-DOOR	Door Upgrade/Replacement			X		

**APPENDIX C**

Purchase Requisition Number: XXXXX

Contract Number: XXXXX

Vendor Number: XXXXX

*\*Inclusive of the following schools:*

<b>Site No.</b>	<b>Site or Program Name</b>	<b>Address</b>
003	MacDowell Montessori at Solomon Juneau Campus	6415 W. Mount Vernon Avenue
012	Bay View High School	2751 S. Lenox Street
016	Barack Obama School of Career and Technical Education	5075 N. Sherman Blvd
018	Alexander Hamilton High School	6215 W. Warnimont Avenue
020	Rufus King International High School	1801 W. Olive Street
022	James Madison Academic Campus (JMAC)	8135 W. Florist Avenue
026	Casimir Pulaski High School	2500 W. Oklahoma Avenue
028	Metropolitan (Alliance) High School	850 W Walnut St
029	Riverside University High School	1615 E. Locust Street
032	South Division Multi-Plex	1515 W. Lapham Blvd.
035	Washington Complex	2525 N. Sherman Blvd.
041	Audubon Multi-Plex	3300 S. 39th Street
044	Wedgewood Park Multi-Plex	6506 W. Warnimont Avenue
049	Milwaukee Parkside School of the Arts	2969 S. Howell Avenue
055	Douglas Community Academy	3620 N. 18th Street
059	Roosevelt School of the Arts	800 W. Walnut Street
062	Milwaukee French Immersion at Steuben Complex	2360 N. 52nd Street
093	William George Bruce Elementary School	6453 N. 89th Street

## I. PROJECT BENEFITS

**A. Certain Definitions.** For purposes of this Agreement, the following terms have the meanings set forth below:

**Annual Project Benefits** are the portion of the projected Total Project Benefits to be achieved in any one year of the Guarantee Term.

**Annual Project Benefits Realized** are the Project Benefits actually realized for any one year of the Guarantee Term.

**Annual Project Benefits Shortfall** is the amount by which the Annual Project Benefits exceed the Annual Project Benefits Realized in any one year of the Guarantee Term.

**Annual Project Benefits Surplus** is the amount by which the Annual Project Benefits Realized exceed the Annual Project Benefits in any one year of the Guarantee Term.

**Baseline** is the mutually agreed upon data and/or usage amounts that reflect conditions prior to the installation of the Improvement Measures as set forth in Section IV below.

**Guarantee Term** will commence on the first day of the month next following the Substantial Completion date and will continue through the duration of the M&V Services, subject to earlier termination as provided in this Agreement.

**Installation Period** is the period beginning on **Contractor's** receipt of Customer's Notice to Proceed and ending on the commencement of the Guarantee Term.

**Measured Project Benefits** are the utility savings and cost avoidance calculated in accordance with the methodologies set forth in Section III below.

**Non-Measured Project Benefits** are identified in Section II below. The Non-Measured Project Benefits have been agreed to by Customer and will be deemed achieved in accordance with the schedule set forth in the Total Project Benefits table below. Customer and Contractor agree that: (i) the Non-Measured Project Benefits may include, but are not limited to, future capital and operational costs avoided as a result of the Work and implementation of the Improvement Measures, (ii) achievement of the Non-Measured Project Benefits is outside of Contractor's control, and (iii) Customer has evaluated sufficient information to conclude that the Non-Measured Project Benefits will occur and bears sole responsibility for ensuring that the Non-Measured Project Benefits will be realized. Accordingly, the Non-Measured Project Benefits shall not be measured or monitored by Contractor at any time during the Guarantee Term, but rather shall be deemed achieved in accordance with the schedule set forth in the Total Project Benefits table below.

**Project Benefits** are the Measured Project Benefits plus the Non-Measured Project Benefits to be achieved for a particular period during the term of this Agreement.

**Total Project Benefits** are the projected Project Benefits to be achieved during the entire term of this Agreement.



**APPENDIX C**

**B. Project Benefits Summary.** Subject to the terms and conditions of this Agreement, Contractor and Customer agree that Customer will be deemed to achieve a total of **\$38,002,920** in Non-Measured Project Benefits and Contractor guarantees that Customer will achieve a total of **\$7,476,160** in Measured Project Benefits during the term of this Agreement, for Total Project Benefits of **\$45,479,080** as set forth in the Total Project Benefits table below.

**TOTAL PROJECT BENEFITS**

Year	Utility Cost Avoidance Measured*	Utility Cost Avoidance Non-Measured*	Total Utility Cost Avoidance*	Major Maintenance Deferred Cost Avoidance **	Maintenance Operations Cost Avoidance**	Total Savings (Annual)
1	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
2	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
3	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
4	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
5	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
6	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
7	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
8	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
9	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
10	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
11	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
12	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
13	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
14	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
15	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
16	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
17	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
18	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
19	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
20	\$373,808	\$0	\$373,808	\$1,536,550	\$363,596	\$2,273,954
<b>Total</b>	<b>\$7,476,160</b>	<b>\$0</b>	<b>\$7,476,160</b>	<b>\$30,731,000</b>	<b>\$7,271,920</b>	<b>\$45,479,080</b>

Per MPS Request, Utility Cost Avoidance will be measured in Year 1 and stipulated for the remainder of the contract. All utility costs will be measured per the identified plan option per measure listed above.

\*Utility Cost Avoidance is a Measured Project Benefit. Utility Cost Avoidance figures in the table above are based on current unit energy costs with no escalation as set forth in the table in Section IV below.

\*\* Major Maintenance Deferred Cost Avoidance and Maintenance Operations Savings are Non-Measured Project Benefits. Major Maintenance Deferred Cost Avoidance and Maintenance Operations Savings figures in the table above are based on current report values with no escalation.

Within sixty (60) days of the commencement of the Guarantee Term, Contractor will calculate the Measured Project Benefits achieved during the Installation Period plus any Non-Measured Project Benefits applicable to such period and advise Customer of same. Any Project Benefits achieved during the Installation Period may, at Contractor's discretion, be allocated to the Annual Project Benefits for the first year of the Guarantee Term. Within sixty (60) days of each anniversary of the commencement of the Guarantee Term, Contractor will calculate the Measured Project Benefits

**APPENDIX C**

achieved for the applicable year plus any Non-Measured Project Benefits applicable to such period and advise Customer of same.

*Customer acknowledges and agrees that if, for any reason, it (i) cancels or terminates receipt of M&V Services, (ii) fails to pay for M&V Services in accordance with Appendix A, (iii) fails to fulfill any of its responsibilities necessary to enable Contractor to complete the Work and provide the M&V Services, or (iv) otherwise cancels, terminates or materially breaches this Agreement, the Assured Performance Guarantee shall automatically terminate and Contractor shall have no liability hereunder.*

**C. Project Benefits Shortfalls or Surpluses.**

- (i) Project Benefits Shortfalls. If an Annual Project Benefits Shortfall occurs for any one year of the Guarantee Term, Contractor shall, at its discretion and in any combination, (a) set off the amount of such shortfall against any unpaid balance Customer then owes to Contractor, (b) where permitted by applicable law, increase the next year's amount of Annual Project Benefits by the amount of such shortfall, (c) pay to Customer the amount of such shortfall, or (d) subject to Customer's agreement, provide to Customer additional products or services, in the value of such shortfall, at no additional cost to Customer.\*
- (ii) Project Benefits Surpluses. . If an Annual Project Benefits Surplus occurs for any one year of the Guarantee Term, Contractor may, at its discretion, apply the amount of such surplus to set off any subsequent Annual Project Benefit Shortfall during the Guarantee Term.
- (iii) Additional Improvements. Where an Annual Project Benefits Shortfall has occurred, Contractor may, subject to Customer's approval (which approval shall not be unreasonably withheld, conditioned, or delayed), implement additional Improvement Measures, at no cost to Customer, which may generate additional Project Benefits in future years of the Guarantee Term.

\*In the event Contractor is providing an Assured Performance Guarantee under Appendix C, Annual Project Benefits Shortfalls and Annual Project Benefits Surpluses under Appendix C shall be reconciled against one another.

**II. NON-MEASURED PROJECT BENEFITS**

Source of Non-Measured Project Benefits	First Year Utility Avoidance	First Year Major Maintenance Deferred Cost & Maintenance Operations Cost Avoidance	Total Avoidance
Major Maintenance Deferred Cost Avoidance **	\$0	\$1,536,550	\$1,536,550
Maintenance Operations Cost Avoidance**	\$0	\$363,596	\$363,596
<b>Total Non-Measured First Year Avoidance</b>	<b>\$0</b>	<b>\$1,900,146</b>	<b>\$1,900,146</b>

*Customer has furnished the foregoing information to Contractor, which information forms the basis of the Non-Measured Project Benefits. Customer agrees that the Non-Measured Project Benefits are reasonable and that the installation of the Improvement Measures will enable Customer to take actions that will result in the achievement of such Non-Measured Project Benefits.*

**APPENDIX C**

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX

**III. MEASUREMENT AND VERIFICATION METHODOLOGIES**

*The following is a brief overview of the measurement and verification methodologies applicable to the Improvement Measures set forth below. Contractor shall apply these methodologies, as more fully detailed in the guidelines and standards of the International Measurement and Verification Protocol (IPMVP), in connection with the provision of M&V Services hereunder.*

**M&V Options Summary**

MPS FIM ID *	MPS FIM Description	M&V Option **				
		A	B	C	D	Non-Measured
<b>HVAC</b>						
XXX-F-HP	Heating Plant Upgrade/Replacement		X			
XXX-F-CU	Coils & Unit Ventilators Upgrade/Replacement			X		
XXX-F-AHU	AHU & Dampers Upgrade/Replacement		X			
XXX-F-EMS	Energy Management System			X		
XXX-F-TAB	Test, Adjust, and Air Balance			X		
<b>Lighting</b>						
XXX-F-LCORR	Corridor Upgrade/Replacement	X				
XXX-F-LAUD	Auditorium Upgrade/Replacement	X				
XXX-F-LGYM	Gym Upgrade/Replacement	X				
XXX-F-LGDF	Gym Destratification Fans			X		
XXX-F-LCLAS	Classroom Upgrade/Replacement	X				
XXX-F-LEXT	Exterior Upgrade/Replacement	X				
<b>Plumbing</b>						
XXX-F-PFIX	Plumbing Fixtures Upgrade/Replacement			X		
<b>Building Envelope</b>						
XXX-F-WIND	Window Upgrade/Replacement			X		
XXX-F-ROOF	Roof Upgrade/Replacement			X		
XXX-F-DOOR	Door Upgrade/Replacement			X		

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**Option A  
 Retrofit Isolation: Key Parameter Measurement**

Measured Project Benefits are determined by partial field measurement of the energy use of the system(s) to which an Improvement Measure was applied separate from the energy use of the rest of the facility.

Partial measurement means that some but not all parameters will be measured. Careful review of the design and installation of Improvement Measures is intended to demonstrate that the stipulated values fairly represent the probable actual values. Agreed-upon values will be shown in the measurement and verification plan. Engineering calculations using measurements and stipulations are used to calculate Measured Project Benefits for the duration of the Guarantee Term.

Measured Project Benefits from the following Improvement Measures will be calculated using Option A:

<b>MPS FIM ID</b>	<b>Source of Measured Benefit</b>	<b>M&amp;V Option (Electric)</b>	<b>First Year Utility Avoidance</b>
003-F-LCORR	Corridor Upgrade/Replacement	A	\$2,658
003-F-LAUDIT	Auditorium Upgrade/Replacement	A	\$9,554
012-F-LCORR	Corridor Upgrade/Replacement	A	\$5,077
012-F-LGYM	Gym Upgrade/Replacement	A	\$938
012-F-LCAFE	Cafeteria Upgrade/Replacement	A	\$1,284
016-F-LCORR	Corridor Upgrade/Replacement	A	\$6,405
016-F-LAUDIT	Auditorium Upgrade/Replacement	A	\$480
016-F-LGYM	Gym Upgrade/Replacement	A	\$514
016-F-LGDF	Gym Destratification Fans	A	-\$102
016-F-LCAFE	Cafeteria Upgrade/Replacement	A	\$1,756
018-F-LCORR	Corridor Upgrade/Replacement	A	\$8,611
018-F-LGYM	Gym Upgrade/Replacement	A	\$100
018-F-LCAFE	Cafeteria Upgrade/Replacement	A	\$2,237
020-F-LCORR	Corridor Upgrade/Replacement	A	\$4,279
020-F-LAUDIT	Auditorium Upgrade/Replacement	A	\$331
020-F-LGYM	Gym Upgrade/Replacement	A	\$973
020-F-LGDF	Gym Destratification Fans	A	-\$81
020-F-LCAFE	Cafeteria Upgrade/Replacement	A	\$3,454
022-F-LCORR	Corridor Upgrade/Replacement	A	\$7,470
022-F-LAUD	Auditorium Upgrade/Replacement	A	\$1,494
022-F-LCLAS	Classroom Upgrade/Replacement	A	\$17,928
022-F-LEXT	Exterior Upgrade/Replacement	A	\$2,989
024-F-LCORR	Corridor Upgrade/Replacement	A	\$28,419
024-F-LGYM	Gym Upgrade/Replacement	A	\$4,289
024-F-LGDF	Gym Destratification Fans	A	\$910
026-F-LCORR	Corridor Upgrade/Replacement	A	\$5,963

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026-F-LAUDIT	Auditorium Upgrade/Replacement	A	\$666
026-F-LGYM	Gym Upgrade/Replacement	A	\$1,990
026-F-LGDF	Gym Destratification Fans	A	-\$117
026-F-LCAFE	Cafeteria Upgrade/Replacement	A	\$2,926
028-F-LCORR	Corridor Upgrade/Replacement	A	\$774
028-F-LGYM	Gym Upgrade/Replacement	A	\$600
028-F-LGDF	Gym Destratification Fans	A	\$49
029-F-LCORR	Corridor Upgrade/Replacement	A	\$6,990
029-F-LGYM	Gym Upgrade/Replacement	A	\$2,040
029-F-LGDF	Gym Destratification Fans	A	-\$122
032-F-LCORR	Corridor Upgrade/Replacement	A	\$7,165
032-F-LCAFE	Cafeteria Upgrade/Replacement	A	\$1,691
035-F-LCORR	Corridor Upgrade/Replacement	A	\$9,710
035-F-LAUDIT	Auditorium Upgrade/Replacement	A	\$70
035-F-LGYM	Gym Upgrade/Replacement	A	\$715
035-F-LGDF	Gym Destratification Fans	A	-\$55
035-F-LCAFE	Cafeteria Upgrade/Replacement	A	\$3,474
041-F-LCORR	Corridor Upgrade/Replacement	A	\$3,258
041-F-LAUDIT	Auditorium Upgrade/Replacement	A	\$268
041-F-LGYM	Gym Upgrade/Replacement	A	\$1,277
041-F-LGDF	Gym Destratification Fans	A	-\$62
041-F-LCAFE	Cafeteria Upgrade/Replacement	A	\$1,788
044-F-LCORR	Corridor Upgrade/Replacement	A	\$5,923
044-F-LAUDIT	Auditorium Upgrade/Replacement	A	\$346
044-F-LGYM	Gym Upgrade/Replacement	A	\$737
049-F-LCORR	Corridor Upgrade/Replacement	A	\$13,264
049-F-LAUDIT	Auditorium Upgrade/Replacement	A	\$13,061
049-F-LGYM	Gym Upgrade/Replacement	A	\$381
049-F-LGDF	Gym Destratification Fans	A	-\$53
049-F-LCLAS	Classroom Upgrade/Replacement	A	\$11,721
049-F-LEXT	Exterior Upgrade/Replacement	A	\$1,404
055-F-LCORR	Corridor Upgrade/Replacement	A	\$3,927
055-F-LGYM	Gym Upgrade/Replacement	A	\$1,271
055-F-LGDF	Gym Destratification Fans	A	-\$63
055-F-LCAFE	Cafeteria Upgrade/Replacement	A	\$1,003
059-F-LCORR	Corridor Upgrade/Replacement	A	\$6,206
059-F-LAUDIT	Auditorium Upgrade/Replacement	A	\$66
059-F-LGYM	Gym Upgrade/Replacement	A	\$821

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059-F-LGDF	Gym Destratification Fans	A	-\$48
062-F-LCORR	Corridor Upgrade/Replacement	A	\$3,235
062-F-LAUDIT	Auditorium Upgrade/Replacement	A	\$94
093-F-LCORR	Corridor Upgrade/Replacement	A	\$3,103
093-F-LGYM	Gym Upgrade/Replacement	A	\$328
093-F-LCLAS	Classroom Upgrade/Replacement	A	\$31,886
093-F-LEXT	Exterior Upgrade/Replacement	A	\$694
<b>Total Measured Project Benefits - Option A</b>			<b>\$263,909</b>

The energy calculation was supplied by MPS. The energy savings is agreed to be reasonable and achievable by both parties. A calculation or verification will be done to prove savings by using either the calculation provided by MPS or using the Trane TRACE 700 implemented input/output reports compared to the existing prior to implementation input/output reports. A visual site inspection of the equipment and review of the final close out documentation will be done to confirm operation and adjust final calculations and/or simulation.

