November 2026 Special Meeting
Monday, November 2, 2026 6:00 PM Eastern

Community Board Room
11450 Wyalusing New Albany Road
Wyalusing, PA 18853

| | |
|---|---|
| Brad Delamater: | Present |
| Lori Keeney-Naugle: | Present |
| Daryl Travis Knapp: | Present |
| Matthew Muench: | Present |
| Duane Naugle: | Present |
| Jamie Patrick: | Present |
| Richard Robinson: | Present |
| Tiffani Warner: | Present |
| Dustin Welles: | Present |

Present: 9.

1. ***Opening***
   - 1.1. **American Flag Salute**
   - 1.2. **Call to Order**
   - 1.3. **Roll Call/Establishment of a Quorum**

2. ***Agenda Approval***
   - 2.1. **Approval of the Agenda**
   - 2.2. **Citizens' Comments regarding agenda items**
3. ***School Board Business Items***
   - 3.1. **Approval of Social Media Class Action Litigation Agreement**
4. ***Budget, Finance, and Transportation - Matthew Muench, Chair***
   - 4.1. **Approval of Contracts**
   - 4.2. **Approval of Additional Substitute Drivers for the 2026-2027 School Year**
5. ***Personnel-Employment-Richard Robinson, Chair***
   - 5.1. **Accept Resignation — Carly Sheldon**
   - 5.2. **Approval of Volunteers**
6. ***Buildings & Grounds - Duane Naugle, Chair***
   - 6.1. **Award Bid for Track Fence Replacement**
   - 6.2. **Approve Third Party Commissioning Agent for HVAC Commissioning Services**
7. ***Citizens' Comments***
8. ***Adjournment***
   - 8.1. **Adjourn the meeting**

**ATTORNEY-CLIENT CONTINGENT FEE AGREEMENT**

This ATTORNEY-CLIENT CONTINGENT FEE AGREEMENT ("Agreement") is entered into by and between the Wyalusing Area School District ("the Client") and Frantz Law Group, APLC; Dillon McCandless King Coulter & Graham, LLP; and the Levin Legal Group, P.C. (collectively, "Attorneys" or "We") and encompasses the following provisions:

1. CONDITIONS. This Agreement will not take effect, and Attorneys will have no obligation to provide legal services, until Client returns a signed copy of this Agreement.

2. CLIENT REPRESENTATIVES. Client designates its Superintendent or his/her designee as the authorized representative to direct Attorneys and to be the primary individual to communicate with Attorneys regarding the subject matter of Attorneys' representation of Client under this Agreement. The designation is intended to establish a clear line of authority and to minimize potential uncertainty but not to preclude communication between Attorneys and other representatives of Client.

3. ATTORNEY REPRESENTATIVES. James Frantz, William Shinoff, and Jade Koller of Frantz Law Group, APLC will be primarily responsible for the work, either performing it himself/herself or delegating it to others as may be appropriate.

4. SCOPE AND DUTIES. Client hires Attorneys to provide legal services in connection with pursuing claims for damages associated with Social Media litigation, including the preparation and filing of the School District's individual action ("Action"). Attorneys shall provide those legal services reasonably required to represent Client and shall take reasonable steps to keep Client informed of progress and to respond to Client's inquiries. Client shall be truthful with Attorneys, cooperate with Attorneys, and keep Attorneys informed of developments.

5. LEGAL SERVICES SPECIFICALLY EXCLUDED. Unless otherwise agreed in writing by Client and Attorneys, Attorneys will <u>not</u> provide legal services with respect to: (a) defending any legal proceeding or claim against the Client commenced by any person unless such proceeding or claim is filed against the Client in the Action; or (b) proceedings before any federal or state administrative or governmental agency, department, or board. With Client's permission, however, Attorneys may elect to appear at such administrative proceedings to protect Client's rights. If Client wishes to retain Attorneys to provide any legal services not provided under this Agreement for additional compensation, a separate written agreement between Attorneys and Client will be required.

6. FEES. Client will pay attorneys' fees of:

6.1 Twenty five percent (25%) of any monetary settlement or recovery that Attorneys obtain for Client. Client is not responsible for paying Attorneys any money other than what has been recovered from Defendants or as otherwise set forth herein.

6.2 Fees shall be calculated on the basis of any settlement or recovery prior to the deduction of any expense or cost or common benefit fees ("Gross Recovery"). Contingency fee rates are not set by law but have been negotiated. If no recovery is made, no fees will be charged.

6.3 The term "Gross Recovery" shall include, without limitation, the then present value of any

monetary payments agreed or ordered to be made by the adverse parties or their insurance carriers as a result of the Services, whether by settlement, arbitration award, court judgment (after all appeals are exhausted), or otherwise. Any statutory Attorneys' fee paid by Defendants shall be included in calculating the Gross Recovery, however, any such award of Attorneys' fees shall be proportionately applied as a credit against Client's obligation to pay its portion of the contingency fee amount and shall not be retained by the Attorneys as a separate payment in addition to the contingency fee.

6.4 "Gross Recovery," if by settlement, also includes: (1) the then-present value of any monetary payments to be made to the School District; and (2) any Attorneys' fees and costs recovered by the School District as part of any cause of action that provides a basis for such an award. "Recovery" may come from any source, including, but not limited to, the adverse parties to the School District and/or their insurance carriers and/or any third party, whether or not a party to formal litigation. The contingent fee is calculated by multiplying the recovery by the fee percentage. This calculation is performed on the gross recovery amount before the deduction of expenses as discussed above.

6.5 "Gross Recovery," except in the case of a settlement, does not contemplate nor include any amount or value for injunctive relief or for the value of an abatement remedy which may be obtained in a final arbitration award or court judgment.

6.6 The School District shall not be obligated to pay the Attorneys unless Attorneys are successful in collecting a monetary recovery on the School District's behalf as a result of the Services.

6.7 If, by judgment, the School District is awarded in the form of property or services ("In Kind"), the value of such property and services shall not be included for purposes of calculating the Gross Recovery.

6.8 If, by judgment, there is *no* money recovery and the School District receives In Kind relief, Attorneys acknowledge that School District is not obligated to pay Attorneys' fees from public funds for the value of the In Kind relief. In the event of In Kind relief, by judgment, Attorneys' sole source of recovery of contingent fees will come from a common fund or court ordered Attorney's fees.

6.9 If Client and Attorney disagree as to the fair market value of any non-monetary property or services as described above, Attorney and Client agree that a binding appraisal will be conducted to determine this value.

6.10 It is possible that payment to the Client by the adverse parties to the Action or their insurance carrier(s) or any third-party may be deferred, as in the case of an annuity, a structured settlement, or periodic payments. In such event, gross recovery will consist of the initial lump sum payment plus the present value (as of the time of the settlement) of the total of all payments to be received thereafter. The contingent fee is calculated, as described above, by multiplying the gross recovery by the fee percentage. The Attorneys' fees will be paid out of the initial lump-sum payment if there are sufficient funds to satisfy the Attorneys' fee. If there are insufficient funds to pay the Attorneys' fees in full from the initial lump sum payment, the balance owed to Attorneys will be paid from subsequent payments to Client before there is any distribution to Client.

6.11 Reasonable Fee if Contingent Fee is Unenforceable or if Attorneys are Discharged Before Any Recovery. In the event that the contingent fee portion of this agreement is determined to be unenforceable for any reason or the Attorneys are prevented from representing Client on a contingent fee basis, Client agrees to pay a reasonable fee for the services rendered. If the parties are unable to agree on a reasonable

fee for the services rendered, Attorneys and Client agree that the fee will be determined by arbitration proceedings before a mutually agreed upon neutral affiliated with either the Judicial Arbitration and Mediation Services (JAMS) or Judicate West (JW); in any event, Attorneys and Client agree that the fee determined by arbitration shall not exceed twenty five percent (25%) of the gross recovery as defined in paragraph 5.

7. NO GENERAL FUND PAYMENTS. Notwithstanding any other provision in this Agreement, in no event will the Client be required to pay legal fees out of any fund other than the monies recovered from Defendants in this litigation. Under no circumstances shall School District general funds be obligated to satisfy the contingent Attorneys' fees as a result of this case or this contingency fee Agreement.

8. COSTS AND EXPENSES. In addition to paying legal fees, Client shall reimburse Attorneys for all "costs/expenses", which includes but is not limited to the following: process servers' fees, fees fixed by law or assessed by courts or other agencies, court reporters' fees, long distance telephone calls, messenger and other delivery fees, parking, investigation expenses, consultants' fees, expert witness fees, and other similar items, incurred by Attorneys. Other costs and expenses include case management computer services, Document Management Services, case administration/accounting fees and costs, outside attorney services and other similar items. Attorneys may find it necessary and/or in the Client's best interests to obtain the services of legal, clerical, and/or other personnel who are not Attorneys' regular employees, but outside independent contractors. The costs/expenses incurred that Attorneys advance will be owed in addition to Attorneys' fees and Client will reimburse those costs/expenses after Attorneys' fees have been deducted. However, if there is no recovery, Client will not be required to reimburse Attorneys for costs and fees. In the event a recovery is less than incurred costs/expenses, Client will not be required to reimburse Attorneys for costs/expenses, above and beyond the recovery, and fees.

9. SHARED EXPENSES. Client understands that Attorneys may incur certain expenses that jointly benefit multiple clients, including, for example, expenses for travel, experts, and copying. Client agrees that Attorneys shall divide such expenses equally, or pro rata, among such clients, and deduct Client's portion of those expenses from Client's share of any recovery.

10. FEDERAL MDL AND STATE COORDINATION COMMON BENEFIT FEES. Various attorneys, including Frantz Law Group, frequently serve on plaintiffs' steering or executive committees in Multi-District Litigations (MDLs) and/or the California state court coordinated proceedings (JCCP's) and perform work which benefits Attorneys' clients as well as clients of other attorneys involved in the same litigation. As a result, the court or courts where the cases are pending may order that Attorneys are to receive additional compensation for Attorneys' time and effort which has benefitted all claimants. Compensation for this work and effort, which is known as "common benefit fees," may be awarded to Attorneys by a court or courts directly from the assessments paid by the School District and others who have filed claims in this litigation. Court orders generally have no bearing on the contractual relationship between Attorneys and your School District and will not in any way reduce the amount of fees owed under this Agreement. Absent a court order to the contrary, the payment of a common benefit fee will not reduce the Attorneys' fees to be paid by Client under this agreement.

11. DISCHARGE AND WITHDRAWAL.

11.1 Client may discharge Attorneys at any time. After receiving notice of discharge, Attorneys shall stop services on the date and to the extent specified by the notice of discharge and deliver to Client all

evidence, files and attorney work product for the Action. This includes any computerized indices, programs and document retrieval systems created or used for the Action.

11.2 Attorneys may withdraw with Client's consent or for good cause. Good cause includes Client's breach of this Agreement, Client's refusal to cooperate with Attorneys, or any other fact or circumstance that would render Attorneys continuing representation unlawful or unethical. Attorneys may also discharge Client if Client at any time is dishonest with Attorneys or fails to provide relevant information to Attorneys.

12. ARBITRATION OF DISPUTES. Attorneys and Client agree that should any Dispute arise between them, it must be mediated first, before any claims are filed. Specifically, any and all disputes, controversies or claims arising out of, or related to this Agreement and/or Attorneys' representation of Client, including claims of malpractice (collectively referred to herein as "Dispute" or "Disputes"), shall be submitted to mediation at the offices of Judicial Arbitration & Mediation Services, Inc. ("JAMS") at the JAMS location closest to the Client or at another mutually acceptable location before a retired judge or other mediator affiliated with JAMS, agreed to between the parties and, if the parties cannot agree, before a retired judge selected by JAMS. No petition for arbitration can be filed until after this agreed-upon mediation has occurred, and any petition for arbitration (or litigation) filed prior to conclusion of this mediation shall be subject to dismissal, pursuant to this Agreement. Client will pay one-half of the actual cost of the mediation, but each party will be responsible for his or her own attorneys' fees and preparation costs. the parties agree that any Dispute, whether submitted to mediation or not, will not be litigated in court. Rather, any Dispute, which is specifically defined above to include claims of malpractice, will be submitted to mandatory binding arbitration before JAMS. By signing this Agreement, Client and Attorneys agree to arbitration and waive the right to a court or jury trial and the right to appeal. Any Disputes shall be decided in at the JAMS location closest to the Client or at such other mutually acceptable location, applying California law. Client is not waiving rights to arbitration before the San Diego County Bar Association.

13. AUTHORITY OF ATTORNEYS. Attorneys may, with prior Client approval, associate co-counsel if the Attorneys believe it advisable or necessary for the proper handling of Client's claim, and Client expressly authorizes the Attorneys to divide any Attorneys' fees that may eventually be earned with co-counsel so associated for the handling of Client's claim. Attorneys understand that the amount of Attorneys' fees which Client pays will not be increased by the work of co-counsel associated to assist with the handling of Client's claim, and that such associated co-counsel will be paid by the Attorneys out of the Attorneys' fees Client pays to the Attorneys. Attorneys will associate with Dillon McCandless King Coulter & Graham, L.L.P.

14. DISCLAIMER OF GUARANTEE. Nothing in this Agreement and nothing in Attorneys' statements to Client will be construed as a promise or guarantee about the outcome of Client's matter. Attorneys make no such promises or guarantees. Attorneys' comments about the outcome of Client's matter are expressions of opinion only.

15. MULTIPLE REPRESENTATIONS. The School District understands that Attorneys do or may represent many other individuals/entities with actual or potential litigation claims. Attorneys' representation of multiple claimants at the same time may create certain actual or potential conflicts of interest in that the interests and objectives of each client individually on certain issues are, or may become, inconsistent with the interests and objectives of the other. Attorneys are governed by specific rules and regulations relating to Attorneys' professional responsibility in Attorneys' representation of clients, and especially where conflicts of interest may arise from Attorneys' representation of multiple clients against the same or similar Defendants, Attorneys are required to advise Attorneys' clients of any actual or potential conflicts of interest

and obtain their informed written consent to Attorneys' representation when actual, present, or potential conflicts of interest exist. By signing this agreement, the School District is acknowledging that it has been advised of the potential conflicts of interest which may be or are associated with Attorneys' representation of the School District and other multiple claimants, that the School District nevertheless wants the Attorneys to represent the School District, and that the School District consents to Attorneys' representation of others in connection with the litigation. Attorneys strongly advise the School District, however, that the School District remains completely free to seek other legal advice at any time even after the School District signs this Agreement.

16. AGGREGATE SETTLEMENTS. Often times in cases where Attorneys represent multiple clients in similar litigation, the opposing parties or Defendants attempt to settle or otherwise resolve Attorneys' cases in a group or groups by making a single settlement offer to settle a number of cases simultaneously. There exists a potential conflict of interest whenever a lawyer represents multiple clients in a settlement of this type because it necessitates choices concerning the allocation of limited settlement amounts among the multiple clients. However, if all clients consent, a group settlement can be accomplished and a single offer can be fairly distributed among the clients by assigning settlement amounts based upon the strengths and weaknesses of each case; the relative nature, severity and extent of injuries; and individual case evaluations. In the event of a group or aggregate settlement proposal, Attorneys may implement a settlement program, overseen by a referee or special master who may be appointed by a court, designed to ensure consistency and fairness for all claimants, and which will assign various settlement values and amounts to each client's case depending upon the facts and circumstances of each individual case. The School District authorizes Attorneys to enter into and engage in group settlement discussions and agreements which may include the School District's individual claims. Although the School District authorizes Attorneys to engage in such group settlement discussions and agreements, the School District will still retain the right to approve, and Attorneys are required to obtain the School District's approval of, any settlement of the School District's case.

17. EFFECTIVE DATE AND TERM. This Agreement will take effect upon execution by School District and Attorneys.

18. COUNTERPARTS. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, and all of which, taken together, shall constitute one and the same instrument. Facsimile or .pdf versions of this Agreement shall have the same force and effect as signature of the original.

[THE BALANCE OF THIS PAGE HAS BEEN LEFT BLANK INTENTIONALLY.
SIGNATURE PAGE FOLLOWS.]

The parties, intending to be legally bound, approve and agree to the foregoing terms by executing this Agreement.

THE FRANTZ LAW GROUP, APLC

_____
Signature

Date: _____

LEVIN LEGAL GROUP, P.C.

_____
Signature

Date: _____

DILLON MCCANDLESS KING COULTER & GRAHAM, LLP

_____
Signature

Date: _____

WYALUSING AREA SCHOOL DISTRICT

_____
President

_____
Secretary

Date: _____

# SCHOOL BUS TRANSPORTATION SERVICES AGREEMENT

This Agreement entered into this 9th day of November, 2026 is made between the Board of School Directors of the Wyalusing Area School District and Walters Transport, Inc. ("the Contractor" hereinafter). Pursuant to this Agreement, the District and the Contractor agree to be bound as follows:

**Section 1: Terms**

A. This Agreement shall begin July 1, 2025 and terminate on June 30th, 2030 unless terminated earlier for cause, by mutual consent of the Parties hereto or due to reduction in District enrollment, elimination or reduction in off-site programs, or elimination of a route.

**Section 2: Legal Requirements**

A. The Contractor or driver will immediately inform the District Business Manager if they have broken any laws or have been charged with breaking any laws that would be of a nature so as to disqualify them from hiring by a public school district. Each driver will complete the Act 24 disclosure form indicating the violation and date (Appendix A).

B. The Contractor and driver(s) will sign a release authorizing the District to obtain and review each driver's driving history record and the District will provide a free copy to the Contractor. The District reserves the right to reject a driver based upon that driver's record history.

C. The Contractor and driver(s) must comply with all Federal and State requirements and provide assurance to the District of the following information that each driver:

- is at least 21 years of age
- possesses and maintains a valid Driver's License
- possesses and maintains a valid CDL School Bus endorsement license (when operating a school bus)
- meets the expectations of the PennDot School Bus Driver's Physical Examination Form (DL-704)
- will submit a pre-employment drug test
- will provide such other relevant information as the District may request

D. All drivers must provide a copy of, comply with, and be absent of any findings deemed unacceptable by the District for the following:

  - Act 24 (Arrest/Conviction Form)
  - Department of Human Services Child Abuse History Clearance
  - Pennsylvania State Police Criminal Records Check
  - Federal Criminal History Record Information (CHRI)

- ACT 168 (Disclosure Form)

E. The Contractor and driver(s) must comply with any required trainings established by the District or Federal/State laws including but not limited to Act 126-Manadated Reporter Training.

**Section 3: Daily Student Transportation**

A. The Contractor agrees to provide transportation for school pupils who shall be designated by the District, to and from such points, along and over such routes, and at times set forth in the schedule provided by the District for each school year.

B. The District may adjust bus route lengths in its sole discretion. Routes are subject to change depending on District changes in enrollment, changes in available roadways and opportunities for increased route efficiency.

C. Bus routes and bus stops shall be determined by the District and may be modified by the District as circumstances arise. The operator shall not deviate from the designated route except at the discretion of the District or, in the case of an emergency, which shall be reported promptly to the District.

D. The student pick-up and drop-off operating time schedule shall be prepared by the District in cooperation with the Contractor. The District will make the final determination of the operating time schedule.

E. Pupils shall embark and disembark from the bus only at the designated stops which will whenever possible be at the extreme right of the road. No pupils shall be permitted to get on or off the bus while it is in motion.

F. No person other than a school pupil shall be transported in a vehicle without permission from the District. Nothing except passengers and their belongings shall be transported in the school vehicle while it is engaged in transporting pupils to and from school. Pupils shall be permitted to transport sports equipment and musical instruments on the school bus.

G. In the event that a route needs to be eliminated, the District will consider seniority, driver record, discipline record, contractor evaluation, driver evaluation and geography when making the decision to terminate an Agreement. The District will make the final determination of any routes to be eliminated.

**Section 4: Communication and Video Surveillance Equipment**

A. The District will pay the cost and maintenance for one two-way radio for each transportation vehicle. The Contractor will be responsible for the installation of the communication equipment. All communication equipment will remain the property of the District and will be returned to the District if the route is no longer needed.

B. The District may elect to upgrade the bus camera system and will pay 100% of the cost. The District will choose the replacement make and model of the camera system. The District will be responsible for the initial installation of the camera system. The Contractor will make all vehicles available for installation at no cost to the district. The Contractor will be responsible for installation costs associated with removing video equipment from one bus to another if/when a replacement bus is put into service.

C. The District may elect to purchase and install a GPS monitoring system. The District will pay 100% of the cost if/when the district chooses to implement said system. The District will be responsible for the initial installation of the GPS system. The Contractor will make all vehicles available for installation at no cost to the district. The Contractor will be responsible for installation costs associated with removing GPS equipment from one bus to another if/when a replacement bus is put into service. The District will pay 100% of the monthly fees associated with a GPS monitoring system during the school term.

**Section 5: Northern Tier Career Center Transportation**

A. The Northern Tier Career Center (NTCC) route will be paid as follows on days when students are transported to the NTCC via school bus, inclusive of layover time:
   - One Hundred Fifty-Six ($175.00) Dollars per day for the 2025-2026 school year
   - One Hundred Sixty-One ($180.00) Dollars per day for the 2026-2027 school year
   - One Hundred Sixty-Six ($185.00) Dollars per day for the 2027-2028 school year
   - One Hundred Seventy-One ($190.00) Dollars per day for the 2028-2029 school year
   - One Hundred Seventy-Six ($195.00) Dollars per day for the 2029-2030 school year

**Section 6: Extra-Curricular & Field Trip Transportation**

A. For each year of this Agreement, all Extracurricular field trips, Co-curricular field trips and Summer School transportation needs will be reimbursed at $3.00 per mile (garage to garage), plus Fifteen ($15.00) Dollars per hour for any layover deemed necessary by the District. *Layover time is defined as the period beginning 15 minutes before the driver leaves the district for an event and ending when the driver unloads at the district after the event.*

B. The Contractor must submit the Field-Trip Form for proper payment processing within two weeks of occurrence via Appendix B.

**Section 7: Payment Schedule, Financial Terms, and Penalties**

A. For each year of the Agreement, the Contractor will be paid the PDE Vehicle Formula Allowance as calculated assuming full ridership for each vehicle, plus Ten ($0.10) Cents for all regular and the after school runs.

B. If a handicap-lift is required for the route and approved by the District, the contractor shall be paid $1,000 per year.

C. A maximum distance of no more than ten (10) miles will be permitted for payment to reach the first student pick-up location.

D. The Contractor's payments will be made through twelve (12) monthly direct deposit installments typically posted by the 25th of each month.

E. All drivers will report any mileage variance greater than 2 (TWO) miles (addition or deduction) via Appendix C, to the Business Manager within 5 business days of the change, and will also submit a new odometer reading signed by the Contractor.

   If an error is discovered at any time during the course of the year, appropriate adjustments to payments will be made so that total payment for a year reflects the actual miles driven. In the event that an error is discovered too late to make corrections during the current year, the appropriate adjustments will be made during the next year of the Agreement.

F. The Contractor will be compensated for dates when transportation is required. The District operating calendar is subject to change. No compensation shall be provided when the District is closed for weather, work-stoppage, or any other purpose. The Contractor is not guaranteed any specific number of operating days.

G. The Contractor will provide transportation services to non-public schools and off campus alternative education school facilities as required by the District. The operating calendar dates shall be prepared by the District and provided to the Contractor and may be different from the District calendar operating dates and are subject to change. No compensation shall be provided when the non-public school or off campus alternative education school facility is closed for weather, work-stoppage, or any other purpose. The Contractor is not guaranteed any specific number of operating days.

H. If the PDE Vehicle Formula Allowance is discontinued before this agreement expires the district will continue to pay the Contractors, the PDE Vehicle Formula Allowance rate for the remainder of that current school year. The Contractor and the District will then enter into negotiations for future years and this agreement will become null and void.

I. The District reserves the right to require the Contractor and/or driver(s) to attend meetings or professional development trainings. The Contractor and/or driver(s) will be paid $10.00 per hour to attend the District required meetings/trainings.

J. The Contractor will be subject to a penalty fee of $10.00/day for any reports, paperwork or receipts not submitted by the appropriate due date (dates will be recorded by the Transportation Secretary). A penalty of $10.00/day will also be enforced to the Contractor for not returning calls within 18 hours. Returned calls will be noted by the Transportation Secretary.

K. If state or federal programs are created that provide any incentive for alternative fuel usage and / or usage of alternative fuel vehicles for pupil transportation and the Contractor participates in the program(s), the incentive would be passed from the District to the Contractor.

L. The District shall assess the current legally allowed fee (currently 2%) of the payment amount to the Contractor who has wages garnished or otherwise court ordered for child support, tax liens, or other court ordered payments. The Business Office will deduct the fee from the Contractor's next payment after the third party was paid.

M. In the event that the Contractor does not provide 30 calendar days' notice of discontinuing his or her contracted route, the Contractor will pay the District a penalty of $300/day for each day less than 30 days. This amount will be withheld from any remaining payments due to the Contractor, and any remaining amount will be billed to the Contractor.

N. **In the event that the Contractor fails to transport students per the District operating calendar/hours, the Contractor shall be subject to a penalty of $300/day or $150 per morning or afternoon run and will not receive their daily route compensation. If the Contractor habitually fails to provide consistent transportation services for students, they will be subject to termination of this agreement.

**In the event that a Contractor covers the morning or afternoon route of another Contractor as a result of the circumstance identified above, the Contractor will be compensated $200/day or $100 per morning/afternoon run.

**Section 8: Insurance & Liability Requirements**

A. The Contractor will maintain insurance coverage of at least $1,000,000.00 for each accident combined single limit including bodily injury and property damage. The Contractor will provide at least annually, before the beginning of the new school year, a certificate of insurance or evidence of appropriate insurance coverage. The Contractor

shall have the Wyalusing Area School District named as Additional Insured on their policy.

B. The Contractor will indemnify, defend and hold harmless the District, its officers, agents and employees from and against any and all losses, claims, actions, damages, liability and expenses (including litigation and reasonable counsel fees) arising out of the performance of this contact by the Contractor, its agent, representative, or employee.

**Section 9: Drug & Alcohol Testing Requirements**

A. Pre-employment drug testing requirements will be paid by the Contractor and must be completed within 30 days of reporting for duty. The Contractor will provide evidence of test results to the District.

B. The District will pay the cost of random drug and alcohol tests for regular and substitute drivers.

C. Post-accident drug/alcohol testing is mandatory and will be paid by the Contractor. Drivers involved in an accident regardless of fault may not report for duty until the District receives confirmation of a negative test result.

D. Contractors are required to maintain compliance with all regulations set forth by the Federal Motor Carrier Safety Administration (FMCSA), specifically, but not limited to, the regulations requiring drug and alcohol testing for all Commercial Driver License (CDL) drivers. The Contractor will assume full responsibility for compliance with the Drug and Alcohol Clearinghouse which includes the requirements associated with establishing a Contractor determined Designated Employer Representative (DER).

