

RELAMPING THE MEETING ROOM

PATTON TOWNSHIP ADMINISTRATION BUILDING

100 PATTON PLAZA, STATE COLLEGE, PA
PATTON TOWNSHIP, CENTRE COUNTY

 **Fernsler
Hutchinson** ARCHITECTURE LLC

521 East Beaver Ave.

State College, PA 16801

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| | | |
|---------------------|--|--|
| DATE: AUG. 25, 2017 | | |
| PROJ. NO.: 1727 | | |
| REVISIONS | | |
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Notice to Bidders
Weekly Payroll Certification for Public Works Projects
Prevailing Wage Rates
Bid Proposal
Owner's Instructions for Insurance
Standard Form of Agreement Between Owner and Contractor
Application and Certificate for Payment
Change Order
Certificate of Substantial Completion
Supplemental General Conditions

DIVISION 01 - GENERAL REQUIREMENTS

Section 1A - Demolition and Waste Disposal

DIVISION 16 - ELECTRICAL

Section 16000 - General Electrical Requirements
Section 16060 - Grounding and Bonding
Section 16095 - Minor Electrical Demolition
Section 16123 - Building Wire and Cable
Section 16150 - Wiring Connections
Section 16510 - Interior Luminaires

NOTICE TO BIDDERS

Sealed bids will be received by the Patton Township Board of Supervisors for the following project:

Meeting Room Relamping
Patton Township Building
100 Patton Plaza
State College, Centre County, PA

Owner: Patton Township Board of Supervisors
100 Patton Plaza
State College, PA 16803

Architect: Fernsler Hutchinson Architecture, LLC
521 East Beaver Avenue
State College, PA 16801
Phone: (814) 234-6806
Fax: (814) 234-0256
Email: fjfaia@aol.com

Engineer: Peno Engineering, LLC
2746 West College Avenue
State College, PA 16801
Phone: (814) 234-7366
Fax: (814) 234-7040
Email: frank@penoeng.com

Construction Contract: Electrical Construction Prime Contract

Project Scope: Replace existing lighting fixtures with new LED down lights and replace lamps in other lighting fixtures with new LED lamps

Builders' Exchanges: One full set of Bid Documents will be filed with the following Builders' Exchanges:
Altoona Builders' Exchange
Pittsburgh Builders' Exchange

Drawings and Specifications: Available electronically at the Patton Township Office on September 6, 2017. Prime Contractors shall provide all subcontractors and suppliers with documents if necessary.

Request for Information from Architect: All requests for substitution, clarification of documents, etc. shall be by fax at (814) 234-0256 or email at fjfaia@aol.com and responded to by same.

Pre-Bid Building Inspection: Bidding Contractors shall have access to the existing building where proposed construction is to occur by contacting Doug Erickson, Township Manager, to arrange a convenient time and date at (814) 234-0271.

Bid Opening:

Date: Wednesday, October 4, 2017
Time: 2:00 pm Eastern Prevailing Time
Place: Patton Township
100 Patton Plaza, State College, PA
Submitted to: Doug Erickson, Township Manager
Patton Township
100 Patton Plaza
State College, PA 16803

The sealed bid shall be mailed or hand delivered

Bid Award: Wednesday, October 11, 2017, at 7:00 pm

Proposal Guarantee: None

Proposal Period: 90 days from date of bid opening

Completion Date: 60 calendar days after Notice to Proceed

Liquidated Damages: None

Construction Bond Requirements: 100% Performance Bond except if bid is less than \$19,700

Construction Insurance Requirements:

| | |
|-----------------------|--|
| 1(a) Public Liability | \$1,000,000/\$2,000,000 |
| (b) Property Damage | \$100,000/\$500,000 |
| 2(a) Vehicular | \$500,000/\$1,000,000 |
| (b) Property Damage | \$500,000 |
| 3(a) Workman's Comp | Affidavit Required |
| 4(a) Fire Insurance | Complete coverage by Contractor in the names of the Owner and Contractor |

Prevailing Minimum Wages: Pennsylvania Prevailing Wage Act, P.L. 987, Approved August 15, 1961.


Should the Contractor's bid exceed \$25,000, prevailing wage rates shall apply. If the Contractor's bid is less than \$25,000, prevailing wage rates shall not apply nor the requirement for wage rate certifications.

Construction Payments: On, or before, the 3rd Thursday of each month, ninety percent (90%) of labor and materials installed and/or stored on the site.

The owner reserves the right to waive any informalities in or reject any or all proposals.

WEEKLY PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

Contractor or Subcontractor (Please check one) **ALL INFORMATION MUST BE COMPLETED**

| CONTRACTOR | | SUBCONTRACTOR | |  DEPARTMENT OF LABOR & INDUSTRY <small>COMMONWEALTH OF PENNSYLVANIA</small> BUREAU OF LABOR LAW COMPLIANCE PREVAILING WAGE DIVISION 7TH & FORSTER STREETS HARRISBURG, PA 17120 1-800-932-0665 | | | | | | |
|-----------------------|-------------------------|-----------------------------|-----------------------|--|------------------|------------------|--|------------------|--------------------------------------|---------|
| ADDRESS | | ADDRESS | | | | | | | | |
| PAYROLL NUMBER | WEEK ENDING DATE | PROJECT AND LOCATION | | PROJECT # | | | | | | |
| | | PROJECT SERIAL # | | | | | | | | |
| EMPLOYEE NAME | APPR. RATE (%) | WORK CLASSIFICATION | DAY AND DATE | | S-TIME 0-TIME | BASE HOURLY RATE | TOTAL FRINGE BENEFITS (C=Cash) (FB=Contributions)* | TOTAL DEDUCTIONS | GROSS PAY FOR PREVAILING RATE JOB(S) | CHECK # |
| | | | HOURS WORKED EACH DAY | | | | | | | |
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THE NOTARIZATION MUST BE COMPLETED ON FIRST AND LAST SUBMISSIONS ONLY. ALL OTHER INFORMATION MUST BE COMPLETED WEEKLY.

*FRINGE BENEFITS EXPLANATION (FB): Bona fide benefits contribution, except those required by Federal or State Law (unemployment tax, workers' compensation, income taxes, etc.)

Please specify the type of benefits provided and contributions per hour:

- 1) Medical or hospital care _____
- 2) Pension or retirement _____
- 3) Life insurance _____
- 4) Disability _____
- 5) Vacation, holiday _____
- 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

1. The undersigned, having executed a contract with _____
(AWARDING AGENCY, CONTRACTOR OR SUBCONTRACTOR)

_____ for the construction of the above-identified project, acknowledges that:

- (a) The prevailing wage requirements and the predetermined rates are included in the aforesaid contract.
- (b) Correction of any infractions of the aforesaid conditions is the contractor's or subcontractor's responsibility.
- (c) It is the contractor's responsibility to include the Prevailing Wage requirements and the predetermined rates in any subcontract or lower tier subcontract for this project.

2. The undersigned certifies that:

- (a) Neither he nor his firm, nor any firm, corporation or partnership in which he or his firm has an interest is debarred by the Secretary of Labor and Industry pursuant to Section 11(e) of the PA Prevailing Wage Act, Act of August 15, 1961, P.L. 987 as amended, 43 P.S. § 165-11(e).
- (b) No part of this contract has been or will be subcontracted to any subcontractor if such subcontractor or any firm, corporation or partnership in which such subcontractor has an interest is debarred pursuant to the aforementioned statute.

3. The undersigned certifies that:

(a) the legal name and the business address of the contractor or subcontractor are: _____

(b) The undersigned is: a single proprietorship a corporation organized in the state of _____
 a partnership other organization (describe) _____

(c) The name, title and address of the owner, partners or officers of the contractor/subcontractor are:

| NAME | TITLE | ADDRESS |
|------|-------|---------|
| | | |
| | | |
| | | |

The willful falsification of any of the above statements may subject the contractor to civil or criminal prosecution, provided in the PA Prevailing Wage Act of August 15, 1961, P.L. 987, as amended, August 9, 1963, 43 P.S. § 165.1 through 165.17.

 (DATE)

 (SIGNATURE)

 (TITLE)

 SEAL

Taken, sworn and subscribed before me this _____ Day
 of _____ A.D., _____

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

| | |
|----------------------------|--------------------------------------|
| Project Name: | Relamping the Meeting Room |
| Awarding Agency: | Patton Township Board of Supervisors |
| Contract Award Date: | 11/15/2017 |
| Serial Number: | 17-06008 |
| Project Classification: | Building |
| Determination Date: | 8/28/2017 |
| Assigned Field Office: | Altoona |
| Field Office Phone Number: | (814)940-6224 |
| Toll Free Phone Number: | |
| Project County: | Centre County |