**Savings Summary**

Project Benefit	kWh			Savings
	Baseline	Proposed	Savings	
Total Measured Project Benefits - Option A	62,298,143	58,634,661	3,663,482	\$263,909
Calculated Total	62,298,143	58,634,661	3,663,482	\$263,909
<b>Guaranteed Total</b>	<b>62,298,143</b>	<b>58,634,661</b>	<b>3,663,482</b>	<b>\$263,909</b>

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Purchase Requisition Number: XXXXX  
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**Option B  
 Retrofit Isolation**

Measured Project Benefits are determined by field measurement of the energy use of the systems to which an Improvement Measure was applied separate from the energy use of the rest of the facility. Short-term, long-term or continuous measurements are taken throughout the pre and post-retrofit periods. Engineering calculations using short term, long-term or continuous pre and post-retrofit measurements are used to calculate the Measured Project Benefits for the duration of the Guarantee Term.

Measured Project Benefits from the following Improvement Measures will be calculated using Option B:

<b>MPS FIM ID</b>	<b>Source of Measured Benefit</b>	<b>M&amp;V Option (Electric &amp; Gas)</b>	<b>First Year Utility Avoidance</b>
022-F-HP	Heating Plant Upgrade/Replacement	B	\$19,926
022-F-AHU	AHU & Dampers Upgrade/Replacement	B	\$1,772
049-F-AHU	AHU & Dampers Upgrade/Replacement	B	\$0
093-F-HP	Heating Plant Upgrade/Replacement	B	\$10,419
093-F-AHU	AHU & Dampers Upgrade/Replacement	B	\$1,772
<b>Total Measured Project Benefits - Option B</b>			<b>\$33,889</b>

**Savings Summary**

<b>Project Benefit</b>	<b>Savings</b>
Total Measured Project Benefits - Option B	\$33,889
Calculated Total	\$33,889
<b>Guaranteed Total</b>	<b>\$33,889</b>

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**Option C  
 Whole Facility**

Option C involves use of utility meters or whole building sub-meters to assess the energy performance of a total building. Option C assesses the impact of any type of Improvement Measure, but not individually if more than one is applied to an energy meter. This option determines the collective Measured Project Benefits of all Improvement Measures applied to the part of the facility monitored by the energy meter. Also, since whole building meters are used, Measured Project Benefits reported under Option C include the impact of any other change made in facility energy use (positive or negative).

Measured Project Benefits from the following Improvement Measures will be calculated using Option C:

<b>MPS FIM ID</b>	<b>Source of Measured Benefit</b>	<b>Electric &amp; Gas M&amp;V Option</b>	<b>First Year Utility Avoidance</b>
022-F-CU	Coils & Univents Upgrade/Replacement	C	\$4,586
022-F-EMS	Energy Management System	C	\$8799
022-F-TAB	Test, Adjust, and Air Balance	C	\$14,519
022-F-PFIX	Plumbing Fixtures Upgrade/Replacement	C	\$3,341
022-F-WIND	Window Upgrade/Replacement	C	\$12,875
022-F-DOOR	Door Upgrade/Replacement	C	\$1,672
049-F-CU	Coils & Univents Upgrade/Replacement	C	\$0
049-F-EMS	Energy Management System	C	\$14,089
049-F-TAB	Test, Adjust, and Air Balance	C	\$0
093-F-CU	Coils & Univents Upgrade/Replacement	C	\$0
093-F-EMS	Energy Management System	C	\$3,426
093-F-TAB	Test, Adjust, and Air Balance	C	\$0
093-F-PFIX	Plumbing Fixtures Upgrade/Replacement	C	\$353
093-F-WIND	Window Upgrade/Replacement	C	\$753
093-F-DOOR	Door Upgrade/Replacement	C	\$18
<b>Total Measured Project Benefits - Option C</b>			<b>\$64,431</b>

**Savings Summary**

<b>Project Benefit</b>	<b>Savings</b>
Total Measured Project Benefits - Option C	\$64,431
Calculated Total	\$64,431
<b>Guaranteed Total</b>	<b>\$64,434</b>



**Calculation of Base Line and Utility Savings**

**A. Objectives**

In order to accurately assess the effectiveness of a performance contract, it is necessary to be able to make comparisons of pre-retrofit and post-retrofit conditions under similar terms. To do this, Base Lines are established to document pre-retrofit conditions and serve as the basis for post-retrofit analysis. For the purpose of this appendix “Baseline” is defined as a specific period of time and any data, used for, or resulting from, the analysis of that period.

The following methodology will be used to calculate unit savings:

- a. The program applies baseline data for the specified “tuning period” to the regression calculation detailed in 1(c) or 1(d).
- b. The program attempts to establish a relationship between utility consumption or demand and the independent variable(s) (e.g. HDD, CDD, User defined1, etc.). Coefficient(s) of consumption per unit will be tuned and documented for variables where such a relationship can be established and will be included as a part of this agreement as Appendix C Exhibit A.
- c. During the post retrofit period the pre-retrofit coefficients and the post retrofit variable data are applied to the regression calculation to adjust for differences in conditions. This projects an adjusted baseline which represents what would have been consumed had no facility improvement measures been implemented.
- d. The units saved are equal to this adjusted baseline minus the actual consumption for the billing period. The adjusted baseline referred to in this document is equivalent to the “baseline scenario” used in either the calculation provided by MPS or by using the Trane TRACE 700 software program. The regression analysis methodology used in this agreement is capable of making adjustments for changes in base load, heating degree days, cooling degree-days, and up to three other variables. The inclusion of any variables will be mutually agreed upon by Contractor and the Customer and supported by regression analysis documentation. In addition, some consumption may be allocated to tuning period modifications if any are defined.

**B. Application of Regression Analysis Calculation**

**1. Definitions**

(a) **Base Line** - The Base Line(s) shown on Appendix C, Exhibit A illustrates the relationship(s) of each utility consumption to independent variables during a representative pre-retrofit tuning period. The Base Line is determined by utilizing the Regression Analysis Calculations defined in sections 1(c) and 1(d) and documented on Appendix C, Exhibit A.

(b) **Adjusted Base Line** - The Adjusted Base Line(s) estimates post-retrofit utility consumption using the same Regression Analysis Calculation as shown on Appendix C, Exhibit A plus any modifications (as described in section 2(c)). The Adjusted Base Line represents an estimate of utility consumption had no Facility Improvement Measures been implemented.

(c) **Regression Analysis Calculation** - Regression Analysis is the means by which the relationship(s) between utility consumption and other variables is determined.

The inputs and outputs to the equation vary depending on whether the equation is being applied to the pre-retrofit tuning period or the post retrofit tracking period. Once the coefficients B,  $D_H$ ,  $D_C$ ,  $D_1$ ,  $D_2$ ,  $D_3$  and the base temperatures  $T_{B_H}$ ,  $T_{B_C}$  have been obtained by regression, they remain fixed and are used to derive adjusted meter consumption for all future time periods.

$$E = B * \Delta t + D_H * HDD(T_{B_H}) + D_C * CDD(T_{B_C}) + D_1 * U_1 + D_2 * U_2 + D_3 * U_3$$

where:

- E = Adjusted Base Line Consumption throughput through meter. During the post retrofit period this value represents what the consumption would have been under current conditions (weather, etc.) had no Facility Improvement Measures (FIMs) been implemented.
- B = Base load consumption per unit of time (Utility Units/day), that part of the meter consumption that is independent of (cannot be correlated to) any of the independent variables, including the degree-days. This consumption will be present no matter what the weather conditions or other independent variables are. This fixed value, dependent only on the number of days in the period being evaluated, is determined when defining the Base Line.
- $\Delta t$  = Time interval (days) in analysis period.
- $D_H, D_C$  = Coefficients for Heating and Cooling Degree-days (Utility units/deg-day). These fixed values, which are determined when defining the Base Line, define the sensitivity of consumption to changes in weather.
- HDD, CDD = Heating and Cooling degree-days (°F-day or °C-day) for the period being analyzed;
- $T_{B_H}, T_{B_C}$  = Heating and Cooling degree-day base (or balance point) temperatures (°F or °C) upon which the HDD and CDD values are derived. These balance point temperatures represent the outdoor air temperature at which utility consumption or demand begins to react to any further change in outdoor temperature. When outdoor air temperature is equal to balance point temperature heat loss = heat gain.
- DI = Coefficients for user defined variable I (I=1,2,3 for any one meter). These coefficients (or relationships) are determined when defining the Base Line.
- UI = Value of independent user variable I (I=1,2,3 for any one meter) for the period being analyzed. A maximum of three optional user defined variables (e.g., occupancy hours, production rates, square footage) can be included in the fit to any one meter.

(d) **Regression Analysis Calculation for Demand** - The system program treats demand differently than consumption since demand is an instantaneous value and consumption is a value totaled over time. As can be seen in the following calculation demand, is not dependent on the number of days in the billing period. Rather, demand is a function of a fixed base load component and a variable component which is sensitive to changes in the independent variables. Instead of cumulative degree-days, the regression calculation for demand uses the average temperature difference between the balance point temperature and the average daily temperature. The average temperature difference is calculated by dividing the total DD in the billing period by the # of days in the period as shown in the

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following equation. The units for the heating and cooling coefficients are kW per DD per day. The equation shows kW as the demand unit but any appropriate demand unit may be used.

$$kW_{base} = Offset\_Coefficient + DD\_Coefficient \times \left( \frac{DD_{per}}{\#Days_{per}} \right)$$

where  $kW_{base}$  = kW for the baseline scenario for the current bill period (per)  
 Offset\_Coefficient = the demand value that is not associated to weather  
 DD\_Coefficient = relationship of demand to weather (e.g. kW/DD)  
 DD(per) = degree days for the current bill period (heating or cooling)  
 #Days(per) = number of days in the current bill period

**2. Base Line Calculations**

Following is a summary of how a Base Line is developed:

**2a. Select a Tuning Period** - The first step in developing a Base Line is to identify a pre-retrofit period of time that is representative of physical and operational conditions within the premises. This period of time is known as the Tuning Period.

**2b. Identify Relationships of Consumption to Independent Variables** - The Regression Analysis Calculation shown in section 1(c) or 1(d)) is then applied to each individual utility item during the selected Tuning Period against one or more independent variables. The resultant relationship(s) of utility consumption as a function of time, weather and other independent variable(s) is represented by the Regression Analysis Calculation as shown on Appendix C Exhibit A.

**2c. Modifications to the Base Line**

A modification is made up of a # of units to be applied, a time period to apply the units, and a description of why the modification is being applied.

(1) Annual Periodic Modifications. Annual Periodic Modifications are used to adjust the base line consumption for anomalies that occurred during the Tuning Period because of operational procedures or abnormal conditions that occurred. These “out of line” consumption periods cause the regression equation to over or under predict consumption. A modification helps to fit the equation’s predicted value to the actual value that occurred during the tuning period. Future consumption can be predicted with a high degree of confidence once the predicted and actual tuning period consumption is matched properly. Annual Periodic Modifications for the Project are identified on Appendix C, Exhibit A.

(2) Additional Modifications. During the term of the Agreement, it may also be necessary to make modifications to the base line, as a result of physical or operational changes within the premises that are beyond the agreed upon conditions as shown on Exhibit 5 of this schedule and as implied by the base line values of any independent user variable as defined in section B-1(c) and documented on Appendix C, Exhibit A.

**3. Utility Consumption Savings**

For each time period being evaluated, an Adjusted Base Line is calculated by performing the Regression Analysis and applying to it any necessary modifications. This Adjusted Base Line represents the utility consumption that would have occurred if the retrofits had not been implemented. Utility consumption savings is the difference between the Adjusted Base Line consumption and the actual post-retrofit consumption for the same period.

**4. Utility Cost Savings**

Utility cost savings is the result of applying the contract specified minimum utility unit costs to the utility units or the future commodity unit cost if greater than the minimum utility unit cost. The method of selecting unit costs is documented on Appendix C, Exhibit A and will be used throughout the term of the agreement to assign costs to the physical units. The following describes the four possible cost calculation methods:

1 - Single Rate - The “single utility rate” method uses the rate modeling capabilities of calculation or software program. This method applies the same rate to all of the scenarios within the program. The individual rate parameters are documented on Appendix C, Exhibit A.

2 - Multiple Rate - The “multiple utility rate” method also uses the rate modeling capabilities of calculation or software program. This method allows different rates to be attached to the scenarios within the calculation or

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software program. This method may be used if savings are expected from a Contractor initiated rate change. The individual rate parameters are documented on Appendix C, Exhibit A.

3 - Average Cost of Consumption and Average cost of Demand - The “average cost per unit” method allows the program to calculate savings using a simpler strategy. Dollar savings are equal to the physical unit difference between the baseline scenario and the actual scenario (units saved) multiplied by the appropriate unit cost. The appropriate unit cost is equal to the average unit cost for the current billing period or the minimum unit cost as defined on Appendix C, Exhibit A, whichever is greater.

4 - Average Cost of Consumption - The “average cost of consumption” blended method allows the program to calculate savings using the same strategy as the “average cost per unit” method shown above. The only differences being that the blended method only needs to track consumption and it combines the consumption and demand costs before calculating the average unit cost. The appropriate unit cost is equal to the average blended unit cost for the current billing period or the minimum unit cost as defined on Appendix C, Exhibit A, whichever is greater.

Total dollar savings is the sum of the utility cost savings from each utility type plus any other savings as identified in attachment(s).

### 5. Miscellaneous Adjustments

**5a.** The various obligations and commitments undertaken by Contractor in this Performance Contract are based in part on the assumption that Customer's Facilities are and will remain in full compliance with all applicable building codes, all equipment of Customer will be maintained in proper operating condition, and all equipment of the Customer will be operated in accordance with the terms of this Agreement. In the event Contractor determines or becomes aware that building codes are not being adhered to or that the Customer's equipment is not being maintained in proper operating condition or that the Customer's equipment is not being operated in accordance with Exhibit 5, Contractor shall be entitled to make such adjustments as may be necessary to the calculations used to determine energy savings in order to reflect the effects of non-compliance with building codes and/or improper operating condition of Customer's equipment.

**5b.** The services performed and equipment provided by Contractor under this Performance Contract are intended to operate and be used as a total package to achieve optimum energy efficiency for Customer under this Performance Contract. In the event Customer disables, disconnects, or otherwise ceases to use or overrides any or all service(s) or Equipment provided by Contractor under this Performance Contract, Contractor shall be entitled to make such adjustments as may be necessary to the calculations used to determine energy savings in order to reflect the effects of such action by Customer.

**5c.** Customer and Contractor acknowledge that the method of billing used by the applicable utility providing the energy source may be modified or subject to variation during the term of this Performance Contract. In such event, the calculations used to determine energy savings shall be subject to such adjustments as necessary to equate the modified or varied method of billing to the method in effect at the time the relevant billing variables were incorporated into this Performance Contract.

**CHANGES IN USE OR CONDITION; ADJUSTMENT TO BASELINE  
AND/OR ANNUAL PROJECT BENEFITS**

MPS agrees to notify Contractor, within fourteen (14) days, of (i) any actual or intended change, whether before or during the Guarantee Term, in the use of any facility, equipment, or Improvement Measure to which this Appendix applies; (ii) any proposed or actual expansions or additions to the premises or any building or facility at the premises; (iii) a change to utility services to all or any portion of the premises; or (iv) any other change or condition arising before or during the Guarantee Term that reasonably could be expected to change the amount of Project Benefits realized under this Contract.