E. Contractors will provide the District with all drug and/or alcohol testing results.

**Section 10: License and Certification Requirements**

A. The Contractor and its drivers will be responsible for their Driver certification/re-certification course. An authorized Instructor will be permitted to ride the school bus route to conduct the driving hours required as part of the certificate/re-certification process. The Contractor will inform the Business Manager of the scheduled dates and times that the instructor will be riding the bus. The Instructor must provide the District with copies of all required clearances.

B. All drivers are encouraged to maintain current First Aid & CPR certification and provide the District with a copy of the certificate. The District will pay for the costs of First Aid & CPR certification.

## Section 11: Governing School Board Policies and Transportation Handbook

A. The Contractor and driver(s) must adhere to all School Board Policies including but not limited to Policy 824 Maintaining Professional Adult/Student Boundaries, 810 Transportation, 810.1 Drug/Alcohol Testing-Covered Drivers, 810.2 Student Behavior on School Buses, 810.3 Use of Video Cameras on School Buses, 810.4 Device Usage While Operating a Vehicle, 818 Contracted Services. School Board policies can be viewed on the school district website www.wyalusingrams.com.

B. The Contractor and driver(s) must adhere to the components established in the District Transportation Policy and state guidelines.

C. Students are to be managed and disciplined according to school board policy and the Student Handbook which is updated annually, Appendix E.

D. Drivers shall refrain from physical contact with a student unless the safety of self or others is at stake.

## Section 12: General Contractor & Driver Requirements

A. The Contractor shall furnish vehicles which conform to the standards for school transportation vehicles approved by the Department of Traffic Safety of the Pennsylvania Department of Transportation, Public Utility Commission and Mass Transit Authorities as applicable. School buses and Type A vehicles shall meet the minimum standards of the Bureau of Traffic Safety and shall pass annual inspection by the Pennsylvania State Police during the month of August. Type B and C school vehicles shall conform to the minimum standards of the Bureau of Traffic Safety. All vehicles shall conform to the provision of the laws of the Commonwealth, and shall be in good mechanical and sanitary condition.

B. The Contractor agrees to comply with and observe all provisions of the Pennsylvania Vehicle Code and all other applicable laws.

C. The speed of a vehicle shall at all times be consistent with the safety of the passengers and shall at no time exceed the speed limit as set forth in the minimum standards of the Bureau of Traffic Safety, PennDOT, as promulgated from the vehicle code.

D. The Contractor while carrying out and complying with any of the terms and conditions of this contact, is an Independent Contractor, and is not an officer, agent or employee of the District.

E. This Agreement shall not be transferred.

F. Any violation of the terms of this Agreement may, at the option of the District, operate as a cause for termination.

G. The Superintendent and/or Business Manager may place the Contractor or its driver on suspension or administrative leave without pay for violation of terms of this agreement or during investigation of misconduct. In the event of suspension, it is the responsibility of the Contractor to find a replacement driver to ensure route coverage.

H. Utilization of drivers prior to approval by the School Board can be authorized by the Superintendent when necessary to maintain continuity of services provided that the District receives the appropriate paperwork.

I. The District reserves the right to implement a Contractor and/or driver performance evaluation tool.

J. Neither the Contractor nor its drivers shall engage in political activities while transporting students or staff under the jurisdiction of the District, unless permission has been granted for that purpose. Collection of campaign funds and/or solicitation for campaign workers is prohibited on school property or on contracted buses or vans. The use of students for writing, addressing or distributing partisan political materials is prohibited. No signs, bumper stickers or other displays shall be displayed on school buses or vans without prior District approval.

K. The District shall adjust all matters arising out of this Agreement not specifically provided for herein.

IN WITNESS WHEREOF, the parties above named have hereto set their hands and seal the day and year aforesaid.

BY **Walters Transport, Inc.** Contractor Name

**310 Walters Road** Address

**Mehoopany PA 18629** Address

**570-690-5067** Cell Phone

**LGW_CMW@yahoo.com** Email Address

**Van # 111** Student In-Person Instructional Day/After School Activity Assigned Vehicle Route(s)

Yes X No___ Extra-Curricular/Field Trip/Summer School Interest

10-23-2026 Date

Walters Transport Inc. Contractor Signature
Roger Walters

RECOMMENDED FOR BOARD APPROVAL:

_____ _____
Superintendent Signature Date

FOR THE BOARD OF SCHOOL DIRECTORS OF

Wyalusing Area School District

_____ President

_____ Secretary

11450 Wyalusing-New Albany Road, Wyalusing, PA 18853

| **Grade Level :** | 4th Grade |
|---|---|
| **Trip Destination** | Corning Museum of Glass |
| **Trip Dates** | 12/7 & 12/8 |
| | |
| **Chaperone Last Name** | **Chaperone First Name** |
| Amber | Adams |
| Jira | Albers |
| Elizabeth | Benninger |
| Lynn | Broschart |
| Crystal | Chilson |
| Lyndsey | Clark |
| Brooke | Cogswell |
| Rebecca | Cox |
| Sarah | DeLong |
| Tiffany | Evans |
| Karin | Ferguson |
| Shannon | Kolupski |
| Jennifer | Morningstar |
| Sara | Petlock |
| Hannah | Pursel |
| Denise | Schloder |
| Sonya | Shaffer |
| Jessica | Smith |
| Stefani | Whipple |
| Nicole | Wild |

## Request for Proposals for

## Commissioning Services

# Wyalusing Area School District Capital Improvements Project Commissioning

## High School Building

## 11364 Wyalusing New Albany Road, Wyalusing, PA 18853

## A. INTRODUCTION

i. Wyalusing Area School District, referred to for the entirety of this document as Owner, requests written proposals to secure independent, third-party commissioning services for the Capital Improvements Project.

ii. The commissioning authority will heretofore be referred to as the CxA. The CxA will be hired by and report directly to *Hunt Engineers, Architects, Land Surveyors & Landscape Architect DPC* referred to for the entirety of this document ad Engineer..

iii. The Owner is committed to commissioning this facility to systematically optimize the building and ancillary systems so that they operate efficiently and effectively in accordance with the owner's project requirements, and that the facility staff has adequate system documentation and training.

iv. It is the intent of the Owner to ensure that the fundamental systems are calibrated and operating as required to deliver functional and efficient performance.

v. The project will take place at the following buildings: Wyalusing Area School District High School, 11364 Wyalusing New Albany Road, Wyalusing, PA 18853

vi. Design team members currently associated with this project include:
   a. Construction Manager: LeChase
   b. Architect(s): Hunt EAS
   c. Design Engineer(s): Hunt EAS
   d. Controls Company/Service provider: CP3

vii. Construction started on April 2025 **a**nd anticipates completion of commissioning services in December, 2026

## B. TERMS & CONDITIONS

i. This Request for Proposals (RFP) does not commit the Owner to award a contract, issue a purchase order or to pay any costs incurred in the preparation of a proposal in response to this RFP.

ii. The proposal will become part of the Owner's official files without any obligation on the Owner's part. All responses will be held strictly confidential and shall not be released to the public without written authorization from the respective bidder.

iii. Proposer(s) shall not offer gratuities, favors or anything of monetary value or otherwise to any officer, authority, contractor or employee of the Owner for the purpose of influencing consideration of contract award to that party.

iv. Proposer(s) shall not collude in any manner, or engage in any practices, with any other Proposer(s) that may restrict or eliminate competition or otherwise restrain trade. This is not intended to preclude subcontracts and joint ventures for the purpose of responding to this RFP or establishing a project team to meet the requirements of this RFP.

v. The Owner reserves the right to cancel this RFP or to reject any or all proposals received prior to contract award.

vi. The Owner reserves the right to request clarification of any proposal after all proposals have been received. This request can be in the form of oral presentation or personal meetings.

## C. SCOPE OF WORK

Construction Phase

1. Review project status, build and maintain a deficiency list, and provide a field report for each sitevisit. Include as many site visits as are required to complete review of equipment and build full deficiency list as well as 2 visits for project meetings and include 3 additional site visits to recheck deficiencies after corrections have been made.
2. Attend 2 project meetings after completion of deficiency list. Provide the following input at each meeting:
   a. Impacts on schedule for commissioning activities
   b. Review of deficiency list
3. Execute self performed pre-functional tests and provide reports with the following minimum information for each piece of equipment to be commissioned:
   a. Equipment name, location, and service
   b. Name plate data
   c. Installation completeness (appropriate installation based on the O&M manuals)
   d. Services by other trades – (such as electrical and plumbing for HVAC equipment)
   e. Balancing review and independent confirmation of balance report
   f. Preliminary controls point-to-point checkouts
4. Hold a Pre-functional review meeting with the controls contractor, CM and engineer to discuss:
   a. What is required to finalize pre-functional checklists
   b. Outstanding deficiencies
   c. Testing plan for Functional testing, including schedule and who will be required to be available for each test.
5. Deliverables:
   a. Field reports
   b. Deficiency List
   c. Pre-functional testing
   d. Balance Review

Testing phase

1. Develop and implement a diagnostic monitoring and test plan to compile data on how systems are operating by the use of BAS trend logging, portable data logging or functional performance tests. The quantity and quality of these tests shall meet or exceed section C408 of the building code.

2. Deliverables:
    a. Short-term diagnostic monitoring and functional test plans
    b. The master list of deficiencies and potential improvements
    c. Completed site-assessment forms (optional)
    d. Completed functional tests, including (at minimum)
        i. Data recorded with calibrated devices independent of the control systems
        ii. Air handlers, Roof-top units, and Energy recovery ventilators
            1. Name-plate data and areas served
            2. Measured air flows: Supply, Return, Exhaust and outside air
            3. Measured water flows: Heating and cooling (where applicable)
            4. Trending data that supports the written sequences and schedules
            5. Testing of alarm points and associated sequences (high and low limits, etc.)
            6. Review of the sequences of operation and schedules, and the equipment's ability to serve the occupants with the written sequence
        iii. VRF System
            1. Name-plate data and areas served
                a. Notation regarding additional systems (such as finned tube) that serve the same areas
            2. Trending data that supports the written sequences and schedules
            3. Testing of alarm points and associated sequences (high and low limits, etc.)
            4. Review of the sequences of operation and schedules, and the equipment's ability to serve the occupants with the written sequence

<u>Close-out Phase</u>

1. Orchestrate a meeting to review deficiencies and work with the engineer as directed for resolution of major improvements

2. Deliverables:
    a. Minutes for the major improvements meeting

<u>Project Turnover Phase</u>

1. Prepare and submit the final report including:
    a. Executive summary
    b. Analysis of major findings and results
    c. Building and systems descriptions
    d. Scope of the commissioning project
    e. Master list of improvements, including training needs and maintenance recommendations
    f. Minutes from the major improvements meeting
    g. All completed functional tests and results

## D. SYSTEMS TO BE COMMISSIONED

Systems to be commissioned will include all equipment shown on Mechanical schedules, see drawings for further information.

## E. QUALIFICATIONS

i. The required expertise for this project will be based on the skill and experience set of the full team submitting the proposal.

ii. A member of the prime firm will be the designated commissioning authority who is the member of the team that will coordinate the commissioning activities from the technical perspective.

iii. The CxA must have substantial and proven in-building commissioning experience, including technical and management expertise on commissioning projects of similar scope.

iv. Subcontractor qualifications shall be included and clearly designated in the response to this RFP.

v. It is the desire of the Owner that the CxA satisfy as many of the following conditions and requirements as possible:

a. Acted as the principal commissioning authority for at least five (5) projects of comparable size, type and scope.
b. Commissioning must be the firms primary business
c. Extensive experience in the operation and troubleshooting of HVAC systems and energy management control systems.
d. It is the desire of the owner to have one firm handle all items of the commissioning process.
e. Extensive field experience for all key team members, including project managers, team leaders and field engineers. Field engineers must posses a minimum of three full years of field commissioning experience.
f. Knowledge and experience in the following:
    - Writing commissioning plans.
    - Writing commissioning specifications.
    - Building operation and maintenance and O&M training.
    - Testing and balancing of air and water systems.
    - Energy-efficient equipment design and control strategy optimization.
    - Monitoring and analyzing system operation using energy management control system trending and stand-alone data logging equipment.
g. The staff member assigned to developing energy saving calculations shall either be accredited by the Association of Energy Engineers (AEE) as a Certified Energy Manager (CEM), or PA state board approved Professional Engineer.
h. Excellent verbal and written communication skills.
i. A bachelor's degree from an accredited institution in mechanical engineering is strongly preferred and professional licenses and certifications are desired.
j. Certification as a Certified Commissioning Professional with the Building Commissioning Association.

## F. SUBMITTAL GUIDELINES

i. All questions and requests concerning this RFP must be submitted to:
   a. Eric Stickler
      Hunt EAS
      100 Hunt Center
      Horseheads, NY 14845
      W: (607)-358-1000
      C: (607)-972-3399
      Email: Sticklere@hunt-eas.com
   b. Questions and requests received by the above-named individual after 8AM 10/23/2026 may not be considered.

ii. Emailed Proposals shall be sent to Eric Stickler by 5PM on 10/26/2026. Proposals received after this time may not be considered.

iii. Responses to this RFP should be prepared simply and economically, providing straight-forward and concise responses to the submittal requirements.

iv. The Owner reserves the right to reject any and all responses received as a result of this RFP or to negotiate with any or all of the responding firms.

v. The Owner, in its sole discretion, has the right to cancel the RFP and reissue the RFP at any time prior to the issuance of a fully executed contract.

## G. SUBMITTAL REQUIREMENTS

i. The proposal should be submitted in a bound format and corresponding to the sections that follow.
   a. **Firm History and Overview.** Name and address of firm and full contact information for key representative concerning this project. Number of years firm has provided commissioning services and percentage of annual revenue represented by commissioning must be included.

   b. **Key Personnel.** Describes the general qualifications of the CxA personnel assigned to this specific project and demonstrates clear and effective lines of communication through a project organization chart. List the individual who will serve as the lead commissioning authority for all phases of this project. Provide resumes for all key staff and sub-consultants (resumes must be no longer than two pages per individual).

   c. **Relevant Commissioning Experience.** Provide adequate information demonstrating commissioning experience on projects of similar scope and magnitude. Project square footage, construction cost and owner/client reference must be included.

   d. **References.** Provide three (3) owner or client references that will attest, when called upon, to the quality and timely service provided by your firm and its principal commissioning authority or project manager.

   e. **Project Approach.** Describe your approach to commissioning projects, including

commissioning philosophy, deficiency management, project management tools for managing budget and schedule, and other pertinent information. Describe how you intend to determine the appropriate level of commissioning effort for the various systems and equipment.

f. **Work Samples.** As an attachment please provide work products that members of the proposer's team have developed for specific projects related to the size, scope and magnitude of this assignment. Work samples must include an actual commissioning plan used on a project; actual commissioning specifications used on a project; and executed functional test procedure forms used on a project.

g. **Proposed Fee**. Provide a fixed, lump sum total cost per building to accomplish the work for the phases outlined in this RFP's scope of work. Provide a single standard hourly bill rate to be used for change-order work. All task amounts include associated meetings, progress reports and direct costs.

h. **Additional Services.** Provide a separate unit price cost for additional field visits structured based on an 8 hour workday in the event that additional field inspection are desired after completion of proposed scope.

i. **Use of Sub consultants.** Provide a detailed accounting of how each (if any) sub consultants will be used, the percentage of the project fee they account for, and which phases they will be involved in.

## H. SELECTION PROCESS

i. Owner's staff and contractors will review all proposals and select and rank the most qualified consultants according to the following criteria (not necessarily in this order).
   a. Ability to meet the proposed schedule
   b. Key individual experience
   c. Past experience in performing similar projects
   d. Expertise of team in performing services required by the project
   e. Management approach
   f. Staff experience
   g. Work samples
   h. Cost

ii. On the basis of the response and qualifications the Owner will make a selection or firms may be invited to be interviewed and may also be asked to make a formal presentation.

iii. Negotiations with the highest ranked consultant may be formally terminated if they fail to result in a contract within a reasonable time period. Negotiations may then ensue with the second ranked consultant, and if necessary, the third ranked consultant.

October 27, 2026

**WYALUSING AREA SCHOOL DISTRICT**
**CAPITAL IMPROVEMENT PROJECT**
**COMMISSIONING SERVICES**
REFERENCE 266C-03417-00

**HUNT EAS**
100 Hunt Center
Horseheads, NY 14845
Attn: Eric Stickler

Dear Eric:

We are pleased to submit this proposal to provide engineering services as follows:

A. **GENERAL**

1. Professional services will include Commissioning Services associated with Wyalusing Area School District's Capital Improvement Project. It is our understanding that the project consists of renovations at the High School located at 11364 Wyalusing New Albany Road.

2. This proposal's scope of work is based on the Construction Documents dated February 18, 2025. It is our understanding that the construction began in April 2025, and it is anticipated to be concluded by December 2026.

3. Commissioning Services will be provided to meet the minimum requirements of Section C408, Maintenance Information and System Commissioning, of the 2018 International Energy Conservation Code.

B. **BASIC SERVICES**

We propose providing commissioning services as follows:

1. Commissioning Plan:

   a. A Commissioning Plan will be developed that will describe in detail the commissioning process, specific commissioning team member responsibilities and tasks, preliminary commissioning schedule, details of the functional performance testing process, and a listing of all equipment and systems to be commissioned.

2. Checklists/Functional Test Procedure Development:

   a. Submittals of all equipment and systems to be commissioned will be reviewed. This review will provide the basis for the development of project specific Checklists and Functional Test Procedures.

b. Develop project-specific Prefunctional (Installation) Checklists for the commissioned equipment and systems that will be completed by the commissioning agent.

c. Develop Functional Performance Test procedures and scripts, which will be filled out by the commissioning agent during functional testing. The developed documents will be based on a review of the design documents and the approved controls submittal.

3. Construction Phase Site Visit:

a. We have included two (2) site visits during the construction phase of the project. Below are the items that will be included during these site visits.

1) We will conduct an initial commissioning kick-off meeting with the owner, design team, and construction team. The commissioning roles, responsibilities, schedule and other pertinent information will be discussed.

2) Review the installation of the commissioned equipment and systems as compared to the project documents.

3) Complete the prefunctional checklists for the commissioned equipment and systems, with the assistance of the contractors.

b. Site observation reports and a deficiency list will be developed following each visit, documenting project progress and observations.

4. Review Construction Phase Documentation:

a. CxA will confirm installation of the commissioned equipment and systems by completing the prefunctional checklists and collecting and reviewing the contractor's equipment startup reports and the controls contractor's point-to-point verification report.

b. We will hold a prefunctional review meeting virtually with the controls contractor, CM and engineer to discuss outstanding deficiencies and what is required to complete the prefunctional checklists and prepare for functional testing. Upon acceptance of documentation, functional performance testing can commence.

5. Functional Performance Testing:

a. Final Functional Performance Testing will be executed by the installing contractors and manufacturer representatives, as required, and the testing will be overseen and documented by the commissioning agent. Contractors will operate the commissioned equipment and systems as directed by the written test procedures. The commissioning agent will document the observed test results and any deficiencies or operational issues. We anticipate this testing will take approximately five to six days onsite, and we anticipate testing in two consecutive day intervals, for a total of three site visits, with each visit being two working days.

b. A comprehensive verification of the Direct Digital Control (DDC) System will be accomplished, which will address the following:

1) System point-to-point confirmation and system graphics

2) Sequences of operation for all commissioned equipment/systems

3) Confirmation of system alarms and schedules

4) System performance trend data confirmation

c. This proposal assumes functional performance testing utilizing the testing sampling rates listed below. For the equipment to qualify for the sampling percentage, there would need to be 10 or more units or devices that are of similar type, size and control. If the quantity is less than 10 units, then the testing sample will be 100%.

1) Major HVAC Equipment: 100% testing sample

2) Secondary/Terminal HVAC Equipment: 25% testing sample

d. Any deficiencies resulting from the testing will be communicated to the project team, and an action plan for remediation discussed. Upon resolution of the issues by the contractors and confirmation of the equipment being ready, the commissioning agent will return to the site to retest the equipment and confirm the deficiencies were resolved. We have included two (2) site visits to conduct our retesting.

6. Issues & Resolution Log:

a. An on-going Issues & Resolutions Log will be maintained that will record all issues, deficiencies and system operational shortcomings identified during the construction observation visits and during functional performance testing. Deficiencies will not be removed from the log until they are addressed in a satisfactory manner.

7. Project Meetings:

a. We will attend and participate in the construction progress meetings. Two (2) have been included in this proposal and will be attended either in person to coincide with our site visits or testing visits, or they may be attended virtually.

8. Project Turnover Review:

a. Testing & Balancing: CxA will review the testing & balancing report and compare the recorded results with what is observed onsite during testing – deficiencies will be noted in the Issues & Resolution Log.

b. Training Coordination: The CxA will confirm all required training and demonstrations are provided by the contractors to the Owner's designated operating staff.

c. Closeout Documents: The CxA will confirm all Operations and Maintenance manuals are submitted by the contractors, approved by the engineer of record, and provided to the Owner.

9. Commissioning Report:

    a. Final Commissioning Report will be developed, which will include the following:

        1) Executive Summary

        2) Completed Prefunctional Checklists & Functional Test Procedures

        3) Final Commissioning Issues & Resolutions Log

        4) Other Commissioning-Related Documents: Site Observation Reports, Test and Balance Report, Training Record, Meeting Minutes

10. Deferred Commissioning:

    a. Based on the seasonal timeframe of project completion, seasonal or deferred commissioning will be required to address heating or cooling equipment at full load conditions. These services will be provided, and the Final Commissioning Report will be amended to reflect the seasonal functional performance testing. We have included one (1) site visit for this testing, which may take place in the Spring/Summer of 2027.

## C. SYSTEMS TO BE COMMISSIONED

1. Based on our understanding of the project, the following equipment and systems are to be commissioned:

    a. Rooftop Air Handling Units – DX/HW/Heat Recovery (8)

    b. Rooftop Air Handling Units – DX/Heat Recovery (1)

    c. Rooftop Air Handling Units – DX/HW (3)

    d. Energy Recovery Ventilator (1)

    e. VAV Air Terminal Units – HW Reheat (23) *(25% sampling)*

    f. Exhaust Fans (8)

    g. Duct Heating Coils – Hot Water (3)

    h. Duct Heating Coils – Electric (6)

    i. Cabinet Unit Heaters – Hot Water (2)

    j. Mini-Split System Air Conditioning Units (2)

    k. Unit Ventilators – HW/DX (6)

    l. Unit Ventilators – HW only (7)

    m. Range Hoods (2), Dust / Particulate Collectors (2)

    n. Automatic Temperature Control System

## A. ASSUMPTIONS

1. Actual check, test, and start-up of all equipment and systems remains the responsibility of the installing contractor and equipment manufacturers.

2. All contract-required field testing and functional performance testing shall be conducted by the contractor, and all necessary tools, equipment and testing devices shall be provided by the contractor, including calibration certificates.

3. Access will be provided to the commissioned equipment and systems, including the use of the contractor's ladders, lifts, etc. and work will be performed during normal working days and hours.

4. The functional performance testing scope of work includes one complete sequence of operation system test per equipment item listed upon completion of installation. If a retest (due to failure) is required, then one (1) follow-up test will be conducted once the deficiencies have been corrected. Any subsequent visits for rechecks or retests due to failures or incomplete work by the contractor will require an amendment to this contract.

## B. SERVICES NOT INCLUDED

1. The scope of work is for commissioning services only and does not include design services.

2. Any indoor air quality (IAQ), measurement & verification (M&V), building envelope commissioning (BECx), or monitoring-based Cx (MBCx) related services.

3. Commissioning of any new or existing equipment/systems not specifically referenced in this proposal.

4. Commissioning associated with any federal, state or local incentive or rebate program, such as NYSERDA, Energy Star, NYSEG, etc.

5. Additional site visits or meetings not included under Basic Services.

## C. FEE FOR SERVICES

1. Our fee for Basic Services will be THIRTY-EIGHT THOUSAND SEVEN HUNDRED FIFTY DOLLARS ($38,750.00) (USD) lump sum.

2. Invoices for services will be submitted every four weeks based on the work completed. This proposal is valid for a period of sixty (60) days from issue.

3. For reference purposes only, an Estimated Labor-Hour Breakdown is provided.

## D. RATE SCHEDULE

1. We have included our rate schedule for hourly billing rates for the current calendar year. Should the duration of the project extend beyond the calendar year, a revised rate schedule will be provided, and we will invoice based on those hourly billing rates.

E. **TERMS AND CONDITIONS**

1. Included you will find "Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering). Terms and Conditions" which shall apply to this proposal for services.

We appreciate this opportunity to serve you, and we look forward to a very successful project. If the preceding is acceptable, please sign below and return.

Sincerely,

*Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering)*

Steven Hollis, CCP, LEED GA, BECxP, CxA+BE
Project Manager
Sustainability | Commissioning Services Group

SCH:hnk
cc: File
Encl:

**ACCEPTED FOR HUNT EAS:**

Signature _____ Date _____

Print Name _____ Title _____

## ESTIMATED LABOR-HOUR BREAKDOWN

| Tasks Description | Estimated Hours |
|---|---|
| Project Review, Coordination & Commissioning Plan | 8 |
| Develop Prefunctional Checklists & Functional Test Procedures | 12 |
| Cx Kickoff Meeting | 4 |
| Site Observation Visits, Reports & Deficiency Log Updates (2) | 32 |
| Review Construction Phase Documentation & Virtual Meeting | 8 |
| On-Site Functional Performance Testing (3, 2-day visits) | 66 |
| Issues & Resolutions Log | 8 |
| Construction Project & Closeout Meetings (3) | 6 |
| Test & Balancing Review & Verification | 8 |
| Recheck Deficiencies / Retesting (2) | 32 |
| Closeout Documentation & Owner Training Review | 3 |
| Preliminary and Final Commissioning Report | 12 |
| Deferred Seasonal Testing | 16 |
| | |
| | |
| **Total Hours** | **215** |
| | |
| Average Labor Rate: | $160.00 |
| Fee (Labor): | $34,400.00 |
| Estimated Travel (mileage) Expenses: | $1,600.00 |
| Estimated Lodging (hotel) Expenses: | $2,750.00 |
| | |
| **Total Fee:** | **$38,750.00** |

## TERMS & CONDITIONS

***Performance of Services:***
Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) shall perform the services outlined in the attached proposal in consideration of the stated fee and payment terms.

***Billings/Payments:***
Invoices for Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) services will be submitted on a monthly basis. Invoices are due upon presentation and shall be payable in United States Dollars (USD) within 30 days of the invoice date. If the invoice is not paid within 60 days, Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) may, without waiving any claim or right against the Client, and without liability whatsoever to the Client, suspend the performance of services. Retainers will be credited on the final invoice. Accounts unpaid 60 days after the invoice date may be subject to a monthly service charge of 1.5% (or the legal rate) on the then unpaid balance. In the event any portion or all of an account remains unpaid 120 days after the invoice date, the Client shall pay Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) all costs of collection, including reasonable attorney's fees.

