

SPECIFICATIONS

FOR

Bid No. 16-16

***HVAC Rooftop Air Handling Unit Replacement (SZ-4)
at the
Maple Point Middle School***

*Neshaminy School District
2001 Langhorne-Newtown Road
Langhorne, PA 19047*

January 30, 2015

Prepared by

CONSOLIDATED ENGINEERS
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CE Project No. 15-2357-1

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SCHEDULE OF DRAWINGS

DRAWING NUMBER

DRAWING NAME

ME-1

Roof Plan, Schedules & Details

SECTION 00030 - ADVERTISEMENT FOR BIDS

The Board of Directors of the Neshaminy School District is soliciting bids for:

HVAC Rooftop Air Handling Unit Replacement at Maple Point Middle School, Bid No. 16-16.

Sealed proposals will be received by Mr. Tom Sizgorich, Director of Purchasing, until 10:00 a.m., prevailing time Tuesday, March 9th, 2015. At that time & place sealed proposals will be publicly opened and read in the Purchasing Department of the Neshaminy School District at 2001 Old Lincoln Highway, Langhorne, Pennsylvania. The District will not be responsible for late delivery of mail and no bid will be accepted after 10:00 a.m.

A mandatory pre-bid meeting will be held on Wednesday, February 18th, 2015, 10:00 am, at the Maple Point Middle School.

Each bid shall be accompanied by a certified check, a cashier's check or the bid of an approved Surety Company, in an amount of not less than 10% of the amount of the proposal. Check or bond shall be drawn in favor of the Neshaminy School District.

Bid documents are at the Neshaminy School District Site at www.neshaminy.org. Click on the bid tab and look for bid#16-16.

Site visits or Technical questions pertaining to the bid specifications should be directed to Paul Minotti or Jerry Rutledge at (215) 809-6250. Questions regarding Division 1 on the specifications should be directed via email to tsizgorich@neshaminy.k12.pa.us.

The School District reserves the right to waive any informality in bids, or to reject any or all proposals, and to make the award in the best interest of the School District.

Mr. Tom Sizgorich
Director of Purchasing

END OF SECTION 00030

PREVAILING WAGES PROJECT RATES

Project Name: HVAC Rooftop Unit Replacement (SZ-4) at Maple Point School

Awarding Agency: Neshaminy School District

Contract Award Date: 3/17/2015

Serial Number: 15-00267

Project Classification: Building

Determination Date: 1/14/2015

Assigned Field Office: Philadelphia

Field Office Phone Number: 215-560-1858

Toll Free Phone Number:

Bucks County

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	5/1/2011		\$40.39	\$28.00	\$68.39
Asbestos & Insulation Workers	5/1/2012		\$41.39	\$28.00	\$69.39
Asbestos & Insulation Workers	5/1/2013		\$41.79	\$29.10	\$70.89
Asbestos & Insulation Workers	5/1/2014		\$43.14	\$30.40	\$73.54
Boilermaker (Commercial, Institutional, and Minor Repair Work)	4/1/2013		\$25.23	\$17.51	\$42.74
Boilermaker (Commercial, Institutional, and Minor Repair Work)	1/1/2014		\$25.23	\$17.51	\$42.74
Boilermaker (Commercial, Institutional, and Minor Repair Work)	3/1/2014		\$25.79	\$17.95	\$43.74
Boilermakers	1/1/2011		\$37.35	\$28.12	\$65.47
Boilermakers	1/1/2012		\$37.62	\$29.85	\$67.47
Boilermakers	9/30/2012		\$39.97	\$29.85	\$69.82
Boilermakers	1/1/2013		\$38.69	\$31.13	\$69.82
Boilermakers	4/1/2013		\$38.54	\$31.43	\$69.97
Boilermakers	1/1/2014		\$39.06	\$32.81	\$71.87
Bricklayer	5/1/2014		\$38.02	\$23.59	\$61.61
Bricklayer	5/1/2015		\$39.67	\$23.59	\$63.26
Carpenter - Chief of Party (Surveying & Layout)	5/1/2014		\$47.79	\$25.59	\$73.38
Carpenter - Chief of Party (Surveying & Layout)	5/1/2015		\$49.58	\$25.59	\$75.17