Such a change, expansion, addition, or condition would include, but is not limited to: (a) changes in the primary use of any facility, Improvement Measure, or portion of the premises; (b) changes to the hours of operation of any facility, Improvement Measure, or portion of the premises; (c) changes or modifications to the Improvement Measures or any related equipment; (d) changes to the M&V Services provided under this Contract; (e) failure of any portion of the premises to meet building codes; (f) changes in utility suppliers, utility rates, method of utility billing, or method of utility purchasing; (g) insufficient or improper maintenance or unsound usage of the Improvement Measures or any related equipment at any facility or portion of the premises (other than by Contractor); (h) changes to the Improvement Measures or any related equipment or to any facility or portion of the premises required by building codes or any governmental or quasi-governmental entity; or (i) additions or deletions of Improvement Measures or any related equipment at any facility or portion of the premises.

Such a change or condition need not be identified in the Baseline in order to permit Contractor to make an adjustment to the Baseline and/or the Annual Project Benefits. If Contractor does not receive the notice within the time period specified above or travels to either MPS's location or the project site to determine the nature and scope of such changes, MPS agrees to pay Contractor, in addition to any other amounts due under this Contract, any applicable third party consulting charges incurred by Contractor that are attributable to the time it took to determine the changes and to make any adjustments and/or corrections to the project as a result of the changes, plus all reasonable and documented third party out-of-pocket expenses, including travel costs. Upon receipt of such notice, or if Contractor independently learns of any such change or condition, Contractor shall calculate and send to MPS a notice of adjustment to the Baseline and/or Annual Project Benefits to reflect the impact of such change or condition, and the adjustment shall become effective as of the date the change or condition first arose. Should MPS fail to promptly provide Contractor with notice of any such change or condition, Contractor may make reasonable estimates as to the impact of such change or condition and as to the date on which such change or condition first arose in calculating the impact of such change or condition, and such estimates shall be conclusive.

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**IV. BASELINE CALCULATIONS AND UTILITY RATES**

The unit utility costs for the Baseline period are set forth below as “Base Utility Cost” and shall be used for all calculations made under this Appendix.

Contractor was furnished with documentation prepared by MPS that provided electricity costs for the Baseline utilizing a blended rate (demand and energy cost integrated into one value). MPS acknowledges that the use of a blended \$/kWh electricity charge may not represent the actual savings achieved as compared to utilizing separate demand (\$/kW) and energy (\$/kWh) charges for a given improvement measure.

\*\*\*The utility rates reflected below for James Madison Academic Campus, Parkside Middle School, and Bruce Elementary School are the actual utility rates from the utility bills provided by MPS and were used to calculate savings in the Trace 700 energy modeling software for James Madison Academic Campus, Parkside Middle School, and Bruce Elementary.\*\*\*

**James Madison Academic Campus**

Annual Energy Consumption Profile					
Energy Type	Annual Energy Consumption	Equivalent MMBTU	Annual BTU/Sq.Ft.	% of Total	
Electricity (KWH)	2,225,984	7,595	25,066	30%	
Electricity (KW)	5,213	N.A.	N.A.	0%	
#2 Oil (GAL)	0	0	0		
Gas (Therms)	173,474	17,347	57,252	70%	
<b>Total</b>	<b>N.A.</b>	<b>24,942</b>	<b>82,318</b>	<b>100%</b>	

Annual Energy Cost Profile				
Energy Type	Annual Energy Costs	Average Cost/Unit	Annual Cost/Sq.Ft.	% of Total
Electricity (KWH)	\$140,141	\$0.063	\$0.72	43%
Electricity (KW)	\$69,371	\$13.307		21%
Oil (GAL)	\$0		\$0.00	
Gas (Therms)	\$105,463	\$0.608	\$0.35	33%
<b>Total</b>	<b>\$324,396</b>	<b>\$13.01</b>	<b>\$1.07</b>	<b>100%</b>

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**Parkside Middle school**

<b>Annual Energy Consumption Profile</b>				
<b>Energy Type</b>	<b>Annual Energy Consumption</b>	<b>Equivalent MMBTU</b>	<b>Annual BTU/Sq.Ft.</b>	<b>% of Total</b>
Electricity (KWH)	860,560	2,936	17,071	26%
Electricity (KW)	2,723	N.A.	N.A.	0%
#2 Oil (GAL)	0	0	0	
Gas (Therms)	83,964	8,396	48,816	74%
<b>Total</b>	<b>N.A.</b>	<b>11,333</b>	<b>65,887</b>	<b>100%</b>

<b>Annual Energy Cost Profile</b>				
<b>Energy Type</b>	<b>Annual Energy Costs</b>	<b>Average Cost/Unit</b>	<b>Annual Cost/Sq.Ft.</b>	<b>% of Total</b>
Electricity (KWH)	\$59,206	\$0.069	\$0.58	39%
Electricity (KW)	\$37,216	\$13.665		24%
Oil (GAL)	\$0		\$0.00	
Gas (Therms)	\$53,515	\$0.637	\$0.31	35%
<b>Total</b>	<b>\$153,056</b>	<b>\$13.51</b>	<b>\$0.89</b>	<b>100%</b>

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 Vendor Number: XXXXX

**Bruce Elementary School1**

<b>Annual Energy Consumption Profile</b>				
<b>Energy Type</b>	<b>Annual Energy Consumption</b>	<b>Equivalent MMBTU</b>	<b>Annual BTU/Sq.Ft.</b>	<b>% of Total</b>
Electricity (KWH)	312,140	1,065	20,552	25%
Electricity (KW)	965	N.A.	N.A.	0%
#2 Oil (GAL)	0	0	0	
Gas (Therms)	32,332	3,233	62,392	75%
<b>Total</b>	N.A.	4,298	82,945	100%

<b>Annual Energy Cost Profile</b>				
<b>Energy Type</b>	<b>Annual Energy Costs</b>	<b>Average Cost/Unit</b>	<b>Annual Cost/Sq.Ft.</b>	<b>% of Total</b>
Electricity (KWH)	\$33,359	\$0.107	\$0.76	54%
Electricity (KW)	\$6,587	\$6.826		11%
Oil (GAL)	\$0		\$0.00	
Gas (Therms)	\$21,938	\$0.679	\$0.42	36%
<b>Total</b>	<b>\$61,290</b>	<b>\$14.26</b>	<b>\$1.18</b>	<b>100%</b>

School	cost per KWH( blended)
JUNEAU H.S.	10 cents
BAY VIEW	10 cents
OBAMA	10 cents
HAMILTON	10 cents
KING	10 cents
PULASKI	10 cents
ALLIANCE	10 cents
RIVERSIDE	10 cents
SOUTH	10 cents
WASHINGTON	10 cents
AUDUBON M.S.	10 cents
WEDGEWOOD	10 cents
DOUGLAS	10 cents
ROOSEVELT	10 cents
FRENCH	10 cents



**APPENDIX C**

Purchase Requisition Number: XXXXX

Contract Number: XXXXX

Vendor Number: XXXXX

<b>Utility Type</b>	<b>Base Utility Cost</b>
James Madison HS Water	\$5.55/1000 gallons
Parkside Middle School Water	\$5.55/1000 gallons
Bruce Elementary School Water	\$5.55/1000 gallons

**Utility Baseline**

Utility	Building	Dollars	Units
Electric Consumption	James Madison Academic Campus	\$209,512(blended)	2,225,984 kWh
	Parkside Middle School	\$96,422(blended)	860,560 kWh
	Bruce Elementary School	\$55,297(blended)	312,140kWh
	<b>Sites Total</b>	<b>\$361,231</b>	<b>3,398,684kWh</b>
Natural Gas	James Madison Academic Campus	\$96,631	173,474 Therms
	Parkside Middle school	\$53,515	83,964 Therms
	Bruce Elementary School	\$21,938	32,332 Therms
	<b>Sites Total</b>	<b>\$172,084</b>	<b>289,730 Therms</b>
Water	James Madison Academic Campus	\$10,982	19,787 kGal.
	Parkside Middle school	\$3,028	5456 kGal.
	Bruce Elementary School	\$4,117	7418 kGal.
	<b>Sites Total</b>	<b>\$ 18,127</b>	<b>32,661 kGal.</b>

**APPENDIX C****V. PRIMARY OPERATIONS SCHEDULE PRE & POST RETROFIT****James Madison Academic Campus**

\*\*\* Pre-Retrofit Facility/Area HVAC schedule hours based off of actual run hours confirmed by site audit\*\*\*

Pre-Retrofit Facility/Area	HVAC	
	Time On	Time Off
Monday	6:00 am	9:00 pm
Tuesday	6:00 am	9:00 pm
Wednesday	6:00 am	9:00 pm
Thursday	6:00 am	9:00 pm
Friday	6:00 am	9:00 pm
Saturday	8 am	6 pm
Sunday	8 am	6 pm
Holidays	8 am	6 pm

Occupied Room Temperature During Heating Season: 70 to 70 degrees FUnoccupied Low Temperature Limit During Heating Season: \_\_\_\_\_ 70 degrees FHeating season is October to AprilOccupied Room Temperature During Cooling Season: 72 to \_\_\_\_\_ 72 degrees FUnoccupied High Temperature Limit During Cooling Season: \_\_\_\_\_ 72 degrees FCooling season is May to September

Post-Retrofit Facility/Area	HVAC	
	Time On	Time Off
Monday	6:30 am	3:30 pm
Tuesday	6:30 am	3:30 pm
Wednesday	6:30 am	3:30 pm
Thursday	6:30 am	3:30 pm
Friday	6:30 am	3:30 pm
Saturday	8 am	4 pm
Sunday	OFF	OFF
Holidays	OFF	OFF

Occupied Room Temperature During Heating Season: 70 to 68 degrees FUnoccupied Low Temperature Limit During Heating Season: \_\_\_\_\_ 60 degrees FHeating season is October to \_\_\_\_\_ AprilOccupied Room Temperature During Cooling Season: 74 to 76 degrees FUnoccupied High Temperature Limit During Cooling Season: 80 degrees FCooling season is May to September

**APPENDIX C**

**Bruce Elementary School**

\*\*\* Pre-Retrofit Facility/Area HVAC schedule hours based off of actual run hours confirmed by site audit\*\*\*

Pre-Retrofit Facility/Area	HVAC	
	Time On	Time Off
Monday	7:00 am	5:00 pm
Tuesday	7:00 am	5:00 pm
Wednesday	7:00 am	5:00 pm
Thursday	7:00 am	5:00 pm
Friday	7:00 am	5:00 pm
Saturday	OFF	OFF
Sunday	OFF	OFF
Holidays	OFF	OFF

Occupied Room Temperature During Heating Season: 70 to 70 degrees F  
 Unoccupied Low Temperature Limit During Heating Season: \_\_\_\_\_ 70 degrees F  
 Heating season is October to April  
 Occupied Room Temperature During Cooling Season: 72 to \_\_\_\_\_ 72 degrees F  
 Unoccupied High Temperature Limit During Cooling Season: \_\_\_\_\_ 72 degrees F  
 Cooling season is May to September

Post-Retrofit Facility/Area	HVAC	
	Time On	Time Off
Monday	6:30 am	3:30 pm
Tuesday	6:30 am	3:30 pm
Wednesday	6:30 am	3:30 pm
Thursday	6:30 am	3:30 pm
Friday	6:30 am	3:30 pm
Saturday	OFF	OFF
Sunday	OFF	OFF
Holidays	OFF	OFF

Occupied Room Temperature During Heating Season: 70 to 68 degrees F  
 Unoccupied Low Temperature Limit During Heating Season: \_\_\_\_\_ 60 degrees F  
 Heating season is October to \_\_\_\_\_ April  
 Occupied Room Temperature During Cooling Season: 74 to 76 degrees F  
 Unoccupied High Temperature Limit During Cooling Season: 80 degrees F  
 Cooling season is May to September

**APPENDIX C**

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX

**Parkside Middle School**

\*\*\* Pre-Retrofit Facility/Area HVAC schedule hours based off of actual run hours confirmed by site audit\*\*\*

Pre-Retrofit Facility/Area	HVAC	
	Time On	Time Off
Monday	7:00 am	5:00 pm
Tuesday	7:00 am	5:00 pm
Wednesday	7:00 am	5:00 pm
Thursday	7:00 am	5:00 pm
Friday	7:00 am	5:00 pm
Saturday	OFF	OFF
Sunday	OFF	OFF
Holidays	OFF	OFF

Occupied Room Temperature During Heating Season: 70 to 70 degrees F  
 Unoccupied Low Temperature Limit During Heating Season: \_\_\_\_\_ 70 degrees F  
 Heating season is October to April  
 Occupied Room Temperature During Cooling Season: 72 to \_\_\_\_\_ 72 degrees F  
 Unoccupied High Temperature Limit During Cooling Season: \_\_\_\_\_ 72 degrees F  
 Cooling season is May to September

Post-Retrofit Facility/Area	HVAC	
	Time On	Time Off
Monday	6:30 am	3:30 pm
Tuesday	6:30 am	3:30 pm
Wednesday	6:30 am	3:30 pm
Thursday	6:30 am	3:30 pm
Friday	6:30 am	3:30 pm
Saturday	OFF	OFF
Sunday	OFF	OFF
Holidays	OFF	OFF

Occupied Room Temperature During Heating Season: 70 to 68 degrees F  
 Unoccupied Low Temperature Limit During Heating Season: \_\_\_\_\_ 60 degrees F  
 Heating season is October to \_\_\_\_\_ April  
 Occupied Room Temperature During Cooling Season: 74 to 76 degrees F  
 Unoccupied High Temperature Limit During Cooling Season: 80 degrees F  
 Cooling season is May to September

**APPENDIX C**

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX

<b>MPS Bldg.</b>	<b>Description</b>	<b>Existing Burn Hours Assigned</b>	<b>Proposed Controlled Burn Hours &amp; Rooms w/ Existing Sensors</b>
All	Auditorium/Stage	3000	2160
All	Conference Room	3000	2160
All	Kitchen	3000	2160
All	Library	3000	2160
All	Cafeteria	3000	2160
All	Locker Room	3000	1584
All	Mechanical/Electrical Rooms	3000	2160
All	Open Office	3000	2160
All	Office Support (copy room, coffee room, etc.)	3000	2160
All	Private Office	3000	2160
All	Storage	3000	2160
All	Lavatory	3000	2160
All	Stadium	3000	1584
HS	Classroom	3000	2160
HS	Hallway	3000	2160
HS	Gymnasium	3000	1584
HS	Restroom	3000	2160
ES	Classroom	2000	2160
ES	Hallway	2000	2160
ES	Gymnasium	2000	1584
ES	Restroom	2000	2160

## VI. MEASUREMENT & VERIFICATION SERVICES

Contractor will provide the M&V Services set forth below in connection with the Assured Performance Guarantee.

1. During the Installation Period, a Contractor Performance Assurance Specialist will track Measured Project Benefits. Contractor will report the Measured Project Benefits achieved during the Installation Period, as well as any Non-Measured Project Benefits applicable to the Installation Period, to Customer within 60 days of the commencement of the Guarantee Term.
2. Within 60 days of each anniversary of the commencement of the Guarantee Term, Contractor will provide Customer with an annual report containing:
  - A. an executive overview of the project's performance and Project Benefits achieved to date;
  - B. a summary analysis of the Measured Project Benefits accounting; and
  - C. depending on the M&V Option, a detailed analysis of the Measured Project Benefits calculations.
3. During the Guarantee Term, a Contractor Performance Assurance Specialist will monitor the on-going performance of the Improvement Measures, as specified in this Agreement, to determine whether anticipated Measured Project Benefits are being achieved. In this regard, the Performance Assurance Specialist will periodically assist Customer, on-site or remotely, with respect to the following activities:
  - A. review of information furnished by Customer from the facility management system to confirm that control strategies are in place and functioning;
  - B. advise Customer's designated personnel of any performance deficiencies based on such information;
  - C. coordinate with Customer's designated personnel to address any performance deficiencies that affect the realization of Measured Project Benefits; and
  - D. inform Customer of opportunities to further enhance project performance and of opportunities for the implementation of additional Improvement Measures.
4. For specified Improvement Measures utilizing an "Option A" M&V protocol, Contractor will:
  - A. conduct pre and post installation measurements required under this Agreement;
  - B. confirm the building management system employs the control strategies and set points specified in this Agreement; and
  - C. analyze actual as-built information and adjust the Baseline and/or Measured Project Benefits to conform to actual installation conditions (e.g., final lighting and water benefits calculations will be determined from the as-built information to reflect the actual mix of retrofits encountered during installation).
5. For specified Improvement Measures utilizing an "Option B" M&V protocol, Contractor will:
  - A. confirm that the appropriate metering and data points required to track the variables associated with the applicable Improvement Measures' benefits calculation formulas are established; and
  - B. set up appropriate data capture systems (e.g., trend and totalization data on the facility management system) necessary to track and report Measured Project Benefits for the applicable Improvement Measure.
6. For specified Improvement Measures utilizing an "Option C" M&V protocol, Contractor will:
  - A. Within sixty (60) days of the implementation phase, establish a tuned baseline for the utility meters by utilizing statistical regression analysis to identify the relationships (if any) between historic utility performance and weather or other variables.
  - B. Enter monthly utility utilization and compare to baseline for cost avoidance results
  - C. Remote connect periodically via internet access to building systems management to verify and validate control strategies and set points specified in this agreement.
  - D. Analyze actual as-built information and adjust the Baseline and/or Measured Project Benefits to conform to actual installation conditions (e.g., final lighting and water benefits calculations will be determined from the as-built information to reflect the actual mix of retrofits encountered during installation).