***Access to Site:***
Unless otherwise stated, Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) shall have access to the site for activities necessary for the performance of the services. Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) will take precautions to minimize damage due to these activities, but has not included in the fee the cost of restoration of any resulting damage due to site investigations and exploratory work.

***Indemnification:***
The Client shall, to the fullest extent permitted by law, indemnify and hold harmless Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering), its officers, directors, employees, agents and sub consultants from and against all damage, liability and cost, including reasonable attorney's fees and defense costs, to the extent caused by the Client's negligent acts in connection with the project and the acts of its contractors, subcontractors, consultants or anyone for whom the Client is legally liable. Neither the Client nor Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) shall be obligated to indemnify the other party in any manner whatsoever for the other party's own negligence, nor will either party be subject to consequential, special, incidental or punitive damages.

***Certifications, Guarantees and Warranties:***
Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) shall not be required to execute any document that would result in their certifying, guaranteeing or warranting the existence of conditions whose existence of Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) cannot ascertain.

***Ownership of Documents:***
All reports, drawings, specifications, computer files, field data, notes and other documents and instruments prepared by M/E are instruments of service under this agreement and shall remain the property of Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering), and may not be used by the Client for any other endeavor without the written consent of Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering). Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) shall retain all common law, statutory and other reserved rights, including the copyright thereto.

***Dispute Resolution:***
Any claims or disputes made during design, construction or post-construction between the Client and Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) shall be submitted to non-binding mediation. Client and Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) agree to include a similar mediation agreement with all contractors, sub-contractors, sub-consultants, suppliers and fabricators, thereby providing for mediation as the primary method for dispute resolution between all parties.

***Termination of Services; Suspension of Project:***
A party may immediately terminate this agreement and/or cease providing services in the event of a material breach of any term, warranty, condition or covenant by another party which remains uncured for fifteen (15) days after written notice to the defaulting party. Notwithstanding the above, if the Client fails to make payments to Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) in accordance with this Proposal, such failure shall be considered substantial non-performance and cause for termination or, at Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) option, cause for suspension of performance of services under this proposal. Prior to suspension or termination of services, Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) shall give three (3) days' written notice to the Client. Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) shall have no liability to the Client or Owner for delay or damage caused because of such suspension or termination of services. In the event of suspension of services, and before resuming services, Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) shall be paid for all sums due prior to suspension and any expenses incurred in the interruption and resumption of Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) services. Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) compensation and schedule for remaining services shall be equitably adjusted, as necessary.

***Assignment:***
Neither Client nor Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) shall transfer, sublet or assign any rights or interest to the proposed services, including, but not limited to monies that are due or monies that may be due, without the prior written consent of the other party, except that Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) can hire subconsultants as is usual and customary in the execution of this agreement.

***Changes in Scope and Schedule:***
Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) shall not be responsible for additional services resulting from significant changes in the scope, extent, or complexity of any portions of the Project designed or specified by Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) caused by changes in Owner's schedule, Contractor's Schedule, length of construction, or method of financing; and revising previously accepted studies, reports, Drawings, Specifications, or Contract Documents when such revisions are required by changes in Laws and Regulations or Codes enacted subsequent to the Effective Date of this Agreement or are due to any other causes beyond Salas O'Brien Consulting and Engineering Group of New York, Inc. (FKA M/E Engineering) control.

***Entire Agreement:***
This Proposal constitutes the entire agreement of the parties concerning the subject matter hereof. No covenants, agreements, representations or warranties of any kind whatsoever have been made by any party to this proposal except as specifically set forth herein. All prior agreements, discussions and negotiations are entirely superseded by this proposal.

ME ENGINEERING

is now Salas O'Brien
Consulting and Engineering Group of New York, Inc.

## RATE SCHEDULE

for the period
**January 1, 2026, through December 31, 2026**

| CLASSIFICATION | HOURLY BILLING RATES |
|---|---|
| Principal | $285.00 |
| Associate/Manager | $195.00 |
| Senior Engineer | $180.00 |
| Senior Designer/Senior Commissioning Agent | $180.00 |
| Project Engineer/Project Designer | $125.00 |
| Commissioning Agent | $120.00 |
| Design Engineer/Designer | $110.00 |
| CAD Operator | $65.00 |
| Word Processor | $60.00 |

| REIMBURSABLE EXPENSES | |
|---|---|
| Travel | At Cost |
| Printing and Reproduction | At Cost |
| Sub-consultant | Cost Plus 10% |
| Testing Services | Cost Plus 10% |




# Commissioning

## Group Overview

The Sustainability/Commissioning Services Group at M/E Engineering specializes in Commissioning for new construction, building renovation projects and Retro-Commissioning of existing facilities. This group consists of professionally trained and certified staff with extensive experience in project management, mechanical and electrical system design and troubleshooting, direct digital control systems, and facilities staff training programs.

M/E Engineering is an accredited service provider of the Building Commissioning Association, and employs accredited professionals by the BCA, the Associated Air Balancing Council and ASHRAE. M/E Engineering has successfully implemented commissioning and retro-commissioning programs for educational, industrial, municipal, governmental, health care, corrections and commercial clients that have provided long term operational results.



### Commissioning Services

- Development/review of Owner's project requirements and Basis of Design
- Commissioning plans
- Design and contract document review
- Commissioning process facilitator
- Prefunctional Checklist development
- Functional Test Procedure development
- On-Site field testing and commissioning
- Test results documentation
- Operations Manual review
- Owner training
- Final Commissioning Record
- Project warranty inspections
- Systems Manual development
- LEED Certification commissioning
- Balancing Report verification

### Retro-Commissioning Services

- Audit of building HVAC and other energy consuming systems
- Review of utility bills
- Interview of facility operating personnel
- Diagnostic monitoring and testing of building systems
- Identification and implementation of lower cost operational and maintenance measures
- Proposed resolutions to complex issues
- Training of facility staff
- Building Operating Manuals
- System Maintenance Plans
- Building Retrofit Design
- Long Term Re-Commissioning Plans
- Laboratory system verification

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# Commissioning References

## SCHOOL DISTRICTS

**Cortland Enlarged School District**
Kris Williamson, Business Administrator
kwilliamson@cortlandschools.org
(607) 758-4100

**Fairport Central School District**
Aaron Smith, Director of Facilities
aaron.smith@fairport.org
(585) 421-2062

**Fayetteville-Manlius Central School District**
Goeff Brown, Director of Facilities
gbrown@fmschools.org
(315) 692-1250

**Marcus Whitman Central School District**
Christopher Wickham, Business Administrator
cwickham@mwcsd.org
(585) 554-4848

**Midlakes Schools | Phelps-Clifton Springs Central School District**
Ryan Tilburg, Director of Facilities
rtilburg@midlakes.org
(315) 548-6465

**Orchard Park Central School District**
Jeffrey Petrus, Asst. Superintendent for Business Support Services
JPetrus@opschools.org
(716) 209-6209

**Tonawanda City School District**
John Wille, Sr., Director of Facilities
jwille@tonacsd.org
(716) 694-7675

**Victor Central School District**
Christopher Marshall, Director of Facilities
marshallc@victorschools.org
(585) 924-3252

## ARCHITECTURAL FIRMS

**Ashley McGraw Architects, D.P.C.**
Daniel Donovan, AIA, LEED AP BD+C
Associate Principal
donovan@ashleymcgraw.com
(315) 425-1814

**Gordon W. Jones Associates, Architects**
Michael Noga, AIA, LEED Green Assoc.
Vice President
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(716) 633-9000

**Gordon W. Jones Associates, Architects**
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Senior Project Manager
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(716) 633-9000

**King + King Architects, LLP**
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Partner
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**King + King Architects, LLP**
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(315) 671-2400

**LaBella Associates, P.C.**
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Project Manager
jkury@labellapc.com
(585) 454-6110

**SEI Design Group**
Ted Mountain, AIA
Senior Principal
twm@seidesigngroup.com
(585) 442-7010

## CONSTRUCTION MANAGERS

**Campus Construction Management Group**
George Spinaris
Project Executive
GSpinaris@campuscmg.com
(585) 545-6567

**Campus Construction Management Group**
Nick Ippolito
Senior Project Manager
nippolito@campuscmg.com
(585) 280-0971

**LeChase Construction**
Brooks Buttice
Project Manager
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(607) 788-5555

**Turner Construction**
Christina IL Grande Mahaney
Project Manager
cilgrande@tcco.com
(716) 853-1900

**Turner Construction**
Vincent Donowski
Project Manager
vdonowski@tcco.com
(315) 701-3047

**Watchdog Building Partners**
Dan Blankenberg
Project Manager
dblankenberg@watchdogbp.com
(585) 369-5080

**Watchdog Building Partners**
Todd Labar
Project Manager
tlabarr@watchdogbp.com
(585) 233-5889

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# Steven C. Hollis, IE, CCP, LEED GA, BECxP, CxA+BE

Project Manager | Senior Commissioning Engineer



Steve has extensive project management and commissioning experience for a wide variety of healthcare, higher education, public school, and commercial projects. Steve also has expertise as an HVAC and process control systems designer for mechanical, electrical, refrigeration, and plumbing systems. Steve's commissioning responsibilities include, but are not limited to, design reviews, Commissioning Plans and Prefunctional Checklists, Functional Test Procedure development, on-site commissioning, retro-commissioning activities, and Final Report development. Below are a number of examples of Steve's K-12 School commissioning experience:

## Relevant Project Experience

Brasher Falls Central School District, Brasher Falls, NY
- 2024 CIP

Brighton Central School District, Rochester, NY
- 2022 CIP - Phases 1 and 2

Forestville Central School District, Forestville, NY
- 2022 CIP

Greece Central School District, Greece, NY
- New Transportation & Support Services Facility

Harpursville Central School District, Harpursville, NY
- 2022 A/C Replacement

Livonia Central School District, Livonia, NY
- 2024 CIP

Liverpool Central School District, Liverpool, NY
- Phase 3 - Fine Arts Addition
- Phase 3C.2B Capital Project

Oakfield-Alabama Central School District, Oakfield, NY
- 2023 CIP

Romulus Central School District, Romulus, NY
- 2023 CIP

Rush-Henrietta Central School District, Henrietta, NY
- 2023 CIP - Athletics

Skaneateles Central School District, Skaneateles, NY
- 2023-2024 CIP - Phase 1

West Irondequoit Central School District, Rochester, NY
- 2023 CIP

## Experience

18 years

## Education

Bachelor of Science - 2009
Clarkson University
Potsdam, NY
Mechanical Engineering

## Registrations

NY Intern Engineer-085870
BECxP
CxA+BE
OSHA 30 Hour Construction Safety Certification
USGBC-LEED Green Associate
Certified Commissioning Professional

## Affiliations

Building Commissioning Association Board of Directors
United State Green Building Council
American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE)
Rochester Engineering Society (RES)
Mechanical Contractor Association of America

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# Michael H. Wenzel, EMP, CxA, BECxP, CxA+BE

Senior Commissioning Agent



Mike has over 25 years of experience in the Commissioning, HVAC, refrigeration and Direct Digital Controls field. His commissioning experience includes responsibilities for all aspects of the commissioning process including preparation of Commissioning Plans, reviews of project documents, generation of Prefunctional Checklists and Functional Test Procedures, implementation of all tests and performance documentation as well as the issuance of the final commissioning documents. He has earned Commissioning Authority Accreditation and Energy Management Professional Certification by the Associated Air Balance Council, and is a Certified Building Envelope Commissioning Professional by the University of Wisconsin.

## Relevant Project Experience

Bellows Falls Union High School, Bellows Falls, VT

Brasher Falls Central School District, Brasher Falls, NY
- 2024 CIP

Clinton Central School District, Clinton, NY
- 2025 CIP

Cortland Enlarged City School District, Cortland, NY
- 2021 Capital Project - Phase 1
- Auditorium Renovations

Eastchester Union Free School District, Eastchester, NY
- 2022 CIP - Phase 4

Hudson City School District, Hudson, NY
- District-Wide Renovations

Lyme Central School District, Chaumont, NY
- 2024 CIP

Newark Central School District Newark, NY
- District-Wide Capital Program

Skaneateles Central School District, Skaneateles, NY
- 2021 CIP

Tri-Valley Central School District Grahamsville, NY
- 2020 CIP

Unadilla Valley Central School District, New Berlin, NY
- 2023 CIP - Phases I and II

Wappingers Central School District, Hopewell Junction, NY
- 2023 District-Wide Renovations

## Experience

28 years

## Education

Associate of Applied Science - 1992
County College of Morris
Randolph, NJ
Computer Science

## Registrations

710-700-Certified Commissioning Authority
1012-E51-Certified Energy Management Professional
BECxP
CxA+BE

## Affiliations

AABC Commissioning Group
Building Commissioning Association (BCxA)
American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE)

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# Scott T. Valente

## Senior Commissioning Agent



### Experience

12 years

### Education

Associate of Applied Science - 2013
ITT Technical Institute
Albany, NY
Mechanical Engineering

### Affiliations

The Building Commissioning Association (BCxA)

Scott is a Senior Commissioning Agent providing Commissioning and Retro-Commissioning Services for a wide variety of educational, healthcare, municipal and government clients. He has extensive experience in all project commissioning activities from OPR/BOD development and design reviews. Through functional performance testing, Scott also has specialized expertise in the testing and commissioning of life safety, fire alarm and smoke control/evacuation systems. The below listing illustrates a portion of Scott's commissioning experience in educational facilities:

### Relevant Project Experience

Fayetteville-Manlius Central School District, Manlius, NY
- Capital Improvement Project
- Mott Road Commissioning

Harpursville Central School District, Harpursville, NY
- 2022 A/C Replacement

Morris Central School District, Morris, NY
- Custodial/Maintenance Building & New Bus Garage

Norwich Central School District, Norwich, NY
- 2021 Capital Project Phase 2A

Tioga Central School District, Tioga Center, NY
- 2021 CIP - Phase 2

Tri-Valley Central School District, Grahamsville, NY
- 2020 CIP

Utica City School District, Utica, NY
- DDC Upgrades
- Albany Elementary School - IAQ & Mechanical Improvements
- Hugh R. Jones Elementary School - IAQ & Mechanical Improvements
- Thomas R. Proctor Senior High School - IAQ & Mechanical Improvements

Whitney Point Central School District, Whitney Point, NY
- 2021 CIP

Binghamton University, Binghamton, NY
- Bartle Library, Third Floor South & Penthouse
- Baseball Fieldhouse & Stadium Enhancements
- Welcome Center

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# Justin C. Supernault
## Commissioning Agent



### Experience
10 years

### Education
Associate of Arts, Liberal Arts & Sciences - 2016
North Country Community College, Malone, NY
Humanities and Social Science

Justin works in M/E Engineering's Rochester office as a Commissioning Agent on our Sustainability and Energy Services team. With over 10 years' experience in the commercial, industrial, and multi-building construction industry, including 7 years specializing in building management control systems, Justin is valued addition to our group. The below listing illustrates a portion of Justin's recent experience:

### Relevant Project Experience

18 Utica Street Village, Hamilton, NY
- Core Mixed-use Development

Brighton Central School District, Rochester, NY
- 2023 CIP - Phases 1 & 2

City of Rochester, NY
- Loretta C. Scott Center Building Automation System Upgrades

East Adams Apartments, Syracuse, NY
- Phase 1 - Commissioning & Geothermal Commissioning

Eugenio Maria de Hostos Charter School, Rochester, NY
- Commissioning

Horseheads Central School District, Horseheads, NY
- Elementary Addition & Alterations

Lyons Central School District, Lyons, NY
- 2023 CIP

Liverpool Central School District, Liverpool, NY
- 2024 CIP - Phase 1
- 2022 CIP - Phases B & C

Marcus Whitman Central School District, Rushville, NY
- 2022 CIP - Phases 1 & 2

Onondaga Central School District, Nedrow, NY
- 2024 CIP - Phase 2A & B

Oswego City School District, Oswego, NY
- 2024 CIP - Phases 1 & 2

Penfield Central School District, Penfield, NY
- 2021 CIP - Phase 3

South Seneca Central School District, Ovid, NY
- 2022 CIP

Victor Central School District, Victor, NY
- 2024 CIP - Phase 1

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# Orchard Park Central School District 2022 Capital Improvement Project Commissioning, Orchard Park, NY

M/E Engineering collaborated with Orchard Park Central School District to provide commissioning for their 2022 Capital Improvement project at multiple buildings throughout the district, including Eggert Elementary, Ellicott Elementary, Middle School, High School & New Athletic Building & Press Box.

The capital project was overwhelmingly approved by the town voters in 2022, and the goal of this capital improvement project was to build a new athletic building to help support the growing sports teams, replace a significant amount of HVAC equipment reaching the end of its useful life, build a new pool addition, and a new music wing addition, and additions for new classroom spaces.

Our team handled the commissioning process for each of the phases and our focus included mechanical, plumbing and electrical systems. Systems included new boiler systems, over 35 new air handling units, new unit ventilators, a pool packaged dehumidification and pool heating system, and a significant number of terminal units and miscellaneous HVAC systems. The lighting control systems and new domestic hot water system equipment were also included. Our goal was to ensure all the commissioned equipment and systems were installed and perform as design and to meet the district's needs.

### Construction Cost

$114,000,000

### Completion Date

2027

### Contact

Orchard Park Central School District
Jeffrey Petrus
Asst. Superintendent for Business Support Services
(716) 209-6209
jpetrus@opschools.org

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# Liverpool Central School District High School Capital Project Commissioning, Liverpool, NY




The project consisted of major renovations and additions to Liverpool High School Gym, Locker Rooms, Fitness Center, and Large Group Instruction Room. MEP system upgrades included high efficiency condensing boilers for domestic hot water and heating hot water plants, air-cooled chiller plant, several air handling units including two 20,000 CFM Gym Air Handling Units that will utilize Demand Control Ventilation controls, Temperature control system improvements, and upgrades to the lighting control system.

## Commissioning Services Addressed the Following:

- Boilers
- Unit Ventilators
- Heat Exchanger
- Terminal Units
- Fans
- Circulating Pumps
- Air Cooled Chiller
- Fan Coil Units
- Domestic Water Heaters
- Lighting System Controls
- Direct Digital Controls
- Testing & Balancing

## Services Provided

- Development of a Commissioning Plan
- Review of Submittals for Equipment and Systems to be Commissioned
- Development of Prefunctional Checklists
- Development of Functional Test Procedure Documentation
- Attendance at Commissioning Meetings
- Periodic Construction Observation Visits
- Issues and Resolutions Log
- Completion of Functional Performance Testing
- Verification of DDC system Operation
- Review of HVAC Testing and Balancing Reports
- Final Commissioning Report
- Deferred Commissioning

## Construction Cost

$22 Million

## Completion Date

2020

## Contact

LeChase Construction
James Mulherin, Jr.
Senior Project Manager
(315) 715-4007
James.Mulherin@lechase.com

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# Skaneateles Central School District 2023/2024 Capital Improvement **Project,** Skaneateles, NY

M/E Engineering collaborated with Skaneateles Central School District to provide commissioning for their 2023 / 2024 Capital Improvement project at multiple buildings throughout the district, including the Middle School, High School, State Street Elementary, Waterman Elementary and the District Office. The capital improvement project began in June 2023 and focuses on comprehensive upgrades to facilities, including High School science classrooms, renovations to High School and State Street gymnasiums, site lighting, and overall HVAC upgrades.

Our team handled the commissioning process for the mechanical, plumbing and electrical systems. Systems included new rooftop air handling units, exhaust fans, unit ventilators, air conditioning units, and heat recovery units, along with number terminal units. The lighting control systems were also included. Our goal was to ensure all the commissioned equipment and systems were installed and perform as designed and to meet the district's needs.

### Construction Cost

$21,500,000

### Completion Date

2025

### Contact

Skaneateles Central School District
Connor Brown
School Business Manager
(315) 291-2205
connorbrown@skanschools.org

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# Utica City School District
# HVAC & DDC Systems Upgrades
# Commissioning Services, Utica, NY



Commissioning services associated with district indoor air quality and mechanical system upgrade project at Albany Elementary, Jones Elementary, and Proctor Senior High School. Project also included a district-wide building management system addressing 10 district educational buildings.

## Services Provided

- Develop Commissioning Plan
- Commissioning Coordination Meetings
- Regular Field Observation Visits
- Development of Prefunctional Checklists & Functional Test Procedures
- Commissioning Design Reviews
- Coordination of Owner's Training
- Indoor Air Quality & Resolution Log
- Maintain Issues & Resolutions Log
- Oversight & Documentation of Functional Performance Testing
- Development of a Final Commissioning Report

## Commissioning Services Addressed the Following:

- Dedicated Outdoor Air Units
- Energy Recovery Units
- Lighting Controls
- Testing & Balancing
- Rooftop Units
- Displacement Induction Air Units
- Unit Ventilators
- Direct Digital Controls
- Sequence of Operations Verification
- Trend Log Reviews

## Construction Cost

$18,500,000

## Completion Date

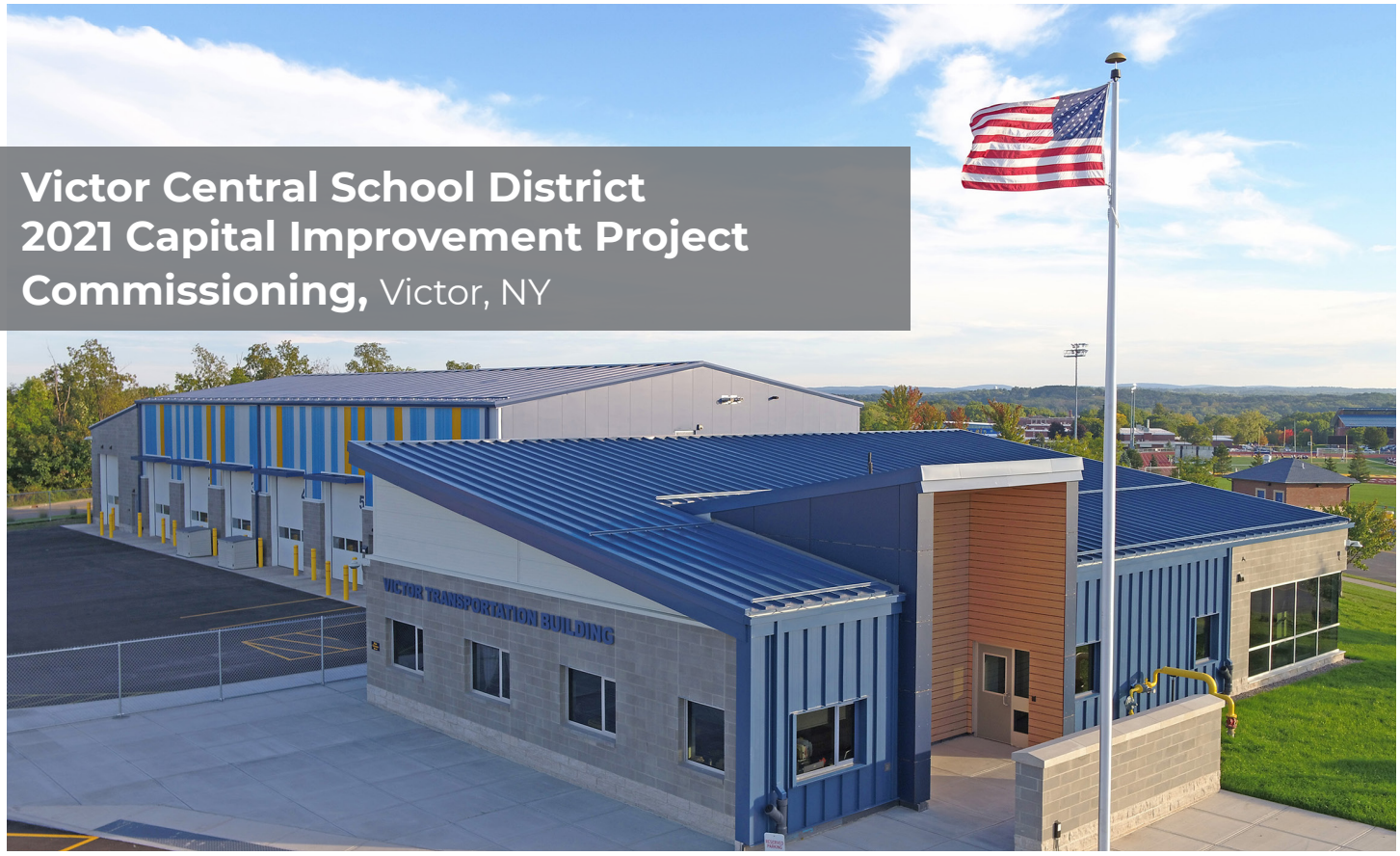
2024

## Contact

Stieglitz Snyder Architecture
Jeffrey Kloetzer, AIA, NCARB
Partner
(716) 828-9166
jkloetzer@stieglitzsnyder.com

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# Victor Central School District 2021 Capital Improvement Project **Commissioning,** Victor, NY




M/E Engineering collaborated with Victor Central School District to provide commissioning for their 2021 Capital Improvement project at multiple buildings throughout the district, including the Early Childhood Center, Primary School, High School, Bus Garage, and a new Transportation Building. The capital improvements began in June 2023 and focuses on comprehensive upgrades throughout the facilities, including a new Transportation Building to replace the smaller bus garage the District had outgrown. The new facility can support their current fleet, which includes over 80 modern buses that are larger than the building was originally to hold.

Our team handled the commissioning process for the mechanical, plumbing and electrical systems. Systems included new rooftop air handling units, unit ventilators, hydronic pumps, and heat recovery units, along with number terminal units and specialty exhaust systems serving the transportation building. The lighting control systems were also included. Our goal was to ensure all the commissioned equipment and systems were installed and perform as designed and to meet the district's needs.

### Construction Cost

$30,000,000

### Completion Date

2024

### Contact

Victor Central School District
Christopher Marshall
Director of Facilities
(585) 924-3252
marshallc@victorschools.org

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October 26, 2026

Eric Stickler
Hunt Engineers, Architects, Land Surveyors & Landscape Architect DPC (Hunt EAS)
100 Hunts Center
Horseheads, NY 14845
*Transmitted via e-mail: sticklere@hunt-eas.com*

**RE: Wyalusing Area School District Capital Improvements Project Commissioning**

Dear Mr. Stickler:

FST Technical Services, LLC (FST) is pleased to submit this proposal in response to the request for proposal (RFP) for the Wyalusing Area School District Capital Improvements project. As FST is recognized by the Building Commissioning Certification Board (BCCB)/Building Commissioning Association (BCxA) as a Certified Commissioning Firm (CCF), our proposed scope of services is intended to meet both the requirements of the project specific RFP and the BCxA Building Commissioning Best Practices. As a result, the rigor of our proposed services will adhere in principle to the BCxA Building Commissioning Best Practices for all requested services.

## NAME AND ADDRESS OF FIRM

**Name.** FST Technical Services, LLC (FST)
**Address.** 450 E. Warner Road, Suite 1, Chandler, AZ 85225

## KEY REPRESENTATIVE CONTACT INFORMATION

Nicholas Neiley, Engineering Manager
**T.** (315) 571-4101
**E.** nicholas_neiley@fsttechnical.com

## NUMBER OF YEARS PROVIDING COMMISSIONING SERVICES

We have been providing commissioning services for 31 years.