PREVAILING WAGES PROJECT RATES

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter - Chief of Party (Surveying & Layout)	5/1/2016		\$51.42	\$25.59	\$77.01
Carpenter - Instrument Person (Surveying & Layout)	5/1/2014		\$41.56	\$25.59	\$67.15
Carpenter - Instrument Person (Surveying & Layout)	5/1/2015		\$43.11	\$25.59	\$68.70
Carpenter - Instrument Person (Surveying & Layout)	5/1/2016		\$44.71	\$25.59	\$70.30
Carpenter - Rodman (Surveying & Layout)	5/1/2014		\$33.25	\$20.16	\$53.41
Carpenter - Rodman (Surveying & Layout)	5/1/2015		\$34.49	\$20.16	\$54.65
Carpenter - Rodman (Surveying & Layout)	5/1/2016		\$35.77	\$20.16	\$55.93
Carpenters	5/1/2014		\$37.20	\$25.49	\$62.69
Carpenters	5/1/2015		\$38.45	\$25.49	\$63.94
Carpenters	5/1/2016		\$39.80	\$25.49	\$65.29
Cement Masons	5/1/2013		\$33.05	\$28.56	\$61.61
Cement Masons	5/1/2014		\$33.55	\$29.66	\$63.21
DockBuilder/Pile Drivers (Building, Heavy & Highway)	5/1/2014		\$40.55	\$30.62	\$71.17
DockBuilder/Pile Drivers Divers (Building Heavy & Highway)	5/1/2014		\$48.66	\$30.62	\$79.28
Drapery Installers	5/1/2009		\$31.09	\$21.34	\$52.43
Drywall Finisher	5/1/2009		\$32.79	\$21.37	\$54.16
Drywall Finisher	5/1/2010		\$33.00	\$22.41	\$55.41
Drywall Finisher	5/1/2011		\$33.11	\$23.45	\$56.56
Drywall Finisher	5/1/2012		\$34.09	\$23.87	\$57.96
Drywall Finisher	5/1/2014		\$35.23	\$25.63	\$60.86
Electric Lineman	6/3/2013		\$50.19	\$21.29	\$71.48
Electric Lineman	6/2/2014		\$51.64	\$21.81	\$73.45
Electric Lineman	6/5/2015		\$52.93	\$22.17	\$75.10
Electric Lineman	5/30/2016		\$54.56	\$22.61	\$77.17
Electricians & Telecommunications Installation Technician	4/29/2013		\$49.65	\$32.09	\$81.74
Electricians & Telecommunications Installation Technician	4/29/2014		\$51.02	\$32.72	\$83.74
Electricians & Telecommunications Installation Technician	5/3/2015		\$52.68	\$34.06	\$86.74
Electricians & Telecommunications Installation Technician	5/2/2016		\$54.52	\$35.22	\$89.74
Elevator Constructor	1/1/2012		\$49.30	\$23.84	\$73.14