## APPENDIX C

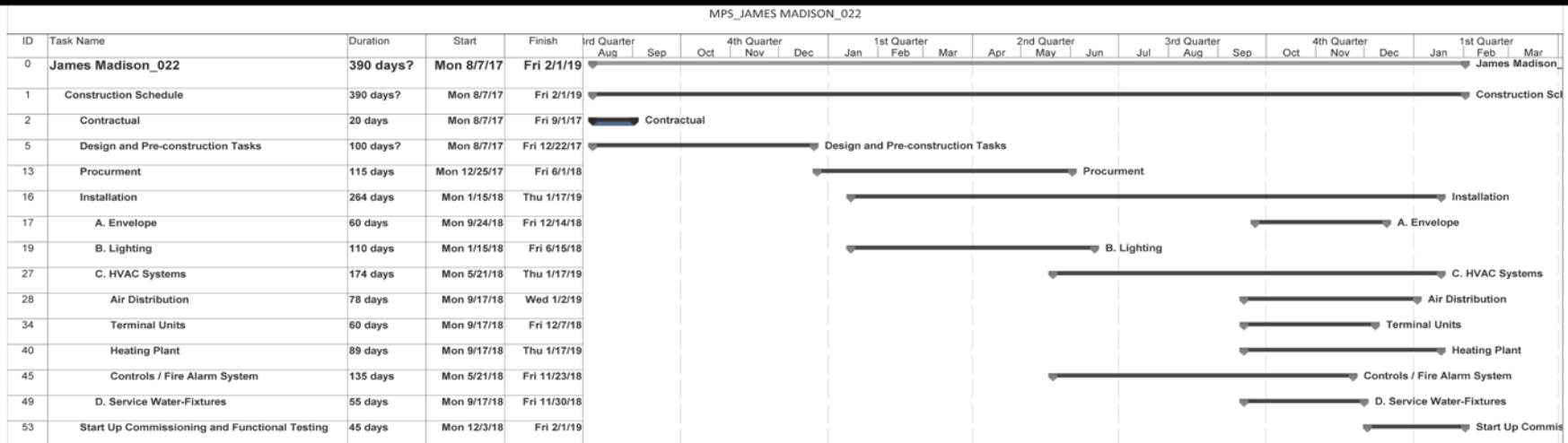
- E. Set up appropriate data capture systems (e.g., trend and totalization data on the facility management system) necessary to track and report Measured Project Benefits for the applicable Improvement Measure.
7. For specified Improvement Measures utilizing an “Option D” M&V protocol, Contractor will:
- A. Develop calibrated computer simulation models of the individual component or whole building energy consumption to determine measure energy cost avoidance.
  - B. Within twelve (12) months of the implementation phase, establish a tuned baseline for the utility meters by utilizing calibrated computer simulation models. Long-term whole building energy use data may be used to calibrate the simulation(s).
  - C. Perform spot, short-, or long-term measurements of system components; and whole building utility meter data.
  - D. Remote connect periodically via internet access to building systems management to verify and validate control strategies and set points specified in this agreement.
  - E. Analyze actual as-built information and adjust the Baseline and/or Measured Project Benefits to conform to actual installation conditions (e.g., final lighting and water benefits calculations will be determined from the as-built information to reflect the actual mix of retrofits encountered during installation).
  - F. Set up appropriate data capture systems (e.g., trend and totalization data on the facility management system) necessary to track and report Measured Project Benefits for the applicable Improvement Measure.

APPENDIX D

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX

APPENDIX D  
 PROJECT CONSTRUCTION SCHEDULE

Per Section 2 of the primary contract all schedules are tentative:  
 Attached hereto as **Appendix D** is the initial Construction Progress Schedule for the project (the “Progress Schedule”), which shall be updated by Contractor from time to time as the need arises during the Term for MPS’ approval.



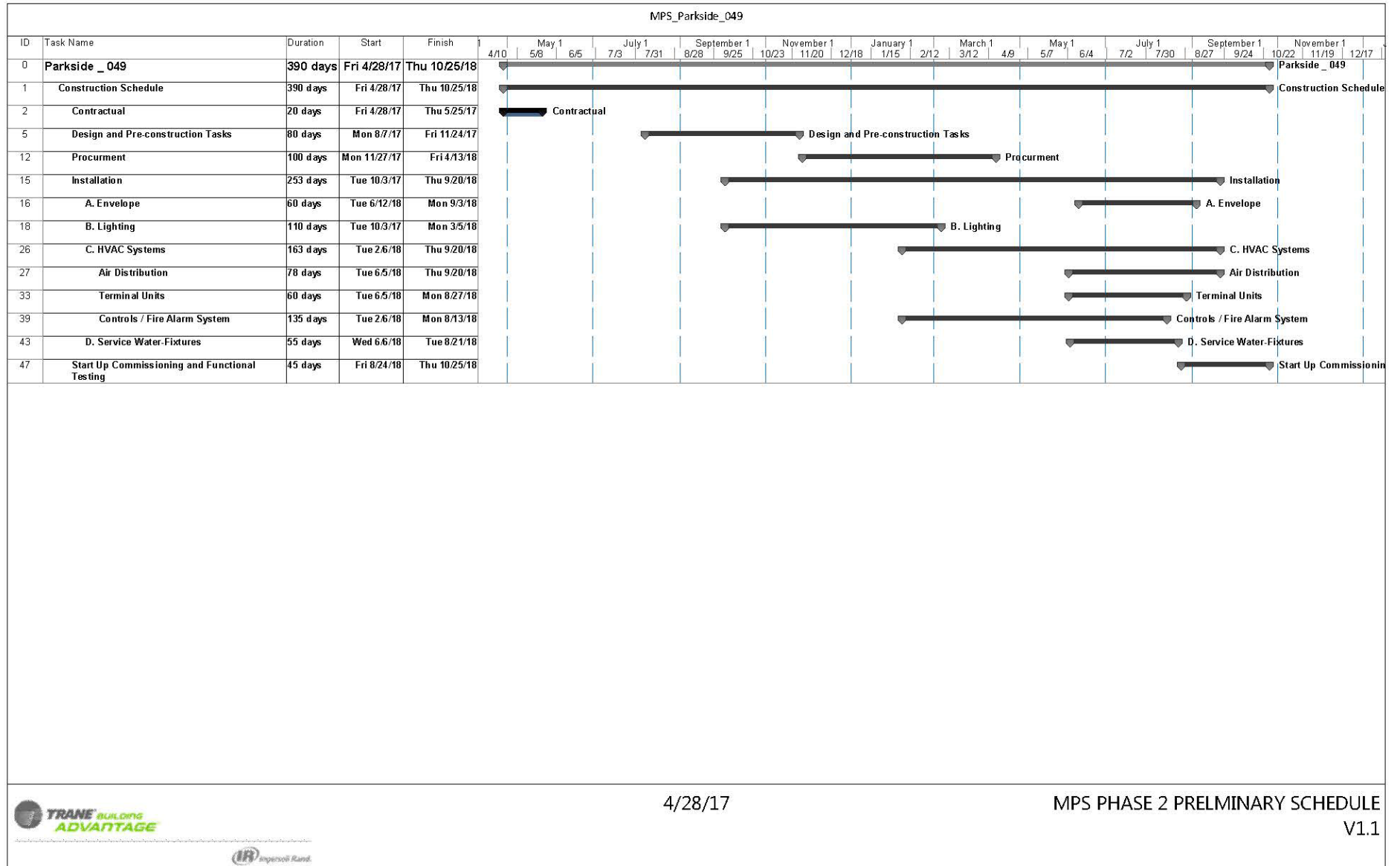
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MPS PHASE 2 PRELIMINARY SCHEDULE  
 V1.1



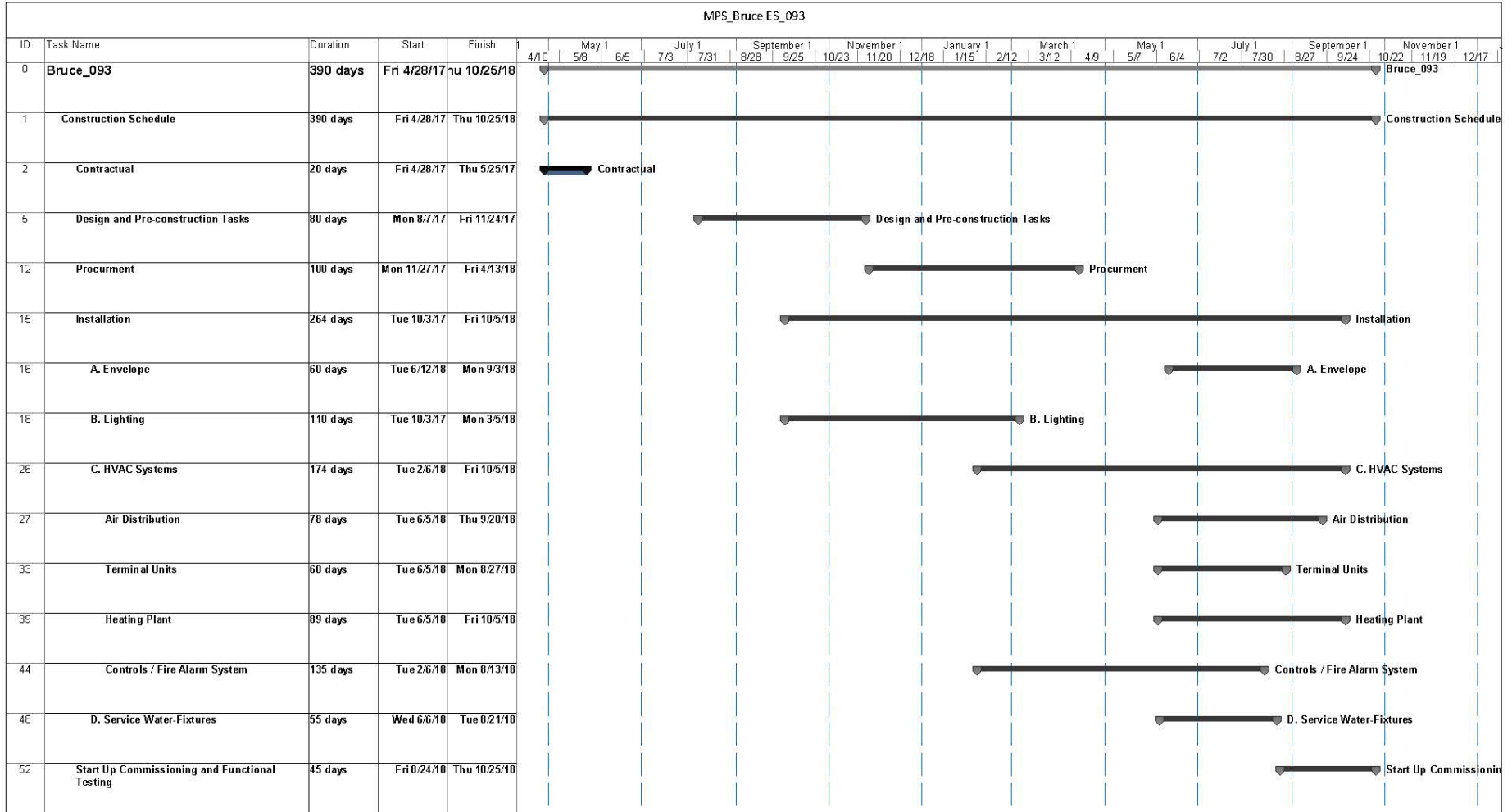
APPENDIX D

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX



**APPENDIX D**

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX



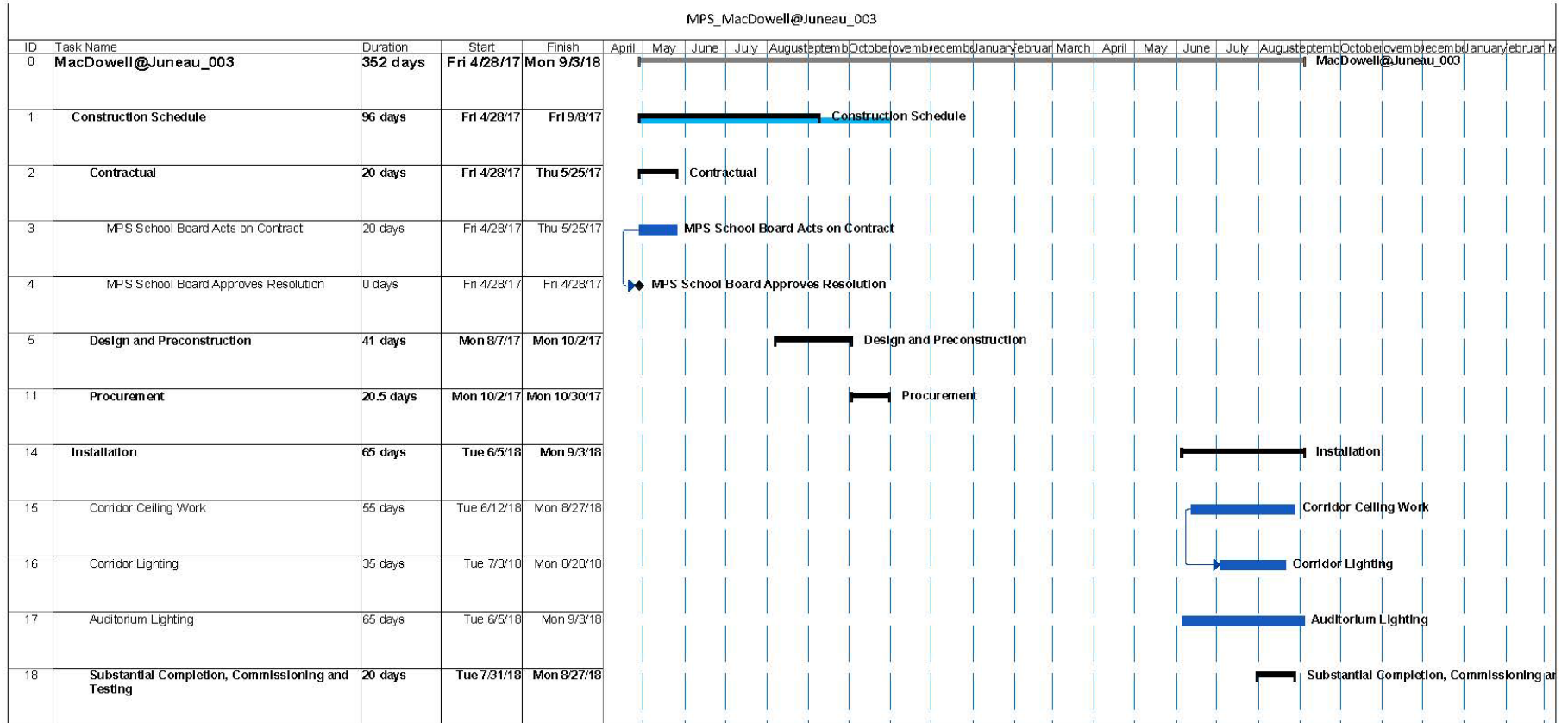
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MPS PHASE 2 PRELIMINARY SCHEDULE  
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**APPENDIX D**