## FIRM INFORMATION

FST has extensive experience serving as lead commissioning authority (CxA) on K-12 building commissioning projects across the nation. We understand the Wyalusing Area School District Capital Improvements project represents an important investment in the safety, functionality and long-term sustainability of the district's educational facilities.

FST's mission to ***provide unreasonable help*** reflects our commitment to going beyond conventional expectations. We take a hands-on, solutions-oriented approach – anticipating challenges, addressing issues before they escalate and working collaboratively with project stakeholders to keep progress on track. This philosophy enables us to deliver not only technical results, but also a level of service that supports confidence and continuity throughout the project lifecycle.

In addition to technical delivery, we prioritize clear documentation, transparency and measurable outcomes. Our goal is to provide our clients with actionable insights and verified results that support both immediate project success and long-term operational performance.

From design-document review through construction, functional testing, reporting, owner training and seasonal/warranty-period testing, our commitment to a higher standard for school districts across the country means more than meeting expectations. We believe in providing comprehensive solutions that enhance school building performance, operational reliability, occupant comfort and long-term project success.

FST performs functions from the perspective of an equipment and systems operator, yielding long-term success stories that go beyond project turnover. We commission for system performance and treat each facility as if we would operate it for the next 20 years. This approach enhances the quality of the project, through improved energy efficiency, sufficient access to equipment, better operational characteristics and improved training of personnel.

Here are just a few reasons why FST is qualified to provide commissioning services for this project:

- Hands-on approach, which allows us to remain readily available and actively involved throughout the duration of the project.
- Experience providing fundamental commissioning services for similar projects, including high schools, middle schools and elementary schools.
- Extensive experience with systematic equipment inspections, deficiency tracking, commissioning building automation and HVAC systems, etc.
- Highly skilled staff who have experience working with architects and construction managers (CMs), including Hunt EAS, to identify and resolve deficiencies efficiently while maintaining project progress.
- Providing detailed system documentation and training for effective turn-over.

## SCOPE OF WORK

Our scope includes the following services:

### CONSTRUCTION PHASE

**Construction Phase Commissioning Kick Off Meeting (KOM).** A KOM will be held with the appropriate team members at the beginning of the commissioning process. FST will review our scope of services for the project, define roles and responsibilities and introduce our approach to project execution, including the use of the web-based software Facility Grid.

**Pre-Functional Checklist (PFC) and Functional Performance Test (FPT) Development.** In accordance with the project documents and the approved submittals, FST will develop PFC and FPT procedures. These procedures will document all information that is to be verified as part of the commissioning process.

**PFC Execution.** FST will execute all PFC's. Prior to executing, FST will coordinate with the CM and installing contractors to ensure that the equipment and systems have been adequately installed, piped, ducted and wired to allow for a thorough inspection. When ready, FST will thoroughly inspect the items, to ensure that they are installed according to the design specifications and approved submittals. FST will submit a field observation report (FOR) and the current issues list after each visit(s).

**Testing, Adjusting, Balancing (TAB) Verification.** FST will review the report(s) submitted by the TAB contractor, concurrent with the design team, as the TAB contractor completes work on individual systems (i.e., not all systems need to be balanced before the reporting process begins). FST will verify that all required data has been collected, that the measured results are in compliance with the specification and that any non-compliant items have been resolved and retested prior to the start of FPT. FST will coordinate a session with the TAB contractor to verify a sample of the measurements listed in the TAB report. The TAB contractor will re-measure selected TAB report data at the request of and witnessed by FST. Any items requiring action will be added to the commissioning action list.

**FPT Execution.** FST will field-direct, witness and document the FPT for each system to be commissioned. The work will progress from tests of individual components of the central equipment to tests of the overall systems that contain those pieces of equipment. FST will ensure that correct procedures are implemented and all systems function properly. For each visit, a FOR will be issued.

**Issue Resolution.** FST will document all issues identified in the required systems during the verification process and report them to the construction team. FST and the contractor(s) responsible will schedule re-testing of these items. FST will also manage and administer any and all issues for the duration of the project. The issues log will be maintained in real time using Facility Grid, with regular updates and notifications provided to the team. Open issues will be reviewed regularly during scheduled commissioning meetings.

**Meetings.** FST will attend up to 2 project meetings and 1 deficiency review meeting.

## POST ACCEPTANCE PHASE

**Commissioning Final Report.** FST will furnish a commissioning report that will include the following:

- A summary of the services provided, the issues found, open or deferred activities and recommendations for improvement
- Final report shall include:
    - Executive summary
    - Analysis of major findings and results
    - Building and system descriptions
    - Scope of the commissioning project
    - Master list of improvements, including training needs and maintenance recommendations
    - All completed functional tests and results

## EQUIPMENT LIST

Systems that are included are as follows:

| EQUIPMENT NAME | PROJECT QTY | CX QTY |
|---|---|---|
| **VENTILATION SYSTEM** | | |
| Ductwork | System | System |
| Fume Hoods | 3 | 3 |
| Multizone Roof Top Units (RTUs) | 3 | 3 |
| Energy Recovery Unit (ERU) | 1 | 1 |
| RTUs | 9 | 9 |
| Variable Air Volumes (VAVs) with Reheat | 23 | 23 |
| Range Hoods | 2 | 2 |
| Unit Ventilators | 13 | 13 |
| Exhaust Fans | 8 | 8 |
| Particle and Dust Collectors | 2 | 2 |
| **MECHANICAL COOLING SYSTEM** | | |
| Air Cooled Condensing Units | 4 | 4 |
| Split System | 2 | 2 |
| **MECHANICAL HEATING SYSTEM** | | |
| Duct Mounted Heating Coils | 2 | 2 |
| Cabinet Unit Heaters | 2 | 2 |
| **ELECTRIC HEAT SYSTEM** | | |
| Duct Mounted Electric Heating Coils | 6 | 6 |
| **BUILDING AUTOMATION SYSTEM** | | |
| Building Management System (BMS) | System | System |

## FEE INFORMATION

Our proposed lump sum fee, to provide services for the Wyalusing Area School District Capital Improvements project, is as follows:

| PROJECT TASKS | FEE ($) | HOURS |
|---|---|---|
| **CONSTRUCTION PHASE** | | |
| Commissioning KOM | $540.00 | 3 |
| PFC Development | $4,500.00 | 25 |
| FPT Development | $4,500.00 | 25 |
| PFC Execution | $7,920.00 | 44 |
| TAB Verification | $2,520.00 | 14 |
| FPT Execution | $15,840.00 | 88 |
| Issues Resolution | $3,240.00 | 18 |
| Meetings | $1,080.00 | 6 |
| Project Management | $360.00 | 2 |
| **POST ACCEPTANCE PHASE** | | |
| Final Report | $1,440.00 | 8 |
| **MOBILIZATION** | | |
| Mobilization | $2,340.00 | 13 |
| **EXPENSES** | | |
| Reimbursable Expenses | $3,810.00 | -- |
| Application Setup Fee | $1,100.00 | -- |
| **PROJECT TOTAL** | **$49,190.00** | **246** |

**Please note the following:**

- **Our fee is based on a lump sum amount inclusive of all labor, expenses and fees.**
- **We invoice our projects on a monthly basis. Each invoice submitted will be based on our progress to date and reflected as a percentage of each milestone. Our first invoice will include costs for mobilization (internal project initiation and setup) and a one-time fee of $1,100 for the use of our commissioning software, Facility Grid.**
- **Any additional services resulting from scope and/or schedule changes will require an approved change order. Change orders will be provided on a lump sum, including expenses, basis, but based on contractually agreed "rates for changes".**

## PROPOSAL BASIS

Our scope of work and fee were developed based on the RFP dated October 21, 2026 and construction drawings and specification set dated February 18, 2025. From the provided information, we have concluded that the overall project duration is 2 months, with a substantial completion date of December 31, 2026. Our fee is based on the project achieving the substantial completion date. If the project extends past December 31, 2026, FST may require additional time and funding to manage the completion of the commissioning of the project.

Based on the project duration above and our scope, we assume that up to a total of 4 meetings will be required to successfully coordinate the work, including the closure of issues found during the process. We will provide a schedule of meetings at our construction phase kick off that indicates how we will manage the project within those parameters.

We develop our fees based on the equipment and systems to be commissioned on a project. For your project, we have included an equipment list that is based on the project information provided. If equipment types and/or quantities are modified during the project or if we are requested to modify any sampling strategies noted in our list, then FST may provide a change order to cover the costs of those changes.

FST will confirm the readiness of systems and availability of contractor support, as required, prior to performing any FPT. If issues are found during testing, FST will note the issue and log it into our commissioning software system, Facility Grid. The issue will be clearly explained and will define which contractor is responsible for correcting. Once the contractor confirms they have corrected the issue, FST will re-inspect once to confirm that the issue has been corrected. Same day cancellations of confirmed testing and multiple re-inspections of an issue are not included in our scope and fee.

## EXCLUSIONS

Our proposal is based on standard working hours 8 a.m.-5 p.m. (Monday-Friday) and does not include weekend or off hours work.

## TERMS

**Acceptance.** If you would like to proceed with this work, please address your order to FST Technical Services, LLC, 450 E. Warner Road, Suite 1, Chandler, AZ 85225. You may submit your order hard copy to the address listed or electronically to contracts@fsttechnical.com.

**Validity.** This quotation is valid for 60 days for work commencing within 6 months.

**Payments.** Invoices for basic services, reimbursable expenses and additional services shall be submitted monthly on our normal monthly billing cycle. Unless otherwise stipulated, invoices will be submitted electronically. Payments are due and payable 30 days from the date of the invoice. If we are not paid within 60 days of the invoice, we have the right to stop work without notice or liability. If any payment is not made within 30 days of the due date, we may begin charging interest at the rate of PRIME+5% until payment is received. If any payment remains unpaid for a period of 60 days following the due date, FST may add an additional 10% penalty to the full outstanding amount delinquent. After 90 days, client may be sent to collections and client is responsible for actual collection costs.

**Application Setup Fee.** Facility Grid will remain available for the duration of the project through final closeout. Upon project completion, Facility Grid access will be shut down, however, project information can be made available to the client for a designated time for an additional fee.

**Expenses.** Reimbursable expenses that are included in our lump sum fee will include:

- All reproduction costs for plotting, prints and specifications, as well as creating any required drawings.
- All final commissioning documentation will be submitted electronically, unless requested by the client.
- Laboratory testing expenses, as applicable.
- Test equipment rentals which may be are required to satisfy project requirements.
- Any expenses associated with travel and transportation incurred by the engineer due to travel outside of routine commuting including mileage, mass transportation and airfare.
- Fees paid for expediting and securing approvals of authorities having jurisdiction over the project. These are project specific and may carry an additional cost dependent on corresponding jurisdictional requirements.
- Re-calibration of required test equipment associated with the project when necessary.

Reimbursable expenses that are not included in our fee include, but are not limited to, the following. If FST determines after award that any of these are required, they will be subject to a change order:

- Mailing express delivery, courier service, messenger services and other communication expenses incurred in connection with the project.
- Travel expenses and billable travel time for project travel away from the project location, including off-site meetings, factory witness testing, etc.
- Project specific personal protective equipment (PPE) outside of typical general requirements.
- Project specific software or technology unless specifically outlined in the project RFP.
- Time and expenses (T&Es) related to project specific safety training unless specifically outlined in the project RFP.
- Site badging requirements including background checks and drug testing unless specifically outlined in the project RFP.

If you are in acceptance of this proposal, please sign and date in the space indicated below and return to my attention.

---

**Eric Stickler, Hunt EAS** **Date**

If you have any questions or would like more information, please do not hesitate to contact me at (315) 571-4101 or nicholas_neiley@fsttechnical.com. We look forward to working with you on this important project.

Sincerely,



Nicholas Neiley
Engineering Manager
FST Technical Services, LLC (FST)

*Attached: Resumes*
*Past Project Experience*

# Scott Lance, CCP, EBCP

## Regional Director



Scott Lance is a Regional Director, with over 25 years of hands-on experience in project management and systems engineering, including 10 years of controls experience with Siemens. He has a proven ability to successfully organize critical business requirements and identify deficiencies. Mr. Lance is experienced with all aspects of building automation and controls systems, including conceptual design, engineering, installation, start-up, commissioning, operation and maintenance (O&M) and customer training. In addition to lab and cleanrooms, Mr. Lance has experience commissioning education, healthcare and commercial facilities.

### EDUCATION

Associate Degree, State University of New York College of Technology, Applied Science (1999)

OSHA 30-Hour Trained

### PROFESSIONAL LICENSES & CERTIFICATIONS

Existing Building Commissioning Professional (2014)

Certified Commissioning Professional, Building Commissioning Association (2024)

### RELEVANT EXPERIENCE

- Milton Hershey School
  - » Founders Hall Renovation Phase 2B, Hershey, PA / 240,000 sf
  - » Legacy Student Homes, Hershey, PA
  - » Memorial Hall Multi-Purpose Expansion, Hershey, PA
  - » Senior Hall North, Hershey, PA
  - » Renovations to Central Power Plant Hershey, PA
- Catherine Hershey School
  - » Elizabethtown, PA / 52,000 sf
  - » Lancaster, PA
  - » Middletown, PA
  - » New Danville, PA
- Hunt Engineers, Architects, Land Surveyors & Landscape Architect DPC
  - » Dryden High School & Bus Garage, Dryden, NY
  - » Clyde Savanah Elementary School, Clyde, NY
  - » Horseheads Central School District, Horseheads, NY / 200, 000 sf
- Northeastern High School Project, Manchester, PA / 31,963 sf
- Eastern York School District, Wrightsville, PA
- Cumberland Valley School District, Sporting Hill Electrical Study, Mechanicsburg, PA
- Governor Mifflin School District, New Athletic and Community Center, Shillington, PA / 68,500 sf
- Northeastern High School Project, Manchester, PA / 31,963 sf
- Hanover High School, Hanover, MA / 156,000 sf / $42 million
- Howard County Public School System, Hammond High School Renovation and Addition, Columbia, MD
- Liverpool Central School District, Liverpool, NY / $38 million
- Dover High School and Career Tech Center, Dover, NH / 305,000 sf / $87.4 million
- Dickinson College, Drayer Hall, Carlisle, PA
- Lebanon Valley College, New Nursing Facility, Annville, PA / 35,331 sf
- Pennsylvania Department of General Services
  - » Lincoln University, Vail Hall, Lincoln University, PA
  - » Lincoln University, Amos Hall, Lincoln University, PA / 9,102 sf
  - » East Stroundsburg University, Information Commons, East Stroundsburg, PA

# Nicholas Neiley

## Lead CxA/Commissioning Project Manager



Nicholas Neiley is an Engineering Manager, with experience commissioning over 1 million sf of new and existing facilities. His duties often include project management, commissioning documentation generation, site visits, functional performance testing (FPT), submittal and shop drawing review and indoor air quality (IAQ) testing. Mr. Neiley specializes in mechanical systems and building controls and familiarity with numerous manufacturer and product lines.

### EDUCATION

Bachelor of Science, Clarkson University, Major in Mechanical Engineering, Minor in Mathematics (2008)

OSHA 10-Hour Trained (2010)

### RELEVANT EXPERIENCE

- Hunt Engineers, Architects, Land Surveyors & Landscape Architect DPC
  - Clyde-Savannah Central School District, Junior/Senior High School, Clyde, NY / 257,000 sf
  - Clyde-Savannah Central School District, Middle/High School Alterations, Clyde, NY
  - Clyde-Savannah Central School District, Elementary School, Clyde, NY
  - Horseheads Central School District, High School, Horseheads, NY / 200,000 sf
  - Trumansburg Capital Phase II, Trumansburg, NY / 191,500 sf
  - South Seneca Central School District, Ovid, NY / 348,150 sf
- Milton Hershey School
  - Founders Hall Office Renovations, Hershey, PA / 37,000 sf
  - Legacy Student Homes, Hershey, PA
  - Founders Hall Renovation Phase 2B, Hershey, PA / 240,000 sf
- Homer Central School District, Homer, NY
- Yorkshire-Pioneer Central School District, Middle School, Yorkshire, NY
- Binghamton City School District High School, Binghamton, NY / 564,700 sf / $15.4 million
- Oppenheim Ephratah St. Johnsville Central School District, Additions and Alterations, St. Johnsville, NY / 95,000 sf / $25 million
- Liverpool Central School District, Chestnut Hill Middle and Elementary Schools, Liverpool, NY / $38 million
- Gloversville Enlarged School District, Middle School, Gloversville, NY
- Harlem Academy New Campus, New York, NY / 28,500 sf
- The Alternative School for Math & Science, Corning, NY / 60,000 sf / $17 million
- Victor Central School District, Victor, NY
- North Branford Intermediate School Addition, North Branford, CT / 115,700 sf / $36 million
- Bedford High School Addition and Renovation, Bedford, MA / 220,000 sf / $51 million
- Terra Centre Elementary School, Burke, VA / 89,000 sf
- Cornell University, Computing and Information Science New Building, Ithaca, NY / 110,000 sf

# Ryan Kilgore

## Commissioning Engineer



Ryan Kilgore is a Senior Engineer, with 10+ years of engineering experience. Prior to joining FST, he was employed as a commercial HVAC/R and controls technician. Mr. Kilgore is well-versed in the design, installation and commissioning of HVAC controls. He also has extensive experience installing, commissioning and servicing hydronic systems, hot water and steam boilers, refrigeration and DX cooling systems, cooling towers and air distribution equipment.

### EDUCATION

Heating, Ventilating and Air Conditioning, Monroe #1 BOCES, 380 hour career training program (2010)

M.A. in Russian East European Studies, Indiana University (2009)

B.A. with High Distinction in Russian Language; Minors in Chemistry and Music, Indiana University (2007)

### PROFESSIONAL LICENSES & CERTIFICATIONS

NEBB TAB Certified Technician

ASHRAE Rochester Chapter Board of Governors (1) & Government Advocacy Committee Member

Refrigeration Service Engineers Society - Certified Member

International Institute of Ammonia Refrigeration - Member

### RELEVANT EXPERIENCE

- University of Pittsburgh Medical Center
  - Lock Haven Hospital, Lock Haven, PA
  - Lock Haven Skilled Nursing Facility, Lock Haven, PA
  - Wellsboro Air Handling Unit (AHU)-5 Humidification, Pittsburgh, PA
  - Cole Crawl Space Evaluation, Pittsburgh, PA
  - PM&R and Dialysis Renovation and Expansion, Pittsburgh, PA
- University of Rochester (UR)
  - Emergency Department Tower Enabling - Officing, Rochester, NY / 18,500 sf / $4.4 million
  - Cooling Tower Replacement and Chiller, Rochester, NY / $25 million
  - Clinics at Marketplace, Rochester, NY / 80,000 sf / $59.8 million
  - Strong Memorial Hospital Emergency Department New Tower, Rochester, NY / 693,665 sf
  - G9200 10 Bed Unit, Rochester, NY / 9,000 sf
  - Ambulatory Orthopaedics (AO) at Marketplace Mall (Saunders Center), Rochester, NY / 330,000 sf
- Cornell University, Computing and Information Science New Building, Ithaca, NY / 110,000 sf
- State University Construction Fund (SUCF)
  - Alfred University, Renovate Old Heating Plant for Ceramics Foundry, Alfred, NY / 7,500 sf
  - State University of New York at Buffalo, Central Heating Plant Phase 3, Buffalo, NY / 16,200 sf
  - State University of New York at Buffalo, Renovate Science Building 15 Phase II, Buffalo, NY / 115,000 sf / $40 million
  - State University of New York at Buffalo, Renovate Moore Hall, Buffalo, NY
  - State University of New York at Fredonia, Renovate Jewett Hall, Fredonia, NY
- Dartmouth College, Irving Institute for Energy and Society, Hanover, NH / 50,900 sf
- Roswell Park Cancer Institute
  - Cell & Virus Air Handler Replacement, Buffalo, NY / 94,500 sf
  - Theranostics Addition and Renovation, Buffalo, NY
  - CSC 5 & IDS Pharmacy Renovations, Buffalo, NY

# Yana Svirko

## Commissioning Engineer



Yana Svirko is a Field Engineer, with a Bachelor of Science degree in Mechanical Engineering. Ms. Svirko's duties often include design, submittal and operation and maintenance (O&M) manual reviews, prefunctional and functional checklist development, testing, adjusting, balancing (TAB) verification, pre-functional and functional testing, deficiency management and development of systems manuals.

### EDUCATION

Bachelor of Science in Engineering, Mechanical Engineering, Binghamton University, SUNY

### RELEVANT EXPERIENCE

- University of Rochester (UR)
  - » Cooling Tower Replacement and Chiller, Rochester, NY / $25 million
  - » Strong Memorial Hospital Emergency Department New Tower, Rochester, NY / 693,665 sf
  - » Ambulatory Orthopaedics (AO) at Marketplace Mall (Saunders Center) Rochester, NY / 330,000 sf
- Cornell University
  - » McGraw Hall Renovation, Ithaca, NY
  - » Hollister Hall Rooms 162 & 166 Lab Renovation, Ithaca, NY
  - » Thurston Hall Addition for Instructional Labs, Ithaca, NY
  - » Sibley Hall Dome Renovation, Ithaca, NY
- State University Construction Fund (SUCF)
  - » State University of New York at Buffalo, Central Heating Plant Phase 3, Buffalo, NY / 16,200 sf
  - » State University of New York at Buffalo, Renovate Moore Hall, Buffalo, NY
  - » State University of New York at Fredonia, Renovate Jewett Hall, Fredonia, NY
- New York University, UDAR 115 5th Avenue, New York, NY
- Dormitory Authority of the State of New York, Baruch College ITB Building Hot & Cold, New York, NY
- New York State Office of General Services, Stony Brook University Emergency, Stony Brook, NY / 110,000 sf
- NYU Langone Health
  - » Brooklyn Hospital Chiller Plant Up, Brooklyn, NY
  - » Tisch Emergency Department Ambulance Entrance, New York, NY
  - » Citicorp 5th Floor, New York, NY / 37,000 sf
  - » Potter Cooling Tower, Mineola, NY
  - » Energy Building & Hepatocellular Carcinoma Building, New York, NY
  - » Red Hook Hospital, Brooklyn, NY / 4,500 sf
  - » Rego Park 3rd & 4th Floors, New York, NY
  - » Spatz Inpatient Renovation, New York, NY
  - » Brooklyn Infrastructure Upgrades, Brooklyn, NY
  - » Lutheran Cath Laboratory, New York, NY
  - » Potter Cooling Tower, Mineola, NY
  - » Park Slope Family Health Center, Brooklyn, NY

FST

# Yorkshire-Pioneer Central School District Middle School

## Yorkshire, NY | QA/QC Commissioning



Yorkshire-Pioneer Central School District hired FST to provide quality assurance/quality control (QA/QC) services for the Pioneer Middle School project. FST's services included, but were not limited to, the following: reviewing of design documents, submittals and shop drawings, commissioning of all mechanical, control systems and balancing verification. The goal of the QA/QC process was to ensure that the Yorkshire-Pioneer Central School District received a building that operated and performed per the engineer's and architect's intended design and that the Owner's staff would have the proper training and documents needed for continual maintenance of the building well into the future.

The construction project included various HVAC replacements and upgrades to replace the aging existing equipment with new energy efficiency equipment. Also, a new building management system (BMS) was installed to control the new equipment and employ energy efficient control strategies. FST was onsite throughout the installation, startup and turnover phases of construction to confirm equipment was installed per the construction documents and manufacturer's requirements. FST performed tests to verify and document system functionality and performance.

FST utilized the web-based Facility Grid program to track the process, including commissioning checklists and deficiency items. The team was provided access to Facility Grid to view the status of all open items in real time and respond as items were addressed. FST's constant written and verbal communication with the contractors helped to ensure deficiencies were satisfactorily completed in a timely fashion.

**Systems Commissioned**

- Mechanical
- Building management system (BMS)/controls

**Square Footage**
N/A

**Construction Cost**
$10 million

**Owner/Client Reference**
Jeff A. Nunn
Project Manager
Gordon W. Jones Associates
**T.** (716) 633-9000
**E.** jeff@jonesarchitects.net

# Clyde-Savannah Elementary/Junior-Senior High Schools

## Clyde, NY | QA/QC Commissioning









FST was contracted by the Clyde-Savannah Central School District to provide quality assurance/quality control (QA/QC) services for the Phase 2 Capital Improvement project. The project consisted of significant renovations and system upgrades for the elementary, junior/senior high school buildings. Additions were added to both buildings, including a new elementary school gym, new high school cafeteria and science, technology, engineering, mathematics (STEM) classrooms.

Mechanical, electrical, plumbing (MEP) scope of work included all new HVAC, plumbing and electrical systems. FST worked closely with Campus Construction Management, to ensure activities were coordinated with the overall project schedule and any issues identified during the process were addressed.

Overall, the process went smoothly, with the majority of deficiency items found being quickly addressed.

A challenge on this project was the ongoing use of both facilities during the construction timeframe and phased work. FST worked closely with the construction team and school district to ensure activities were included in the construction schedule, as well as coordinated with the turnover of completed spaces and ongoing use of the facilities.

**Systems Commissioned**

- Mechanical
- Electrical
- Plumbing
- Building management system (BMS)/controls

**Square Footage**
257,000

**Construction Cost**
$27 million

**Owner/Client Reference**
Gary Henry
Principal/Project Manager
Hunt EAS
**T.** (607) 358-1000 ext.1009
**E.** henryg@hunt-eas.com

# Oppenheim-Ephratah-St. Johnsville Central School District

## St. Johnsville, NY | QA/QC Commissioning




FST was contracted by Oppenheim-Ephratah-St. Johnsville Central School District (OSEJ CSD) to provide quality assurance/quality control (QA/QC) services for an elementary school and high school owned by the district. The $25 million project addressed health, safety, wellness and infrastructure issues, including new additions, site work, roofing and mechanical, electrical and technology upgrades.

The project was performed to reduce the energy usage in the 2 buildings through the installation of high-efficiency equipment, as well as to improve the comfort of students and teachers in each building.

The heating hot water system was the focus of the scope of work at the elementary school with the installation of 3 high-efficiency boilers and 3 boiler pumps. The scope of work at the high school focused on the addition of technology and agricultural rooms. The new additions included 5 new unit ventilators, a glycol heat exchanger and 5 glycol system inline pumps.

**Systems Commissioned**

- Hot water boilers
- Hot water pumps
- Air handling units (AHUs)
- Roof top units (RTUs)
- Heating coils
- Cabinet unit heater
- Exhaust fan
- Fan coil units (FCUs)
- Unit ventilator
- Variable air volume (VAV) boxes

**Square Footage**
95,000

**Construction Cost**
$25 million

**Owner/Client Reference**
Patrick Manna
Superintendent
Turner Construction Company
**T.** (315) 701-3047
**E.** pmanna@tcco.com

# Trumansburg Capital Project, Phase II

## Trumansburg, NY | QA/QC Commissioning



FST was contracted by Hunt Engineers, Architects, Land Surveyors & Landscape Architect DPC (Hunt EAS) to provide building QA/QC services for the Trumansburg Central School District Capital Project - Phase II.