PREVAILING WAGES PROJECT RATES

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Elevator Constructor	1/1/2013		\$49.84	\$25.49	\$75.33
Elevator Constructor	1/1/2014		\$50.69	\$27.09	\$77.78
Floor Layer	5/1/2013		\$39.91	\$24.86	\$64.77
Floor Layer	5/1/2014		\$40.21	\$26.11	\$66.32
Glazier	5/1/2009		\$36.64	\$23.81	\$60.45
Glazier	5/1/2010		\$36.67	\$24.53	\$61.20
Glazier	5/1/2011		\$37.35	\$25.25	\$62.60
Glazier	5/1/2012		\$38.35	\$25.75	\$64.10
Glazier	5/1/2014		\$39.75	\$27.60	\$67.35
Iron Workers (Bridge, Structural, Ornamental, Precast)	7/1/2014		\$44.64	\$30.64	\$75.28
Iron Workers (Bridge, Structural, Ornamental, Precast)	1/1/2015		\$45.14	\$30.89	\$76.03
Iron Workers (Riggers)	7/1/2013		\$37.00	\$19.25	\$56.25
Iron Workers (Riggers)	7/1/2014		\$38.00	\$19.75	\$57.75
Iron Workers - Reinforcing Steel Mesh - Rebar	7/1/2013		\$39.63	\$19.25	\$58.88
Iron Workers - Reinforcing Steel Mesh - Rebar	7/1/2014		\$40.73	\$19.75	\$60.48
Laborers (Class 01 - See notes)	5/1/2010		\$23.85	\$22.30	\$46.15
Laborers (Class 01 - See notes)	5/1/2011		\$24.75	\$22.30	\$47.05
Laborers (Class 01 - See notes)	5/1/2012		\$25.15	\$23.00	\$48.15
Laborers (Class 01 - See notes)	5/1/2013		\$25.85	\$23.40	\$49.25
Laborers (Class 01 - See notes)	5/1/2014		\$26.00	\$24.55	\$50.55
Laborers (Class 02 - See notes)	5/1/2010		\$25.97	\$21.73	\$47.70
Laborers (Class 02 - See notes)	5/1/2011		\$26.87	\$21.73	\$48.60
Laborers (Class 02 - See notes)	5/1/2012		\$26.45	\$22.85	\$49.30
Laborers (Class 02 - See notes)	5/1/2013		\$26.95	\$23.45	\$50.40
Laborers (Class 02 - See notes)	5/1/2014		\$27.25	\$24.40	\$51.65
Laborers (Class 03 - See notes)	5/1/2010		\$24.37	\$22.28	\$46.65
Laborers (Class 03 - See notes)	5/1/2011		\$25.17	\$22.28	\$47.45
Laborers (Class 03 - See notes)	5/1/2012		\$25.45	\$23.23	\$48.68
Laborers (Class 03 - See notes)	5/1/2013		\$25.92	\$23.83	\$49.75
Laborers (Class 03 - See notes)	5/1/2014		\$26.27	\$24.78	\$51.05

PREVAILING WAGES PROJECT RATES

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 04 - See notes)	5/1/2011		\$25.27	\$21.65	\$46.92
Laborers (Class 04 - See notes)	5/1/2012		\$25.45	\$23.23	\$48.68
Laborers (Class 04 - See notes)	5/1/2013		\$25.92	\$23.83	\$49.75
Laborers (Class 04 - See notes)	5/1/2014		\$26.27	\$24.78	\$51.05
Laborers (Class 05 - See notes)	5/1/2011		\$25.42	\$21.45	\$46.87
Laborers (Class 05 - See notes)	5/1/2012		\$25.35	\$22.80	\$48.15
Laborers (Class 05 - See notes)	5/1/2013		\$25.85	\$23.40	\$49.25
Laborers (Class 05 - See notes)	5/1/2014		\$26.20	\$24.35	\$50.55
Landscape Laborer	4/1/2009		\$19.31	\$19.98	\$39.29
Landscape Laborer	5/1/2012		\$18.71	\$21.03	\$39.74
Landscape Laborer	5/1/2013		\$19.11	\$21.63	\$40.74
Landscape Laborer	5/1/2014		\$19.76	\$22.18	\$41.94
Marble Finisher	5/1/2009		\$28.63	\$19.22	\$47.85
Marble Finisher	5/1/2010		\$28.63	\$19.97	\$48.60
Marble Finisher	5/1/2011		\$28.68	\$20.72	\$49.40
Marble Finisher	5/1/2012		\$29.27	\$21.02	\$50.29
Marble Finisher	5/1/2013		\$30.34	\$21.02	\$51.36
Marble Finisher	5/1/2014		\$31.92	\$21.02	\$52.94
Marble Finisher	5/1/2015		\$33.50	\$21.02	\$54.52
Marble Mason	5/1/2010		\$34.36	\$21.77	\$56.13
Marble Mason	5/1/2011		\$34.35	\$22.58	\$56.93
Marble Mason	5/1/2012		\$35.25	\$22.90	\$58.15
Marble Mason	5/1/2013		\$36.65	\$22.90	\$59.55
Marble Mason	5/1/2014		\$38.30	\$22.90	\$61.20
Marble Mason	5/1/2015		\$39.95	\$22.90	\$62.85
Millwright	7/1/2012		\$36.11	\$27.88	\$63.99
Millwright	7/1/2013		\$36.61	\$28.74	\$65.35
Millwright	5/1/2014		\$37.26	\$29.89	\$67.15
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2013		\$40.81	\$25.55	\$66.36
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2014		\$41.81	\$26.20	\$68.01