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

| Project: 17-06008 - Building | Effective Date | Expiration Date | Hourly Rate | Fringe Benefits | Total |
|---|-----------------------|------------------------|--------------------|------------------------|--------------|
| Asbestos & Insulation Workers | 6/26/2017 | | \$32.00 | \$26.51 | \$58.51 |
| Asbestos & Insulation Workers | 6/27/2016 | | \$32.00 | \$25.51 | \$57.51 |
| Boilermaker (Commercial, Institutional, and Minor Repair Work) | 3/1/2018 | | \$29.52 | \$18.22 | \$47.74 |
| Boilermaker (Commercial, Institutional, and Minor Repair Work) | 3/1/2017 | | \$28.52 | \$18.22 | \$46.74 |
| Boilermaker (Commercial, Institutional, and Minor Repair Work) | 3/1/2016 | | \$27.52 | \$18.22 | \$45.74 |
| Boilermakers | 1/1/2018 | | \$46.26 | \$33.36 | \$79.62 |
| Boilermakers | 1/1/2017 | | \$44.26 | \$33.36 | \$77.62 |
| Boilermakers | 1/1/2016 | | \$42.26 | \$33.36 | \$75.62 |
| Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners | 5/1/2019 | | \$33.63 | \$17.18 | \$50.81 |
| Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners | 5/1/2020 | | \$34.17 | \$17.64 | \$51.81 |
| Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners | 5/1/2021 | | \$34.78 | \$18.13 | \$52.91 |
| Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners | 5/1/2016 | | \$32.90 | \$15.40 | \$48.30 |
| Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners | 5/1/2017 | | \$32.77 | \$16.34 | \$49.11 |
| Bricklayers, Stone Masons, Pointers, Caulkers, Cleaners | 5/1/2018 | | \$33.16 | \$16.75 | \$49.91 |
| Carpenters | 6/1/2017 | | \$27.93 | \$14.79 | \$42.72 |
| Carpenters | 6/1/2016 | | \$27.24 | \$14.36 | \$41.60 |
| Cement Masons | 7/1/2018 | | \$27.74 | \$17.10 | \$44.84 |
| Cement Masons | 7/1/2019 | | \$28.49 | \$17.45 | \$45.94 |
| Cement Masons | 7/10/2017 | | \$26.96 | \$16.73 | \$43.69 |
| Dockbuilder, Pile Drivers | 1/1/2016 | | \$32.03 | \$17.53 | \$49.56 |
| Drywall Finisher | 6/1/2018 | | \$28.10 | \$19.99 | \$48.09 |
| Drywall Finisher | 6/1/2016 | | \$27.50 | \$18.29 | \$45.79 |
| Drywall Finisher | 6/1/2017 | | \$27.80 | \$19.14 | \$46.94 |
| Electric Lineman | 5/30/2016 | | \$44.78 | \$22.82 | \$67.60 |
| Electricians & Telecommunications Installation Technician | 12/25/2015 | | \$39.11 | \$23.98 | \$63.09 |
| Electricians & Telecommunications Installation Technician | 12/23/2016 | | \$40.61 | \$23.98 | \$64.59 |
| Elevator Constructor | 1/1/2017 | | \$43.98 | \$31.89 | \$75.87 |
| Elevator Constructor | 1/1/2016 | | \$43.05 | \$31.11 | \$74.16 |
| Elevator Tender (Use Elevator Apprentice or Constructor) | 1/1/2007 | | \$0.00 | \$0.00 | \$0.00 |
| Glazier | 9/1/2016 | | \$22.25 | \$18.10 | \$40.35 |
| Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing) | 6/1/2017 | | \$28.02 | \$28.36 | \$56.38 |
| Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing) | 6/1/2016 | | \$27.81 | \$27.25 | \$55.06 |
| Laborers (Class 01 - See notes) | 1/1/2017 | | \$18.47 | \$15.49 | \$33.96 |
| Laborers (Class 01 - See notes) | 1/1/2016 | | \$18.37 | \$14.59 | \$32.96 |
| Laborers (Class 01 - See notes) | 1/1/2018 | | \$20.37 | \$14.59 | \$34.96 |

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

| Project: 17-06008 - Building | Effective Date | Expiration Date | Hourly Rate | Fringe Benefits | Total |
|---|-----------------------|------------------------|--------------------|------------------------|--------------|
| Laborers (Class 02 - See notes) | 1/1/2016 | | \$18.52 | \$14.59 | \$33.11 |
| Laborers (Class 02 - See notes) | 1/1/2017 | | \$18.62 | \$15.49 | \$34.11 |
| Laborers (Class 02 - See notes) | 1/1/2018 | | \$20.52 | \$14.59 | \$35.11 |
| Laborers (Class 03 - See notes) | 1/1/2017 | | \$18.72 | \$15.49 | \$34.21 |
| Laborers (Class 03 - See notes) | 1/1/2018 | | \$20.62 | \$14.59 | \$35.21 |
| Laborers (Class 03 - See notes) | 1/1/2016 | | \$18.62 | \$14.59 | \$33.21 |
| Laborers (Class 04 - See notes) | 1/1/2018 | | \$19.37 | \$14.59 | \$33.96 |
| Laborers (Class 04 - See notes) | 1/1/2016 | | \$17.37 | \$14.59 | \$31.96 |
| Laborers (Class 04 - See notes) | 1/1/2017 | | \$17.47 | \$15.49 | \$32.96 |
| Landscape Laborer | 1/1/2016 | | \$20.51 | \$13.49 | \$34.00 |
| Landscape Laborer | 1/1/2017 | | \$20.59 | \$14.36 | \$34.95 |
| Landscape Laborer (Skilled) | 1/1/2017 | | \$21.01 | \$14.36 | \$35.37 |
| Landscape Laborer (Skilled) | 1/1/2016 | | \$20.93 | \$13.49 | \$34.42 |
| Landscape Laborer (Tractor Operator) | 1/1/2017 | | \$21.31 | \$14.36 | \$35.67 |
| Landscape Laborer (Tractor Operator) | 1/1/2016 | | \$21.23 | \$13.49 | \$34.72 |
| Marble Mason | 5/1/2018 | | \$29.88 | \$16.01 | \$45.89 |
| Marble Mason | 5/1/2017 | | \$29.27 | \$15.62 | \$44.89 |
| Marble Mason | 5/1/2021 | | \$31.55 | \$17.34 | \$48.89 |
| Marble Mason | 5/1/2020 | | \$31.02 | \$16.87 | \$47.89 |
| Marble Mason | 5/1/2019 | | \$30.46 | \$16.43 | \$46.89 |
| Millwright | 6/1/2017 | | \$39.83 | \$18.57 | \$58.40 |
| Millwright | 6/1/2016 | | \$38.91 | \$18.14 | \$57.05 |
| Operators (Class 01 - see notes) | 7/1/2021 | | \$32.47 | \$20.32 | \$52.79 |
| Operators (Class 01 - see notes) | 7/1/2020 | | \$31.87 | \$19.57 | \$51.44 |
| Operators (Class 01 - see notes) | 7/1/2019 | | \$31.27 | \$18.82 | \$50.09 |
| Operators (Class 01 - see notes) | 7/1/2017 | | \$30.17 | \$17.42 | \$47.59 |
| Operators (Class 01 - see notes) | 7/1/2018 | | \$30.72 | \$18.12 | \$48.84 |
| Operators (Class 02 -see notes) | 7/1/2021 | | \$27.85 | \$20.32 | \$48.17 |
| Operators (Class 02 -see notes) | 7/1/2020 | | \$27.45 | \$19.57 | \$47.02 |
| Operators (Class 02 -see notes) | 7/1/2018 | | \$26.75 | \$18.12 | \$44.87 |
| Operators (Class 02 -see notes) | 7/1/2017 | | \$26.45 | \$17.42 | \$43.87 |
| Operators (Class 02 -see notes) | 7/1/2019 | | \$27.05 | \$18.82 | \$45.87 |
| Operators (Class 03 - See notes) | 7/1/2020 | | \$26.00 | \$19.57 | \$45.57 |
| Operators (Class 03 - See notes) | 7/1/2018 | | \$25.50 | \$18.12 | \$43.62 |
| Operators (Class 03 - See notes) | 7/1/2021 | | \$26.30 | \$20.32 | \$46.62 |
| Operators (Class 03 - See notes) | 7/1/2019 | | \$25.70 | \$18.82 | \$44.52 |
| Operators (Class 03 - See notes) | 7/1/2017 | | \$25.30 | \$17.42 | \$42.72 |
| Operators (Class 04 - Chief of Party (Surveying and Layout)) | 7/1/2015 | | \$23.30 | \$16.52 | \$39.82 |
| Operators (Class 04 - Chief of Party (Surveying and Layout)) | 7/1/2016 | | \$23.65 | \$16.77 | \$40.42 |
| Operators (Class 04 - Instrument Person (Surveying & Layout)) | 7/1/2015 | | \$22.30 | \$16.22 | \$38.52 |
| Operators (Class 04 - Instrument Person (Surveying & Layout)) | 7/1/2016 | | \$22.65 | \$16.77 | \$39.42 |
| Operators (Class 04 - Rodman/Chainman (Surveying | 7/1/2016 | | \$22.20 | \$16.77 | \$38.97 |