The full 5 year capital plan upgraded the school district's Elementary, Middle and High Schools, as well as their transportation facility. Work included roofing and window replacements, to improve building energy performance, lighting system upgrades and life safety/security system improvements. Additions were made to the top of the high school's existing auditorium, relocating mechanical systems and enabling ventilation and cooling to operate during performances. New lighting systems were provided for the majority of the Middle School and other areas including offices, gymnasiums and hallways.

FST was responsible for the QA/QC of all mechanical, electrical, plumbing (MEP), ventilation and building management system (BMS)/controls systems, during the project's second phase. FST also handled the development of all QA/QC checklists (pre-functional and functional performance), while maintaining an active presence at the project location throughout the entire project duration.

**Systems Commissioned**

- Mechanical
- Electrical
- Plumbing
- Ventilation
- Building management system (BMS)/controls

**Square Footage**
191,500

**Construction Cost**
$25 million

**Owner/Client Reference**
Nathan King
Hunt EAS
**T.** (607) 346-6304
**E.** kingn@hunt-eas.com

# RCSCS District-Wide Renovations & Additions - Phase 2

## Ravena, NY | QA/QC Commissioning




FST was hired by Turner Construction Company to provide quality assurance/quality control (QA/QC) services for Ravena-Coyeman-Selkirk Central School (RCSCS) District's district-wide renovations and additions project in Ravena, NY.

FST was brought on provide QA/QC services for all mechanical and control systems for Phase 2 of the project, which included renovations to the middle school's locker room. FST also provided balancing verification services and reviewed the project's shop drawings and design documents to ensure that the facility operated and performed per the engineer's and architect's intended design.

In an effort to maintain maximum occupant comfort within the space, as well as maximize energy efficiency, the commissioning process was able to identify and correct many issues before owner turn-over. The following are 3 examples of deficiencies found by FST during the process which, when corrected, attributed to improved equipment performance and improved indoor air quality (IAQ):

- Exhaust fan was found to be incorrectly powered and inoperable
- During functional testing, it was identified that a blower coil unit was incapable of modulating the heating coil due to being equipped with 2 stages of heating
- A roof top unit (RTU) was determined to have the heating system firing at only 50% of its intended power

**Systems Commissioned**

- HVAC
- Building control (central automation)
- Lighting and daylighting controls
- Domestic hot water
- Technology
- Fire alarm
- Security

**Square Footage**
N/A

**Construction Cost**
N/A

**Owner/Client Reference**
Robert S. Stewart
Construction Project Manager
Turner Construction Company
**T.** (518) 337-8773
**E.** rstewart@tcco.com

# Wyalusing Area School District
# Capital Improvement Project - Commissioning




**Submitted To:**

ATTN: Eric Stickler
Hunt EAS
100 Hunt Center
Horseheads, NY 14845
Email: Sticklere@hunt-eas.com

**Due Date:**

October 26, 2026, 5:00 pm

**Submitted By:**

C.J. Brown Energy & Engineering, P.C.

4245 Union Road, Suite 204, Buffalo, NY 14225
Tel (716) 565-9190 • Fax (716) 633-5598 • www.cjbrownenergy.com

C.J. Brown Energy & Engineering, P.C.

4245 Union Road, Suite 204
Buffalo, New York 14225
**P:** (716) 565-9190 · **F:** (716) 633-5598
**W:** cjbrownenergy.com

October 26, 2026

Hunt EAS
100 Hunt Center
Horseheads, NY 14845
ATTN: Eric Stickler

RE: Request for Proposal
Wyalusing Area School District
Capital Improvement Project - Commissioning Services

Dear Mr. Stickler:

C.J. Brown Energy & Engineering, P.C. ("C.J. Brown Energy") has reviewed the RFP and is pleased to submit our qualifications to provide commissioning authority services for the above referenced contract, per the RFP dated October 21, 2026. Our proposal is based on the commissioning services outlined in the received RFP documents, and we have also provided our firm's qualifications and insurance certificate.

As evidenced in the enclosed information, C.J. Brown Energy brings over 35 years of commissioning experience, supported by a highly skilled team. Commissioning and retro-commissioning services represent approximately 31.5% of our firm's total annual revenue, reflecting our strong commitment and specialized expertise in these services. Our firm has extensive relevant commissioning service experience for major renovation and new construction projects within both primary and secondary education sectors. C.J. Brown Energy has successfully delivered commissioning services for many hundreds of projects, including numerous K-12 school district projects within the last five years.

The C.J. Brown Energy team will utilize our expertise to deliver a project with high-level operating performance, reliability, and occupant comfort. We will work with the facility to accomplish the project objectives and requirements in a timely and cost-efficient manner.

Our lump sum fee proposal for the commissioning services for this project is $49,775 (Forty-Nine Thousand Seven Hundred Seventy-Five Dollars)

Should you have any questions or require any additional information, please do not hesitate to contact us. We thank you for considering our firm for this project and look forward to the opportunity to be of service to Wyalusing Area School District.

Very truly yours,
C.J. BROWN ENERGY & ENGINEERING, P.C.



Christopher M. Sendker, PE, LEED AP, CBCP
Principal/Commissioning Services Manager

C.J. Brown Energy & Engineering, P.C.

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C.J. Brown Energy & Engineering, P.C.

# FIRM PROFILE

C.J. Brown Energy & Engineering, P.C. (C.J. Brown Energy) is a professional engineering firm with a specific focus on building commissioning/retro-commissioning, energy conservation consulting, and related technical services. Established in 1988, we have become known as one of the leading commissioning and energy consulting firms in the northeast. We are a professional corporation licensed to practice engineering in New York State. C.J. Brown Energy has provided commissioning services and energy engineering services for a wide range of sizes and types of facilities including governmental, educational, institutional, healthcare, multifamily, commercial and industrial buildings.

We have consistently expanded the firm's personnel and capabilities to effectively serve our clients and respond to industry changes. Our engineering and design resources include a staff of 37 comprised of experienced licensed Professional Engineers, commissioning specialists, LEED Accredited Professionals, MEP designers/drafters, CADD technicians, and energy engineers.

Our staff totals 37 and consists of:

- Certified Energy Managers
- Mechanical Engineers
- Electrical Engineers
- LEED Accredited Professionals
- Commissioning Agents
- RESNET Home Energy Rater
- Multifamily Building Analyst
- Green Physical Needs Assessment Inspector

Throughout our over 35 years in business, C.J. Brown Energy has provided commissioning services for over 200 projects. As an independent third party commissioning consultant, we are an effective advocate for the owner. We represent their best interests at all times through our communication abilities, professionalism, and leadership. We ensure that new and existing buildings and systems will operate at peak performance to maximize asset value.

C.J. Brown Energy provides comprehensive services to guide and support our clients' project requirements and sustainability goals. We help clients to identify potential high-performance, sustainable design approaches, make cost-effective choices, and implement these principles to achieve the highest performing building possible:

- We develop and execute a commissioning process that provides clearly defined expectations for facility performance and verifies that systems and equipment are installed and functionally tested to operate in conformance with the Owner's Project Requirements, Basis of Design and project specifications. Our commissioning process is structured to meet the requirements of directives and standards that apply to a specific project.
- We assist clients in meeting building code requirements for energy efficiency and commissioning for new construction or major renovation projects.
- We provide comprehensive evaluation and documentation of facilities using the USGBC LEED Rating System and serve as team lead/facilitator for a full range of LEED credits.
- We perform energy benchmarking and building audits that combine site work and building simulation to pinpoint opportunities for energy savings in existing facilities.
- We assist clients and design teams in identifying and understanding energy efficient system options and provide accurate and thorough assessments of energy conservation measures (ECMs) and costs based on facility requirements and operating parameters.
- We perform building energy modeling using Carrier HAP and other software programs. We are also proficient in the use of REVIT during design for 3D modeling and automated engineering calculations.

C.J. Brown Energy assists clients in reducing their project costs by taking full advantage of programs, services and incentives for which a project may be eligible. We keep current on new funding opportunities that arise, ensure that projects are structured to meet program criteria, and assist clients in managing the documentation required for program application and receipt of funding.

*We evaluate and plan all of our energy consulting and commissioning projects to access program services and financial incentives from NYSERDA, investor-owned utilities, and other sources to offset and buy down project costs.*



# COMMISSIONING APPROACH

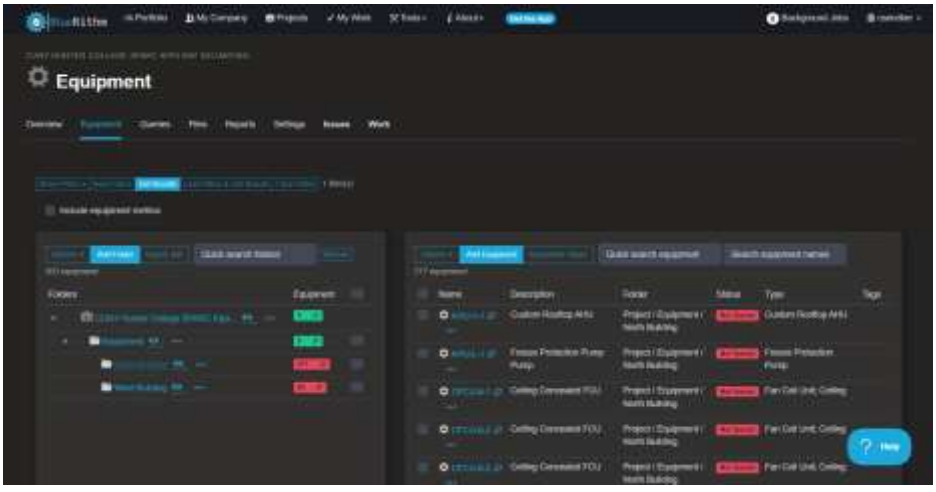
*Our team is committed to completing projects in a timely and efficient manner, with a proven track record of meeting or exceeding deadlines while maintaining high-quality outcomes. We understand the importance of turnaround time for this project and will coordinate closely with the client to ensure all milestones are achieved on schedule. Our streamlined project management process allows us to deliver work efficiently, without compromising quality.*

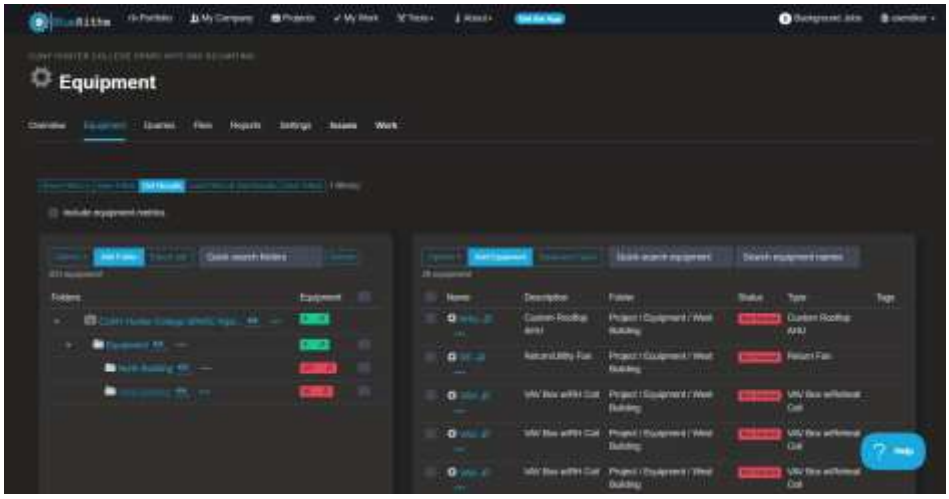
C.J. Brown Energy's commissioning approach encompasses the design, bid, construction and post-occupancy/ warranty phases of a project. Our technical process helps ensure that the requirements for the scope of work, systems/equipment to be commissioned, and deliverables are met during commissioning.

C.J. Brown Energy utilizes Bluerithm, a cloud-based commissioning software platform, which provides real-time, 'open-book' review of the commissioning work and its progress. Team members including the Contractors, Construction Managers, A/E Team and client personnel have full-time access to this platform. Team "Administrators" have to ability to review the progress, completeness and accuracy of the work at any time and from anywhere. This ensures an open and timely delivery of commissioning information that can be reviewed by the project personnel at any time. The Cx forms are tailored to be project specific and uploaded for the Contractors to complete electronically. Team "administrators" have to ability to review the progress, completeness and accuracy of the work at any time and from anywhere. This ensures an open and timely delivery of commissioning information that can be reviewed by the project personnel at any time. Bluerithm can also be integrated into project documentation software packages (Procore, Submittal Exchange, etc.) to maintain a single-source depositary of project information.

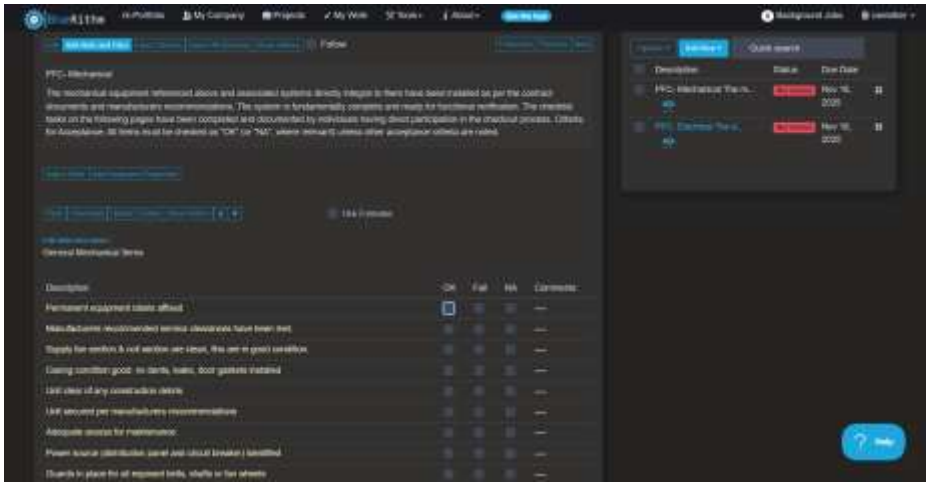
The software system manages functional and integrated systems testing including components such as:

- Equipment list with customizable data input information tailored to meet CUNY's needs. The preliminary equipment list has already been compiled in our system.






- Customized forms and checklists
    - Pre-functional checklists developed specific to the equipment utilized on this project
    - Functional performance tests based on the approved temperature control submittals, with adjustable format and workflow
    - First-in-Kind Pre-functional checklists have already been prepared for this project and are ready for review & approval.



- Site observations, commissioning meeting minutes and any other activities needed to track or manage a commissioning project
- Issue & Resolution Log, assignable to the appropriate party for collaboration, communication and resolution
- Gives all stakeholders (owner, design consultants, contractors) real-time, interactive access to all project commissioning data
- Live data and actual progress for accurate real-time updates

# APPROACH AND CAPABILITY

***C.J. Brown Energy has developed and utilizes a comprehensive commissioning technical process that enables us to achieve a high level of quality control and quality assurance in professional services. Our process has been developed through our commissioning project experience, our extensive knowledge of building systems and conservation measures, and our ongoing research into new commissioning tools, strategies and "best practices."***

Following is a summary of C.J. Brown Energy's technical approach that is typically applied to commissioning projects. This methodology has been customized for this project but can be adapted to meet the specific needs and requirements identified during the discovery process.

## Commissioning Methodology

C.J. Brown Energy's technical approach is driven to ensure that building systems function as they are designed and intended while minimizing duplication of services with respect to the rest of the project team. Our methodology encompasses the design, bid, construction, post-occupancy/warranty phases of a project. Our methodology for providing commissioning services for New York State agencies is in compliance with SUCF 1B-6, relevant sections of the LEED (Leadership in Energy and Environmental Design) Rating System, the New York State Energy Code, and/or other applicable agency-specific guidelines and directives. Our technical process helps ensure that the requirements for the scope of work, systems/equipment to be commissioned, and deliverables are met during commissioning.

We utilize a cloud-based commissioning platform to organize, manage and track the commissioning process. Commissioning team members including the contractors, construction manager, A/E team and client/agency personnel have full-time access to this platform. The Cx forms are tailored to be project specific and uploaded for the Contractors to complete electronically. Team "administrators" have to ability to review the progress, completeness and accuracy of the work at any time and from anywhere. This ensures an open and timely delivery of commissioning information that can be reviewed by the project personnel at any time.

C.J. Brown Energy emphasizes the design phase as well as the construction phase work. Our review of design and construction documentation typically focuses on commissionability of systems. This generally involves review for proper access for maintenance and service a reasonable number of service valves, gauges, etc.; and sufficient definition and clarity of control sequences in order to eliminate field interpretation. The goal for our design review process is to project and eliminate potential change orders due to conflicts, insufficient information or excessive interpretation in the Contract Documents.

In addition, our expertise in energy conservation consulting and facility operations enables us to provide a highly effective review of energy using systems as well as O&M measures. We review the project specifications and log the spare parts, extended warranties and training requirements for the commissioned systems. These logs are then reviewed with the Owner and coordinated with the Engineer. This ensures that the Owner will receive an adequate supply of spare materials without excess waste and receive the appropriate level and amount of training.

During the construction phase, particular attention is given to the functional testing of systems and equipment to ensure they are properly set up and operating according to the design intent. We place a focused emphasis on the functionality of the energy-consuming systems through the use of temperature control specialists capable of interpreting the sequences utilized by the contractor and comparing them with the design intent.

We utilize a comprehensive, detailed Commissioning Testing Plan and Schedule to track the progress Experience of construction with respect to the required functional testing.

C.J. Brown Energy's commissioning specifications requires TAB and TC plans to be provided by the contractor prior to functional testing. We review the TAB contractor's procedures, forms and plan; review the TAB processes for general compliance with good practice of the trade; and observe select portions of the TAB to confirm the TAB contractor was following approved approaches. We also verify a sample (20%) of the various systems not witnessed during the initial TAB observation to verify compliance with the design documents.

To facilitate the completion of the functional testing phase, C.J. Brown Energy has separated the functional tests into three distinct components. The first is the hardware verification, which is done on individual pieces of equipment as they come on-line and provides verification of the point-to-point checkouts from the final Graphical User Interface. The goal is to verify proper operation and appropriate reactions to a given command. This work is field intensive and can be completed prior to the building turnover so the commissioning work will not interfere with the FF&E and initial building occupancy.

The completion of the hardware verification marks the primary end of the commissioning field work which helps to facilitate the building turnover. The final two phases of the functional verification process are held at the Operator's Workstation and in the office; minimizing any disruptions in the space.

The second functional testing component is the sequence review. For this work we utilize the approved "as-built" sequences of operation to verify that they are accurately documented. The sequences are reviewed line-by-line, the safeties and controls are verified, and emergency conditions are simulated. Upon completion, if there are any discrepancies between the record drawings and the actual system, they are presented to the Owner and the engineer for review and approval. Once the sequences have been verified as acceptable, the third functional verification component can begin.

The final functional verification phase is the trend log analysis. C.J. Brown Energy sets up the desired trend log groups to verify proper TC tuning. The contractor is responsible for tuning the control components to a satisfactory condition. Particular attention is required to ensure the proper air flow and pressure relationships are met for the systems serving the laboratory fume hood equipment. A variety of points will be trended as a group to visually identify individual component action and reaction to the operation of the laboratory.

C.J. Brown Energy's focus for O&M training is to ensure that the Owner's personnel receive training content that is beneficial to their ability to operate and maintain the facility, and that the level and extent of training meet the Owner's expectations and needs. The length and rigor of the training requirements are coordinated with the Owner and conveyed to the design professionals and eventually the installing contractors. We have a standardized training agenda that addresses and is customized to the following:

- Intended audience
- General objectives and scope of training
- Company instructors (specific personnel, their positions and qualifications)

Subjects to be covered including complexity of information and duration of training

- Training methods to be utilized
- Documentation for Owner approval of the training agenda and plan, use of the agenda during training, trainee attendance, and training completion

C.J. Brown Energy provides all required deliverables in a comprehensive Commissioning Record including the final Commissioning Report and all of the pertinent project documentation. The equipment and systems requiring commissioning are included in the Scope of Work as defined by the Commissioning Plan.

Following is a summary of C.J. Brown Energy's technical approach that is typically applied to commissioning projects. This methodology is adapted to meet the specific needs and requirements of each project.

**Design Phase Commissioning (When Requested)**

- Preparation of the Commissioning Plan.
- Review of the Owner's Project Requirements and Basis of Design.
- Preparation of the Commissioning and Indoor Air Quality Specifications.
- Design Manual (DD) phase commissioning review.
- Contract Document (CD) phase commissioning review.
- Coordination of spare parts, warranty and training requirements.
- Final back-check of design comments with Bid Documents

**Bid Phase Commissioning (When Requested)**

- Answer contractor's questions.

**Construction Phase Commissioning**

- Develop Commissioning Schedule of Values requirements and coordinate integration with project CPM schedule.
- Focused review of select submittals for commissionability and commissioning requirements.
- Development of the project specific pre-functional checklists, and functional verifications forms based on the approved submittals.
- Review executed pre-functional checklists as completed by the Contractor.
- Review and approve the contractor's Testing, Adjusting and Balancing Plan, and the Temperature Control Plan. We monitor select portions of the interactions between the TC and TAB work to confirm compliance with the approved plans.
- Provide periodic site visits to monitor progress of commissioning activities.
- Functional verifications are accomplished utilizing hardware, historical trending, and operational procedures that allow for maximizing compliance with the contract documents while minimizing adverse impact on the project schedule.
- The sensors and controlled devices are checked and exercised (point-to-points) utilizing the Building Management Systems Operator's Workstation to ensure that field devices are accurately represented. This reduces the need to physically enter areas that may be turned over and occupied.
- Upon successful completion of the functional hardware verifications, perform operational verifications to ensure the approved "as-built" control sequences match the actual system performance during normal and irregular modes of operation. Sequences and control strategy verifications include start-up, shutdown, unoccupied and manual modes, component sequencing, life safety and fail-safe interlocks with other equipment.

Complete the functional verification process by verifying system interactivity through the use of historical trending data to ensure holistic building performance.

- Review, approve and document the contractor's training plan and schedule for the Owner. Prepare training agenda outlines for review with campus personnel prior to implementation by the contractor.
- • Review the Operation and Maintenance (O&M) manuals for all commissioned features and systems prior to commencement of Owner training.
- • Prepare the Systems & Energy Management/Recommissioning Manual.
- • Maintain an Issues Log documenting items found and resolved during the commissioning process.
- • Prepare Final Commissioning Report.
- • Indoor Air Quality Testing

**Warranty Phase Commissioning**

- Deferred seasonal testing.
- 10-month commissioning review.
- Update Final Commissioning Report with addendums.
- Prepare Commissioning Record with all commissioning materials.

**Systems Commissioned**

Systems commissioned by C.J. Brown Energy can include but are not limited to:

- Air cooled condensers
- Blower door testing
- Building envelope
- Built up AHUs
- Chemical water treatment
- Chilled water systems
- Clean rooms
- Condenser water systems
- Digital Addressable Lighting Interface (DALI)
- Daylight harvesting
- Dehumidification units
- Direct burial piping
- District chilled water
- District high temperature/ high pressure hot water
- District steam
- Domestic booster pumping
- Domestic solar heat exchangers
- Domestic water heat exchangers
- Domestic water heaters
- Electrical systems
- Emergency generators and UPS
- Energy Management Systems
- Fire alarm
- Fire protection
- Fume hood control
- Geothermal
- Heat pump systems
- Heat recovery
- Heating systems
- High temperature/high pressure hot water heat exchangers
- Hot water boilers
- Hot water radiant flooring
- Hot water-glycol heat exchangers
- Humidification
- IAQ management and testing
- Laboratory exhaust
- Lighting control
- Mechanical insulation systems
- Modular hot water boilers
- Rain water harvesting
- RO/DI water systems
- Rooftop units
- Snowmelt
- Sound attenuation
- Standby chiller
- Steam boilers
- Steam condensate return
- Steam generators for humidification systems
- Steam-hot water heat exchangers
- Thermal imaging
- Variable hydronic pumping
- VAV distribution
- VAV exhaust evacuation

## Project Management Approach

C.J. Brown Energy utilizes team-based project organization to achieve efficient project administration and quality results. To meet the requirements of each project, we establish a team that includes a primary representative/project manager and supporting technical personnel.

The primary representative/project manager selected possesses extensive and direct experience on similar projects. He assures that all aspects of the project are implemented and completed consistent with the project scope and client requirements. He is responsible for the development and facilitation of the commissioning electronic reporting for the project.

In addition, C.J. Brown Energy performs upfront, in-depth project planning to ensure that all areas of a project are fully and properly addressed, and that all team members are knowledgeable in their roles and responsibilities. Our continuous project tracking, together with the high degree of communication that takes place among team members, provides for ongoing monitoring of task status, time and costs. Our cloud-based Cx platform is utilized to insure open and timely transfer of information.

The impact of project phasing is an integral component in proper commissioning implementation. Our hands-on approach and our understanding of how the project phases flow together allow the commissioning activities to be seamlessly integrated into the overall project CPM schedule. This maximizes the outcome of the commissioning work while minimizing its impact on the project schedule. Regular site visits and meeting attendance are used to proactively address any issues that may arise and to minimize the impact on the project.

Through our project management approach, C.J. Brown Energy accomplishes the following:

- Manage and complete the project in a cost-effective manner.
- Provide for quick response and timely scheduling.
- Manage the entire project to achieve the highest level of technical results, quality and service.
- Provide for consistent review, quality control, and problem resolution procedures.
- Ensure effective communication required to complete tasks efficiently and provide continuity through the organizational structure of the assigned project team.

Furthermore, our project management approach enables us control program costs, particularly as they relate to the distribution of tasks and the costs associated with site visits, meetings and travel. We properly and efficiently provide the requisite knowledge and skills at each task level. By identifying milestones in the commissioning process, we plan site visits/meetings around key start-up and operational checkout points, thus avoiding unnecessary additional visits.

## Communication

C.J. Brown Energy utilizes a cloud-based Cx software platform to allow full-time “open-book” review of the Cx work and its progress. Integration into the project documentation software package (Procore, Submittal Exchange, etc.) can be utilized to maintain a single-source depositary of project information.

C.J. Brown Energy integrates commissioning into the construction process, starting at the kickoff meeting, by ensuring that each party’s responsibilities and required activities are clearly communicated and understood and

are/have been effectively detailed in the contract documents. We coordinate the addition of key commissioning components into the Contractor's schedule of values and cross reference them on the project CPM progress schedule. We work with contractors to develop preliminary schedules based on construction milestones and maintain ongoing communication to refine the schedule as the project progresses.