PREVAILING WAGES PROJECT RATES

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2015		\$42.85	\$26.56	\$69.41
Operators Class 01 - See Notes (Building, Heavy, Highway)	5/1/2016		\$44.09	\$26.92	\$71.01
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2009		\$43.04	\$21.96	\$65.00
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2010		\$43.04	\$22.96	\$66.00
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2011		\$43.04	\$24.31	\$67.35
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2012		\$43.42	\$25.38	\$68.80
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2013		\$43.80	\$26.45	\$70.25
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2014		\$44.82	\$27.08	\$71.90
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2015		\$45.86	\$27.44	\$73.30
Operators Class 01a - See Notes (Building, Heavy, Highway)	5/1/2016		\$47.10	\$27.80	\$74.90
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2009		\$39.79	\$21.00	\$60.79
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2010		\$39.79	\$22.00	\$61.79
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2011		\$39.79	\$23.35	\$63.14
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2012		\$40.18	\$24.41	\$64.59
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2013		\$40.56	\$25.48	\$66.04
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2014		\$41.57	\$26.12	\$67.69
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2015		\$42.61	\$26.48	\$69.09
Operators Class 02 - See Notes (Building, Heavy, Highway)	5/1/2016		\$43.84	\$26.85	\$70.69
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2009		\$42.80	\$21.88	\$64.68
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2010		\$42.80	\$22.88	\$65.68
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2011		\$42.80	\$24.23	\$67.03
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2012		\$43.17	\$25.31	\$68.48
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2013		\$43.57	\$26.36	\$69.93
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2014		\$44.56	\$27.02	\$71.58
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2015		\$45.61	\$27.37	\$72.98
Operators Class 02a - See Notes (Building, Heavy, Highway)	5/1/2016		\$46.84	\$27.74	\$74.58

PREVAILING WAGES PROJECT RATES

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2009		\$35.71	\$19.79	\$55.50
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2010		\$35.71	\$20.79	\$56.50
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2011		\$35.71	\$22.14	\$57.85
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2012		\$36.10	\$23.20	\$59.30
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2013		\$36.48	\$24.27	\$60.75
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2014		\$37.48	\$24.92	\$62.40
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2015		\$38.53	\$25.27	\$63.80
Operators Class 03 - See Notes (Building, Heavy, Highway)	5/1/2016		\$39.76	\$25.64	\$65.40
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2009		\$35.40	\$19.71	\$55.11
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2010		\$35.40	\$20.71	\$56.11
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2011		\$35.40	\$22.06	\$57.46
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2012		\$35.79	\$23.12	\$58.91
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2013		\$36.17	\$24.19	\$60.36
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2014		\$37.18	\$24.83	\$62.01
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2015		\$38.23	\$25.18	\$63.41
Operators Class 04 - See Notes (Building, Heavy, Highway)	5/1/2016		\$39.46	\$25.55	\$65.01
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2009		\$33.68	\$19.20	\$52.88
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2010		\$33.68	\$20.20	\$53.88
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2011		\$33.68	\$21.55	\$55.23
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2012		\$34.07	\$22.61	\$56.68
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2013		\$34.45	\$23.68	\$58.13
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2014		\$35.46	\$24.32	\$59.78
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2015		\$36.50	\$24.68	\$61.18
Operators Class 05 - See Notes (Building, Heavy, Highway)	5/1/2016		\$37.74	\$25.04	\$62.78
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2009		\$32.69	\$18.91	\$51.60
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2010		\$32.69	\$19.91	\$52.60