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

| Project: 17-06008 - Building | Effective Date | Expiration Date | Hourly Rate | Fringe Benefits | Total |
|---|-----------------------|------------------------|--------------------|------------------------|--------------|
| and Layout)) | | | | | |
| Operators (Class 04 - Rodman/Chainman (Surveying and Layout)) | 7/1/2015 | | \$21.85 | \$16.22 | \$38.07 |
| Painters Class 6 (see notes) | 6/1/2019 | | \$28.50 | \$20.06 | \$48.56 |
| Painters Class 6 (see notes) | 6/1/2018 | | \$28.00 | \$19.36 | \$47.36 |
| Painters Class 6 (see notes) | 6/1/2017 | | \$27.50 | \$18.66 | \$46.16 |
| Painters Class 6 (see notes) | 6/1/2016 | | \$27.38 | \$17.58 | \$44.96 |
| Pile Driver Divers (Building, Heavy, Highway) | 1/1/2017 | | \$49.13 | \$17.95 | \$67.08 |
| Pile Driver Divers (Building, Heavy, Highway) | 1/1/2019 | | \$51.45 | \$19.30 | \$70.75 |
| Pile Driver Divers (Building, Heavy, Highway) | 1/1/2018 | | \$50.33 | \$18.55 | \$68.88 |
| Piledrivers | 1/1/2017 | | \$32.75 | \$17.95 | \$50.70 |
| Piledrivers | 1/1/2018 | | \$33.55 | \$18.55 | \$52.10 |
| Piledrivers | 1/1/2019 | | \$34.30 | \$19.30 | \$53.60 |
| Plasterers | 6/1/2016 | | \$27.30 | \$8.66 | \$35.96 |
| Plasterers | 6/1/2017 | | \$27.30 | \$9.66 | \$36.96 |
| Plasterers | 6/1/2017 | | \$27.30 | \$9.66 | \$36.96 |
| Plumber/Pipefitter | 5/1/2017 | | \$35.82 | \$24.51 | \$60.33 |
| Plumber/Pipefitter | 5/1/2016 | | \$35.22 | \$23.61 | \$58.83 |
| Roofers (Composition) | 5/1/2017 | | \$36.15 | \$30.22 | \$66.37 |
| Roofers (Shingle) | 5/1/2016 | | \$25.70 | \$19.17 | \$44.87 |
| Roofers (Slate & Tile) | 5/1/2016 | | \$28.70 | \$19.17 | \$47.87 |
| Sheet Metal Workers | 6/1/2016 | | \$33.60 | \$33.43 | \$67.03 |
| Sign Makers and Hangars | 5/21/2010 | | \$24.33 | \$16.37 | \$40.70 |
| Sprinklerfitters | 4/1/2017 | | \$37.40 | \$21.74 | \$59.14 |
| Sprinklerfitters | 4/1/2018 | | \$38.80 | \$22.74 | \$61.54 |
| Sprinklerfitters | 4/1/2016 | | \$36.05 | \$21.02 | \$57.07 |
| Terrazzo Finisher | 5/1/2018 | | \$32.35 | \$15.91 | \$48.26 |
| Terrazzo Finisher | 5/1/2017 | | \$31.64 | \$15.62 | \$47.26 |
| Terrazzo Finisher | 5/1/2016 | | \$30.17 | \$16.09 | \$46.26 |
| Terrazzo Finisher | 5/1/2019 | | \$33.04 | \$16.22 | \$49.26 |
| Terrazzo Setter | 5/1/2016 | | \$30.00 | \$18.48 | \$48.48 |
| Terrazzo Setter | 5/1/2017 | | \$30.63 | \$18.85 | \$49.48 |
| Terrazzo Setter | 5/1/2019 | | \$31.81 | \$19.67 | \$51.48 |
| Terrazzo Setter | 5/1/2018 | | \$31.23 | \$19.25 | \$50.48 |
| Tile & Marble Finisher | 5/1/2019 | | \$28.29 | \$14.46 | \$42.75 |
| Tile & Marble Finisher | 5/1/2018 | | \$27.60 | \$14.15 | \$41.75 |
| Tile & Marble Finisher | 5/1/2017 | | \$26.89 | \$13.86 | \$40.75 |
| Tile & Marble Finisher | 5/1/2020 | | \$28.96 | \$14.79 | \$43.75 |
| Tile & Marble Finisher | 5/1/2021 | | \$29.61 | \$15.14 | \$44.75 |
| Tile Setter | 5/1/2020 | | \$31.02 | \$16.87 | \$47.89 |
| Tile Setter | 5/1/2019 | | \$30.46 | \$16.43 | \$46.89 |
| Tile Setter | 5/1/2017 | | \$29.27 | \$15.62 | \$44.89 |
| Tile Setter | 5/1/2021 | | \$31.55 | \$17.34 | \$48.89 |
| Tile Setter | 5/1/2018 | | \$29.88 | \$16.01 | \$45.89 |
| Truckdriver class 1(see notes) | 1/1/2016 | | \$27.62 | \$16.60 | \$44.22 |

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

| Project: 17-06008 - Building | Effective Date | Expiration Date | Hourly Rate | Fringe Benefits | Total |
|-------------------------------------|-----------------------|------------------------|--------------------|------------------------|--------------|
| Truckdriver class 2 (see notes) | 1/1/2016 | | \$27.75 | \$16.69 | \$44.44 |
| Truckdriver class 3 (see notes) | 1/1/2016 | | \$28.23 | \$16.98 | \$45.21 |

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

| Project: 17-06008 - Heavy/Highway | Effective Date | Expiration Date | Hourly Rate | Fringe Benefits | Total |
|---|-----------------------|------------------------|--------------------|------------------------|--------------|
| Carpenter Welder | 1/1/2019 | | \$34.72 | \$18.42 | \$53.14 |
| Carpenter Welder | 1/1/2017 | | \$33.10 | \$17.14 | \$50.24 |
| Carpenter Welder | 1/1/2018 | | \$33.87 | \$17.77 | \$51.64 |
| Carpenters | 1/1/2017 | | \$32.15 | \$17.14 | \$49.29 |
| Carpenters | 1/1/2018 | | \$32.92 | \$17.77 | \$50.69 |
| Carpenters | 1/1/2019 | | \$33.77 | \$18.42 | \$52.19 |
| Cement Finishers | 1/1/2017 | | \$30.14 | \$19.40 | \$49.54 |
| Cement Finishers | 1/1/2018 | | \$31.04 | \$19.90 | \$50.94 |
| Cement Finishers | 1/1/2019 | | \$31.94 | \$20.50 | \$52.44 |
| Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing) | 6/1/2016 | | \$27.81 | \$27.25 | \$55.06 |
| Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing) | 6/1/2017 | | \$28.02 | \$28.36 | \$56.38 |
| Laborers (Class 01 - See notes) | 1/1/2019 | | \$24.75 | \$23.85 | \$48.60 |
| Laborers (Class 01 - See notes) | 1/1/2017 | | \$24.75 | \$20.95 | \$45.70 |
| Laborers (Class 01 - See notes) | 1/1/2018 | | \$24.75 | \$22.35 | \$47.10 |
| Laborers (Class 02 - See notes) | 1/1/2019 | | \$24.91 | \$23.85 | \$48.76 |
| Laborers (Class 02 - See notes) | 1/1/2018 | | \$24.91 | \$22.35 | \$47.26 |
| Laborers (Class 02 - See notes) | 1/1/2017 | | \$24.91 | \$20.95 | \$45.86 |
| Laborers (Class 03 - See notes) | 1/1/2017 | | \$25.40 | \$20.95 | \$46.35 |
| Laborers (Class 03 - See notes) | 1/1/2018 | | \$25.40 | \$22.35 | \$47.75 |
| Laborers (Class 03 - See notes) | 1/1/2019 | | \$25.40 | \$23.85 | \$49.25 |
| Laborers (Class 04 - See notes) | 1/1/2017 | | \$25.85 | \$20.95 | \$46.80 |
| Laborers (Class 04 - See notes) | 1/1/2019 | | \$25.85 | \$23.85 | \$49.70 |
| Laborers (Class 04 - See notes) | 1/1/2018 | | \$25.85 | \$22.35 | \$48.20 |
| Laborers (Class 05 - See notes) | 1/1/2019 | | \$26.26 | \$23.85 | \$50.11 |
| Laborers (Class 05 - See notes) | 1/1/2017 | | \$26.26 | \$20.95 | \$47.21 |
| Laborers (Class 05 - See notes) | 1/1/2018 | | \$26.26 | \$22.35 | \$48.61 |
| Laborers (Class 06 - See notes) | 1/1/2019 | | \$23.10 | \$23.85 | \$46.95 |
| Laborers (Class 06 - See notes) | 1/1/2018 | | \$23.10 | \$22.35 | \$45.45 |
| Laborers (Class 06 - See notes) | 1/1/2017 | | \$23.10 | \$20.95 | \$44.05 |
| Laborers (Class 07 - See notes) | 1/1/2018 | | \$25.75 | \$22.35 | \$48.10 |
| Laborers (Class 07 - See notes) | 1/1/2019 | | \$25.75 | \$23.85 | \$49.60 |
| Laborers (Class 07 - See notes) | 1/1/2017 | | \$25.75 | \$20.95 | \$46.70 |
| Laborers (Class 08 - See notes) | 1/1/2019 | | \$27.25 | \$23.85 | \$51.10 |
| Laborers (Class 08 - See notes) | 1/1/2017 | | \$27.25 | \$20.95 | \$48.20 |
| Laborers (Class 08 - See notes) | 1/1/2018 | | \$27.25 | \$22.35 | \$49.60 |
| Operators (Class 01 - see notes) | 1/1/2018 | | \$31.29 | \$20.78 | \$52.07 |
| Operators (Class 01 - see notes) | 1/1/2019 | | \$31.89 | \$21.68 | \$53.57 |
| Operators (Class 01 - see notes) | 1/1/2017 | | \$30.69 | \$19.98 | \$50.67 |
| Operators (Class 02 -see notes) | 1/1/2017 | | \$30.43 | \$19.98 | \$50.41 |
| Operators (Class 02 -see notes) | 1/1/2019 | | \$31.63 | \$21.68 | \$53.31 |
| Operators (Class 02 -see notes) | 1/1/2018 | | \$31.03 | \$20.78 | \$51.81 |
| Operators (Class 03 - See notes) | 1/1/2017 | | \$26.78 | \$19.98 | \$46.76 |
| Operators (Class 03 - See notes) | 1/1/2018 | | \$27.38 | \$20.78 | \$48.16 |