At construction meetings, we establish a timeline for our commissioning tasks and continually coordinate these times with the contractors and vendors involved. We work to provide an effective level of flexibility to resolve potential delays due to variations in deliveries, installation schedules, rigging, temperature control tie-ins, etc. before they can impact the project. Because of our in-depth knowledge of and experience with the construction process, we are particularly aware of the various start-up and operational checkout points at which our attendance and input are required, and which preliminary work can be completed without our direct involvement.

C.J. Brown Energy believes that effective commissioning requires teamwork among all parties involved in the project. We provide the high level of facilitation, communication and education necessary for a smoothly functioning team of stakeholders working to achieve the shared goal of delivering a high-performance building. We understand their roles and responsibilities as they relate to the commissioning process and thus can effectively address concerns as to the impact of commissioning on their work. We work to make the commissioning process transparent so that everyone involved is aware of and understands the big picture and the individual components of the process. We possess the interpersonal and mediation skills necessary to resolve disputes, combined with actual project experience in "give-and-take" to satisfy all parties.

C.J. Brown Energy is prepared for an immediate start to this project. We have manpower available, are prepared to coordinate our subcontractors as required to fully engage this project immediately upon approval. We have already compiled the equipment list and first-in-kind pre-functional checklists for much of the equipment. Upon approval, the pre-functional checklists can be electronically distributed to the Contractor and completed electronically to provide an efficient start to the commissioning process.

***Resumes for C.J. Brown Energy team members, highlighting their qualifications and relevant project experience, are provided below.***

### *Commissioning Controls Specialist*

C.J. Brown Energy will utilize Brad Wellman of Wellman Energy Solutions LLC as a Commissioning Controls Specialist for this project. Mr. Wellman will support our commissioning team by performing a portion of the field commissioning activities, including controls verification and related field assessments. His extensive experience in building automation and HVAC controls will complement C.J. Brown Energy's commissioning expertise and support the successful completion of the project.

C.J. Brown Energy & Engineering, P.C.

# ORGANIZATIONAL CHART OF PROPOSED TEAM

**Wyalusing Area School District**

Capital Improvements Project | Commissioning

## WYALUSING AREA SCHOOL DISTRICT

Capital Improvements Project | Commissioning



**Craig J. Palkowski, CEM, EIT**
General Manager / Senior Energy Engineer

### ENERGY ENGINEERING SERVICES



**Scott G. Szymendera, HERS**
Senior Multifamily Energy Engineer



**Nathan R. Gaylord**
Multifamily Energy Engineer



**Dylan C. Kashuba**
Energy Engineer



**Gabriel D. Hughes**
Energy Engineer



**Hunter J. Palkowski**
Junior Energy Engineer



**Lisa A. Grabenstatter**
Analyst / Program Implementation

### COMMISSIONING SERVICES



**Christopher M. Sendker, PE, LEED AP, CBCP**
Principal / Commissioning Services Manager



**Mark S. Jankowiak**
Commissioning Specialist / Controls



**Curtis R. Stuart, CEM**
Energy Engineer / Commissioning Specialist

C.J. Brown Energy & Engineering, P.C.

# Christopher M. Sendker, PE, LEED AP, CBCP

Principal/Commissioning Services Manager



**Education**
Clarkson University
B.S. Mechanical & Industrial Engineering

**Registration**
New York, 1997, #074242

**Professional Experience**
C.J. Brown Energy & Engineering, P.C.
1999 – Present
Commissioning Services Manager

Babinsky Klein Engineering
1988 – 1999
Team Leader

Trautman Associates
1984 – 1988
Mechanical Group Leader

**Certifications**
USGBC LEED Accredited Professional
2004

Association of Energy Engineers
Certified Building Commissioning Professional
2014

## Summary

Mr. Sendker has over 40 years of experience in all aspects and phases of mechanical engineering. His areas of expertise include commissioning, retro-commissioning and control system design. He is particularly skilled in verifying sequences of operation, investigating operational issues, and liaising with stakeholders/project team members. He is also experienced in quality assurance reviews, field inspections, compliance with applicable standards and directives, and project technical support. Mr. Sendker is a member of the Building Commissioning Association.

## Project Experience

**Primary & Secondary Education (K-12) Commissioning Services**
Provides comprehensive commissioning services from design through warranty for K-12 capital improvement, renovation, and new construction projects. Services include HVAC and building system upgrades, building automation systems (BAS), lighting and temperature controls, fire alarm systems, testing and balancing (TAB), RTU, AHU, and VAV commissioning, functional performance testing, systems testing and documentation, seasonal testing, controls verification, and owner training.

- **Niagara-Wheatfield Central School District 2022 Capital Improvement Project:** Phase 2A & Phase 2B ($17.3M) - Niagara-Wheatfield High School, Edward Town Middle School, and Colonial Village Elementary School | Sanborn, NY
- **Cleveland Hill Union Free School District 2022 Capital Improvement Project:** Phase I & Phase II ($12.57M) - Cleveland Hill K-12 Building and Morton Building | Cheektowaga, NY
- **Hamburg Central School District 2021 Capital Improvement Project:** Phase II ($22.5M) - Hamburg High School, Armor Elementary School, Boston Valley Elementary School, and Charlotte Avenue Elementary School | Depew, NY
- **Westfield Academy & Central School District 2019 Capital Outlay Project**: ($5.3M) - Westfield Academy | Westfield, NY
- **Erie BOCES 2018 Capital Improvement Project:** Phase I & Phase II ($16.1M) - Harkness Career & Technical Center / Kenton Career & Technical Center | Cheektowaga & Tonawanda, NY
- **Orchard Park Central School District 2018 Safety and Security Capital Improvement Project:** ($12.2M) - High School, Middle School, Eggert Elementary School, Ellicott Elementary School, South Davis Elementary School, and Windom Elementary School | Orchard Park, NY
- **Eden Central School District 2017 Capital Improvement Project:** Phase III ($18.3M) - Eden Junior/Senior High School, Eden Elementary, Grover L. Priess Elementary, Bus Garage, and construction of a new Concession Building | Eden, NY

C.J. Brown Energy & Engineering, P.C.

# Mark S. Jankowiak

## Commissioning Specialist/Controls



**Education**
Johnson Controls Institute for-Building Commissioning, Programming, Building Graphic Design, and Equipment (Chillers, Air Handlers, Rooftops, Unit Ventilators, FanCoils, Exhaust Fans, Variable Speed Drives)

**Professional Experience**
C.J. Brown Energy
& Engineering, P.C.
2025 – Present
Commissioning Specialist/Controls

Johnson Controls, Inc.
2004-2025
Installation Systems Technician, Project Engineer, Systems Designer

### Summary

Mr. Jankowiak has over 22 years of experience in the development installation and commissioning of building controls systems including DDC and pneumatic controls, hydraulic, hydronic, and mechanical systems. His expertise includes field verification, testing, operation, O&M and graphic creation for building management systems. He also has a background in project management, field supervision, HVAC equipment, and technical support of HVAC systems. He possesses extensive hands-on programming, point to point verification, and program testing of building controls systems. He has 15 years of knowledge and experience in industry (mechanical, electrical, hydronic) working as machinery maintenance mechanic, and facilities manager. He has developed team skills with project managers, tradesmen, engineers and architects.

### Project Experience

**Primary & Secondary Education (K-12) Commissioning Services**
Provides comprehensive commissioning services from design through warranty for K-12 capital improvement, renovation, and new construction projects. Services include HVAC and building system upgrades, building automation systems (BAS), lighting and temperature controls, fire alarm systems, testing and balancing (TAB), RTU, AHU, and VAV commissioning, functional performance testing, systems testing and documentation, seasonal testing, controls verification, and owner training.

- **Jamestown Central School District 2021 & 2023 Capital Improvement Project:** Phase I, Phase II, Phase A, RTU Replacements & High School Auditorium Renovation ($86.5M) - Jamestown High School, Fletcher Elementary and Technical Academy | Jamestown, NY
- **Niagara-Wheatfield Central School District 2022 Capital Improvement Project:** Phase 2A, Phase 2B ($17.3M) & Phase 3 (Ongoing) - Niagara-Wheatfield High School, Edward Town Middle School, and Colonial Village Elementary School | Sanborn, NY
- **Lancaster Central School District 2018 Capital Improvement Project:** Phase V ($77.1M) consisting of renovations at John Sciole Elementary School and 295 Pleasant View Administration Building | Lancaster, NY
- **Sharon Springs Central School District Detailed Energy Audit:** oK-12 building (high school, middle school and elementary school) and bus garage totaling 112,300 SF in support of an energy performance contract under the NYSERDA FlexTech Program. Contract Value - $33,000 | Sharon Springs, NY
- **Oneida City School District Detailed Energy Audit**: for nine school district facilities totaling approximately 362,000 SF and $3M under the NYSERDA FlexTech Program. Facilities included elementary, middle, and high schools, administrative offices, maintenance, and transportation buildings| Oneida, NY

Wellman ENERGY SOLUTIONS

IoT Sub-Metering · Building Automation · Energy Analytics · BESS Integration

**SDVOSB · VOSB · NYS SDVOB #262564** UEI: H3Q4UPDAHV33 · CAGE: 12S72 · OGS: 1100349776

(607) 438-1030 · brad@wellmanenergysolutions.com · wellmanenergysolutions.com

5 E. Market Street, Suite 271, Corning, NY 14830

## WHO WE ARE

Wellman Energy Solutions LLC (WES) is a federally certified SDVOSB/VOSB and NYS-certified SDVOB delivering IoT sub-metering, building automation optimization, demand-controlled ventilation (DCV), power quality correction, and battery energy storage (BESS) integration to K-12 school districts, municipalities, and federal facilities across New York State.

WES deploys **DENT PowerScout HD** meters (Buy American, made in Oregon) paired with **Sapient Industries** analytics and **Viridi Parente** BESS systems. Our founder brings 25+ years of BMS controls and building automation expertise across multiple platforms, and U.S. Navy veteran service.

## CORE CAPABILITIES

- **IoT Sub-Metering Installation** — DENT PowerScout HD + Sapient cloud analytics
- **Building Automation (BAS)** — Multi-platform BMS controls integration, optimization & commissioning
- **Demand-Controlled Ventilation** — CO2-based DCV design & commissioning
- **Power Quality Analysis** — THD measurement, harmonic correction, power factor
- **BESS Integration** — Viridi Parente battery storage siting & commissioning
- **Measurement & Verification (M&V)** — IPMVP-aligned savings documentation
- **Demand Response** — NYISO Zone C/D facilitation via CPower
- **C405.13 Sub-Metering Compliance** — Supply, installation & compliance for new construction >10,000 SF
- **Utility Rebate Management** — NYSEG/RG&E custom rebate development (Trade Ally)
- **VFD Procurement & Commissioning** — ABB variable frequency drives, specialist startup

## OUR DIFFERENTIATORS

- **SDVOSB/VOSB & NYS SDVOB** — Preferred status — federal & state set-asides
- **Buy American Compliant** — DENT meters made in Oregon — qualifies for BIL/IRA
- **25+ Years BAS Expertise** — Multi-platform BMS controls experience, integration & optimization
- **Live K-12 Reference Sites** — Available for client visits — Southern Tier, NY
- **U.S. Navy Veteran — AT2, F/A-18C** — Service-disabled, Persian Gulf deployments
- **Full Technology Stack** — Hardware, software & service from one partner

## PAST PERFORMANCE

**K-12 School District — BAS Optimization & Sub-Metering**
Commissioned CO2-based demand-controlled ventilation, hot and chilled water reset strategies, and heating setpoint optimization across multiple district facilities. IoT sub-metering installed at lead building with live reference site available for client visits.

**K-12 School District — Buy American Sub-Metering Deployment**
Deployed DENT PowerScout HD sub-metering with Sapient Industries cloud analytics. Full Buy American Act and Bipartisan Infrastructure Law (BIL/IRA) compliant installation on a publicly funded facility.

**K-12 School District — VFD Replacement & Commissioning**
Procured and commissioned replacement ABB variable frequency drives for failed units at a bus garage and middle school cooling tower. Equipment supply, project management, and specialist startup.

**Commercial Office Building — Energy Monitoring Services**
Energy monitoring, equipment services, and performance reporting for a private commercial building in the Southern Tier of New York.

## CERTIFICATIONS & REGISTRATIONS

- **Federal SDVOSB & VOSB** — SBA Certified
- **NYS SDVOB** — #262564
- **SAM.gov** — UEI: H3Q4UPDAHV33 | CAGE: 12S72
- **NYS OGS Vendor** — ID: 1100349776
- **DASNY Registry** — Registered
- **NYSEG/RG&E Trade Ally** — Registered
- **SBA HUBZone** — Certified
- **Prevailing Wage Contractor** — NYS DOL Article 8

## NAICS CODES

| | |
|---|---|
| 541690 | Other Scientific & Technical Consulting (Primary) |
| 238210 | Electrical Contractors & Wiring Installation |
| 238220 | Plumbing, Heating & A/C Contractors |
| 541512 | Computer Systems Design Services |
| 423610 | Electrical Apparatus Merchant Wholesalers |
| 238290 | Other Building Equipment Contractors |
| 541330 | Engineering Services |

## GEOGRAPHIC COVERAGE & AVAILABILITY

WES serves all of New York State excluding the five NYC boroughs, with a primary focus on the Southern Tier, Finger Lakes, and Western NY regions. Available for federal, state, and municipal projects statewide. WES operates as both prime contractor and subcontractor on public and private sector projects. Reference site visits available upon request.

## TECHNOLOGY PARTNERS

- **DENT PowerScout HD** — Authorized Partner — sub-metering hardware
- **Sapient Industries** — Channel Partner — IoT analytics platform
- **Viridi Parente** — Official Channel Partner — fail-safe BESS
- **Best.Energy/Eniscope** — Accredited Partner — private commercial
- **CPower** — Demand Response Partner — NYISO
- **Franklin Energy** — Trade Ally — NYSEG/RG&E rebates

# BRAD WELLMAN

**Founder & CEO, Wellman Energy Solutions LLC | Building Automation & Energy Systems Professional**

brad@wellmanenergysolutions.com | (607) 329-0874 | 5 E. Market St., Suite 271, Corning, NY 14830

Service-disabled U.S. Navy veteran and founder of Wellman Energy Solutions LLC (WES), a certified SDVOB, SDVOSB, and HUBZone energy efficiency and building automation firm. 25+ years in commercial building automation and energy management spanning service, commissioning, systems engineering, account management, and operations supervision. Expertise in BAS platform migration, BACnet and Modbus integration, DDC startup and controls programming, IoT sub-metering and analytics, power quality analysis, and utility incentive programs across K-12, commercial, industrial, and municipal facilities throughout New York State.

## CORE COMPETENCIES

- Building Automation Systems (BAS)
- BACnet / Modbus Integration
- IoT Sub-Metering & Analytics
- DDC Startup & Controls Programming
- Energy Management & Efficiency
- Power Quality Analysis (THD / Harmonics)
- HVAC Controls Optimization
- Commissioning & Functional Testing
- NYSERDA / Utility Rebate Programs
- Project Leadership & Operator Training
- Demand Response & Grid Programs
- Federal & NYS Government Contracting

## CERTIFICATIONS & REGISTRATIONS

- NYS SDVOB #262564
- Federal SDVOSB & VOSB, SBA Certified
- SBA HUBZone Certified
- SAM.gov Registered | UEI: H3Q4UPDAHV33
- NYS OGS Vendor | DASNY Vendor
- NYSEG/RG&E Trade Ally | NYS Prevailing Wage

## PROFESSIONAL EXPERIENCE

**Founder & CEO** | Wellman Energy Solutions LLC, Corning / Campbell, NY — Feb 2025 to Present

- Operate a certified SDVOB, SDVOSB, and HUBZone energy efficiency and building automation firm serving K-12 school districts, municipalities, and commercial, industrial, and agricultural facilities across New York State.
- Deliver end-to-end energy monitoring projects: site surveys, IoT sub-metering design, device commissioning and validation, energy analytics dashboards, and operator training.
- Execute HVAC controls optimization including scheduling, DCV programming, reset strategies, and setpoint optimization across multiple BAS platforms.
- Perform power quality analysis and remediation, develop NYSEG/RG&E utility rebate applications, and manage BAS subcontracts on public works projects under NYS Prevailing Wage.

**Progressive Technical & Leadership Roles** | Commercial Building Automation, NY / MA — 2001 to 2025

*Sr. Remote Support Specialist · Commissioning Technician II · Operations Specialist Supervisor · Remote Service Center Specialist · Service Account Engineer · Engineering Specialist II*

- Commissioned and serviced BAS for K-12, higher education, healthcare, municipal, and commercial facilities: controller startup, point-to-point checkout, functional performance testing, and customer turnover documentation.
- Led full project lifecycle from system design through commissioning on large-scale BAS installations, including automation database development, control programming sequences, graphics, alarm and trend strategy, and third-party integration via BACnet and Modbus.
- Executed legacy platform migrations, network upgrades, and controller replacements across multi-building campuses, including integration with metering and lighting control systems.
- Supervised an 8-member district operations team and managed a service account portfolio, delivering account-level energy savings strategies, contract renewals, and operator training programs.

**Project Lead II, National Accounts** | U & S Services Inc. and Day Automation Systems — 2009 to 2010, 2020 to 2021

- Led HVAC and controls projects for national accounts, managing schedules, safety compliance, and subcontractor coordination; managed controls project startups on Andover Controls systems.

## MILITARY SERVICE

**Aviation Electronics Technician 2nd Class (AT2), Supervisor** | U.S. Navy, VFA-136 — 1997 to 2000

- Maintained F/A-18C Hornet avionics systems on strike fighter aircraft and supervised 12 technicians; completed two six-month deployments including Persian Gulf operations. Two Navy and Marine Corps Achievement Medals.

## REPRESENTATIVE PROJECT EXPERIENCE

- Horseheads CSD: IoT sub-metering across 18 circuits at Center Street Elementary with live analytics dashboards; power quality analysis and remediation at the main distribution panel; demand response enrollment across two facilities.
- Fredonia CSD: BAS controller migration subcontract executed under NYS Prevailing Wage on a public works project.
- Commercial and agricultural sector: facility energy assessments, sub-metering design, controls modernization, and coordination of solar and battery energy storage evaluations.

## TECHNICAL TRAINING

Manufacturer training in BAS operations, installation and startup, graphics development, controls programming (I & II), advanced troubleshooting, DDC startup, equipment controller design and startup, critical environments design and startup, energy management, and service methodologies.

# Letchworth CSD 2020 Capital Improvement Project



## Gainesville, NY

The Letchworth Central School District 2020 Capital Improvement Project ($20.35M) is successfully completed, with C.J. Brown Energy implementing the full Commissioning process during the construction phase, including verifying and documenting proper installation and operation of equipment/systems according to contract documents, manufacturer's recommendations, and that adequate startup & operational checkout is performed by installing contract representatives. This project has an expected completion date of September 2023.

Commissioning Scope of Work: Construction through warranty to meet the requirements of Section C408 of the 2016 New York State Energy Conservation Construction Code (2015 IECC as modified by the 2016 New York State Supplement).

Commissioned Systems: Cabinet Unit Heaters, Rooftop Units, Energy Recovery Ventilators, Fan Coil Units, Air Handling Units, Variable Air Volume Boxes w/reheat, Air Cooled Condensing units, Blower Coil Units, Exhaust Fans, Gas Fired Make-up Air Units, Split Ductless A/C units, Boilers, Dust Collector, Particulate Collector, Vehicle exhaust extraction system

### Project Team
Christopher M. Sendker, PE, LEED AP, CBCP

### Project Completion
07/2024

### Project Contacts/Reference
Joe Redmond
Project Manager
Turner Construction Company
716-818-5052
jredmond@tcco.com

Todd Brant
Maintenance Supervisor
Letchworth CSD
585-493-5999 Ext. 7511
tbrant@letchworth.k12.ny.us

# Churchville Chili CSD




## Churchville, NY

The Churchville Chili Central School District underwent major renovations of structural and MEP system as part of its $22.68 million Phase V Capital Improvement Project, including improvements to the 33,506 SF aquatic facility. The Commissioning process was implemented throughout the construction phase and into the warranty phase, wrapping up in 2020.

During the construction phase, commissioning of new systems led to numerous installation, operation, and control issues being diagnosed and rectified to deliver the facility with a properly functioning facility and proper training for maintaining and operating their new equipment.

Commissioning Scope of Work: Construction through warranty to meet the requirements of Section C408 of the 2016 New York State Energy Conservation Construction Code (2015 IECC as modified by the 2016 New York State Supplement).

Commissioned Systems: Packaged Rooftop Units, Pool Dehumidification Unit, Boilers, Air Handling Units, Exhaust Fans, Pumps, Split AC Units, Unit Ventilators, Panel Radiators, Heat Exchangers, DW Heaters, Lighting control systems, TAB, and temperature controls.

### Project Team
Christopher M. Sendker, PE, LEED AP, CBCP

### Project Completion
12/2021

### Project Contacts/Reference
Joe Valenti
Facility Owner
Churchville Chili CSD
585-293-1800
jvalenti@cccsd.org

Kevin Arilotta
Construction Manager
716-239-4884
Campus CMG
karilotta@campuscmg.com

# Salamanca CSD Capital Improvements




## Salamanca, NY

Provided commissioning services for Phase 3.3 and Phase 3.4 of the $41.6 million 2019 Capital Project (Phase 3). Phase 3.3 includes a classroom addition at Prospect Elementary, including cabinet heaters, exhaust fans, fan coil units, HW fin radiation, packaged rooftop units, HW pumps, etc.

Phase 3.4 includes a new district office addition at the main HS/MS campus, renovation to the current district office for Native American Services, replacement of the pool HVAC dehumidification unit and pool heater, and other miscellaneous renovations.

TAB, temperature controls, building managements system programming, and lighting controls are also being commissioned across the phases.

Commissioning Scope of Work: Construction through warranty to meet the requirements of Section C408 of the 2016 New York State Energy Conservation Construction Code (2015 IECC as modified by the 2016 New York State Supplement).

### Project Team
Christopher M. Sendker, PE, LEED AP, CBCP

### Project Completion
11/2023

### Project Reference
Mark Beehler
Superintendent
Salamanca CSD
mbeehler@salamancany.org
716-945-2400

Julian Schnopp
Project Manager
Turner Construction Company
jschnopp@tcco.com
214-915-9600

# LIST OF COMMISSIONED SYSTEMS

**The following list of equipment was derived from the documents provided (Permit Set; Date 2-18-25):**

**General Verification (associated):**

- HVAC Systems
- Temperature Control Systems
- TAB of HVAC Systems
- 100% Primary Equipment
- 20% Secondary / Distributed Equipment

**High School:**

- (4) Air Cooled Condensing Unit
- (3) Air Handling Unit; Multizone
- (2) Cabinet Unit Heaters
- (13) Classroom Unit Ventilators
- (6) Duct Mounted Electric Heating Coils
- (3) Duct Mounted Hydronic Heating Coils
- (4) Duct Silencers
- (1) Dust Collector
- (1) Energy Recovery Unit
- (8) Exhaust Fans
- (2) Kitchen Hoods
- (1) Particulate Collector
- (9) Rooftop Air Handling Units
- (2) Split AC Units
- (23) VAV w/RH

# LUMP SUM FEE

**Consulting Fee (Lump Sum):**

$49,775 (Forty-Nine Thousand Seven Hundred Seventy-Five Dollars)

**Additional Field Pricing:** $1,750/day

# REIMBURSABLE EXPENSES

**Reimbursable Items:**

**The following expenses are excluded from this proposal:**

C.J. Brown Energy & Engineering, P.C. has no anticipated reimbursable items.

**Claims:** C.J. Brown Energy & Engineering, P.C. has no past claims to report.

# MAN-HOUR BREAKDOWN

| | Estimated Number of Hours | | | | |
|---|---|---|---|---|---|
| | L1 | L2 | L3 | L7 | Task |
| | Cx Project Manager | Cx Specialist | Cx Technician | Cx Control Specialist | Hours |
| **Construction Phase** | | | | | |
| Develop Pre-Functional Checklists | | 4 | 8 | | 12 |
| Complete Pre-Functional Checklists | | | 24 | 16 | 40 |
| Review TAB | | | | 16 | 16 |
| Project Meetings (2) | | 8 | | 8 | 16 |
| Maintain Issues Log | | 4 | 8 | 8 | 20 |
| Cx Meeting | | 8 | | | 8 |
| Develop Deliverables | | 2 | 4 | 4 | 10 |
| Other | | | | | 0 |
| **Phase Subtotal** | **0** | **26** | **44** | **52** | **122** |
| **% of Phase** | **0%** | **21%** | **36%** | **43%** | |
| **Testing Phase** | | | | | |
| Develop Functional Test Procedures | 5 | 8 | 4 | | 17 |
| Perform Functional Test Procedures (P2P) | | | 16 | 32 | 48 |
| Perform Functional Test Procedures (Sequences) | | 4 | | 24 | 28 |
| Perform Functional Test Procedures (Trends) | | 4 | | 24 | 28 |
| Maintain Issues Log | | 8 | 8 | | 16 |
| Cx Meeting | | 8 | | | 8 |
| Develop Deliverables | | 2 | 8 | | 10 |
| Other | | | | | 0 |
| **Phase Subtotal** | **5** | **34** | **36** | **80** | **155** |
| **% of Phase** | **4%** | **28%** | **30%** | **66%** | |
| **Close-out Phase** | | | | | |
| Cx Deficiency Meeting | | 8 | | | 8 |
| Develop Deliverables | | 4 | | | 4 |
| Other | | | | | 0 |
| **Phase Subtotal** | **0** | **12** | **0** | **0** | **12** |
| **% of Phase** | **0%** | **10%** | **0%** | **0%** | |
| **Turnover Phase** | | | | | |
| Final Cx Report | | 4 | 8 | | 12 |
| *Other* | | | | | 0 |
| **Phase Subtotal** | **0** | **4** | **8** | **0** | **12** |
| **% of Phase** | **0%** | **33%** | **67%** | **0%** | |

# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 1/2/2026

**THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.**

**IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).**

| PRODUCER | CONTACT NAME: Jennifer Dissette |
|---|---|
| Promark Partners Insurance Services<br>6700 Main St.<br><br>Williamsville NY 14221 | PHONE (A/C, No, Ext): (716) 633-8401 FAX (A/C, No): (716) 633-8429<br>E-MAIL ADDRESS: jdissette@promarkinsurance.com |

| INSURED | INSURER(S) AFFORDING COVERAGE | NAIC # |
|---|---|---|
| CJ Brown Energy & Engineering, PC<br>4245 Union Road<br>Suite 204<br>Buffalo NY 14225-5040 | INSURER A: RLI Insurance Company | 13056 |
| | INSURER B: Travelers Casualty and Surety Co of Am | 31194 |
| | INSURER C: Standard Security Life Insurance | 69078 |
| | INSURER D : | |
| | INSURER E : | |
| | INSURER F : | |

**COVERAGES** **CERTIFICATE NUMBER:** CL261225499 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| A | X COMMERCIAL GENERAL LIABILITY<br>CLAIMS-MADE / X OCCUR<br>X Incl Contractual Liability<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>POLICY / X PRO-JECT / LOC<br>OTHER: | | | PSB0001946 | 1/1/2026 | 1/1/2027 | EACH OCCURRENCE<br>DAMAGE TO RENTED PREMISES (Ea occurrence)<br>MED EXP (Any one person)<br>PERSONAL & ADV INJURY<br>GENERAL AGGREGATE<br>PRODUCTS - COMP/OP AGG | $ 2,000,000<br>$ 1,000,000<br>$ 10,000<br>$ 2,000,000<br>$ 4,000,000<br>$ 4,000,000 |
| A | AUTOMOBILE LIABILITY<br>ANY AUTO<br>ALL OWNED AUTOS / SCHEDULED AUTOS<br>X HIRED AUTOS / X NON-OWNED AUTOS | | | PSA0003667 | 1/1/2026 | 1/1/2027 | COMBINED SINGLE LIMIT (Ea accident)<br>BODILY INJURY (Per person)<br>BODILY INJURY (Per accident)<br>PROPERTY DAMAGE (Per accident) | $ 1,000,000<br>$<br>$<br>$ |
| A | X UMBRELLA LIAB / X OCCUR<br>EXCESS LIAB / CLAIMS-MADE<br>DED / RETENTION $ | | | PSE0001528 | 1/1/2026 | 1/1/2027 | EACH OCCURRENCE<br>AGGREGATE | $ 5,000,000<br>$ 5,000,000 |
| A | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N: N<br>(Mandatory in NH)<br>If yes, describe under DESCRIPTION OF OPERATIONS below | N/A | | PSW0002112 | 1/1/2026 | 1/1/2027 | X PER STATUTE / OTH-ER<br>E.L. EACH ACCIDENT<br>E.L. DISEASE - EA EMPLOYEE<br>E.L. DISEASE - POLICY LIMIT | <br>$ 1,000,000<br>$ 1,000,000<br>$ 1,000,000 |
| B | Professional Liability | | | 106625286 | 11/9/2025 | 11/9/2026 | Per Claim / Aggregate | $2M / $2M |
| C | Disability | | | R65054-000 | 1/1/2026 | 1/1/2027 | NYS DBL | Statutory |

**DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)**

Professional Liability limits shown are per claim and aggregate for all projects of the named insured.