PREVAILING WAGES PROJECT RATES

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2011		\$32.69	\$21.26	\$53.95
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2012		\$33.08	\$22.32	\$55.40
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2013		\$33.46	\$23.39	\$56.85
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2014		\$34.47	\$24.03	\$58.50
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2015		\$35.51	\$24.39	\$59.90
Operators Class 06 - See Notes (Building, Heavy, Highway)	5/1/2016		\$36.75	\$24.75	\$61.50
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2009		\$48.05	\$24.43	\$72.48
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2010		\$48.05	\$25.55	\$73.60
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2011		\$48.05	\$27.10	\$75.15
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2012		\$48.51	\$28.38	\$76.89
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2013		\$48.97	\$29.66	\$78.63
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2014		\$50.17	\$30.41	\$80.58
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2015		\$51.42	\$30.87	\$82.29
Operators Class 07 (A) - See Notes (Building, Heavy, Highway)	5/1/2016		\$52.91	\$31.30	\$84.21
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2009		\$47.75	\$24.35	\$72.10
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2010		\$47.75	\$25.47	\$73.22
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2011		\$47.75	\$27.02	\$74.77
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2012		\$48.21	\$28.30	\$76.51
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2013		\$48.67	\$29.58	\$78.25
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2014		\$49.88	\$30.32	\$80.20
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2015		\$51.13	\$30.78	\$81.91
Operators Class 07 (B) - See Notes (Building, Heavy, Highway)	5/1/2016		\$52.61	\$31.22	\$83.83
Painters Class 1 (see notes)	5/1/2009		\$32.31	\$19.24	\$51.55
Painters Class 1 (see notes)	10/1/2009		\$32.31	\$20.12	\$52.43
Painters Class 1 (see notes)	5/1/2010		\$32.31	\$20.84	\$53.15
Painters Class 1 (see notes)	5/1/2011		\$32.94	\$21.49	\$54.43
Painters Class 1 (see notes)	5/1/2012		\$33.92	\$21.91	\$55.83