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

| Project: 17-06008 - Heavy/Highway | Effective Date | Expiration Date | Hourly Rate | Fringe Benefits | Total |
|---|-----------------------|------------------------|--------------------|------------------------|--------------|
| Operators (Class 03 - See notes) | 1/1/2019 | | \$27.98 | \$21.68 | \$49.66 |
| Operators (Class 04 - See notes) | 1/1/2018 | | \$26.92 | \$20.78 | \$47.70 |
| Operators (Class 04 - See notes) | 1/1/2017 | | \$26.32 | \$19.98 | \$46.30 |
| Operators (Class 04 - See notes) | 1/1/2019 | | \$27.52 | \$21.68 | \$49.20 |
| Operators (Class 05 - See notes) | 1/1/2019 | | \$27.27 | \$21.68 | \$48.95 |
| Operators (Class 05 - See notes) | 1/1/2018 | | \$26.67 | \$20.78 | \$47.45 |
| Operators (Class 05 - See notes) | 1/1/2017 | | \$26.07 | \$19.98 | \$46.05 |
| Painters Class 1 (see notes) | 6/1/2018 | | \$32.50 | \$19.36 | \$51.86 |
| Painters Class 1 (see notes) | 6/1/2019 | | \$33.15 | \$20.06 | \$53.21 |
| Painters Class 1 (see notes) | 6/1/2017 | | \$31.85 | \$18.66 | \$50.51 |
| Painters Class 1 (see notes) | 6/1/2016 | | \$31.58 | \$17.58 | \$49.16 |
| Painters Class 1 (see notes) | 6/1/2017 | | \$31.98 | \$18.43 | \$50.41 |
| Painters Class 2 (see notes) | 6/1/2018 | | \$34.60 | \$19.36 | \$53.96 |
| Painters Class 2 (see notes) | 6/1/2019 | | \$35.25 | \$20.06 | \$55.31 |
| Painters Class 2 (see notes) | 6/1/2017 | | \$33.95 | \$18.66 | \$52.61 |
| Painters Class 2 (see notes) | 6/1/2016 | | \$31.58 | \$17.58 | \$49.16 |
| Painters Class 2 (see notes) | 6/1/2017 | | \$34.08 | \$18.43 | \$52.51 |
| Painters Class 3 (see notes) | 6/1/2019 | | \$35.25 | \$20.06 | \$55.31 |
| Painters Class 3 (see notes) | 6/1/2016 | | \$33.68 | \$17.58 | \$51.26 |
| Painters Class 3 (see notes) | 6/1/2018 | | \$34.60 | \$19.36 | \$53.96 |
| Painters Class 3 (see notes) | 6/1/2017 | | \$27.58 | \$18.48 | \$46.06 |
| Painters Class 3 (see notes) | 6/1/2017 | | \$33.95 | \$18.66 | \$52.61 |
| Painters Class 4 (see notes) | 6/1/2019 | | \$28.20 | \$20.06 | \$48.26 |
| Painters Class 4 (see notes) | 6/1/2017 | | \$27.27 | \$18.43 | \$45.70 |
| Painters Class 4 (see notes) | 6/1/2018 | | \$27.68 | \$19.36 | \$47.04 |
| Painters Class 4 (see notes) | 6/1/2016 | | \$26.95 | \$17.58 | \$44.53 |
| Painters Class 4 (see notes) | 6/1/2017 | | \$27.16 | \$18.66 | \$45.82 |
| Painters Class 5 (see notes) | 6/1/2019 | | \$22.91 | \$20.06 | \$42.97 |
| Painters Class 5 (see notes) | 6/1/2017 | | \$22.16 | \$18.43 | \$40.59 |
| Painters Class 5 (see notes) | 6/1/2018 | | \$22.49 | \$19.36 | \$41.85 |
| Painters Class 5 (see notes) | 6/1/2017 | | \$22.07 | \$18.66 | \$40.73 |
| Painters Class 5 (see notes) | 6/1/2016 | | \$21.90 | \$17.58 | \$39.48 |
| Pile Driver Divers (Building, Heavy, Highway) | 1/1/2018 | | \$50.33 | \$18.55 | \$68.88 |
| Pile Driver Divers (Building, Heavy, Highway) | 1/1/2019 | | \$51.45 | \$19.30 | \$70.75 |
| Pile Driver Divers (Building, Heavy, Highway) | 1/1/2017 | | \$49.13 | \$17.95 | \$67.08 |
| Piledrivers | 1/1/2017 | | \$32.75 | \$17.95 | \$50.70 |
| Piledrivers | 1/1/2019 | | \$34.30 | \$19.30 | \$53.60 |
| Piledrivers | 1/1/2018 | | \$33.55 | \$18.55 | \$52.10 |
| Steamfitters (Heavy and Highway - Gas Distribution) | 5/1/2017 | | \$40.98 | \$32.53 | \$73.51 |
| Truckdriver class 1(see notes) | 1/1/2017 | | \$28.10 | \$17.42 | \$45.52 |
| Truckdriver class 1(see notes) | 1/1/2018 | | \$28.52 | \$18.40 | \$46.92 |
| Truckdriver class 1(see notes) | 1/1/2019 | | \$28.99 | \$19.43 | \$48.42 |
| Truckdriver class 2 (see notes) | 1/1/2019 | | \$29.13 | \$19.51 | \$48.64 |
| Truckdriver class 2 (see notes) | 1/1/2017 | | \$28.24 | \$17.50 | \$45.74 |

**BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES**

| Project: 17-06008 - Heavy/Highway | Effective Date | Expiration Date | Hourly Rate | Fringe Benefits | Total |
|--|-----------------------|------------------------|--------------------|------------------------|--------------|
| Truckdriver class 2 (see notes) | 1/1/2018 | | \$28.66 | \$18.48 | \$47.14 |
| Truckdriver class 3 (see notes) | 1/1/2019 | | \$29.59 | \$19.82 | \$49.41 |
| Truckdriver class 3 (see notes) | 1/1/2018 | | \$29.13 | \$18.78 | \$47.91 |
| Truckdriver class 3 (see notes) | 1/1/2017 | | \$28.71 | \$17.80 | \$46.51 |

SECTION BP - BID PROPOSAL – ELECTRICAL CONSTRUCTION PRIME CONTRACT

In compliance with the Notice to Bidders and the Contract Documents, we, the undersigned, do hereby agree to provide all labor, materials, services, tools, and equipment and to perform all of the required work to complete the

FOR: Meeting Room Relamping
Patton Township Building
100 Patton Plaza
State College, Centre County, PA

All in strict accordance with the Specifications, Schedules, Drawings, and Conditions for the consideration of the following amounts, including State and applicable taxes, for the sum of:

_____ Dollars (\$))
Amount

We, the undersigned, agree, if awarded the Contract, to execute an agreement for the above stated work and compensation on the Standard Form of Agreement.

We, the undersigned, agree, if awarded the Contract, to begin work at the site within ten days after “Notice to Proceed” and to complete the work in a thoroughly good and workmanlike manner under the direction of the Architect and to the satisfaction of the Owner, within 60 calendar days.

The Contract is to be entered into by the Owner upon the understanding that the Contractor, prior to submission of his Bid, has acquainted himself with the requirements of the Plans and Specifications, conditions of the site, all applicable governmental codes, all other requirements of the Contract, and that he obtained all information necessary for completion of the work within the time specified. The Contractor shall not, at any time, set up any claims whatever based on insufficient data or incorrectly assumed conditions, nor shall he claim any misunderstanding in regard to the nature, conditions, or character of the work to be done under the Contractor; and the Contractor shall assume all risks resulting from any changes in conditions which may occur during the progress of this work.

We, the undersigned, acknowledge receipt of and have considered in our Proposal the following Addenda:

We, the undersigned, agree that this Proposal as submitted shall hold good through the ninetieth day following the bid date.

Submitted by: _____ Attest: _____

Address: _____ Surety: _____
_____ Date: _____

Signed by: _____
Authorized Signature

OWNER'S INSTRUCTIONS FOR INSURANCE

I. **CONTRACTOR'S INSURANCE**

- A. **Construction Insurance Requirements:**
- | | |
|-----------------------|--|
| 1(a) Public Liability | \$1,000,000/\$2,000,000 |
| (b) Property Damage | \$100,000/\$500,000 |
| 2(a) Vehicular | \$500,000/\$1,000,000 |
| (b) Property Damage | \$500,000 |
| 3(a) Fire Insurance | Complete coverage by Contractor in the names of the Owner and Contractor |
- B. **Workmen's Compensation:** Statutory

II. **OWNER'S INSURANCE**

- A. The Owner shall purchase and maintain property insurance in the amount of the initial Contract Sums as well as subsequent modifications for the entire work at the site on a replacement cost basis without voluntary deductibles. The Owner shall carry such insurance until final payment is made.

Standard Form of Agreement Between Owner and Contractor

where the basis of payment is a
STIPULATED SUM

AGREEMENT

Made as of the _____ day of _____ in the year of Two Thousand and Seventeen.

BETWEEN the Owner: Patton Township
100 Patton Plaza
State College, PA 16803

and the Contractor: Meeting Room Relamping
Patton Township Building
100 Patton Plaza
State College, Centre County, PA

The Architect: Fernsler Hutchinson Architecture, LLC
521 East Beaver Avenue
State College, PA 16801

The Owner and Contractor agree as set forth below.

ARTICLE 1 **THE CONTRACT DOCUMENTS**

1.1 The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement. These form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations representations or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 9.

ARTICLE 2 **THE WORK OF THIS CONTRACT**

2.1 The Contractor shall execute the entire Work described in the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 **DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**

3.1 The date of commencement is the date from which the Contract Time of Paragraph 3.2 is measured and shall be the date of this Agreement, as first written above, unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

Unless the date of commencement is established by a notice to proceed issued by the Owner, the Contractor shall notify the Owner in writing not less than five days before commencing the Work to permit the timely filing of mortgages, mechanic's liens, and other security interests.

3.2 The Contractor shall achieve Substantial Completion of the entire Work not later than _____.

ARTICLE 4
CONTRACT SUM

4.1 The Owner shall pay the Contractor in current funds for the Contractor's performance of the Contract the Contract Sum of (\$ _____), subject to additions and deductions as provided in the Contract Documents

4.2 The Contract Sum is based upon the following adjustment and is hereby accepted by the Owner.

ARTICLE 5
PROGRESS PAYMENTS

5.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

5.2 The period covered by each Application for Payment shall be one calendar month.

5.3 Provided an Application for Payment is received by the Architect not later than the fifth of the month and reviewed by the Board the third Thursday of each month and payment released after Board meeting in approximately three days.

5.4 Each Application for Payment shall be based upon the Schedule of Values submitted by the Contractor in accordance with the Contract Documents. The Schedule of Values shall allocate the entire Contract Sum among the various portions of the Work and be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This Schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

5.5 Applications for Payment shall indicate the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

5.6 Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

5.6.1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Sum allocated to that portion of the Work in the Schedule of Values, less retainage of ten percent (10%). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute may be included as provided in Subparagraph 7.3.7 of the General Conditions even though the Contract Sum has not yet been adjusted by Change Order;

5.6.2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of ten percent (10%);

5.6.3 Subtract the aggregate of previous payments made by the Owner; and

5.6.4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Paragraph 9.5 of the General Conditions.

5.7 The progress payment amount determined in accordance with Paragraph 5.6 shall be further modified under the following circumstances:

5.7.1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to one hundred percent (100%) of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work and unsettled claims; and

5.7.2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Subparagraph 9.10.3 of the General Conditions.

5.8 Reduction or limitation of retainage, if any, shall be as follows: After 50% complete retainage to be reduced to 5%.

ARTICLE 6 **FINAL PAYMENT**

6.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when (1) the Contract has been fully performed by the Contractor except for the Contractor's responsibility to correct nonconforming Work as provided in Subparagraph 12.2.2, of the General Conditions and to satisfy other requirements, if any, which necessarily survive final payment; and (2) a final Certificate for Payment has been issued by the Architect, such final payment shall be made by the Owner not more than 30 days after the issuance of the Architect's final Certificate for Payment.