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX



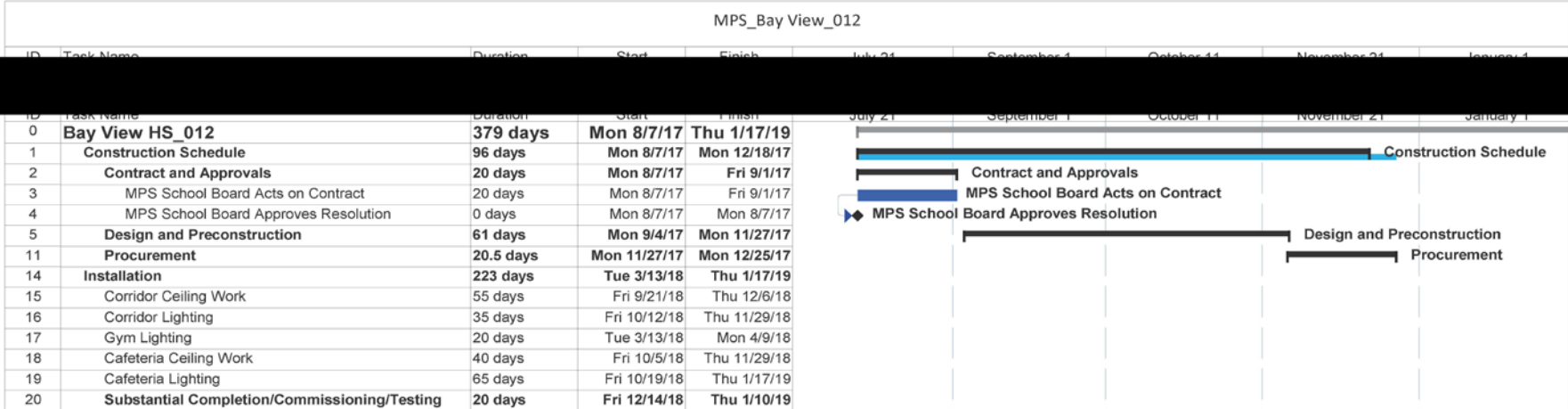
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MPS PHASE 2 PRELIMINARY SCHEDULE

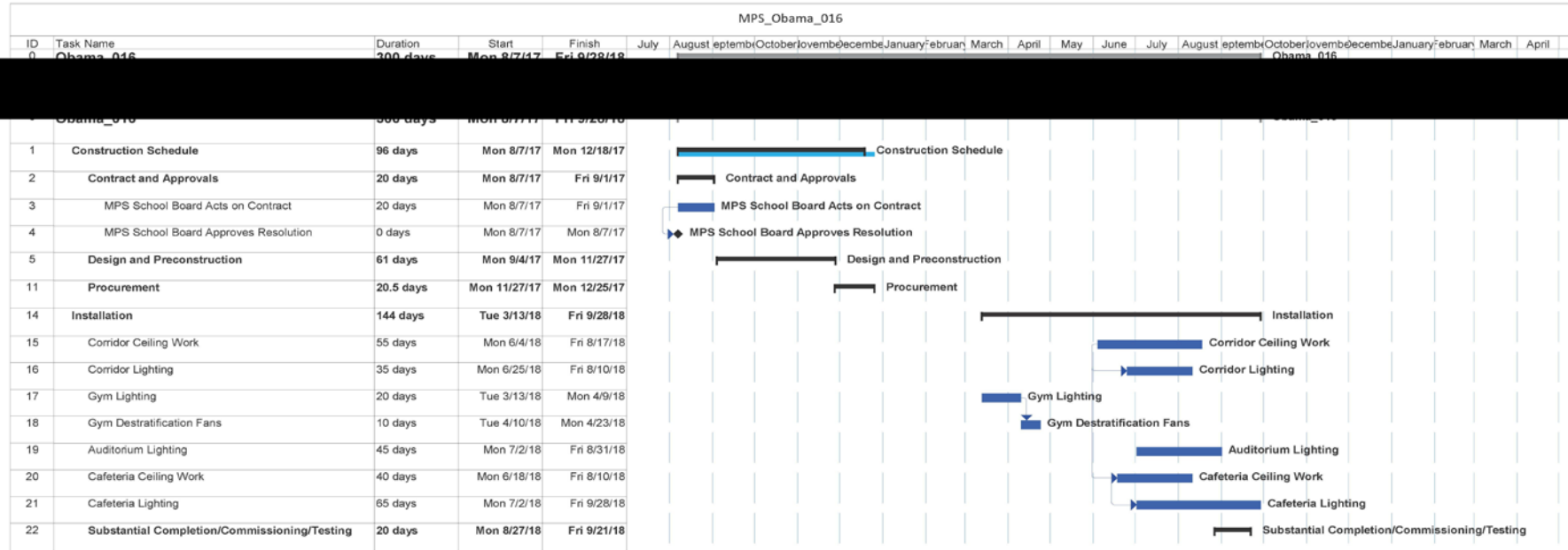
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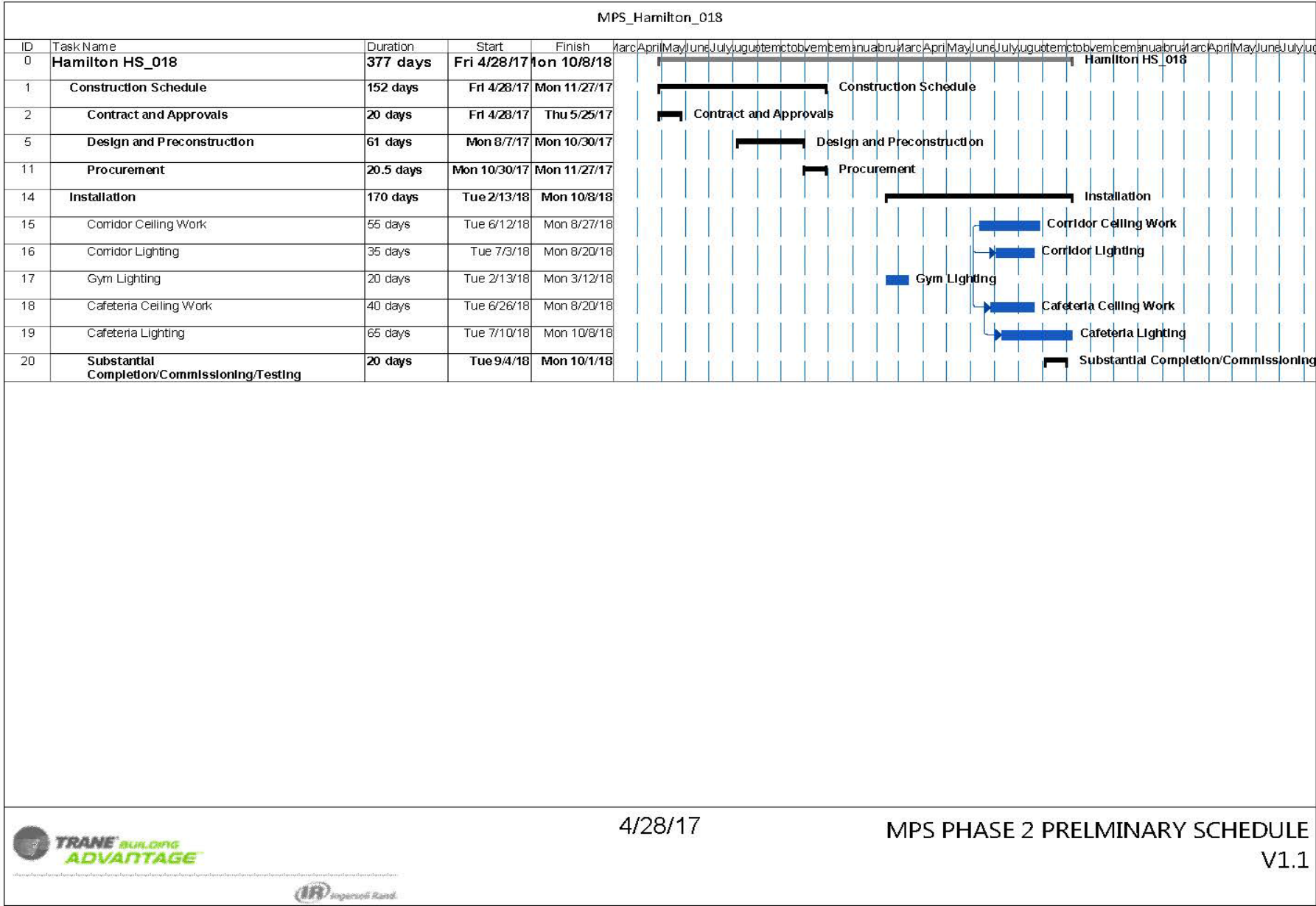
**APPENDIX D**



APPENDIX D



**APPENDIX D**



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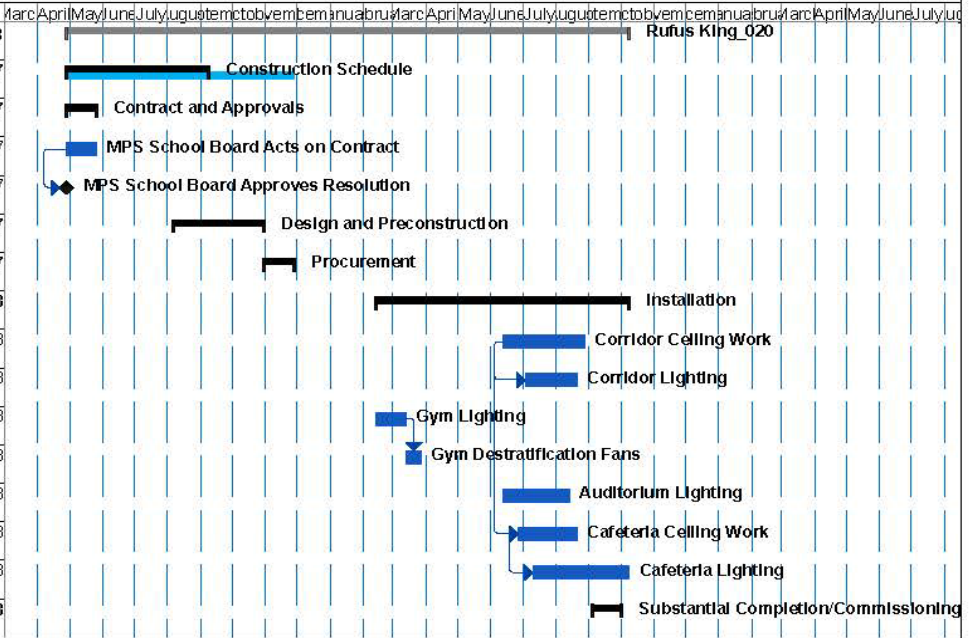
MPS PHASE 2 PRELIMINARY SCHEDULE  
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**APPENDIX D**

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX

MPS_Rufus King_020				
ID	Task Name	Duration	Start	Finish
0	<b>Rufus King_020</b>	<b>377 days</b>	<b>Fri 4/28/17</b>	<b>Mon 10/8/18</b>
1	<b>Construction Schedule</b>	<b>96 days</b>	<b>Fri 4/28/17</b>	<b>Fri 9/8/17</b>
2	<b>Contract and Approvals</b>	<b>20 days</b>	<b>Fri 4/28/17</b>	<b>Thu 5/25/17</b>
3	MPS School Board Acts on Contract	20 days	Fri 4/28/17	Thu 5/25/17
4	MPS School Board Approves Resolution	0 days	Fri 4/28/17	Fri 4/28/17
5	<b>Design and Preconstruction</b>	<b>61 days</b>	<b>Mon 8/7/17</b>	<b>Mon 10/30/17</b>
11	<b>Procurement</b>	<b>20.5 days</b>	<b>Mon 10/30/17</b>	<b>Mon 11/27/17</b>
14	<b>Installation</b>	<b>170 days</b>	<b>Tue 2/13/18</b>	<b>Mon 10/8/18</b>
15	Corridor Ceiling Work	55 days	Tue 6/12/18	Mon 8/27/18
16	Corridor Lighting	35 days	Tue 7/3/18	Mon 8/20/18
17	Gym Lighting	20 days	Tue 2/13/18	Mon 3/12/18
18	Gym Destratification Fans	10 days	Tue 3/13/18	Mon 3/26/18
19	Auditorium Lighting	45 days	Tue 6/12/18	Mon 8/13/18
20	Cafeteria Ceiling Work	40 days	Tue 6/26/18	Mon 8/20/18
21	Cafeteria Lighting	65 days	Tue 7/10/18	Mon 10/8/18
22	<b>Substantial Completion/Commissioning/Testing</b>	<b>20 days</b>	<b>Tue 9/4/18</b>	<b>Mon 10/1/18</b>

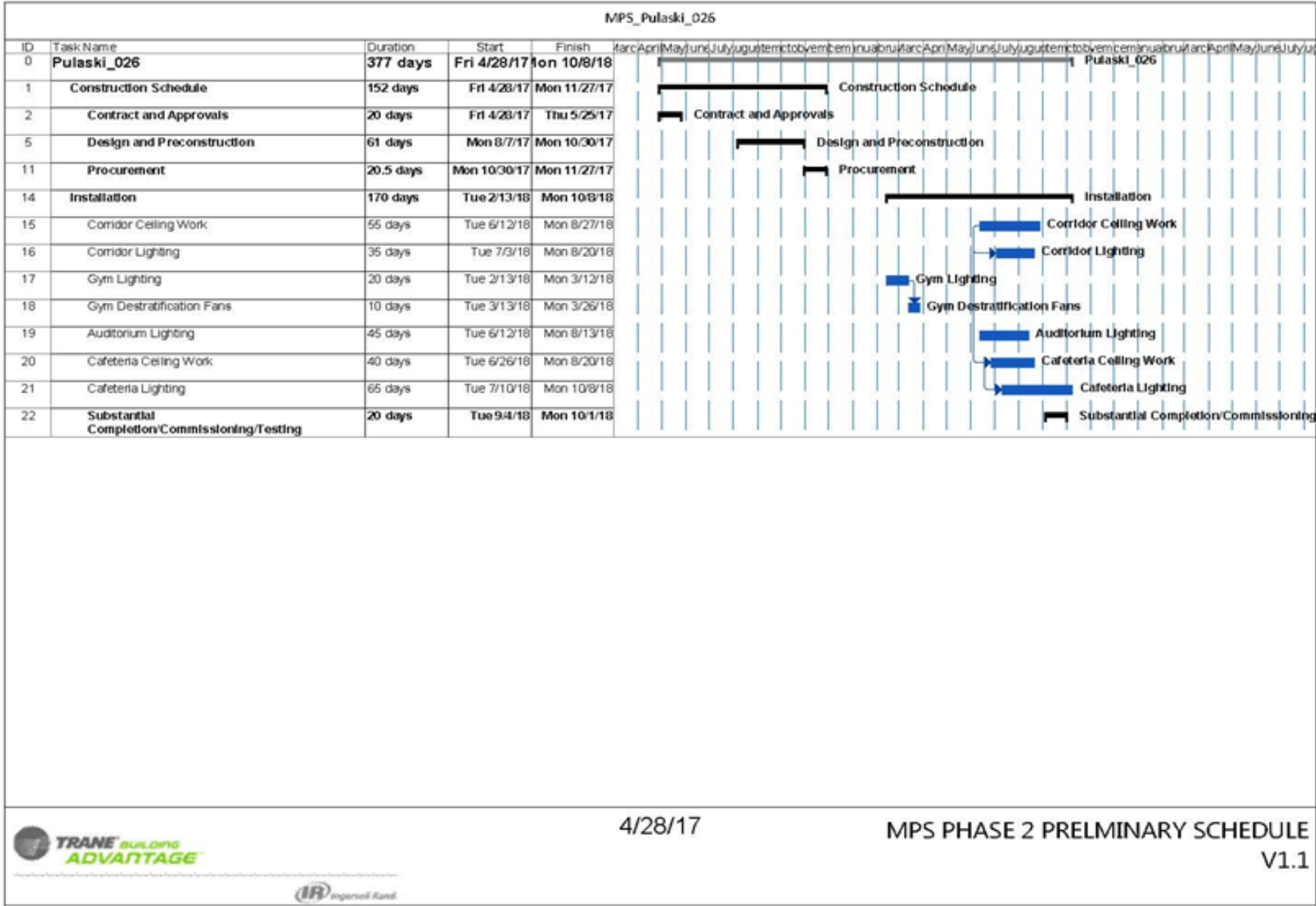


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MPS PHASE 2 PRELIMINARY SCHEDULE  
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APPENDIX D