PREVAILING WAGES PROJECT RATES

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Painters Class 1 (see notes)	5/1/2014		\$35.38	\$23.40	\$58.78
Painters Class 2 (see notes)	5/1/2009		\$40.85	\$19.59	\$60.44
Painters Class 2 (see notes)	10/1/2009		\$40.85	\$20.34	\$61.19
Painters Class 2 (see notes)	5/1/2010		\$40.85	\$20.94	\$61.79
Painters Class 2 (see notes)	5/1/2011		\$42.20	\$21.59	\$63.79
Painters Class 2 (see notes)	11/1/2011		\$44.17	\$21.62	\$65.79
Painters Class 2 (see notes)	5/1/2012		\$45.25	\$22.04	\$67.29
Painters Class 2 (see notes)	11/1/2012		\$46.75	\$22.04	\$68.79
Painters Class 2 (see notes)	5/1/2014		\$47.67	\$22.66	\$70.33
Painters Class 3 (see notes)	5/1/2009		\$32.69	\$19.24	\$51.93
Painters Class 3 (see notes)	10/1/2009		\$32.69	\$20.12	\$52.81
Painters Class 3 (see notes)	5/1/2010		\$32.69	\$20.84	\$53.53
Painters Class 3 (see notes)	5/1/2011		\$33.32	\$21.49	\$54.81
Painters Class 3 (see notes)	5/1/2012		\$34.30	\$21.91	\$56.21
Painters Class 3 (see notes)	5/1/2014		\$35.76	\$23.40	\$59.16
Plasterers	5/1/2013		\$34.70	\$27.05	\$61.75
Plumbers	5/1/2014		\$46.18	\$29.85	\$76.03
Pointers, Caulkers, Cleaners	5/1/2009		\$35.05	\$20.85	\$55.90
Pointers, Caulkers, Cleaners	5/1/2010		\$35.05	\$21.60	\$56.65
Pointers, Caulkers, Cleaners	5/1/2011		\$35.10	\$22.45	\$57.55
Pointers, Caulkers, Cleaners	5/1/2012		\$36.10	\$22.75	\$58.85
Pointers, Caulkers, Cleaners	5/1/2013		\$37.50	\$22.75	\$60.25
Pointers, Caulkers, Cleaners	5/1/2014		\$39.15	\$22.75	\$61.90
Pointers, Caulkers, Cleaners	5/1/2015		\$40.80	\$22.75	\$63.55
Roofers (Composition)	5/1/2013		\$31.05	\$28.40	\$59.45
Roofers (Composition)	5/1/2014		\$32.15	\$28.65	\$60.80
Roofers (Shingle, Slate, Tile)	5/1/2012		\$24.00	\$16.37	\$40.37
Roofers (Shingle, Slate, Tile)	5/1/2014		\$24.50	\$17.37	\$41.87
Sheet Metal Workers (Building, Heavy, Highway)	5/1/2014		\$42.95	\$33.98	\$76.93
Sheet Metal Workers (Building, Heavy, Highway)	5/1/2015		\$42.95	\$36.48	\$79.43

PREVAILING WAGES PROJECT RATES

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Sign Makers and Hangars	5/21/2010		\$24.33	\$16.37	\$40.70
Sign Makers and Hangars	5/20/2011		\$23.70	\$17.69	\$41.39
Sprinklerfitters	5/1/2014		\$49.95	\$22.52	\$72.47
Sprinklerfitters	1/1/2015		\$49.80	\$22.67	\$72.47
Sprinklerfitters	5/1/2015		\$53.15	\$21.57	\$74.72
Steamfitters	5/1/2013		\$48.03	\$28.00	\$76.03
Steamfitters	5/1/2014		\$49.58	\$29.13	\$78.71
Stone Masons	5/1/2010		\$34.36	\$21.77	\$56.13
Stone Masons	5/1/2011		\$34.35	\$22.58	\$56.93
Stone Masons	5/1/2012		\$35.25	\$22.90	\$58.15
Stone Masons	5/1/2013		\$36.65	\$22.90	\$59.55
Stone Masons	5/1/2014		\$38.30	\$22.90	\$61.20
Stone Masons	5/1/2015		\$39.95	\$22.90	\$62.85
Terrazzo Finisher	5/1/2009		\$32.41	\$18.31	\$50.72
Terrazzo Finisher	5/1/2010		\$32.41	\$19.06	\$51.47
Terrazzo Finisher	5/1/2011		\$32.41	\$19.96	\$52.37
Terrazzo Finisher	5/1/2012		\$33.06	\$20.26	\$53.32
Terrazzo Finisher	5/1/2013		\$34.19	\$20.26	\$54.45
Terrazzo Finisher	5/1/2014		\$35.86	\$20.26	\$56.12
Terrazzo Finisher	5/1/2015		\$37.53	\$20.26	\$57.79
Terrazzo Grinder	5/1/2011		\$32.66	\$19.96	\$52.62
Terrazzo Grinder	5/1/2012		\$33.31	\$20.26	\$53.57
Terrazzo Grinder	5/1/2013		\$34.44	\$20.26	\$54.70
Terrazzo Grinder	5/1/2014		\$36.12	\$20.26	\$56.38
Terrazzo Grinder	5/1/2015		\$37.80	\$20.26	\$58.06
Terrazzo Layers	5/1/2008		\$35.41	\$19.47	\$54.88
Terrazzo Mechanics	5/1/2009		\$35.41	\$20.92	\$56.33
Terrazzo Mechanics	5/1/2010		\$35.41	\$21.67	\$57.08
Terrazzo Mechanics	5/1/2011		\$36.30	\$21.78	\$58.08
Terrazzo Mechanics	5/1/2012		\$37.05	\$22.08	\$59.13
Terrazzo Mechanics	5/1/2013		\$38.30	\$22.08	\$60.38