ARTICLE 7 **MISCELLANEOUS PROVISIONS**

7.1 Where reference is made in this Agreement to a provision of the General Conditions or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

7.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

7.3 Other provisions:

7.3.1 Sections 4.3 through 4.5 of the General Conditions shall be replaced by the following:

ARTICLE 8
TERMINATION OR SUSPENSION

8.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of the General Conditions.

8.2 The Work may be suspended by the Owner as provided in Article 14 of the General Conditions.

ARTICLE 9
ENUMERATION OF CONTRACT DOCUMENTS

9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated as follows:

9.1.1 The Agreement is this executed Standard Form of Agreement Between Owner and Contractor, AIA Document A101, 1987 Edition.

9.1.2 The General Conditions are the General Conditions of the Contract for Construction, AIA Document A201, 1987 Edition.

9.1.3 The Supplementary and other Conditions of the Contract are those contained in the Project Manual dated August 25, 2017.

9.1.4 The Specifications are those contained in the Project Manual dated as in Subparagraph 9.1.3, and are as follows:

9.1.5 The Drawings are as follows:

9.1.6 The Addenda are as follows:

| <u>Number</u> | <u>Date</u> | <u>Page</u> |
|---------------|-------------|-------------|
|---------------|-------------|-------------|

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

This agreement is entered into as of the day and year first written above and is executed in at least three original copies of which one is to be delivered to the Contractor, one to the Architect for use in the administration of the Contract, and the remainder to the Owner.

OWNER

CONTRACTOR

(Signature)

(Signature)

(Printed name and title)

(Printed name and title)

TO (OWNER): PROJECT: APPLICATION NO: Distribution to:
 OWNER
 ARCHITECT
 CONTRACTOR

FROM (CONTRACTOR): VIA (ARCHITECT): PERIOD TO:
 ARCHITECT'S PROJECT NO: ARCHITECT'S PROJECT NO:
 CONTRACT DATE:

CONTRACT FOR: CONTRACT DATE:

Application is made for Payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM \$
2. Net change by Change Orders \$
3. CONTRACT SUM TO DATE (Line 1 ± 2) \$
4. TOTAL COMPLETED & STORED TO DATE \$
 (Column G on G703)
5. RETAINAGE:
 a. ___ % of Completed Work \$ _____
 (Column D + E on G703)
 b. ___ % of Stored Material \$ _____
 (Column F on G703)
 Total Retainage (Line 5a + 5b or Total in Column I of G703) \$
6. TOTAL EARNED LESS RETAINAGE \$
 (Line 4 less Line 5 Total)
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate) \$
8. CURRENT PAYMENT DUE \$
9. BALANCE TO FINISH, PLUS RETAINAGE \$
 (Line 3 less Line 6)

State of: _____ County of: _____ day of _____, 19____
 Subscribed and sworn to before me this _____ day of _____, 19____
 Notary Public: _____
 My Commission expires: _____

AMOUNT CERTIFIED \$ _____
 (Attach explanation if amount certified differs from the amount applied for.)
 ARCHITECT: _____

By: _____ Date: _____
 This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

TO (OWNER): PROJECT: APPLICATION NO: Distribution to:
 OWNER
 ARCHITECT
 CONTRACTOR

FROM (CONTRACTOR): VIA (ARCHITECT): PERIOD TO:
 ARCHITECT'S PROJECT NO: ARCHITECT'S PROJECT NO:
 CONTRACT DATE:

CONTRACT FOR: CONTRACT DATE:

CONTRACTOR'S APPLICATION FOR PAYMENT

| CHANGE ORDER SUMMARY | | ADDITIONS | DEDUCTIONS |
|--|---------------|-----------|------------|
| Change Orders approved in previous months by Owner | | | |
| TOTAL | | | |
| Approved this Month | | | |
| Number | Date Approved | | |
| | | | |
| TOTALS | | | |
| Net change by Change Orders | | | |

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR: _____ Date: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

CONTINUATION SHEET

AIA DOCUMENT G703

AIA Document G702, APPLICATION AND CERTIFICATE FOR PAYMENT, containing Contractor's signed Certification is attached.

In tabulations below, amounts are stated to the nearest dollar.

Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NUMBER:

APPLICATION DATE:

PERIOD FROM:

TO:

ARCHITECT'S PROJECT NO:

| A ITEM No. | B DESCRIPTION OF WORK | C SCHEDULED VALUE | D Previous Applications | E WORK COMPLETED | | F Stored Materials (not in D or E) | G TOTAL COMPLETED AND STORED TO DATE (D+E+F) | H BALANCE TO FINISH (C-G) | I RETAINAGE |
|------------------|--------------------------|-------------------------|-------------------------------|---------------------|------------------|--|--|------------------------------------|----------------|
| | | | | Work in Place | This Application | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

CHANGE ORDER

AIA DOCUMENT G701

- OWNER
- ARCHITECT
- CONTRACTOR
- FIELD
- OTHER

PROJECT:
(name, address)

CHANGE ORDER NUMBER:

DATE:

TO CONTRACTOR:
(name, address)

ARCHITECT'S PROJECT NO:

CONTRACT DATE:

CONTRACT FOR:

The Contract is changed as follows:

Not valid until signed by the Owner, Architect and Contractor.

The original (Contract Sum) (Guaranteed Maximum Price) was \$

Net change by previously authorized Change Orders \$

The (Contract Sum) (Guaranteed Maximum Price) prior to this Change Order was \$

The (Contract Sum) (Guaranteed Maximum Price) will be (increased) (decreased)
(unchanged) by this Change Order in the amount of \$

The new (Contract Sum) (Guaranteed Maximum Price) including this Change Order will be ... \$

The Contract Time will be (increased) (decreased) (unchanged) by () days.

The date of Substantial Completion as of the date of this Change Order therefore is

NOTE: This summary does not reflect changes in the Contract Sum, Contract Time or Guaranteed Maximum Price which have been authorized by Construction Change Directive.

| | | |
|-----------|------------|-------|
| ARCHITECT | CONTRACTOR | OWNER |
|-----------|------------|-------|

| | | |
|---------|---------|---------|
| Address | Address | Address |
|---------|---------|---------|

| | | |
|----------|----------|----------|
| BY _____ | BY _____ | BY _____ |
|----------|----------|----------|

| | | |
|------------|------------|------------|
| DATE _____ | DATE _____ | DATE _____ |
|------------|------------|------------|

CERTIFICATE OF SUBSTANTIAL COMPLETION

AIA DOCUMENT G704

Distribution to:
OWNER
ARCHITECT
CONTRACTOR
FIELD
OTHER

PROJECT:
name, address)

ARCHITECT:

ARCHITECT'S PROJECT NUMBER:

TO (Owner):

┌

CONTRACTOR:

└

CONTRACT FOR:

└

DATE OF ISSUANCE:

┌

CONTRACT DATE:

PROJECT OR DESIGNATED PORTION SHALL INCLUDE:

The Work performed under this Contract has been reviewed and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby established as

which is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

DEFINITION OF DATE OF SUBSTANTIAL COMPLETION

The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Architect when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy or utilize the Work or designated portion thereof for the use for which it is intended, as expressed in the Contract Documents.

A list of items to be completed or corrected, prepared by the Contractor and verified and amended by the Architect, is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. The date of commencement of warranties for items on the attached list will be the date of final payment unless otherwise agreed to in writing.

ARCHITECT

BY

DATE

The Contractor will complete or correct the Work on the list of items attached hereto within _____ days from the above Date of Substantial Completion.

CONTRACTOR

BY

DATE

The Owner accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof at _____ (time) on _____ (date).

OWNER

BY

DATE

The responsibilities of the Owner and the Contractor for security, maintenance, heat, utilities, damage to the Work and insurance shall be as follows:

(Note—Owner's and Contractor's legal and insurance counsel should determine and review insurance requirements and coverage; Contractor shall secure consent of surety company, if any.)

SUPPLEMENTAL GENERAL CONDITIONS

1. INSURANCE

Applicable portions of ARTICLE NO. 11 of the AIA General Conditions shall be amended as follows:

- A. Contractor shall take out and maintain, during the life of the Contract, such Public Liability and Property Damage Insurance as shall protect the Owner, the Architect, the Contractor, and any subcontractors performing work covered by this Contract from claims for damage or personal injury, including wrongful death, as well as from claims for property damages, which may arise from operation under this Contract, whether such operations be by himself or by any subcontractors or anyone directly or indirectly employed on the Project.
- B. Amounts of such insurance shall, unless otherwise specified as a special term of the Contract, be as noted in Owner's Instructions for Bonds and Insurance.
- C. Workmen's Compensations- Contractor shall accept, insofar as the work covered by this Contract is concerned, the provisions of the Workmen's Compensation Act and shall insure his liability thereunder; and he shall save the Owner and Architect harmless from all claims for Workmen's Compensation which may be made by any of the employees of the Contractor or by any one of the employees of any subcontractor to whom the Contractor may have let the performance of any part of the work embraced by this Contract.
- D. Proof of Insurance- Contractor shall, when he executes the Contract, deliver to the Owner proper evidence of carriage of the required insurance, which shall consist of an original policy and six memorandum copies of insurance provided. Certificates will be acceptable proof of public liability, property damage, and Workmen's Compensation Insurance, Renewal Policy and six renewal endorsements shall be delivered by the Contractor to the Owner at least ten days before any expirations of original or subsequent policies during progress of the work and until final completion. All policies shall be issued by insurance companies authorized to conduct such business under the law of the Commonwealth of Pennsylvania and shall be acceptable to the Owner and his Solicitor.
- E. Contractor shall not commence work until all required insurance has been obtained, nor until insurance has been approved by Owner as to companies, amount, coverage and form; and the Contractor shall not permit any subcontractor to commence work on any subcontract until such insurance has been so obtained. Insurance shall be submitted at same time as signed contracts and in same number of copies.

2. "OR EQUAL" CLAUSE

- A. Whenever a material, article, or piece of equipment is identified on the plans or in the specifications by reference to manufacturer's or vendor's names, trade names, catalogue numbers, etc., it is intended merely to establish a minimum standard of quality; and any material, article, or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed is, in the opinion of the Architect, or equal substance, appearance, or function. It shall not be purchased or installed by the Contractor without the Architect's written approval.