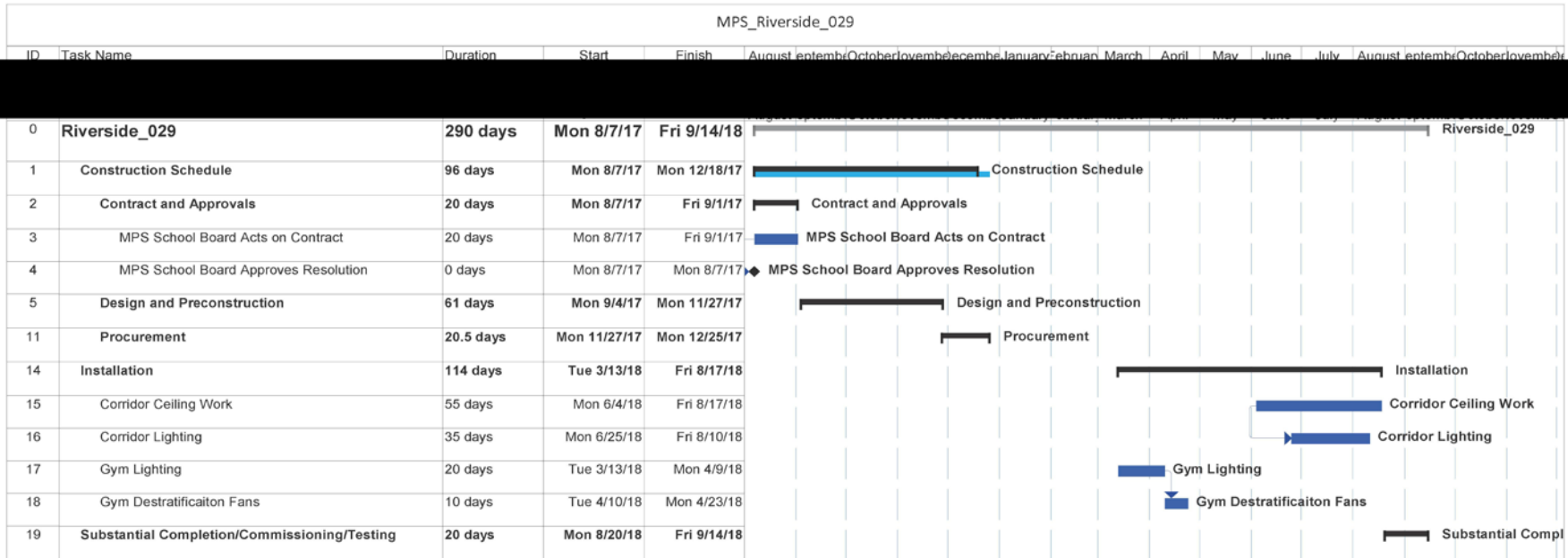






APPENDIX D

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX

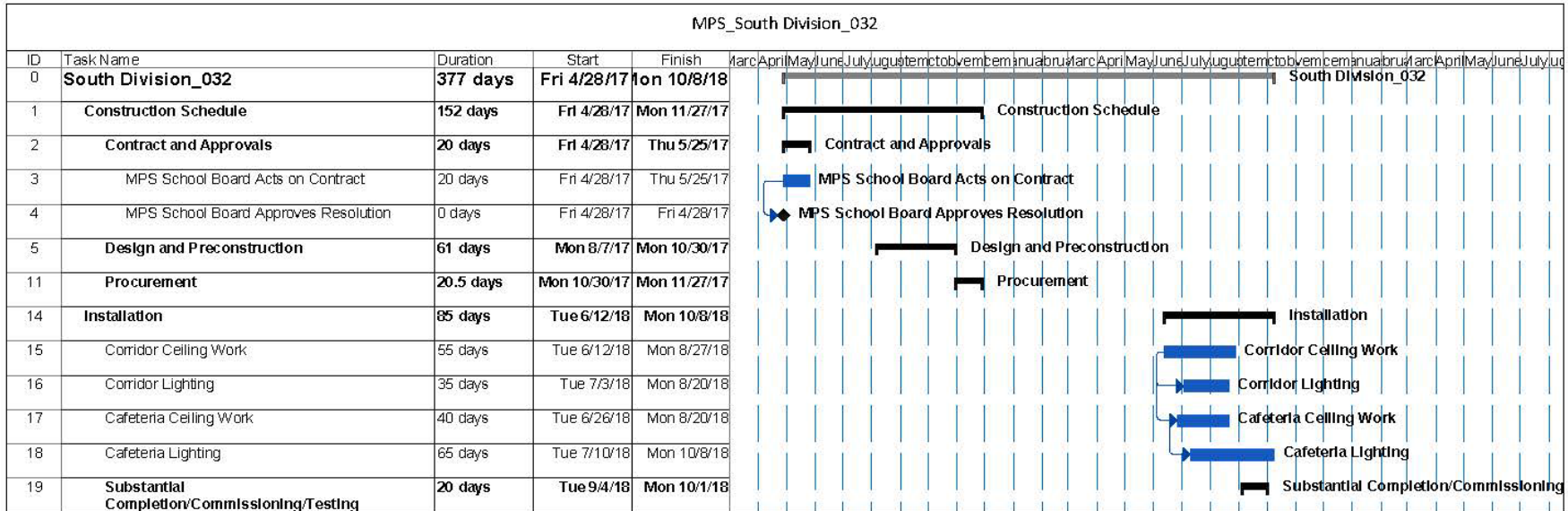


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MPS PHASE 2 PRELIMINARY SCHEDULE

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APPENDIX D

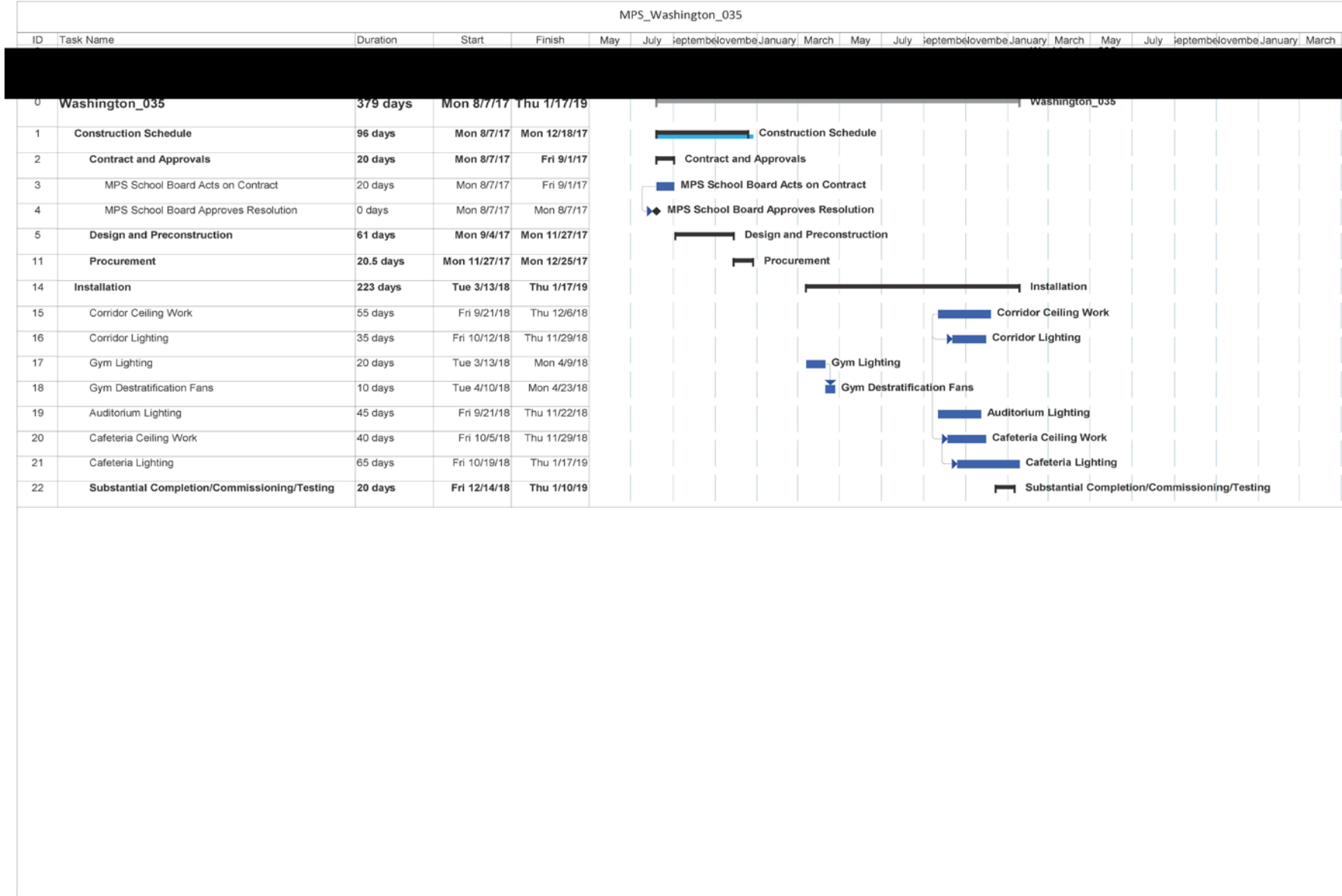


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MPS PHASE 2 PRELIMINARY SCHEDULE  
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**APPENDIX D**



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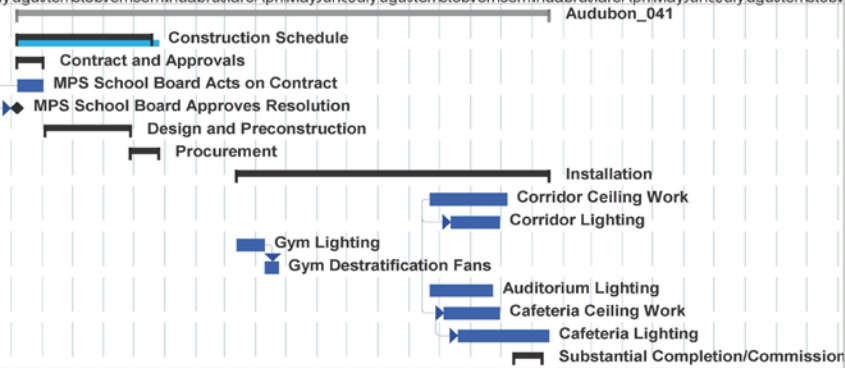
MPS PHASE 2 PRELIMINARY SCHEDULE

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APPENDIX D

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX

MPS_Audubon_041				
ID	Task Name	Duration	Start	Finish
0	<b>Audubon_041</b>	<b>379 days</b>	<b>Mon 8/7/17</b>	<b>Thu 1/17/19</b>
1	Construction Schedule	96 days	Mon 8/7/17	Mon 12/18/17
2	Contract and Approvals	20 days	Mon 8/7/17	Fri 9/1/17
3	MPS School Board Acts on Contract	20 days	Mon 8/7/17	Fri 9/1/17
4	MPS School Board Approves Resolution	0 days	Mon 8/7/17	Mon 8/7/17
5	Design and Preconstruction	61 days	Mon 9/4/17	Mon 11/27/17
11	Procurement	20.5 days	Mon 11/27/17	Mon 12/25/17
14	Installation	223 days	Tue 3/13/18	Thu 1/17/19
15	Corridor Ceiling Work	55 days	Fri 9/21/18	Thu 12/6/18
16	Corridor Lighting	35 days	Fri 10/12/18	Thu 11/29/18
17	Gym Lighting	20 days	Tue 3/13/18	Mon 4/9/18
18	Gym Destratification Fans	10 days	Tue 4/10/18	Mon 4/23/18
19	Auditorium Lighting	45 days	Fri 9/21/18	Thu 11/22/18
20	Cafeteria Ceiling Work	40 days	Fri 10/5/18	Thu 11/29/18
21	Cafeteria Lighting	65 days	Fri 10/19/18	Thu 1/17/19
22	Substantial Completion/Commissioning/Testing	20 days	Fri 12/14/18	Thu 1/10/19



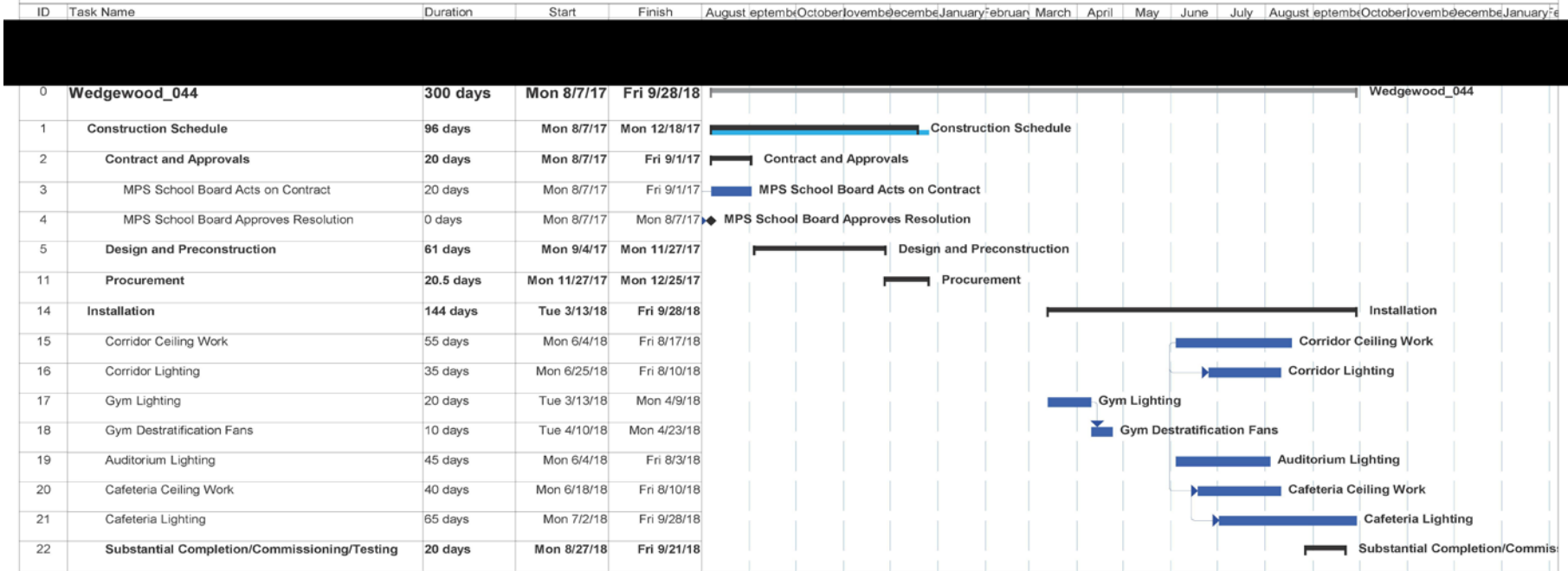
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MPS PHASE 2 PRELIMINARY SCHEDULE  
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APPENDIX D

Purchase Requisition Number: XXXXX  
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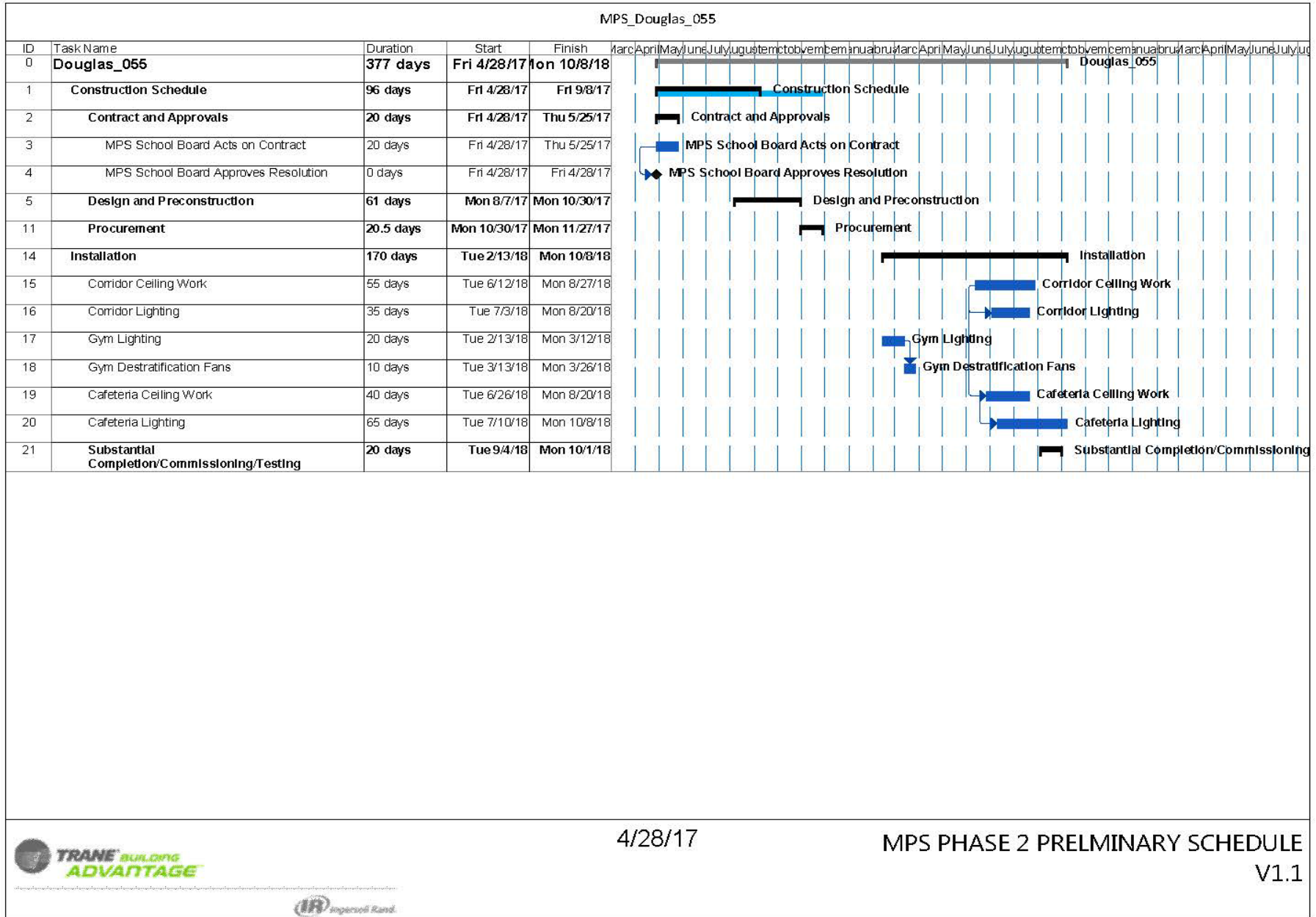
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MPS PHASE 2 PRELIMINARY SCHEDULE