**CERTIFICATE HOLDER**

kab@cjbrownenergy.com

Proposal Use Only

**CANCELLATION**

**SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.**

**AUTHORIZED REPRESENTATIVE**

C Alderson/SALDER

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# SECTION 01 9113

# COMMISSIONING REQUIREMENTS

## PART 1 - GENERAL

### 1.01 DESCRIPTION

A. Commissioning. Commissioning is a systematic process of ensuring that all building systems perform interactively according to the design intent and the owner's operational needs. This is achieved by beginning in the design phase and documenting design intent and continuing through construction, acceptance and the warranty period with actual verification of performance. The commissioning process shall encompass and coordinate the traditionally separate functions of system documentation, equipment startup, control system calibration, testing and balancing, performance verification and training.

B. Commissioning during the construction phase is intended to achieve the following specific objectives according to the Contract Documents:

1. Verify that applicable equipment and systems are installed according to the manufacturer's recommendations and to industry accepted minimum standards and that they receive adequate operational checkout.
2. Verify and document proper performance of equipment and systems.
3. Verify that O&M documentation left on site is complete.
4. Verify that the Owner's operating personnel are adequately trained.

C. The commissioning process does not take away from or reduce the responsibility of the system designers or Contractor to provide a finished and fully functioning product.

D. Abbreviations. The following are common abbreviations used in the Specifications. Definitions are found in Section 1.6.

| | | | |
|---|---|---|---|
| A/E- | Architect and design engineers | GC- | Contractor |
| CxA- | Commissioning authority | MC- | Mechanical Contract Representative |
| Cx- | Commissioning | PC- | Prefunctional checklist |
| Cx Plan- | Commissioning Plan document | PM- | Project manager (of the Owner) |
| EC- | Electrical Contract Representative | TAB- | Testing Adjust Balance |
| FT- | Functional performance verification | TC- | Temperature Control Contract Representative |

### 1.02 COORDINATION

A. Commissioning Team. The members of the commissioning team consist of the Commissioning Authority (CxA), the Campus (UA), the Project Manager (PM) (by

definition “the owner”), the Contractor, the Architect and design engineers (A/E) (particularly the mechanical engineer), the Test Adjust & Balance Contract Representative (TAB), the Controls (TC) Contract Representative, the Mechanical (MC) Contract Representative, any other installers or suppliers of equipment. If known, the Owner’s building or plant operator/engineer is also a member of the commissioning team.

B. Management. The CxA is hired by the Owner directly. The CxA directs and coordinates the commissioning activities and the reports to the Owner. All members work together to fulfill their contracted responsibilities and meet the objectives of the Contract Documents. The CxA’s responsibilities are the same regardless of who hired the CxA. Refer to Section 01913 Part 1.5 for additional management details.

C. Scheduling. The CxA will work with the Contractor according to established protocols to schedule the commissioning activities. The CxA will provide sufficient notice to the Contractor for scheduling commissioning activities. The Contractor will integrate all commissioning activities into the schedule. All parties will address scheduling problems and make necessary notifications in a timely manner in order to expedite the commissioning process.

D. The CxA will provide the initial schedule of primary commissioning events at the commissioning scoping meeting. As construction progresses more detailed schedules are developed by the Contractor and CxA.

## 1.03 COMMISSIONING PROCESS

A. Commissioning Plan. The commissioning plan provides guidance in the execution of the commissioning process. Just after the initial commissioning scoping meeting the CxA will update the plan which is then considered the “final” plan, though it will continue to evolve and expand as the project progresses. The Contract Documents will take precedence over the Commissioning Plan.

B. Commissioning Process. The following narrative provides a brief overview of the typical commissioning tasks during construction and the general order in which they occur.
   1. Commissioning during construction begins with a scoping meeting conducted by the CxA where the commissioning process is reviewed with the commissioning team members.
   2. Additional meetings will be required throughout construction, scheduled by the CxA with necessary parties attending, to plan, scope, coordinate, schedule future activities and resolve problems.
   3. Equipment documentation is submitted by the Contractor to the CxA during normal submittals, including detailed start-up procedures.
   4. The CxA works with the Contractor in developing startup plans and startup documentation formats, including providing the Contractor with prefunctional checklists to be completed by the Contractor during the startup process. UA shall approve PC’s before distribution.
   5. In general, the checkout and performance verification proceeds from simple to complex; from component level to equipment to systems and intersystem levels with prefunctional checklists being completed before functional verification.

6. The Contractor, under their own direction, shall execute and document the prefunctional checklist, perform startup and initial checkout. The CxA documents that the checklists and startup were completed according to the approved plans. This may include CxA witnessing start-up of selected equipment.
7. The CxA develops specific equipment and system functional performance verification procedures. UA shall approve the FT's before distribution. The Contractor shall review the procedures.
8. The prefunctional checklists are executed by the Contractor, under the direction of the CxA, and documented by the Contractor. The functional verifications are executed by the Contractor, under the direction of, and documented by the CxA.
9. Items of non-compliance in material, equipment, installation or setup are corrected and the system re-verified at the Contractor expense.
10. The CxA reviews the O&M documentation for completeness.
11. Commissioning is completed before Substantial Completion.
12. The CxA reviews, pre-approves and coordinates the training provided by the Contractor and verifies that is was completed.
13. Deferred verification is conducted, as specified or required.

## 1.04 RELATED WORK

A. Commissioning shall be included in the following sections of these specifications. All of the following sections apply to the Work of this section.

220800 Systems Commissioning:
Describes the Cx responsibilities of the plumbing work and the prefunctional verification and startup responsibilities of each.

230800 Systems Commissioning:
Describes the Cx responsibilities of the mechanical work and the prefunctional verification and startup responsibilities of each.

230593 Testing, Adjusting & Balancing for HVAC Piping:
Describes the TAB requirements.

230900 DDC Control System:
Describes the TC requirements.

260800 Systems Commissioning:
Describes the Cx responsibilities of the electrical work and the prefunctional verification and startup responsibilities of each.

## 1.05 RESPONSIBILITIES

A. The responsibilities of various parties in the commissioning process are provided in this section. The responsibilities of the Contractor are included. It is noted that the services for the A/E and CxA are not provided for in this contract. That is, the Contractor is not responsible for providing their services. Their responsibilities are listed here to clarify the commissioning process. Refer to 220800, 230800 & 260800 Systems Commissioning also.

B. All Parties: Attend commissioning scoping meeting and additional meetings, as necessary.

C. Architect (of A/E)
1. Construction and Acceptance Phase
   a. The Owner manages the CxA contract.
   b. Attend the commissioning scoping meeting and selected commissioning team meetings.
   c. Perform normal submittal review, construction observation, etc., as contracted.
   d. Provide any design narrative documentation requested by the CxA.
   e. Coordinate resolution of system deficiencies identified during commissioning, according to the contract documents.
   f. Provide pertinent RFI, change order, etc. documentation to the CxA for items impacting the functional performance of the systems and equipment included in the Cx process.
   g. Prepare and submit final as-built design intent documentation for inclusion in the O&M manuals. Review and approve the O&M manuals.
   h. Furnish a copy of all construction documents, addenda, change orders and approved submittals and shop drawings related to commissioned equipment to the CxA.

2. Warranty Period
   a. Coordinate resolution of design non-conformance and design deficiencies identified during warranty-period commissioning.
   b. Ensure that any seasonal or deferred verification and any deficiency issues are addressed.

D. Mechanical and Electrical Designers/Engineers (of the A/E)
1. Construction and Acceptance Phase
   a. Perform normal submittal review, construction observation, as-built drawing review, etc., as contracted. One site observation should be completed just prior to system startup.
   b. Provide any design narrative and sequences documentation requested by the CxA. The designers shall assist (along with the Contractor) in clarifying the operation and control of commissioned equipment in areas where the specifications, control drawings or equipment documentation is not sufficient for writing detailed verification procedures.
   c. Attend commissioning scoping meetings and other selected commissioning team meetings.
   d. Participate in the resolution of system deficiencies identified during commissioning, according to the contract documents.
   e. Prepare and submit the final as-built design intent and operating parameters documentation for inclusion in the O&M manuals. Review and approve the O&M manuals.
   f. Provide a presentation at one of the training sessions for the Owner’s personnel.

2. Warranty Period
    a. Participate in the resolution of non-compliance, non-conformance and design deficiencies identified during commissioning during warranty-period commissioning.

E. Commissioning Authority (CxA)
1. The CxA is not responsible for design concept, design criteria, compliance with codes, design or general construction scheduling, cost estimating, or construction management. The CxA may assist with problem-solving non-conformance or deficiencies, but ultimately that responsibility resides with the Contractor and the A/E. The primary role of the CxA is to develop and coordinate the execution of a verification plan, observe, verify and document performance—that systems are functioning in accordance with the documented design intent and in accordance with the Contract Documents. The Contractor will provide all trending, tools or the use of tools to start, check-out and functionally verification equipment and systems.

2. Construction and Acceptance Phase
    a. Coordinates and directs the commissioning activities in a logical, sequential and efficient manner using consistent protocols and forms, centralized documentation, clear and regular communications and consultations with all necessary parties, frequently updated timelines and schedules and technical expertise.
    b. Coordinate the commissioning work and, with the GC, ensure that commissioning activities are being scheduled into the master schedule.
    c. Revise, as necessary, the Commissioning Plan.
    d. Plan and conduct a commissioning scoping meeting and other commissioning meetings.
    e. Request and review additional information required to perform commissioning tasks, including O&M materials, as built drawings, Contractor start-up and checkout procedures.
    f. Before startup, gather and review the current control sequences and interlocks and work with Contractor and design engineers until sufficient clarity has been obtained, in writing, to be able to write detailed verification procedures.
    g. Review and approve normal Contractor submittals applicable to systems being commissioned for compliance with commissioning needs, concurrent with the A/E reviews.
    h. Write and distribute prefunctional checklists.
    i. Develop an enhanced start-up and initial systems checkout plan.
    j. Perform site visits, as necessary, to observe component and system installations. Attend selected planning and job-site meetings to obtain information on construction progress. Assist in resolving any discrepancies.
    k. Witness initial testing of the HVAC piping testing and flushing procedure, sufficient to be confident that proper procedures were followed. Document this verification and include the documentation in O&M manuals. Notify owner’s project manager of any deficiencies in results or procedures.

l. Witness initial testing of any ductwork testing and cleaning procedures, sufficient to be confident that proper procedures were followed. Document this verification and include the documentation in O&M manuals. Notify owner's project manager of any deficiencies in results or procedures.
m. Approve prefunctional checklist completion by reviewing prefunctional checklist reports and by selected site observation and spot checking.
n. Approve systems startup by reviewing start-up reports and by selected site observation.
o. Review TAB execution plan.
p. Oversee sufficient functional verification of the control system and approve it to be used for TAB, before TAB is executed.
q. Approve air and water systems balancing by spot verification, by reviewing completed reports and by selected site observation.
r. With necessary assistance and review from the Contractor, write the functional performance verification procedures for equipment and systems. This may include energy management control system trending, or manual functional verification.
s. Analyze any functional performance trend logs and monitoring data to verify performance.
t. Coordinate, witness and approve manual functional performance verifications performed by the Contractor. Coordinate re-verification as necessary until satisfactory performance is achieved. Perform actual functional verification with the Contractor on equipment so specified.
u. Maintain a master deficiency and resolution log and a separate verification record. Provide the PM and GC with written progress reports and verification results with recommended actions.
v. Review equipment warranties, spare parts, turn-over items, etc to ensure that the Owner's responsibilities are clearly defined.
w. Oversee and approve the training of the Owner's operating personnel.
x. Compile and maintain a commissioning record and building systems book(s).
y. Review and approve the preparation of the O&M manuals.
z. Provide a final commissioning report (as described in this section).

3. Warranty Period
   a. Coordinate and supervise required seasonal or deferred verification and deficiency corrections.
   b. Return to the site at 10 months into the 12 month warranty period and review with facility staff the current building operation and the condition of outstanding issues related to the original and seasonal commissioning. Also interview facility staff and identify problems or concerns they have operating the building as originally intended. Make suggestions for improvements and for recording these changes in the O&M manuals. Identify areas that may come under warranty or under the original construction contract.

F. Contractor
   1. Construction and Acceptance Phase
   2. Coordinate the work to ensure that commissioning activities are included in the schedule.
   3. Include all costs of its commissioning related work in the total contract price.
   4. Satisfy the requirements for submittal data, O&M data, commissioning tasks and training.
   5. Ensure that all commissioning responsibilities are executed according to the Contract Documents and schedule.
   6. A representative shall attend a commissioning scoping meeting and other necessary meetings scheduled by the CxA to facilitate the Cx process.
   7. Provide the training of owner personnel.
   8. Provide as-built drawings, O&M manuals, etc. according to the Contract Documents, including clarifying and updating the original sequences of operation to as-built conditions.
   9. Provide all requested submittal data, including detailed start-up procedures and specific responsibilities of the Owner to keep warranties in force.
   10. Provide a qualified technical representative for equipment verification.
   11. Provide all special tools, software, hardware and instruments (particularly those only available from manufacturer's representative, specific to a piece of equipment) required for verification equipment according to these Contract Documents in the base bid price to the Contractor.
   12. Provide information requested by CxA regarding equipment sequence of operation and verification procedures.
   13. Review verification procedures for equipment installed by factory representatives.

G. Warranty Period
   1. Ensure that seasonal or deferred functional performance verification is provided; witnessed by the CxA, according to the specifications.
   2. Correct deficiencies and make necessary adjustments to O&M manuals and as-built drawings for applicable issues identified in any seasonal verification.

## 1.06 DEFINITIONS (see agreement for additional specific information)

A. Acceptance Phase - phase of construction after startup and initial checkout when functional performance verifications, O&M documentation review and training occurs. This occurs prior to substantial completion according to the agreement.

B. Approval - acceptance that a piece of equipment or system has been properly installed and is functioning in the verification modes according to the Contract Documents.

C. Architect / Engineer (A/E) - the prime consultant (architect) and sub-consultants who comprise the design team, generally the HVAC mechanical designer/engineer and the electrical designer/engineer.

D. Basis of Design - The basis of design is the documentation of the primary thought processes and assumptions behind design decisions that were made to meet the design intent. The basis of design describes the systems, components, conditions and methods chosen to meet the intent. Some reiterating of the design intent may be included.

E. Commissioning authority (CxA) - an independent agent, not otherwise associated with the A/E team members or the Contractor. The CxA directs and coordinates the day-to-day commissioning activities.

F. Commissioning Plan - an overall plan, developed before or after bidding, that provides the structure, schedule and coordination planning for the commissioning process.

G. Contract Documents - the documents binding on parties involved in the construction of this project (drawings, specifications, change orders, amendments, contracts, Cx Plan, etc.).

H. Contractor - the entities named in the agreement.

I. Control system - the central building energy management control system.

J. Deferred Functional Verifications – When approved by the consultant, FTs that are performed later, after substantial completion, due to partial occupancy, equipment, seasonal requirements, design or other site conditions that disallow the verification from being performed.

K. Deficiency - a condition in the installation or function of a component, piece of equipment or system that is not in compliance with the Contract Documents (that is, does not perform properly or is not complying with the design intent).

L. Design Intent - a dynamic document that provides the explanation of the ideas, concepts and criteria that are considered to be very important to the owner. It is initially the outcome of the programming and conceptual design phases.

M. Design Narrative or Design Documentation - sections of either the Design Intent or Basis of Design.

N. Factory Verification - verification of equipment on-site or at the factory by factory personnel with an Owner's representative present.Functional Performance Verification (FT) - verification of the dynamic function and operation of equipment and systems using manual (direct observation) or monitoring methods. Functional verification is the dynamic verification of systems (rather than just components) under full operation (e.g., the chiller pump is verified interactively with the chiller functions to see if the pump ramps up and down to maintain the differential pressure setpoint). Systems are verified under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying outside air temperatures, fire alarm, power failure, etc. The systems are run through all the control system's sequences of operation and components are verified to be responding as the sequences state. Traditional air or water verification and balancing (TAB) is not functional verification, in the commissioning sense of the word. TAB's primary work is setting up the system flows and pressures as specified, while functional verification is verifying that which has already been set up. The commissioning authority develops the functional verification procedures in a sequential written form, coordinates, oversees and documents the actual verification, which is performed by the Contractor or manufacturer's representative. FTs are performed after prefunctional checklists and startup is complete.

O. Indirect Indicators - indicators of a response or condition, such as a reading from a control system screen reporting a damper to be 100% closed.

P. Manual Verification - using hand-held instruments, immediate control system readouts or direct observation to verify performance (contrasted to analyzing monitored data taken over time to make the "observation").

Q. Monitoring - the recording of parameters (flow, current, status, pressure, etc.) of equipment operation using the trending capabilities of control systems.

R. Non-Compliance - see Deficiency.

S. Non-Conformance - see Deficiency.

T. Over-written Value - writing over a sensor value in the control system to see the response of a system (e.g., changing the outside air temperature value from 50F to 75F to verify economizer operation). See also "Simulated Signal."

U. Owner-Contracted Verifications - verifications paid for by the Owner outside this contract. These verifications will not be repeated during functional verifications if properly documented.

V. Phased Commissioning - commissioning that is completed in phases (by floors, for example) due to the size of the structure or other scheduling issues, in order minimize the total construction time.

W. Prefunctional Checklist (PC) - a list of items to inspect and elementary component verifications to conduct to verify proper installation of equipment, provided by the CxA. Prefunctional checklists are primarily static inspections and procedures to prepare the equipment or system for initial operation (e.g., belt tension, oil levels OK, labels affixed, gages in place, sensors calibrated, etc.). However, some prefunctional checklist items entail simple verification of the function of a component, a piece of equipment or system (such as measuring the voltage imbalance on a three phase pump motor of a chiller system). The word prefunctional refers to before functional verification. Prefunctional checklists augment and are combined with the manufacturer's start-up checklist. Even without a commissioning process, Contractor typically perform some, if not many, of the prefunctional checklist items a commissioning authority will recommend. However, few Contractor document in writing the execution of these checklist items. Therefore, for most equipment, the Contractor executes the checklist on their own. The commissioning authority only requires that the procedures be documented and submitted in writing, and does not witness much of the prefunctional check listing, except for larger or more critical pieces of equipment.

X. Project Manager - the contracting and managing authority for the owner over the design and/or construction of the project, a staff position.

Y. Sampling. - functional verification of only a portion of the total number of identical or near identical pieces of equipment. Refer to Section 01913, Part 3.6, F for details.

Z. Seasonal Performance Verifications - FT that are deferred until the system(s) will experience conditions closer to their design conditions.

AA. Simulated Condition - condition that is created for the purpose of verification the response of a system (e.g., applying a heat source to a space sensor to see the response in a VAV box).

BB. Simulated Signal - disconnecting a sensor and using a signal generator to send an amperage, resistance or pressure to the transducer and DDC system to simulate a sensor value.

CC. Specifications - the construction specifications of the Contract Documents.

DD. Startup - the initial starting or activating of dynamic equipment, including executing prefunctional checklists.

EE. Verification Procedures - the step-by-step process which must be executed to fulfill the verification requirements. The verification procedures are developed by the CxA.

FF. Verification Requirements - requirements specifying what modes and functions, etc. shall be verified. The verification requirements are not the detailed verification procedures. The verification requirements are specified in the Contract Documents.

GG. Trending - monitoring using the building control system.

HH. Manufacturer's representative - supplier of equipment.

II. Warranty Period - warranty period for entire project, including equipment components. Warranty begins at Substantial Completion and extends for at least one year, unless specifically noted otherwise in the Contract Documents and accepted submittals.

## 1.07 SYSTEMS TO BE COMMISSIONED

A. The following systems and equipment will be commissioned in this project include but are not limited to the following:
   1. Mechanical Systems & Equipment:
      a. (5) Air Handling Unit (1 new & 4 existing)
      b. (4) Cabinet Unit Heaters
      c. (1) Condensate Receiver
      d. (4) Destratification Fans
      e. (4) Exhaust Fans (2 new & 2 existing)
      f. (1) Expansion Tank / Air Separator
      g. (1) HEX (new)
      h. (1) HEX (existing)
      i. (2) Pumps
      j. (1) Steam Meter
   2. Electrical Systems & Equipment:
      a. Lighting Controls
   3. General:
      a. 100% Primary Equipment
      b. 20% Distributed Equipment
      c. Ductwork Systems
      d. Piping Systems
      e. Testing, Adjusting and Balancing
      f. Temperature Controls

# PART 2 - PRODUCTS

## 2.01 VERIFICATION EQUIPMENT

A. All standard verification instruments and equipment required to perform startup, initial checkout and required functional performance verification shall be provided by the Contractor. For example, the Contractor shall ultimately be responsible for all standard verification equipment for the HVAC system and controls system, except for equipment specific to and used by TAB in their commissioning responsibilities. Two-way radios shall be provided by the Contractor.

B. Special equipment, tools and instruments (particularly those only available from manufacturer's representative, specific to a piece of equipment) required for verification equipment, according to these Contract Documents shall be included in the base bid price to the Contractor and left on site.

C. All verification equipment shall be of sufficient quality and accuracy to verify and/or measure system performance within the tolerances specified. If not otherwise noted, the following minimum requirements apply: Temperature sensors and digital thermometers used for verification purposes shall have a certified calibration within the past year to an accuracy of 0.1°F and a resolution of + or - 0.1°F. Pressure sensors

shall have an accuracy of + or - 2.0% of the value range being measured (not full range of meter) and have been calibrated within the last year. All equipment shall be calibrated according to the manufacturer's recommended intervals and when dropped or damaged. Calibration tags shall be affixed or certificates readily available.

## PART 3 - EXECUTION

### 3.01 MEETINGS

A. Scoping (KICKOFF) Meeting. The CxA will schedule, plan and conduct a commissioning scoping meeting with the entire commissioning team in attendance. Meeting minutes will be distributed to all parties by the CxA. Information gathered from this meeting will allow the CxA to revise the Draft 2 *Commissioning Plan* to its "final" version, which will also be distributed to all parties.

B. Miscellaneous Meetings. Other meetings will be planned and conducted by the CxA as construction progresses. These meetings will cover coordination, deficiency resolution and planning issues with the Contractor. The CxA will plan these meetings and will minimize unnecessary time being spent by the Contractor. The frequency of these meetings will be determined by the CxA.

### 3.02 REPORTING

A. The CxA will provide regular reports to the PM with increasing frequency as construction and commissioning progresses.

B. The CxA will regularly communicate with all members of the commissioning team, keeping them apprised of commissioning progress and scheduling changes through memos, progress reports, etc.

C. Verification or review approvals and non-conformance and deficiency reports are made regularly with the review and verification as described in later sections.

D. A final summary report by the CxA will be provided to the PM, focusing on evaluating commissioning process issues and identifying areas where the process could be improved. All acquired documentation, logs, minutes, reports, deficiency lists, communications, findings, unresolved issues, etc., will be compiled in appendices and provided with the summary report. Prefunctional checklists, functional verifications and monitoring reports will not be part of the final report, but will be stored in the Commissioning Record in the O&M manuals.

### 3.03 SUBMITTALS

A. The A/E will provide the CxA with pertinent information derived from the Contractor submittal log for the type of submittal documentation the CxA requires to facilitate the commissioning work. These requests will be integrated into the normal submittal process and protocol of the construction team. At minimum, the request will include the manufacturer and model number, the manufacturer's printed installation and detailed start-up procedures, full sequences of operation, O&M data, performance

data, any performance verification procedures, control drawings and details of owner contracted verifications. In addition, the installation and checkout materials that are actually shipped inside the equipment and the actual field checkout sheet forms to be used by the factory or field technicians shall be submitted to the Commissioning authority. All documentation requested by the CxA will be included by the Contractor in his O&M manual contributions.

B. The Commissioning authority will review submittals related to the commissioned equipment for conformance to the Contract Documents as it relates to the commissioning process, to the functional performance of the equipment and adequacy for developing verification procedures. This review is intended primarily to aid in the development of functional verification procedures and only secondarily to verify compliance with equipment specifications. The Commissioning authority will document and notify the PM of items missing or areas that are not in conformance with Contract Documents and which require resubmission.

C. The CxA may request additional design narrative from the A/E and the Contractor, depending on the completeness of the design intent documentation and sequences provided with the Specifications.

D. These submittals to the CxA do not constitute compliance for O&M manual documentation. The O&M manuals are the responsibility of the Contractor, though the CxA will review and provide comments approve them.

## 3.04 START-UP, PREFUNCTIONAL CHECKLISTS AND INITIAL CHECKOUT

A. The following procedures apply to all equipment to be commissioned, according to Section 1.7, Systems to be Commissioned. Some systems that are not comprised so much of actual dynamic machinery, e.g., electrical system power quality, may have very simplified PCs and startup.