If Contractors' bids are to be based upon the use of a material and/or manufacturer other than the one specified, prior approval must be requested from the Architect. Failure to request and obtain approvals during the bidding period will result in the Architect requiring materials to be supplied as specified. "Prior Approvals" will be issued by Bulletin during the bidding period.

3. REVIEW OF SHOP DRAWINGS AND CATALOGUE DATA

- A. Shop drawings and/or catalogue data shall be approved by the Contractor and submitted when so directed by the Architect for his review.
- B. Contractor shall submit to the Architect with a letter of transmittal not less than six (6) sets of shop drawings or catalogue information. Letter of transmittal shall list the number of the drawings or catalogue information sheets contained in the submission.
- C. Shop drawings and catalogue information sheets shall be checked by the Contractor for conforming with the requirements of the contract prints and specifications and he shall verify dimensions and shall stamp thereon his approval prior to submission of such shop drawings or catalogue information to the Architect. All drawings or catalogue information shall be identified with the Project number, Project name, and the name of the Contractor. Failure of the Contractor to note his approval on the shop drawings or catalogue information will be reason for the Architect to return such submission to the Contractor. If the shop drawings or catalogue information sheets show variations from the Contract requirements because of standard shop practice or other reason, the Contractor shall make specific mention of such variations in his letter of transmittal and not such variations on submittal in order that if accepted, suitable action may be taken for proper adjustment in the Contract; otherwise, the Contractor will not be relieved of the responsibility for executing the work in complete conformity with the Contractor even through the shop drawings or catalogue information have been reviewed by the Architect.
- D. Architect, upon receipt of shop drawings or catalogue information, will promptly check for general conformance with the design concept of the project and general conformance with the information given in the contract documents.
- E. Shop drawings or catalogue information, if not reviewed by Architect, will be returned to the Contractor with letter of instruction setting forth the basis for resubmission.
- F. Shop drawings or catalogue data, when reviewed by the Architect, will be returned to the Contractor with instructions setting forth the basis of rejection if not acceptable.
- G. Review of shop drawings or catalogue information will be general and shall not relieve the Contractor from the responsibility of proper fitting and construction of the work nor from furnishing materials and labor required for the fulfillment of the Contract. The review of shop drawings shall not be construed as approving departure from full size or large-scale prints as prepared by the Architect and furnished to the Contractor.
- H. It will be the responsibility of the Contractor to prepare and furnish to other contractors engaged on the project copies of approved shop drawings or catalogue information when requested by such other contractors for the proper installation of their work. Failure of the Contractor to furnish within ten (10) days of request will render him liable for any expense incurred in carrying out the provision of such other related contracts.

4. JOB CONFERENCES

- A. Job Conferences will be held bimonthly while construction is in progress and the Architect will advise all concerned of the schedule of these conferences.

- B. Unless directed otherwise by the Architect, the Contractor shall attend either personally or be represented at such meetings. Should the Contractor elect to be represented at such meetings, it shall be understood and agreed that the Owner and the Architect in dealing with the Contractor's representative do so with full assurance that such representative's actions and commitments may be accepted as though the Contractor, who signed and is bound by the contract, were himself present and personally made such agreements and commitments.
- C. It shall be the Contractor's responsibility to adequately prepare for each meeting so that all questions and/or problems can be discussed and resolved sufficiently in order for the Contractor to proceed until the next regularly scheduled job conference. The Architect will not be responsible for the Contractor's failure to do so and will not be available including by telephone except for regularly scheduled job conferences. The Contractor shall not claim delay as a result of his own failure to conduct the work properly
- D. Architect will prepare and distribute to all concerned a written report of the Job Conference prior to next regularly scheduled conference. This report will contain, but is not limited to, a complete listing of any and all clarifications of the Contract documents, agreements, or commitments made and any Contractor taking exception to the statements in these minutes, or any omissions, shall notify the Architect, in writing, within ten (10) days after receipt of the minutes, with a copy of the letter of exception to the Owner, listing in detail the exceptions; otherwise, the minutes will stand as written.

5. CODE COMPLIANCE

- A. Contractor shall familiarize himself and follow the International Building Code and ADA/ANSI, current editions.
- B. Contractor shall comply with all current codes and regulations as required.

6. PERMIT FEES

- A. Owner shall pay for the Building Permit.
- B. Contractor shall obtain approval from Centre Region Code as required for completion.

7. PREVAILING WAGE RATES

- A. Contractors shall submit all required certificates and affidavits regarding Prevailing Wage Rates.
- B. Contractors shall submit with each request for payment, the required payroll certifications forms, and affidavit. Failure to do so, will cause the Owner to withhold payment.

8. FAMILIARITY WITH PROPOSED WORK

- A. Contract is to be entered into by the Owner upon the understanding that the Contractor, prior to submission of his Bid, has acquainted himself with the requirements of the Plans and Specifications, all applicable governmental requirements, codes, and/or fees, all other requirements of contract, and that he obtained all information necessary for completion of the work within the time specified. The Contractor shall not, at any time, set up any claims whatever based on insufficient data or incorrectly assumed conditions, nor shall he claim any misunderstanding in regard to the nature, conditions, or character of the work to be done under the contract; and the Contractor shall assume all risks resulting from any changes in conditions which may occur during the progress of the work. Proposal amounts shall include all applicable governmental and/or utility company fees and costs. **THE BIDDER SHALL NOT SCALE ANY DRAWINGS.**

9. CLEAN UP

- A. Contractor shall be responsible for, at his expense, daily clean up at the end of each day when construction occurs.
- B. At the end of all construction the Contractor shall be responsible for complete restoration of all affected surfaces, removal of all deleterious and unused material, and providing housecleaning of the entire space within which construction has occurred.

10. ACCESS TO WORK SITE

- A. Contractor shall coordinate all construction times with Doug Erickson, Township Manager, and access requirements.

DIVISION 01
GENERAL REQUIREMENTS

DIVISION 01

GENERAL REQUIREMENTS

SECTION 1A – DEMOLITION AND WASTE DISPOSAL

1. All removed material shall be recycled or deposited at the Centre County Solid Waste Authority approved construction landfill at the expense of the Contractor including all transportation, dumping fees, and miscellaneous expenses.
2. All disposal tickets shall be submitted to Centre Region Code with copies to the Owner and Architect.

DIVISION 16
ELECTRICAL

SECTION 16000
GENERAL ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 GENERAL

A. General Intent

1. It is the general intent of these specifications that the Contractor furnish and install a complete and workable Electrical System in compliance with all applicable codes and regulations and to the satisfaction of the Engineer and Owner.
2. The Contractor shall furnish, to the jobsite, and install all equipment and materials specified in the technical sections of this specification. The installation shall include all accessories required to assure a complete and workable installation.
3. The work shall include the furnishing of all labor, materials, tools, equipment, transportation, permits, inspection fees, services and all necessary related items required for a complete and operational system.
4. Before submittal of bid, thoroughly examine the site. No claim for extra compensation will be recognized if difficulties are encountered which an examination of site conditions, prior to executing contract would have revealed.

1.2 CODES AND REGULATIONS

- A. The entire installation shall conform with all pertinent ordinances, codes and regulations of the National Fire Protection Association, the National Electrical Code and other regulatory bodies having jurisdiction over this class of work.

1.3 GUARANTEE

- A. The entire installation shall be guaranteed for a period of one (1) year from date of acceptance, by the Owner, unless otherwise specified, against defects in material and workmanship, in accordance with the terms of the Contract. Guarantee shall cover the replacement, without cost to the Owner of any and all items that shall become defective within the stated time.

1.4 REMOVAL OF RUBBISH

- A. Periodically and at the completion of the work contemplated under these specifications, the Contractor shall remove from the building and site all rubbish and accumulated materials of whatever nature not caused by other trades, and shall leave the work in a clean, orderly and acceptable condition.

1.5 MATERIALS AND EQUIPMENT

- A. All equipment or apparatus of any one system must be the product of one manufacturer, or equivalent products of a number of manufacturers which are suitable for use in a unified or assembled system. All materials and equipment to be furnished under this contract shall be new.

1.6 FINISH AND ACCESSORIES

- A. The Contractor shall carefully investigate the structural work and all finish conditions affecting his work. He shall arrange his work in accordance with such conditions, furnishing all accessories to meet such conditions.

1.7 CUTTING, PATCHING, AND PAINTING

- A. Provide all cutting and patching for lintels, recesses, chases, and major openings in roofs, walls, floors, ceilings, and partitions to receive conduits, bus ducts, and equipment.
- B. Provide all cutting and patching for minor openings, and repair all damaged areas. Paint shall match existing surroundings.
- C. All cutting and patching shall be done in a neat and workmanlike manner by workmen skilled in the applicable trade involved, and shall be subject to the approval of the Engineer/Architect.
- D. The Contractor shall furnish and place all sleeves required for conduits, bus ducts, etc., passing through roofs, floors, walls, and ceilings all anchors and inserts required for conduits and equipment furnished under this Contract.

END OF SECTION

SECTION 16060
GROUNDING AND BONDING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Wire.
 - 2. Grounding well components.
 - 3. Mechanical connectors.

1.2 REFERENCES

- A. Institute of Electrical and Electronics Engineers:
 - 1. IEEE 142 - Recommended Practice for Grounding of Industrial and Commercial Power Systems.
 - 2. IEEE 1100 - Recommended Practice for Powering and Grounding Electronic Equipment.
- B. International Electrical Testing Association:
 - 1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- C. National Fire Protection Association:
 - 1. NFPA 70 - National Electrical Code.

1.3 SYSTEM DESCRIPTION

- A. Grounding systems use the following elements as grounding electrodes:
 - 1. Metal underground water pipe.
 - 2. Metal building frame.
 - 3. Metal underground gas piping system.
 - 4. Rod electrode.

1.4 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of components and grounding electrodes.

1.5 QUALITY ASSURANCE

- A. Provide grounding materials conforming to requirements of NEC, IEEE 142, and UL labeled.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Accept materials on site in original factory packaging, labeled with manufacturer's identification.
- B. Protect from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original packaging.
- C. Do not deliver items to project before time of installation. Limit shipment of bulk and multiple-use materials to quantities needed for immediate installation.