**APPENDIX D**



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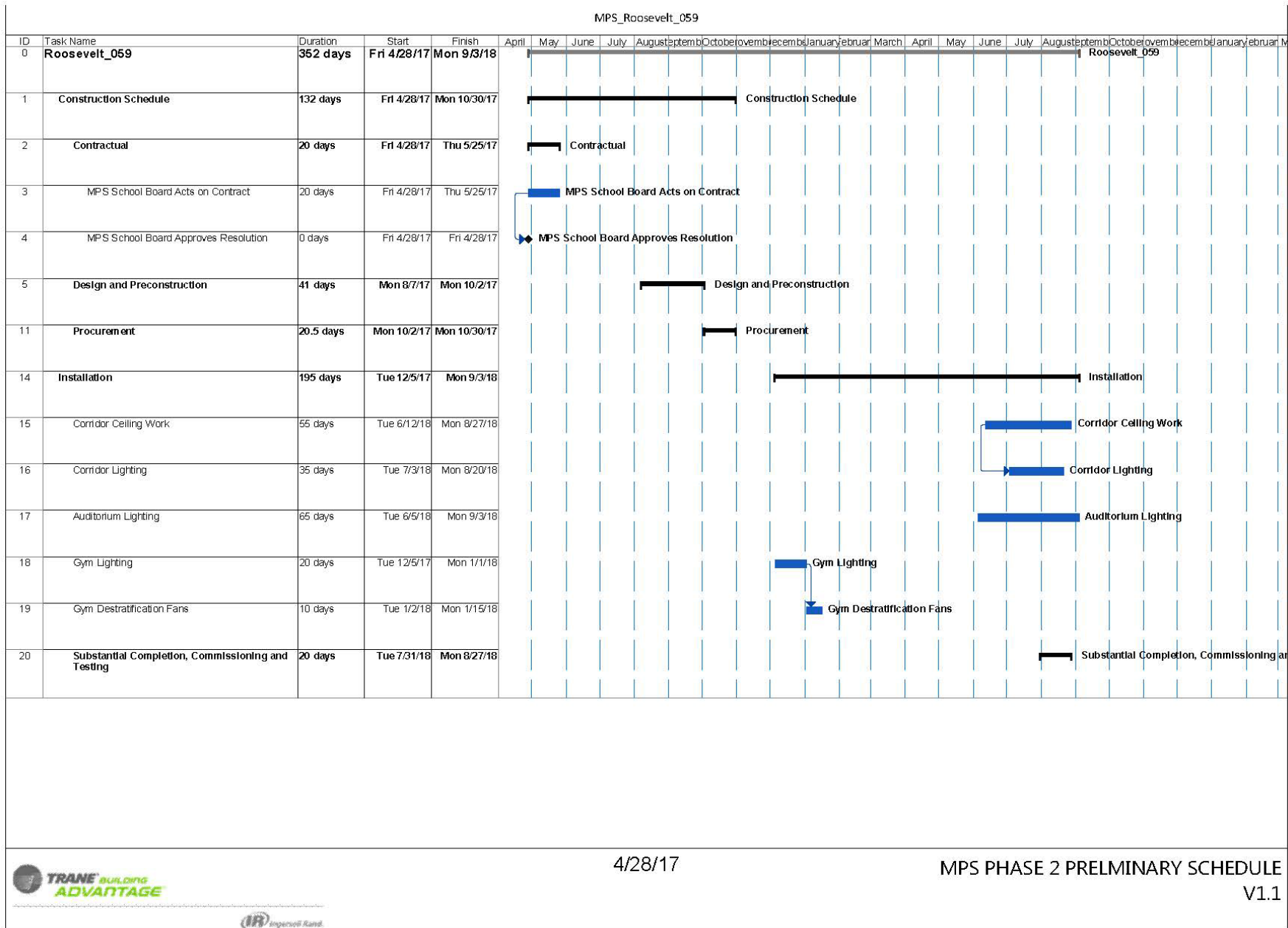
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APPENDIX D

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX



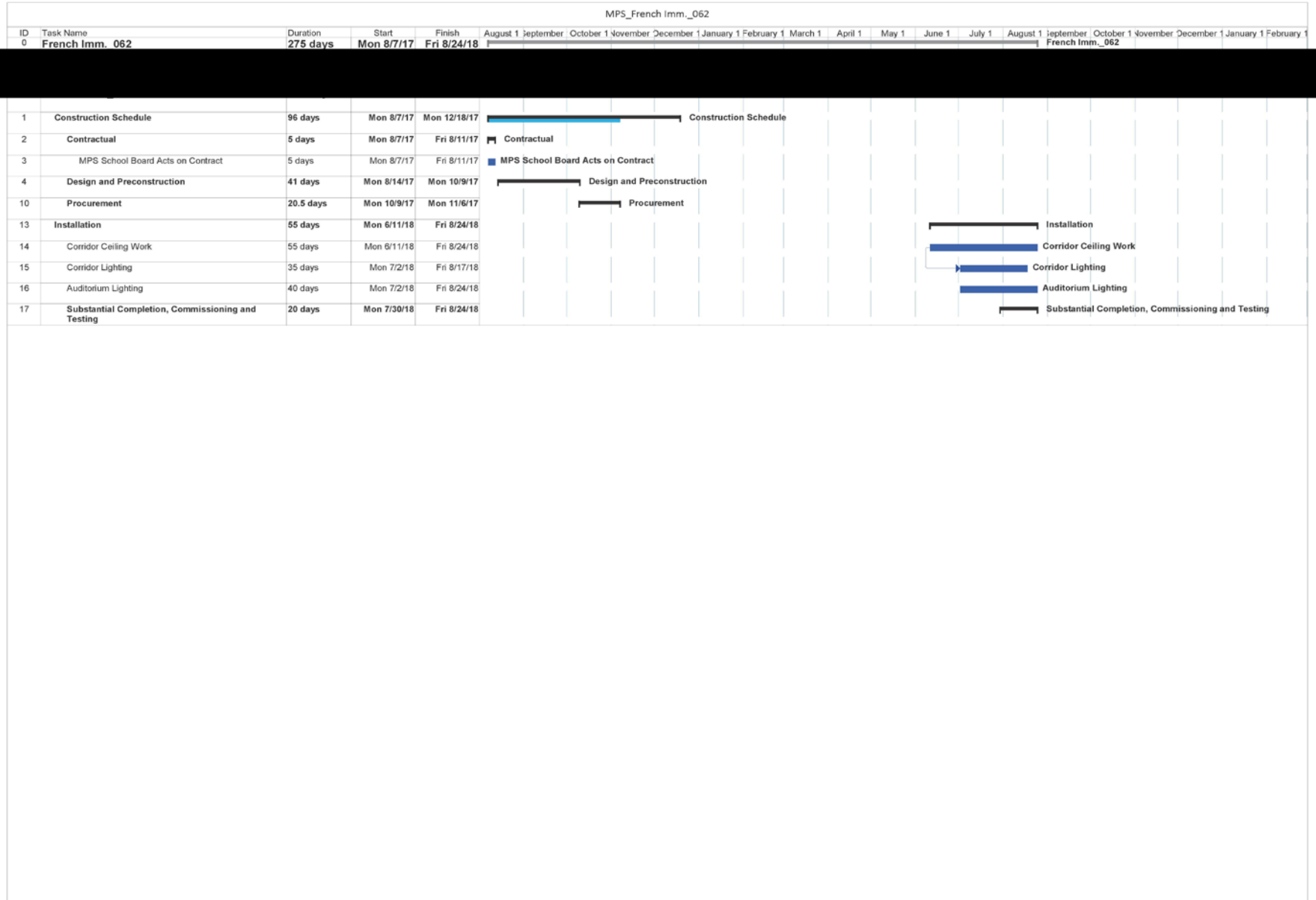
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MPS PHASE 2 PRELIMINARY SCHEDULE  
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APPENDIX D

Purchase Requisition Number: XXXXX  
 Contract Number: XXXXX  
 Vendor Number: XXXXX



4/28/17

MPS PHASE 2 PRELIMINARY SCHEDULE

## APPENDIX E

# APPENDIX E GENERAL CONDITIONS FOR WORK AND M&V SERVICES

Contractor shall complete the Work and M&V Services in accordance with the following terms and conditions:

1. **Construction Standards.** Contractor shall perform, administer and supervise the Work and M&V Services in a diligent and good and workmanlike manner, and in accordance with generally accepted standards of construction and construction management practices for projects in the Milwaukee metropolitan area similar to the Project, as in existence during the term of this Contract. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures for coordinating all portions of the Work and M&V Services.
2. **Scope of Work and Services.** Except to the extent that any such items are the obligations of others, as expressly provided in the Contract, Contractor shall provide all labor, materials, equipment, tools, construction equipment and machinery, coordination of Subcontractors (as such term is defined in Section 5 below), as reasonably necessary for the execution and completion of the Work and M&V Services. Should any governmental entity require the completion of code compliance measures in areas or locations outside of the Project scope of work, the Work shall not include any such work, unless such work is otherwise added to the Project through a Change Order.
3. **Site Control.** Contractor shall maintain good order among Contractor's agents, employees and Subcontractors on the Premises. Contractor shall not permit the presence of unfit persons for whom Contractor is responsible on the Premises nor utilize personnel or entities to perform tasks in which such persons or entities are not reasonably skilled. Contractor shall be responsible for the acts and omissions of Contractor's employees, agents and Subcontractors. Contractor shall at all times properly dispose of waste materials and rubbish on the Premises, and shall periodically remove from the Project waste materials and/or rubbish.
4. **Safety.** Contractor shall be responsible for maintaining and supervising safety programs in connection with the performance of the Work and M&V Services. Contractor shall take reasonable precautions to protect and prevent damage, injury, or loss to: (i) employees engaged in the Work and M&V Services; (ii) the Project and materials and equipment to be incorporated therein; (iii) students, employees and agents of MPS present or working in or about the Premises, and (iv) other property adjacent to or surrounding the Premises. Contractor shall comply with applicable Laws related to the safety of persons and property and their protection from damage, injury, or loss. Contractor's responsibility for safety under this Section is not intended in any way to relieve any of Contractor's subcontractors, suppliers or second or third tier subcontractors and suppliers of their own legal obligations and responsibility for complying with any applicable laws, ordinances, rules, regulations, and lawful orders of public authorities related to safety of persons or property, and for taking all necessary measures to implement and monitor reasonable safety precautions and programs to guard against injury, losses, damages or accidents resulting from their performance of the Work.
5. **Subcontractors.** Contractor shall furnish in writing to MPS the names of the proposed Subcontractors, if any, for each of the portions of the Work not otherwise being self-performed by Contractor. Contractor shall not contract with any Subcontractor with whom MPS has made a reasonable and timely objection. Contractor shall not be required to contract with anyone with whom Contractor reasonably objects. As used in the Contract, the term "Subcontractor" shall mean (i) any person or entity who has a direct contractual arrangement with Contractor to either perform a portion of the Work or to provide materials and equipment to be incorporated into the Project, and (ii) other persons or entities working on behalf of Contractor or for whom Contractor is responsible pursuant to the Contract.
6. **Materials and Equipment; Warranty.** All materials and equipment incorporated into the Project under the Contract (but excluding the tools and construction equipment owned or rented by Contractor or its Subcontractors for the purposes of completing the installation of the Improvement Measures) shall be of good quality, new and free from defects unless otherwise expressly required or permitted by the Contract. Materials and equipment not conforming to

**APPENDIX E**

these requirements shall be deemed to be “Non-Conforming Work.” Contractor will promptly re-perform any Non-Conforming Work for no charge, as long as MPS provides written notice to Contractor within one (1) year following Substantial Completion or such other period identified in **Appendix B** (such time period shall be the “Workmanship Warranty Period”). During the Workmanship Warranty Period only, MPS shall also have the benefit of any implied warranties relating to the Work, including without limitation warranties of merchantability and fitness for particular purpose. Contractor shall also assign and transfer to MPS the benefits of any end-user warranties relating to goods or equipment incorporated into the Work. The foregoing remedies with respect to the Work, together with any remedy provided by goods or equipment manufacturers, shall be MPS’ sole and exclusive remedies for warranty claims. These exclusive remedies shall not have failed of their essential purpose so long as Contractor transfers the benefits of any goods or equipment end-user warranty to MPS and remains willing to re-perform any Non-Conforming Work for no charge within the Workmanship Warranty Period. **EXCEPT AS EXPRESSLY PROVIDED ABOVE IN THIS SECTION 6, NO OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE PROVIDED BY CONTRACTOR.** This warranty does not extend to any Work that has been abused, altered, or misused, or repaired by MPS or third parties without the supervision or prior written approval of Contractor. Except (i) with respect to goods or equipment manufactured by Contractor and furnished to MPS hereunder, for which Contractor shall provide its express written manufacturer’s warranty, and (ii) during the Workmanship Warranty Period, Contractor shall not be considered a merchant or vendor of goods or equipment. Contractor shall store materials and equipment only in areas designated by MPS and shall reasonably remove, as construction of the Project progresses, any tools and construction equipment that are no longer reasonably required to complete the remaining Work.

7. **MPS Scope Modifications.** Contractor agrees not to seek any change orders for additional costs incurred in performing the Work pursuant to the Scope of Work set forth above. However, in the event that MPS modifies the Scope of Work and directs Contractor to perform any additional or extra work outside the

Scope of Work as set forth above, the Contract Price and Contract Time shall be adjusted accordingly. Contractor shall not be obligated to perform scope modifications, including additional or extra work, unless Contractor and an authorized representative of MPS execute a written change order so providing (a “Change Order”); provided, that work performed without the written directive of MPS, but made necessary by an emergency involving an immediate threat to the safety of persons or property, or the non-performance of which would impair the efficiency, scheduling or coordination of the work of MPS, Contractor or Contractor’s subcontractors, shall nevertheless serve as a basis for revising the Contract Price or Contract Time in accordance with this paragraph. The amount to be paid by MPS to Contractor for any scope modifications, including additional or extra work, or the amount to be allowed by Contractor, shall be determined as provided under the terms of the Change Order, except, notwithstanding any provisions to the contrary in the Change Order or elsewhere in the Contract Documents, Contractor shall be entitled to an allowance of ten percent (10%) for overhead and an allowance of five percent (5%) for profit, in addition to its actual costs for materials and labor on all scope modifications, including additional or extra work.