B. General. Prefunctional checklists are important to ensure that the equipment and systems are properly installed and operational. It ensures that functional performance verification (in-depth system checkout) may proceed without unnecessary delays. Each piece of equipment receives full prefunctional checkout. No sampling strategies are used. The prefunctional verification for a given system must be successfully completed prior to formal functional performance verification of equipment or subsystems of the given system.

C. Start-up and Initial Checkout Plan. The primary role of the CxA in this process is to ensure that there is written documentation that each of the manufacturer-recommended procedures have been completed. Parties responsible for prefunctional checklists and startup are identified in the commissioning scoping meeting and in the checklist forms. Parties responsible for executing functional performance verifications are identified in the Contract Documents.
   1. These checklists are provided by the CxA to the Contractor. The Contractor holds the final responsibility to determine which trade is responsible for executing and documenting each of the line item task. Each checklist will be product specific, trade specific, & project specific.

2. Develop the full start-up plan by combining (or adding to) the CxA's checklists with the manufacturer's detailed start-up and checkout procedures from the O&M manual and the normally used field checkout sheets. The plan will include checklists and procedures with specific boxes or lines for recording and documenting the checking and inspections of each procedure and a summary statement with a signature block. The full start-up plan shall consist of:
   a. The CxA's prefunctional checklists.
   b. The manufacturer's standard written start-up procedures copied from the installation manuals with check boxes by each procedure and a signature block added by hand at the end.
   c. The manufacturer's normally used field checkout sheets.
3. The Contractor submits the full startup plan to the CxA for review and approval.
4. The CxA reviews and approves the procedures and the format for documenting them, noting any procedures that need to be added.

D. Execution of Prefunctional Checklists and Startup.
1. Prior to startup, the Contractor and manufacturer's representatives schedule startup and checkout with the GC and CxA. The performance of the prefunctional checklists, startup and checkout are directed and executed by the Contractor or manufacturer's representative. When checking off prefunctional checklists, signatures are required of the Contractor for conformation of completion of their work.
2. The Contractor and manufacturer's representatives shall execute startup and provide the CxA with a signed and dated copy of the completed start-up and prefunctional verifications and checklists.
3. Only individuals that have direct knowledge and witnessed that a line item task on the prefunctional checklist was actually performed shall initial or check that item off. It is not acceptable for witnessing supervisors to fill out these forms.

E. Deficiencies, Non-Conformance and Approval in Checklists and Startup.
1. The Contractor shall clearly list any outstanding items of the initial start-up and prefunctional procedures that were not completed successfully, at the bottom of the procedures form or on an attached sheet. The procedures form and any outstanding deficiencies are provided to the CxA.
2. The CxA reviews the prefunctional checklist and either accepts or rejects them. The CxA shall work with the Contractor and manufacturer's representatives to develop a plan to correct and re-verify deficiencies or uncompleted items. The CxA will involve the PM, the Contractor and others as necessary. The Contractor or manufacturer's representatives shall correct all areas that are deficient or incomplete in the checklists and verifications in a timely manner, and shall notify the CxA as soon as outstanding items have been corrected and resubmit an updated prefunctional checklist. When satisfactorily completed, the CxA recommends approval of the prefunctional checklists and startup of each system using a standard form.
3. Items left incomplete, which later cause deficiencies or delays during functional verification may result in backcharges to the responsible party. Refer to Part 3.7 herein for details.

## 3.05 PHASED COMMISSIONING

A. The project may require startup and initial checkout to be executed in phases. This phasing will be planned and scheduled in a coordination meeting of the CxA, CM, MC, TAB and controls and the Contractor. Results will be added to the master and commissioning schedule.

## 3.06 FUNCTIONAL PERFORMANCE VERIFICATION

A. This sub-section applies to all commissioning functional verification for all divisions.

B. The general list of equipment to be commissioned is found in this section.

C. Objectives and Scope. The objective of functional performance verification is to demonstrate that each system is operating according to the documented design intent and Contract Documents. Functional verification facilitates bringing the systems from a state of substantial completion to full dynamic operation. Additionally, during the verification process, areas of deficient performance are identified and corrected, improving the operation and functioning of the systems.

D. In general, each system should be operated through all modes of operation (seasonal, occupied, unoccupied, warm-up, cool-down, part- and full-load) where there is a specified system response utilizing the Building Automation System (BAS) Graphics. Operational demonstration of the HVAC systems that are not directly controlled by the BAS shall be provided by the respective manufacturer's representatives. Verifying each sequence in the sequences of operation is required. Proper responses to such modes and conditions as power failure, freeze condition, low oil pressure, no flow, equipment failure, etc. shall also be verified.

E. Development of Verification Procedures. Before verification procedures are written, the CxA shall obtain all requested documentation and a current list of change orders affecting equipment or systems, including an updated points list, program code, control sequences and parameters. The CxA shall develop functional verification forms to verify and document proper operation of each piece of equipment and system. The Contractor shall be responsible to execute, and shall provide assistance as required, to the CxA in developing the procedures review (providing sequences as programmed, answering questions about equipment, operation, sequences, etc.). The purpose of any given specific verification is to verify and document compliance with the Contract Documents. The verification forms developed by the CxA shall include (but not be limited to) the following information:
   1. System and equipment or component name(s)
   2. Equipment location and ID number
   3. Unique verification ID number, and reference to unique prefunctional checklist and start-up documentation ID numbers for the piece of equipment
   4. Date
   5. Project name
   6. Participating parties
   7. A copy of the specification section describing the verification requirements
   8. A copy of the specific sequence of operations or other specified parameters being verified

9. Required pre-verification field measurements
10. Special cautions, alarm limits, etc.
11. Acceptance criteria of proper performance with a Yes / No check box to allow for clearly marking whether or not proper performance of each part of the verification was achieved.
12. A section for comments
13. Signatures and date block for the CxA

F. Verification Methods.
1. Functional performance verification and verification may be achieved by manual verification (persons manipulate the equipment and observe performance) in addition to monitoring the performance and analyzing the results using the control system's trend log capabilities. The CxA may substitute specified methods or require an additional method to be executed, other than what was specified. The CxA will determine which method is most appropriate for verifications that do not have a method specified.
2. Trending. All trending must be provided in an "X – Y" graphical format, color coded, with multiple scales to enhance resolution on the "Y" axis. Trend groups will be defined for all points, as directed by CxA. Trending will be provided for all HVAC systems, a sampling strategy for secondary equipment will not be utilized. Trending for the previous weeks must be readily available, earlier trending will be archived on the BAS server. Each trend report should show the system that is being trended, along with the point IDs for all points being trended at 15 min. intervals. Color codes must be consistent for common point types in different trend groups. Fourteen days of consecutive days of trend data exhibiting system performance that has been verified is compliant with the control specification. After seven days of trending, capture an interim report to verify that trend data results are compliant with the Contract Documents. If the trend data results are compliant with the Contract Documents, continue trending. If there are abnormalities in the trend data reports, note the abnormalities and provide a resolution to correct the abnormalities with an anticipated resolution date and provide a report of the findings. When 14 consecutive days of trend data exhibiting system performance that the Contractor deems as compliant with the Contract Documents has been completed, submit the trend data (both X-Y grapg and .csv format) to the CxA and UA for review.
3. Simulated Conditions. Simulating conditions (not by an overwritten value) shall be allowed, though timing the verification to experience actual conditions is encouraged wherever practical.
4. Overwritten Values. Overwriting sensor values to simulate a condition, such as overwriting the outside air temperature reading in a control system to be something other than it really is, shall be allowed as directed by CxA. Before simulating conditions or overwriting values, sensors, transducers and devices shall have been calibrated.
5. Altering Setpoints. Rather than overwriting sensor values, and when simulating conditions is difficult, altering setpoints to verification a sequence is acceptable. For example, to see the AC compressor lockout work at an outside air temperature below 55F, when the outside air temperature is above 55F, temporarily change the lockout setpoint to be 2F above the current outside air temperature.

6. Indirect Indicators. Relying on indirect indicators for responses or performance shall be allowed only after visually and directly verifying and documenting, over the range of the verified parameters, that the indirect readings through the control system represent actual conditions and responses. Much of this verification is completed during the execution of the prefunctional checklists.
7. Setup. Each function and verification shall be performed under conditions that simulate actual conditions as close as is practically possible. Executing the verification and provide all necessary materials, system modifications, etc. to produce the necessary flows, pressures, temperatures, etc. necessary to execute the verification according to the specified conditions. At completion of the verification, return all affected building equipment and systems, due to these temporary modifications, to their pre-verification condition.
8. Sampling. Sampling will not be allowed unless specified with quantities.

G. Coordination and Scheduling. The Contractor shall provide sufficient notice to the CxA regarding their completion schedule for the prefunctional checklists and startup of all equipment and systems. The CxA will schedule functional verifications through the Contractor. The CxA shall direct, witness and document the functional verification of all equipment and systems. The Contractor shall execute the verifications.
1. In general, functional verification is conducted after prefunctional verification and startup has been satisfactorily completed. The control system is sufficiently verified and approved by the CxA before it is used for TAB or to verify performance of other components or systems. The air balancing and water balancing is completed and debugged before functional verification of air-related or water-related equipment or systems. Verification proceeds from components to subsystems to systems. When the proper performance of all interacting individual systems has been achieved, the interface or coordinated responses between systems is checked.

H. Verification Equipment. Refer to Section 01913, Section 2.1 for verification equipment requirements.

I. Problem Solving. The burden of responsibility to solve and correct and problems is with the Contractor and A/E.

## 3.07 DOCUMENTATION, NON-CONFORMANCE AND APPROVAL OF VERIFICATIONS

A. Documentation. The CxA shall witness and document the results of all functional performance verifications using the functional verification forms. Prior to verification, these forms are available for review. The CxA will include the filled out forms in the commissioning record.

B. Non-Conformance.
1. The CxA will record the results of the functional verification on the procedure or verification form. All deficiencies or non-conformance issues shall be noted and reported to the PM and the Contractor.
2. Corrections of minor deficiencies identified may be made during the verifications at the discretion of the CxA. In such cases the deficiency and resolution will be documented on the procedure form.

3. Every effort will be made to expedite the verification process and minimize unnecessary delays, while not compromising the integrity of the procedures. However, the CxA will not be pressured into overlooking deficient work or loosening acceptance criteria to satisfy scheduling or cost issues.
4. As verifications progress and a deficiency is identified, the CxA discusses the issue with the Contractor.
    a. When there is no dispute on the deficiency and the Contractor accepts responsibility to correct it.
    b. If there is a dispute about a deficiency, regarding whether it is a deficiency or who is responsible the deficiency shall be documented and turned over to the PM.
        1) Resolutions are made at the lowest management level possible. Other parties are brought into the discussions as needed in accordance with the agreement.
        2) The CxA documents the resolution process.
        3) Once the interpretation and resolution have been decided, the appropriate party corrects the deficiency, the CxA reschedules the verification and the verification is repeated until satisfactory performance is achieved.

5. Cost of Re-verification.
    a. The cost for the Contractor to re-verify a prefunctional checklist or functional verification, if they are responsible for the deficiency, shall be theirs. If they are not responsible, any cost recovery for re-verification shall be negotiated by the PM with the Contractor.

6. Any required re-verification by the Contractor shall not be considered a justified reason for a claim of delay or for a time extension.

C. Failure Due to Manufacturer Defect. If 10%, or three, whichever is greater, of identical pieces (size alone does not constitute a difference) of equipment fail to perform to the Contract Documents (mechanically or substantively) due to manufacturing defect, not allowing it to meet its submitted performance spec, all identical units may be considered unacceptable. In such case, the Contractor shall provide the Owner with the following:
    1. The Contractor or manufacturer's representative shall examine all other identical units making a record of the findings. The findings shall be provided within two weeks of the original notice.
    2. The Contractor or manufacturer shall provide a signed and dated, written explanation of the problem, cause of failures, etc. and all proposed solutions which shall include full equipment submittals. The proposed solutions shall not significantly exceed the specification requirements of the original installation.
    3. The A/E will determine whether a replacement of all identical units or a repair is acceptable.
    4. Two examples of the proposed solution will be installed by the Contractor and the A/E & CxA will be allowed to verification the installations for up to one week, upon which the A/E will decide whether to accept the solution.
    5. Upon acceptance, the Contractor and/or manufacturer shall replace or repair all identical items, at their expense and extend the warranty accordingly, if the

original equipment warranty had begun. The replacement/repair work shall proceed with reasonable speed beginning within one week from when parts can be obtained.

D. Approval. The CxA notes each satisfactorily demonstrated function on the verification form. Formal approval of the functional verification is made later after review by the CxA. The CxA recommends acceptance of each verification.

## 3.08 OPERATION AND MAINTENANCE MANUALS

A. The commissioning process requires the following detailed O&M documentation in addition to requirements found in the “General Requirements Section”.

B. The Contractor shall compile O&M manuals for every piece of commissioned equipment and commissioned building operating or electrical system with the following format and content.
1. Vendor location and contact information.
2. Submittal information.
3. Operations and maintenance instructions for specific model (Only information for equipment actually installed shall be included).
4. Installation and startup instructions.
5. Parts list and special tool list.
6. Performance data (pump, fan curves).
7. Warranty information
8. As-built data for control systems to document actual control schemes and sequences used.

C. CxA Review. Prior to substantial completion, the CxA shall review the O&M manuals, documentation for systems that were commissioned and to verify compliance with the Contract Documents. The CxA will communicate deficiencies in the manuals to the PM, as requested. Upon a successful review of the corrections, the CxA recommends approval and acceptance of these sections of the O&M manuals to the PM. This work does not supersede the A/E’s review of the O&M manuals according to the A/E’s contract.

## 3.09 TRAINING OF OWNER PERSONNEL

A. The Contractor shall be responsible for training coordination and scheduling and ultimately for ensuring that training is completed.

B. The CxA shall be responsible for overseeing and approving the content and adequacy of the training of Owner personnel for commissioned equipment.
1. The CxA shall interview the facility manager and lead engineer to determine the special needs and areas where training will be most valuable. The Owner and CxA shall decide how rigorous the training should be for each piece of commissioned equipment. The CxA shall communicate the results to the Contractor and manufacturer’s representatives who have training responsibilities.
2. In addition to these general requirements, the specific training requirements of Owner personnel by the Contractor and manufacturer’s representatives is specified in the Contract Documents.

3. The Contractor and manufacturer's representative responsible for training will submit a written training plan to the CxA for review and approval prior to training. The plan will cover the following elements:
   a. Equipment (included in training)
   b. Intended audience
   c. Location of training
   d. Objectives
   e. Subjects covered (description, duration of discussion, special methods, etc.)
   f. Duration of training on each subject
   g. Instructor for each subject
   h. Methods (classroom lecture, video, site walk-through, actual operational demonstrations, written handouts, etc.)
   i. Instructor and qualifications

4. For the primary HVAC equipment, the Controls representative shall provide a short discussion of the control of the equipment during the mechanical or electrical training conducted by others.
5. The CxA oversees a complete training plan developed by the Contractor and coordinates and schedules, with the PM and the Contractor, the overall training for the commissioned systems. The CxA recommends approval of the training to the PM.

## 3.10 DEFERRED VERIFICATION

A. Unforeseen Deferred Verifications. If any check or verification cannot be completed due to the building structure, required occupancy condition or other deficiency, execution of checklists and functional verification may be delayed upon approval of the PM. These verifications will be conducted in the same manner as the seasonal verifications (6-10 months after functional verification) as soon as possible. Services of necessary parties will be negotiated.

B. Seasonal Verification. During the warranty period (6-10 months after functional verification), seasonal verification (verifications delayed until weather conditions are closer to the system's design) shall be completed as part of this contract. The CxA shall coordinate this activity. Verifications will be executed, documented and deficiencies corrected by the Contractor, with facilities staff and the CxA witnessing. Any final adjustments to the O&M manuals and as-builds due to the verification will be made.

**END OF SECTION 01 9113**

# SECTION 22 0800

# SYSTEMS COMMISSIONING

## PART 1 - GENERAL

### 1.1 DESCRIPTION

A. The purpose of this section is to specify the responsibilities in the commissioning process which are being directed by the CxA. Other systems verification is still required as part of the contract.

B. The systems to be commissioned are listed in Section 019113-1.07.

C. Commissioning requires the participation of the Contractor to ensure that all systems are operating in a manner consistent with the Contract Documents. The general commissioning requirements and coordination are detailed in Division 1. The Contractor shall be familiar with all parts of Division 1 and the commissioning plan issued by the CxA and shall execute all commissioning responsibilities assigned to them in the Contract Documents.

### 1.2 RESPONSIBILITIES

A. The Contractor. The commissioning responsibilities applicable to the Contractor are as follows (all references apply to commissioned equipment only):

1. Construction and Acceptance Phases
    a. Include and itemize the cost of commissioning in the Schedule of Values (Include these line items in the project CPM schedule)
        i. O & M manual turnover
        ii. Prefunctional Checklist turnover
        iii. Functional Hardware Verification
        iv. Operational Sequence Verification
        v. Trend Log Verification
        vi. Owner Training
    b. In each purchase order or subcontract written, include requirements for submittal data, commissioning documentation, O&M data and training.
    c. Attend commissioning scoping meeting and other meetings necessary to facilitate the Cx process.
    d. The Contractor shall provide the CxA with standard manufacturers submittal cut sheets and shop drawing submittals of commissioned equipment.

e. Provide additional requested documentation, prior to normal O&M manual submittals, to the CxA for development of start-up and functional verification procedures.
   i. Typically this will include detailed manufacturer installation and start-up, operating, troubleshooting and maintenance procedures, full details of any owner-contracted verifications, fan and pump curves, full factory testing reports, if any, and full warranty information, including all responsibilities of the Owner to keep the warranty in force clearly identified. In addition, the installation, start-up and checkout materials that are actually shipped inside the equipment and the actual field checkout sheet forms to be used by the factory or field technicians shall be submitted to the Commissioning Authority.
   ii. The Commissioning Authority may request further documentation necessary for the commissioning process.

f. This data request may be made prior to normal submittals.
g. Provide a copy of the O&M manuals and submittals of commissioned equipment, through normal channels, to the CxA for review and comments. The CxA's primary focus in reviewing the submittals will be directed towards insuring the commission-ability of the equipment and interoperability of the equipment into functioning systems as per the Contract Documents.
h. The Contractor shall assist (along with the design engineers) in clarifying the operation and control of commissioned equipment in areas where the specifications, control drawings or equipment documentation is not sufficient for writing detailed verification procedures.
i. Provide assistance to the CxA in preparing the specific functional performance verification procedures. The Contractor shall review verification procedures to ensure feasibility, safety and equipment protection and provide necessary written alarm limits to be used during the verifications.
j. Develop a full start-up and initial checkout plan using manufacturer's start-up procedures and the prefunctional checklists from the CxA for all commissioned equipment. Submit to CxA for review and approval prior to startup. Refer to specifications for further details on start-up plan preparation (019113).
k. During the startup and initial checkout process, execute the mechanical-related portions of the prefunctional checklists for all commissioned equipment.
l. Perform and clearly document all completed startup and system operational checkout procedures, providing a copy to the CxA.
m. Address current A/E punch list items before functional verification. Air and water TAB shall be completed with discrepancies and problems remedied before functional verification of the respective air- or water-related systems.

n. Provide skilled technicians to execute starting of equipment and to execute the functional performance verifications. Ensure that they are available and present during the agreed upon schedules and for sufficient duration to complete the necessary verifications, adjustments and problem-solving.
o. Provide skilled technicians to perform functional performance verifications under the direction of the CxA. Assist the CxA in interpreting the monitoring data, as necessary.
p. Correct deficiencies (differences between specified and observed performance) as interpreted by the CxA and A/E and re-verification the equipment.
q. Prepare O&M manuals according to the Contract Documents, including clarifying and updating the original sequences of operation to as-built conditions.
r. During construction, maintain as-built red-line drawings for all drawings and specifications.
s. Provide training of the Owner's operating staff using expert qualified personnel.
t. Coordinate with equipment manufacturers to determine specific requirements to maintain the validity of the warranty.

2. Warranty Period

   a. Correct deficiencies and make necessary adjustments to O&M manuals and as-built drawings for applicable issues.

3. During construction, maintain as-built red-line drawings for all drawings. An updated as-built version of the drawings and an updated as-built version of the sequences of operation shall be included in the final O&M manual submittal.

4. Assist and cooperate with the CxA in the following manner:

   a. Provide an additional site visit by the manufacturer's representative; after formal start-up has been successfully completed, to assist the CxA with the functional verification of the equipment. The additional site visit by the manufacturer's representative shall be as scheduled by the CxA.
   b. Using a skilled technician who is familiar with this building, execute the functional verification of the controls system as specified for the controls Representative. Assist in the functional verification of all equipment.
   c. Execute all control system trend logs (reference section 019113).

5. The Contractor shall prepare a written plan indicating in a step-by-step manner, the procedures that will be followed to verification, checkout and adjust the control system prior to functional performance verification, according to the process in Section 019113. At minimum, the plan shall include for each type of equipment controlled by the automatic controls:

   a. System name.
   b. List of devices.

c. Step-by-step procedures for verification each controller after installation, including:

1) Process of verifying proper hardware and wiring installation.
2) Process of downloading programs to local controllers and verifying that they are addressed correctly.
3) Process of performing operational checks of each controlled component.
4) Plan and process for calibrating valve and damper actuators and all sensors.
5) A description of the expected field adjustments for transmitters, controllers and control actuators should control responses fall outside of expected values.

d. A copy of the log and field checkout sheets that will document the process. This log must include a place for initial and final read values during calibration of each point and clearly indicate when a sensor or controller has “passed” and is operating within the contract parameters.
e. A description of the instrumentation required for verification.

6. Provide a signed and dated certification to the CxA upon completion of the checkout of each controlled device, equipment and system prior to functional verification for each piece of equipment or system, that all system programming is complete as to all respects of the Contract Documents, except functional verification requirements.
7. Beyond the control points necessary to execute all documented control sequences, provide monitoring, control and virtual points as specified in Contract Documents.
8. Utilizing the CxA approved as built drawing schematics and as built sequences, demonstrate to the CxA the validity of these documents.

## PART 2 - PRODUCTS

### 2.1 VERIFICATION EQUIPMENT

A. The Contractor shall provide all verification equipment necessary to fulfill the verification requirements of this Division.

## PART 3 - EXECUTION

### 3.1 SUBMITTALS

A. The Contractor shall provide submittal documentation relative to commissioning as required in this Section Part 1 and Section 019113.

## 3.2 STARTUP

A. The Contractor shall follow the start-up and initial checkout procedures listed in the Responsibilities list in this section and in 019113. The Contractor has start-up responsibility and is required to complete systems and sub-systems so they are fully functional, meeting the design objectives of the Contract Documents. The commissioning procedures and functional verification do not relieve or lessen this responsibility or shift that responsibility partially to the commissioning Authority or Owner.

B. Functional verification is intended to begin upon completion of a system. Functional verification may proceed prior to the completion of systems or sub-systems at the discretion of the CxA. Beginning system verification before full completion does not relieve the Contractor from fully completing the system, including all prefunctional checklists as soon as possible.

## 3.3 FUNCTIONAL PERFORMANCE VERIFICATIONS

A. Refer to Section 019113 Part 1.7 for a list of systems to be commissioned and to Part 3.6 for a description of the process and the Contract Documents for specific details on the required functional performance verifications.

## 3.4 VERIFICATIONING DOCUMENTATION, NON-CONFORMANCE AND APPROVALS

A. Refer to Section 019113 Part 3.7 for specific details on non-conformance issues relating to prefunctional checklists and verifications.

## 3.5 OPERATION AND MAINTENANCE (O&M) MANUALS

A. The following O&M manual requirements do not replace O&M manual documentation requirements elsewhere in these specifications.

B. The Contractor shall compile and prepare documentation for all equipment and systems covered in the Contract Documents for inclusion in the O&M manuals, according to this section, prior to the training of owner personnel.

C. The CxA shall receive a copy of the O&M manuals for review.

D. Review and Approvals. Review of the commissioning related sections of the O&M manuals shall be made by the A/E and by the CxA. Refer to Section 019113 for additional details.

## 3.6 TRAINING OF OWNER PERSONNEL

A. The Contractor shall be responsible for training coordination and scheduling and ultimately to ensure that training is completed. Refer to Section 019113 for additional details.

B. The CxA shall be responsible for overseeing and approving the content and adequacy of the training of Owner personnel for commissioned equipment. Refer to Section 019113 for additional details.

C. The Contractor. The Contractor shall have the following training responsibilities:

1. Provide approved O & M manuals prior to submitting the training plan. Provide the CxA with a training plan four weeks before the planned training.
2. Provide designated Owner personnel with comprehensive orientation and training in the understanding of the systems and the operation and maintenance of each piece of equipment.
3. Training shall normally start with classroom sessions followed by hands-on training on each piece of equipment, which shall illustrate the various modes of operation, including startup, shutdown, fire/smoke alarm, power failure, etc.
4. During any demonstration, should the system fail to perform in accordance with the requirements of the O&M manual or sequence of operations, the system will be repaired or adjusted as necessary and the demonstration repeated.
5. The appropriate trade or manufacturer's representative shall provide the instructions on each major piece of equipment. This person may be the start-up technician for the piece of equipment, the Contractor or manufacturer’s representative. Practical building operating expertise as well as in-depth knowledge of all modes of operation of the specific piece of equipment is required. More than one party may be required to execute the training.
6. The training sessions shall follow the outline in the Table of Contents of the operation and maintenance manual and illustrate whenever possible the use of the O&M manuals for reference.
7. Training shall include:

    a. Use of the printed installation, operation and maintenance instruction material included in the O&M manuals.
    b. A review of the written O&M instructions emphasizing safe and proper operating requirements, preventative maintenance, special tools needed and spare parts inventory suggestions. The training shall include start-up, operation in all modes possible, shut-down, seasonal changeover and any emergency procedures.
    c. Discussion of relevant health and safety issues and concerns.
    d. Discussion of warranties and guarantees.
    e. Common troubleshooting problems and solutions.
    f. Explanatory information included in the O&M manuals and the location of all plans and manuals in the facility.
    g. Discussion of any peculiarities of equipment installation or operation.

8. Hands-on training shall include start-up, operation in all modes possible, including manual, shut-down and any emergency procedures and preventative maintenance for all pieces of equipment.
9. The Contractor shall fully explain and demonstrate the operation, function and overrides of any local packaged controls, not controlled by the central control system.
10. Training shall occur after functional verification is complete, unless approved otherwise by the Project Manager.
11. Duration of Training. The Contractor shall provide training on each piece of equipment included in the applicable portion of 019113-1.7. Reference equipment specific sections for additional training requirements.

12. WRITTEN WORK PRODUCTS
    a. Written work products of the Contractor will consist of the start-up and initial checkout plan described in Section 019113 and the filled out start-up, initial checkout and prefunctional checklists.

**END OF SECTION 22 0800**