1.7 COORDINATION

- A. Complete grounding and bonding of building reinforcing steel prior to concrete placement.

PART 2 - PRODUCTS

2.1 WIRE

- A. Material: Stranded copper.
- B. Foundation Electrodes: 4 AWG.
- C. Grounding Electrode Conductor: Copper conductor bare.
- D. Bonding Conductor: Copper conductor insulated.

2.2 MECHANICAL CONNECTORS

- A. Manufacturers:
 - 1. Apache Grounding/Erico Inc.
 - 2. Copperweld, Inc.
 - 3. Erico, Inc.
 - 4. ILSCO Corporation.
 - 5. O-Z Gedney Co.
 - 6. Thomas & Betts, Electrical.
 - 7. Equal as approved.
- B. Description: Bronze connectors, suitable for grounding and bonding applications, in configurations required for particular installation.

2.3 EXOTHERMIC CONNECTIONS

- A. Manufacturers:
 - 1. Apache Grounding/Erico Inc.
 - 2. Cadweld, Erico, Inc.
 - 3. Copperweld, Inc.
 - 4. ILSCO Corporation.
 - 5. O-Z Gedney Co.
 - 6. Thomas & Betts, Electrical.
 - 7. Equal as approved.
- B. Product Description: Exothermic materials, accessories, and tools for preparing and making permanent field connections between grounding system components.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify final backfill and compaction has been completed before driving rod electrodes.

3.2 PREPARATION

- A. Remove paint, rust, mill oils, and surface contaminants at connection points.

3.3 EXISTING WORK

- A. Modify existing grounding system to maintain continuity to accommodate renovations.
- B. Extend existing grounding system using materials and methods compatible with existing electrical installations, or as specified.

3.4 INSTALLATION

- A. Install grounding and bonding conductors concealed from view.
- B. Accomplish grounding of electrical system by using insulated grounding conductor installed with feeders and branch circuit conductors in conduits. Size grounding conductors in accordance with NEC. Install from grounding bus of serving panel to ground bus of served panel, grounding screw of receptacles, lighting fixture housing, light switch outlet boxes or metal enclosures of service equipment. Ground conduits by means of grounding bushings on terminations at panelboards with installed number 12 conductor to grounding bus.
- C. Permanently attach equipment and grounding conductors prior to energizing equipment.

3.5 FIELD QUALITY CONTROL

- A. Perform continuity testing in accordance with IEEE 142.

END OF SECTION

SECTION 16095
MINOR ELECTRICAL DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Removal of existing electrical equipment, wiring, and conduit in areas to be remodeled; removal of designated construction; dismantling, cutting and alterations for completion of the Work.
2. Disposal of materials.
3. Storage of removed materials.
4. Identification of utilities.
5. Salvaged items.
6. Protection of items to remain as indicated on Drawings.
7. Relocate existing equipment to accommodate construction.

1.2 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of capped conduits and equipment abandoned in place and relocated.

1.3 SCHEDULING

- A. Schedule work to coincide with new construction and owner's operations.

1.4 COORDINATION

- A. Conduct demolition to minimize interference with adjacent and occupied building areas.
- B. Coordinate demolition work with GC.
- C. Coordinate and sequence demolition so as not to cause shutdown of operation of surrounding areas.
- D. Shut-down Periods:
1. Arrange timing of shut-down periods of in service panels with Owner. Do not shut down any utility without prior written approval.
 2. Keep shut-down period to minimum or use intermittent period as directed by Owner.
 3. Maintain life-safety systems in full operation in occupied facilities, or provide notice minimum 3 days in advance.
- E. Identify salvage items in cooperation with Owner.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify wiring and equipment indicated to be demolished serve only abandoned facilities.
- B. Verify termination points for demolished services.

3.2 PREPARATION

- A. Erect, and maintain temporary safeguards, including warning signs and lights, barricades, and similar measures, for protection of the public, Owner, Contractor's employees, and existing improvements to remain.
- B. Temporary egress signage and emergency lighting

3.3 DEMOLITION

- A. Demolition Drawings are based on casual field observation. Report discrepancies to Architect/Engineer before disturbing existing installation.
- B. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.
- C. Remove conduit, wire, boxes, and fastening devices to avoid any interference with new installation.
- D. Disconnect electrical systems in walls, floors, and ceilings scheduled for removal.
- E. Reconnect equipment being disturbed by renovation work and required for continue service to nearest available panel.
- F. Disconnect or shut off service to areas where electrical work is to be removed. Remove electrical fixtures, equipment, and related switches, outlets, conduit and wiring which are not part of final project.
- G. Install temporary wiring and connections to maintain existing systems in service during construction.
- H. Perform work on energized equipment or circuits with experienced and trained personnel.
- I. Remove, relocate, and extend existing installations to accommodate new construction.
- J. Repair adjacent construction and finishes damaged during demolition and extension work.
- K. Remove exposed abandoned grounding and bonding components, fasteners and supports, and electrical identification components, including abandoned components above accessible ceiling finishes. Cut embedded support elements flush with walls and floors.
- L. Clean and repair existing equipment to remain or to be reinstalled.
- M. Protect and retain power to existing active equipment remaining.

- N. Cap abandoned empty conduit at both ends.

3.4 EXISTING PANELBOARDS

- A. Ring out circuits in existing panel affected by the Work. Where additional circuits are needed, reuse circuits available for reuse. Install new breakers.
- B. Tag unused circuits as spare.
- C. Where existing circuits are indicated to be reused, use sensing measuring devices to verify circuits feeding Project area or are not in use.
- D. Remove existing wire no longer in use from panel to equipment.
- E. Provide new updated directories where more than three circuits have been modified or rewired.

3.5 SALVAGE ITEMS

- A. Remove and protect items indicated on Drawings to be salvaged and turn over to Owner.
- B. Items of salvageable value may be removed as work progresses. Transport salvaged items from site as they are removed.

3.6 REUSABLE ELECTRICAL EQUIPMENT

- A. Carefully remove equipment, materials, or fixtures which are to be reused.
- B. Disconnect, remove, or relocate existing electrical material and equipment interfering with new installation.
- C. Relocate existing lighting fixtures as indicated on Drawings. Clean fixtures and re-lamp. Test fixture to see if it is in good working condition before installation at new location.

3.7 CLEANING

- A. Remove demolished materials as work progresses. Legally dispose.
- B. Keep workplace neat.

END OF SECTION

SECTION 16123
BUILDING WIRE AND CABLE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes building wire and cable; and wiring connectors and connections.

1.2 REFERENCES

- A. International Electrical Testing Association:
1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.

1.3 SYSTEM DESCRIPTION

- A. Product Requirements: Provide products as follows:
1. Solid conductor for feeders and branch circuits 10 AWG and smaller.
 2. Stranded conductors for control circuits.
 3. Conductor not smaller than 12 AWG for power and lighting circuits.
 4. Conductor not smaller than 16 AWG for control circuits.
 5. 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.
 6. 10 AWG conductors for 20 ampere, 277 volt branch circuits longer than 200 feet.
- B. Wiring Methods: Provide the following wiring methods:
1. Concealed Dry Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
 2. Exposed Dry Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
 3. Above Accessible Ceilings: Use only building wire, Type THHN/THWN insulation, in raceway.
 4. Wet or Damp Interior Locations: Use only building wire, Type THHN/THWN insulation, in raceway.
 5. Exterior Locations: Use only building wire Type THHN/THWN insulation, in raceway.

1.4 DESIGN REQUIREMENTS

- A. Conductor sizes are based on copper unless indicated as aluminum or "AL".
- B. When aluminum conductor is substituted for copper conductor, size to match circuit requirements for conductor ampacity and voltage drop.

1.5 SUBMITTALS

- A. Product Data: Submit for building wire and each cable assembly type.
- B. Test Reports: Indicate procedures and values obtained.

1.6 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of components and circuits.

1.7 FIELD MEASUREMENTS

- A. Verify field measurements are as indicated on Drawings.

1.8 COORDINATION

- A. Where wire and cable destination is indicated and routing is not shown, determine routing and lengths required.
- B. Wire and cable routing indicated is approximate unless dimensioned. Include wire and cable lengths within 20 ft of length shown.

PART 2 - PRODUCTS

2.1 BUILDING WIRE

- A. Manufacturers:
 - 1. Diamond Wire & Cable Co.
 - 2. Essex Group Inc.
 - 3. General Cable Co.
 - 4. Equal as approved.
- B. Product Description: Single conductor insulated wire.
- C. Conductor: Copper.
- D. Insulation Voltage Rating: 600 volts.

2.2 METAL CLAD CABLE

- A. Manufacturers:
 - 1. Diamond Wire & Cable Co.
 - 2. Essex Group Inc.
 - 3. General Cable Co.
 - 4. Equal as approved.
- B. Conductor: Copper.
- C. Insulation Voltage Rating: 600 volts.
- D. Insulation Temperature Rating: 90 degrees C.
- E. Insulation Material: Thermoplastic.
- F. Armor Material: Steel.

G. Armor Design: Corrugated tube.

H. Jacket: None.

2.3 WIRING CONNECTORS

A. Split Bolt Connectors: for wire sizes #2 AWG and larger

B. Compression Connectors: for wire sizes #1 and smaller.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify interior of building has been protected from weather.

B. Verify mechanical work likely to damage wire and cable has been completed.

C. Verify raceway installation is complete and supported.

3.2 PREPARATION

A. Completely and thoroughly swab raceway before installing wire.

3.3 EXISTING WORK

A. Remove exposed abandoned wire and cable[, including abandoned wire and cable above accessible ceiling finishes]. Patch surfaces where removed cables pass through building finishes.

B. Disconnect abandoned circuits and remove circuit wire and cable. Remove abandoned boxes when wire and cable servicing boxes is abandoned and removed. Install blank cover for abandoned boxes not removed.

C. Provide access to existing wiring connections remaining active and requiring access. Modify installation or install access panel.

D. Extend existing circuits using materials and methods compatible with existing electrical installations, or as specified.