8. **Access.** MPS shall provide Contractor, its Subcontractors, and their respective agents reasonable and safe access to all facilities and properties where the Work and M&V Services are to be performed. An equitable adjustment in the time for performance, price and payment terms, and Assured Performance Guarantee shall be made as a result of any failure to grant such access. Contractor shall provide and maintain reasonable access to the Premises for MPS and its students, agents and employees throughout the completion of the Work and M&V Services. Contractor shall also take all necessary measures to minimize disruption to the operations of MPS.
9. **Environmental Conditions.** The following provisions shall apply to environmental conditions arising at the Premises during the completion of the Project:

*Asbestos-Containing Materials:* Neither party desires to or is licensed to undertake direct obligations relating to the identification, abatement, cleanup, control, removal or disposal of asbestos-containing materials (“ACM”). Consistent with applicable Laws, MPS shall supply Contractor with any information in its possession relating

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to the presence of ACM in the Premises that may result in the disturbance of ACM. It is Contractor's policy to seek certification for facilities constructed prior to 1982 that no ACM is present, and MPS shall provide such certification for the Premises, if Contractor will undertake Work or M&V Services in such locations that could disturb ACM. If either MPS or Contractor becomes aware of or suspects the presence of ACM that may be disturbed by the Work or M&V Services, it shall promptly stop the Work or M&V Services in the affected area and notify the other. As between MPS and Contractor, MPS shall be responsible at its sole expense for addressing the potential for or the presence of ACM in conformance with all applicable Laws and addressing the impact of its disturbance before Contractor continues with its Work or M&V Services, unless Contractor had actual knowledge that ACM was present and acted with intentional disregard of that knowledge, in which case (i) Contractor shall be responsible at its sole expense for remediating areas impacted by Contractor's disturbance of the ACM, and (ii) MPS shall resume its responsibilities for the ACM after Contractor's remediation has been completed.

*Other Hazardous Materials:* Contractor shall be responsible for removing or disposing of any Hazardous Materials (as defined below) that it uses in providing Work or M&V Services ("Contractor Hazardous Materials") and for the remediation of any areas impacted by the release of Contractor Hazardous Materials. For other Hazardous Materials that may be present at the Premises ("Non-Contractor Hazardous Materials"), MPS shall supply Contractor with any information in its possession relating to the presence of such materials if their presence may affect Contractor's performance of the Work or M&V Services. If either MPS or Contractor becomes aware of or suspects the presence of Non-Contractor Hazardous Materials that may interfere with Contractor's Work or M&V Services, it shall promptly stop the Work or M&V Services in the affected area and notify the other. As between MPS and Contractor, MPS shall be responsible at its sole expense for removing and disposing of Non-Contractor Hazardous Materials from its facilities and the remediation of any areas impacted by the release of Non-Contractor Hazardous Materials, unless Contractor had actual knowledge that Non-Contractor Hazardous Materials were present and acted with intentional disregard of that knowledge, in which case (i) Contractor shall be responsible at its sole expense for the remediation of any areas impacted by Contractor's release of such Non-Contractor Hazardous Materials, and (ii) MPS shall remain responsible at its sole expense for the removal of Non-Contractor Hazardous Materials that have not been released and for releases not resulting from Contractor's performance of the Work or M&V Services. For purposes

of this Contract, "Hazardous Materials" means any material or substance that, whether by its nature or use, is now or hereafter defined or regulated as a hazardous waste, hazardous substance, pollutant or contaminant under applicable Law relating to or addressing public or employee health and safety and protection of the environment, or which is toxic, explosive, corrosive, flammable, radioactive, carcinogenic, mutagenic or otherwise hazardous or which is or contains petroleum, gasoline, diesel, fuel, another petroleum hydrocarbon product, or polychlorinated biphenyls. "Hazardous Materials" specifically includes mold and lead-based paint and specifically excludes ACM. Contractor shall have no obligations relating to the identification, abatement, cleanup, control, removal, or disposal of mold, regardless of the cause of the mold.

- 10. Permits and Fees.** Unless otherwise specified in **Appendix F**, Contractor shall be responsible for obtaining all building permits required for it to perform the Work. Unless otherwise specified in **Appendix B**, MPS shall be responsible for obtaining all other permits, licenses, approvals, permissions and certifications, including without limitation all zoning and land use changes or exceptions required for the provision of the Work or the ownership and use of the Improvement Measures.

## APPENDIX F CUSTOMER RESPONSIBILITIES

In order for Contractor to perform its obligations under this Contract with respect to the Work, the Assured Performance Guarantee, and the M&V Services, MPS shall be responsible for:

1. Providing Contractor, its subcontractors, and its agents reasonable and safe access to all facilities and properties that are subject to the Work and/or M&V Services;
2. Providing for shut down and scheduling of affected locations during installation, including timely shutdowns of chilled water and hot water systems as needed, including notice to any staff or system users to accomplish the Work and/or M&V Services;
3. Providing timely reviews and approvals of design submissions, proposed change orders, and other project documents;
4. Providing the following information with respect to the project and project site as soon as practicable following Contractor's request:
  - a. surveys describing the property, boundaries, topography and reference points for use during construction, including existing service and utility lines;
  - b. geotechnical studies describing subsurface conditions, and other surveys describing other latent or concealed physical conditions at the project site;
  - c. temporary and permanent easements, zoning and other requirements and encumbrances affecting land use, or necessary to permit the proper design and construction of the project and enable Contractor to perform the Work;
  - d. a legal description of the project site;
  - e. as-built and record drawings of any existing structures at the project site; and
  - f. environmental studies, reports and impact statement describing the environmental conditions, including hazardous conditions or materials, in existence at the project site.
5. Securing and executing all necessary agreements with adjacent land or property owners that are necessary to enable Contractor to perform the Work;
6. Providing assistance to Contractor in obtaining any permits, approvals, and licenses that are Contractor's responsibility to obtain as set forth in Appendix B;
7. Obtaining any permits, approvals, and licenses that are necessary for the performance of the Work and are not MPS's responsibility to obtain as set forth in Appendix B;
8. Properly maintaining, and performing appropriate preventative maintenance on, all equipment and building systems affecting the Assured Performance Guarantee in accordance with manufacturers' standards and specifications;
9. MPS shall provide Customer with utility information via access to WE Energies and THG online systems.
10. Providing all records relating to energy and/or water usage and related maintenance of the premises and relevant equipment requested by Contractor;

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11. Providing and installing utility sub-meters on all new construction and/or additions built during the Guarantee Term as recommended by Contractor or, alternatively, paying Contractor's applicable fees for calculating necessary adjustments to the Assured Performance Guarantee as a result of the new construction;
12. Providing and maintaining a dedicated telephone line and/or TCP/IP remote connection to facilitate remote monitoring of relevant equipment, such access to be provided via MPS current LAN infrastructure;
13. Promptly notifying Contractor of any change in use or condition described in Section III of Appendix C or any other matter that may impact the Assured Performance Guarantee;
14. Taking all actions reasonably necessary to achieve the Non-Measured Project Benefits;
15. Reviewing and providing approval for all submittals within ten (10) days;
16. Reviewing and providing approval for all engineering reviews within ten (10) business days;
17. Providing a number of LAN connections, as reasonably agreed to by MPS and Contractor, for all Contractor control connections in locations specified by Contractor;
18. Coordinating MPS facility users such that all areas scheduled for construction can be turned over to Contractor for construction in accordance with the construction schedule;
19. Remove and relocate any storage items that are in the area of mechanical upgrades were work is to be done, or in a route for equipment delivery and/or removal;
20. MPS shall be responsible at its sole expense for removing asbestos or lead containing material (ACM) in areas where work is proposed.
21. The portion of **Appendix G** attached hereto, noted as "MPS Responsibilities."

**APPENDIX G  
SUPPLEMENTAL GENERAL CONDITIONS FOR WORK**

**DESIGN AND SPECIFICATIONS REQUIREMENTS:**

1. Prior to commencing any design work, Contractor shall verify all existing conditions that will be affected by the project scope.
2. Contractor shall provide all drawings in AUTOCAD 2013 or approved equal for necessary sketches or representations to clearly define scope of work.
3. MPS has made available to Contractor single-line schematic floor plan CAD drawings for all MPS sites for use as a base plan; however, each school must be surveyed in order to verify existing conditions. In addition, MPS maintains an archive of original drawings, prints, submittals, and specifications for the original construction, remodeling, and maintenance projects for all MPS sites, which may be loaned for use. Please schedule an appointment in advance to review the archives.
4. MPS has prepared Guide Specification sections for the general requirements, general construction, mechanical, and electrical divisions of work, for use on all MPS projects. These specification sections identify the approved materials and product performance standards required for use on all MPS projects.
5. The Guide Specifications have been prepared in the three-part Construction Specifications Institute (CSI) format, and are intended to be utilized as a guide, requiring editing to reflect the specifics for each individual project, including work by consultants and sub-consultants. The Guide Specifications are not inclusive of all required conditions, materials or equipment, but shall be supplemented as required.
6. Any revisions to the materials specified, or to the specifications in general are to be highlighted on the construction document review sets provided to MPS, along with the rationale for the required changes.
7. Failure to use the MPS Guide Specifications for all aspects of the project will be cause for rejection of the review sets, and will not be a basis for additional compensation.
8. All drawings and specifications, renderings, models, scale details, approved copies of shop drawings, calculations, and other such documents, whether hard copy or electronic, prepared by the PC Firm or any consultant pursuant to each contract shall be provided to MPS on completion and acceptance of any of the PC Firm's work, or upon termination of the contract, and shall be delivered to MPS upon request.

**DESIGN PHASE REQUIREMENTS:**

1. Contractor shall work with the City of Milwaukee and/or other regulatory agencies so that project designs comply with any code related issues, including ADA. Contractor is responsible for all redraw/redesign efforts due to changes required to bring the project in line with MPS standards.
2. Contractor shall provide MPS with paper and electronic copies of the following design documents for MPS review:
  - a. 75% and 95% Construction Documents and Specifications:
    - i. Contractor shall submit one (1) review set, hard copy, at the 75% and 95% completion phases of the Construction Documents.
    - ii. Such design review sets should clearly define the general scope of work for the project, including all items that have a major impact on the project's budget, mechanical and electrical systems, etc. All consultant work must be complete at the time of the review submittal.

- iii. Design review sets shall include coordination, to protect the integrity of the design and facilitate construction with all required manufacturers, consultants, utility companies, governmental authorities and MPS.
  - iv. Contractor shall determine time requirements for obtaining any equipment and services for coordination issues.
- b. 95% Construction Documents and Specifications:**
- i. Contractor shall submit to MPS one (1) review set, hard copy, at the 99% completion of Construction Documents Phase along with the 95% review set mark-ups.
  - ii. Documents shall provide for a final review to confirm that all details are complete and all required information is provided. Minor corrections may remain, such as spelling, incomplete references, etc., but major items such as finishes, equipment schedules, details, sections, and elevations, shall be complete. The specifications should be in the correct final format with a complete Table of Contents.
  - iii. Preliminary Plan Review by regulating authorities.
- c. Final 100% Complete Construction Documents and Specifications:**
- i. Contractor shall submit electronic files of all 100% complete construction documents via email, jump drive, CD, or consultant FTP site to MPS.

**CONSTRUCTION PHASE REQUIREMENTS:**

1. Contractor shall conduct two (2) punch list walkthroughs and distribute to MPS. One (1) punch list with site visit to verify construction documents have been followed and one (1) follow up inspection to assure punch list items have been completed.
2. Contractor shall provide all site visits and documentation as reasonably required to resolve field problems as result of ambiguous scope of work (RFI's) within five (5) working days of identification of same.
3. Contractor shall provide all required shop drawing review and maintenance of the Submittal Log Spreadsheet within five (5) working days of receipt.
4. Contractor shall provide any required conflict mediation, primarily request for extras, with Subcontractors as required for the project.

**PROJECT CLOSEOUT AND FOLLOW-UP PHASE:**

1. Upon notification to MPS that Contractor believes Substantial Completion has taken place, Contractor and MPS shall determine in a written report whether Substantial Completion has, in fact, been achieved, along with a written punch list of items found not to be complete, in need of correction, replacement or otherwise not in accordance with the construction Contract Documents. MPS will prepare and distribute the Certificate of Substantial Completion when appropriate.
2. The PC Firm shall maintain marked-up record prints during construction and, upon completion of the Work, modify the original drawings to reflect the changes in the Work made during the construction process to produce a set of as-built documents. All addenda, change orders, and other circumstances known to have caused change shall be included in the production of the as-built documents.
3. At the conclusion of the project, in addition to providing the final Record Drawings, Contractor shall update the existing MPS schematic floor plan CAD drawings as poly-lines in accordance with the MPS guidelines to indicate all



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new building modifications and/or additions and provide the drawings to MPS where the floor plan has been modified as part of the Work.

4. Contractor shall also provide the following to MPS as part of the As-Built/Record Drawings:
  - a. One (1) complete set of reproducible drawings.
  - b. One (1) complete set of CAD record drawings on CD, properly labeled with index. Each drawing must be a separate CAD drawing file.
  - c. One (1) complete set of updated schematic CAD poly-line drawings of all new spaces.
  - d. One (1) electronic copy of Project Specifications.
  - e. Record of all addenda information.
5. Contractor shall provide follow-up assistance within one year of project completion as noted in **Appendix E**.
6. Once project is completed, Contractor shall provide MPS a closeout package which includes two of the following: contractor contact information, as-built drawings, addendum, construction bulletins, submittals, shop drawings, cut sheets, O&M manuals, warranties, attic stock form sign-off's, training form sign-offs, etc.

### **MPS RESPONSIBILITIES:**

1. MPS will provide Contractor available information regarding the requirements for the project, including the desired objectives for the program, and the following:
  - a. Division 1 Specification Sections
  - b. Existing Documents: MPS will provide access to all existing drawings, electronic files, etc., for Contractor's use for informational purposes only. All existing conditions must be field verified as the information provided on existing documents may or may not reflect existing conditions correctly.
  - c. Hazardous Materials Identification
  - d. Existing Materials: MPS will provide information for each specific project and will include the abatement services for the removal of identified hazardous materials.

### **ENVIRONMENTAL COMPLIANCE:**

Asbestos materials in any form are not allowed to be specified in any portion of the Work. At the completion of the project, Contractor shall submit a notarized, signed affidavit attesting that no asbestos containing materials were specified or approved to be used through the project, including the approval of shop drawings or change orders on this project.

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**EMERGENCY EVACUATION OF BUILDING:**

When the fire alarm signal sounds in the school, all employees of contractors involved with this project are to follow the evacuation instructions. This means that all employees shall leave the building upon the sounding of the fire alarm signal and shall not return to the building until the ALL CLEAR signal is sounded.

**NOTIFICATIONS:**

1. Contractor shall notify the MPS’ Division of Facilities and Maintenance Services:
  - a. At least (72) hours before starting work on the project.
  - b. In writing in case of defects in such surfaces that are to receive Work.
  - c. Whenever work is suspended or resumed because of weather or other conditions and at least 24 hours prior to resuming any work.

**LIVABLE WAGE POLICY:**

Contractor shall comply with, and ensure its subcontractors performing work under this Contract comply with, Milwaukee Board of School Directors’ Administrative Policy 3.09(17), which requires that employees be paid a “living wage.” The current livable wage rate can be found at the City of Milwaukee website

**<http://city.milwaukee.gov/ImageLibrary/Groups/doaPurchasing/forms/LivingWageTable.docx>**

**PARTICIPATION PLAN:**

1. In educating the children and youth of Milwaukee, MPS is also a primary purchaser of goods and services in the Milwaukee marketplace. MPS believes it is obligated to display in its own operations the values of excellence, diversity, and economic responsibility that it strives to teach its students.
2. To that end, many MPS contracts require the use of Historically Underutilized Business (HUB) firms, Communities in Need (COIN) employees and the engagement of the MPS contract awardee in Student Employment and/or Student Career Education activities.
3. All information relating to the HUB participation, COIN requirement and the Student Engagement Requirement, including all forms that must be filled out, can be found at **<http://mps.milwaukee.k12.wi.us/en/District/About-MPS/School-Board/Contract-Compliance-Services.htm>** (then click on Forms and Schedules, then click on Vendors).
4. Each individual School/Project has specific requirements for the MPS Participation Plan for HUB, COIN and Student Participation that are based on the cost provided by the Contractor for each School/Project. The MPS Participation Plan requirements per each School/Project under this Contract are as follows:

	<u>HUB</u>	<u>COIN</u>	<u>Paid Student Employment</u>	<u>Student Education Activities</u>
Project Total Cost of \$1,000,000 or less:	20%	10%	400 Hours	20 Hours
Project Total Cost between \$1,000,000 - \$2,000,000:	25%	15%	600 Hours	30 Hours
Project Total Cost in excess of \$2,000,000	30%	20%	800 Hours	40 Hours