E. Clean and repair existing wire and cable remaining or is wire and cable to be reinstalled.

3.4 INSTALLATION

- A. Route wire and cable to meet Project conditions.
- B. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- C. Identify and color code wire and cable under provisions of Section 16075. Identify each conductor with its circuit number or other designation indicated.
- D. Special Techniques--Building Wire in Raceway:
 - 1. Pull conductors into raceway at same time.
 - 2. Install building wire 4 AWG and larger with pulling equipment.
- E. Special Techniques - Cable:
 - 1. Protect exposed cable from damage.
 - 2. Support cables above accessible ceiling, using spring metal clips to support cables from structure. Do not rest cable on ceiling panels.
 - 3. Use suitable cable fittings and connectors.
- F. Special Techniques - Wiring Connections:
 - 1. Clean conductor surfaces before installing lugs and connectors.
 - 2. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
 - 3. Tape uninsulated conductors and connectors with electrical tape to 150 percent of insulation rating of conductor.
 - 4. Install split bolt connectors for copper conductor splices and taps, 6 AWG and larger.
 - 5. Install solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.
 - 6. Install insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.
 - 7. Terminate aluminum conductors with tin-plated, aluminum-bodied compression connectors only. Fill with anti-oxidant compound before installing conductor.
 - 8. Install suitable reducing connectors or mechanical connector adaptors for connecting aluminum conductors to copper conductors.
 - 9. Install solid conductor for feeders and branch circuits 10 AWG and smaller.
 - 10. Install stranded conductors for branch circuits 10 AWG and smaller. However, when stranded conductors are used in lieu of solid, then install crimp on fork terminals for device terminations. Do not place bare stranded conductors directly under screws.

3.5 WIRE COLOR

- A. General
 - 1. For wire sizes 10 AWG and smaller, install wire colors in accordance with the following:
 - a. Black and red for single phase circuits at 120/240 volts.
 - b. Black, red, and blue for circuits at 120/208 volts single or three phase.
 - c. Orange, brown, and yellow for circuits at 277/480 volts single or three phase.
 - 2. For wire sizes 8 AWG and larger, identify wire with colored tape at terminals, splices and boxes. Colors are as follows:
 - a. Black and red for single phase circuits at 120/240 volts.

- b. Black, red, and blue for circuits at 120/208 volts single or three phase.
 - c. Orange, brown, and yellow for circuits at 277/480 volts single or three phase.
- B. Neutral Conductors: White. When two or more neutrals are located in one conduit, individually identify each with proper circuit number.
- C. Branch Circuit Conductors: Install three or four wire home runs with each phase uniquely color coded.
- D. Feeder Circuit Conductors: Uniquely color code each phase.
- E. Ground Conductors:
- 1. For 6 AWG and smaller: Green.
 - 2. For 4 AWG and larger: Identify with green tape at both ends and visible points including junction boxes.

3.6 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS, except Section 4.
- B. Perform inspections and tests listed in NETA ATS, Section 7.3.1.

END OF SECTION

SECTION 16150
WIRING CONNECTIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes electrical connections to equipment.
- B. Related Sections:
 - 1. Section 16123 - Building Wire and Cable.
 - 2. Section 16130 - Raceway and Boxes.

1.2 REFERENCES

- A. National Electrical Manufacturers Association:
 - 1. NEMA WD 1 - General Requirements for Wiring Devices.
 - 2. NEMA WD 6 - Wiring Devices-Dimensional Requirements.

1.3 SUBMITTALS

- A. Product Data: Submit wiring device manufacturer's catalog information showing dimensions, configurations, and construction.
- B. Manufacturer's installation instructions.

1.4 COORDINATION

- A. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.
- B. Determine connection locations and requirements.
- C. Sequence rough-in of electrical connections to coordinate with installation of equipment.
- D. Sequence electrical connections to coordinate with start-up of equipment.

PART 2 - PRODUCTS

2.1 CORD AND PLUGS

- A. Attachment Plug Construction: Conform to NEMA WD 1.
- B. Configuration: NEMA WD 6; match receptacle configuration at outlet furnished for equipment.
- C. Cord Construction: Type SJO multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.

- D. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify equipment is ready for electrical connection, for wiring, and to be energized.

3.2 EXISTING WORK

- A. Remove exposed abandoned equipment wiring connections, including abandoned connections above accessible ceiling finishes.
- B. Disconnect abandoned utilization equipment and remove wiring connections. Remove abandoned components when connected raceway is abandoned and removed. Install blank cover for abandoned boxes and enclosures not removed.
- C. Extend existing equipment connections using materials and methods compatible with existing electrical installations.

3.3 INSTALLATION

- A. Make electrical connections.
- B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.
- C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Install receptacle outlet to accommodate connection with attachment plug.
- E. Install cord and cap for field-supplied attachment plug.
- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

3.4 ADJUSTING

- A. Cooperate with utilization equipment installers and field service personnel during checkout and starting of equipment to allow testing and balancing and other startup operations. Provide personnel to operate electrical system and checkout wiring connection components and configurations.

END OF SECTION

SECTION 16510
INTERIOR LUMINAIRES**PART 1 - GENERAL**

1.1 SUMMARY

- A. Section includes interior luminaires, lamps, ballasts, and accessories.

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI C82.1 - American National Standard for Lamp Ballast-Line Frequency Fluorescent Lamp Ballast.
 - 2. ANSI C82.4 - American National Standard for Ballasts-for High-Intensity-Discharge and Low-Pressure Sodium Lamps (Multiple-Supply Type).

1.3 SUBMITTALS

- A. Shop Drawings: Indicate dimensions and components for each luminaire not standard product of manufacturer.
- B. Product Data: Submit dimensions, ratings, and performance data.

1.4 DEFINITIONS

- A. LED: Light Emitting Diode
- B. Luminaire: Complete lighting fixture including driver or ballast if required.

1.5 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.6 MAINTENANCE MATERIALS

- A. Furnish two of each plastic lens type.
- B. Furnish two replacement lamps for each lamp type installed.
- C. Furnish two of each ballast type.

PART 2 - PRODUCTS

2.1 INTERIOR LUMINAIRES

- A. Product Description: Complete interior luminaire assemblies, with features, options, and accessories as scheduled.

2.2 LED LIGHTING FIXTURES AND COMPONENTS

- A. Product Testing: Comply with U.L> 1598 and 8750. Test according to IES LM-79 and LM-80.
- B. Drivers: Operation to be at standard rated voltage of driver and not "over-driven".

2.3 FLUORESCENT BALLASTS

- A. Manufacturers:
 - 1. Cooper Industries Inc.
 - 2. Duro-Test Corp.
 - 3. General Electric Co.
 - 4. Hubbell Lighting.
 - 5. Magnetek Inc.
 - 6. Pass & Seymour.
 - 7. Philips Electronic North America.
 - 8. Thomas Industries, Inc.
 - 9. Equal as approved.
- B. Product Description: Electronic ballast, less than 10 percent THD, suitable for lamps specified, with voltage to match luminaire voltage.

2.4 HIGH INTENSITY DISCHARGE (HID) BALLASTS

- A. Manufacturers:
 - 1. Duro-Test Corp.
 - 2. General Electric Co.
 - 3. Philips Electronics North America.
 - 4. Radiant Lamp Co.
 - 5. Siemens Corp.
 - 6. Venture Lighting International Inc.
 - 7. Equal as approved.
- B. Product Description: ANSI C82.4, metal halide, ballast, suitable for lamp specified, with voltage to match luminaire voltage.

2.5 LED LAMPS

- A. Manufacturers:
 - 1. Philips Electronics North America.
 - 2. Osram.
 - 3. General Electric.
 - 4. Equal as approved.

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2.6 FLUORESCENT LAMPS

- A. Manufacturers:
 - 1. Cooper Industries Inc.
 - 2. Duro-Test Corp.
 - 3. General Electric Co.
 - 4. Hubbell Lighting.
 - 5. Magnetek Inc.
 - 6. Philips Electronic North America.

7. Thomas Industries, Inc.
8. Equal as approved.

2.7 HID LAMPS

- A. Manufacturers:
 1. Duro-Test Corp.
 2. General Electric Co.
 3. Hubbell Lighting.
 4. Magnetek Inc.
 5. Philips Electronic North America.
 6. Thomas Industries, Inc.
 7. Equal as approved.

PART 3 - EXECUTION

3.1 EXISTING WORK

- A. Disconnect and remove abandoned luminaires, lamps, and accessories.
- B. Extend existing interior luminaire installations using materials and methods compatible with existing installations, or as specified.
- C. Clean and repair existing interior luminaires to remain or to be reinstalled.

3.2 INSTALLATION

- A. Install suspended luminaires using pendants supported from swivel hangers. Install pendant length required to suspend luminaire at indicated height.
- B. Support luminaires larger than 2 x 4 foot size independent of ceiling framing.
- C. Locate recessed ceiling luminaires as indicated on Drawings.
- D. Install surface mounted luminaires plumb and adjust to align with building lines and with each other. Secure to prevent movement.
- E. Exposed Grid Ceilings: Support surface-mounted luminaires on grid ceiling directly from building structure.
- F. Install recessed luminaires to permit removal from below.
- G. Install recessed luminaires using accessories and firestopping materials to meet regulatory requirements for fire rating.
- H. Install clips to secure recessed grid-supported luminaires in place.
- I. Install wall-mounted luminaires at height [as indicated on Drawings] [as scheduled].
- J. Install accessories furnished with each luminaire.
- K. Connect luminaires to branch circuit outlets provided under Section 16130 using flexible conduit as indicated on Drawings.

- L. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions within luminaire.
- M. Install specified lamps in each luminaire.
- N. Interface with air handling accessories furnished and installed under Section 15850
- O. Ground and bond interior luminaires in accordance with Section 16060.

3.3 FIELD QUALITY CONTROL

- A. Operate each luminaire after installation and connection. Inspect for proper connection and operation.

3.4 ADJUSTING

- A. Aim and adjust luminaires as indicated on Drawings.

3.5 CLEANING

- A. Remove dirt and debris from enclosures.
- B. Clean photometric control surfaces as recommended by manufacturer.
- C. Clean finishes and touch up damage.

3.6 PROTECTION OF FINISHED WORK

- A. Re-lamp luminaires [having failed lamps] at Substantial Completion.

END OF SECTION