PREVAILING WAGES PROJECT RATES

Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Terrazzo Mechanics	5/1/2014		\$40.15	\$22.08	\$62.23
Terrazzo Mechanics	5/1/2015		\$42.00	\$22.08	\$64.08
Tile Finisher	5/1/2009		\$29.11	\$19.84	\$48.95
Tile Finisher	5/1/2010		\$29.11	\$20.59	\$49.70
Tile Finisher	5/1/2011		\$29.16	\$21.34	\$50.50
Tile Finisher	5/1/2012		\$29.77	\$21.64	\$51.41
Tile Finisher	5/1/2013		\$30.86	\$21.64	\$52.50
Tile Finisher	5/1/2014		\$32.47	\$21.64	\$54.11
Tile Finisher	5/1/2015		\$34.08	\$21.64	\$55.72
Tile Layers	5/1/2009		\$36.15	\$20.28	\$56.43
Tile Layers	5/1/2010		\$36.15	\$21.03	\$57.18
Tile Layers	5/1/2011		\$36.20	\$21.78	\$57.98
Tile Layers	5/1/2012		\$36.95	\$22.08	\$59.03
Tile Layers	5/1/2013		\$38.20	\$22.08	\$60.28
Tile Layers	5/1/2014		\$40.05	\$22.08	\$62.13
Tile Layers	5/1/2015		\$41.90	\$22.08	\$63.98
Truckdriver class 1(see notes)	5/1/2012		\$27.54	\$14.16	\$41.70
Truckdriver class 1(see notes)	5/1/2014		\$28.68	\$15.56	\$44.24
Truckdriver class 2 (see notes)	5/1/2012		\$27.64	\$14.16	\$41.80
Truckdriver class 2 (see notes)	5/1/2014		\$28.78	\$15.56	\$44.34
Truckdriver class 3 (see notes)	5/1/2012		\$27.89	\$14.16	\$42.05
Truckdriver class 3 (see notes)	5/1/2014		\$29.03	\$15.56	\$44.59

PREVAILING WAGES PROJECT RATES

Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter - Chief of Party (Surveying & Layout)	5/1/2014		\$47.79	\$25.59	\$73.38
Carpenter - Chief of Party (Surveying & Layout)	5/1/2015		\$49.58	\$25.59	\$75.17
Carpenter - Chief of Party (Surveying & Layout)	5/1/2016		\$51.42	\$25.59	\$77.01
Carpenter - Instrument Person (Surveying & Layout)	5/1/2014		\$41.56	\$25.59	\$67.15
Carpenter - Instrument Person (Surveying & Layout)	5/1/2015		\$43.11	\$25.59	\$68.70
Carpenter - Instrument Person (Surveying & Layout)	5/1/2016		\$44.71	\$25.59	\$70.30
Carpenter - Rodman (Surveying & Layout)	5/1/2014		\$33.25	\$20.16	\$53.41
Carpenter - Rodman (Surveying & Layout)	5/1/2015		\$34.49	\$20.16	\$54.65
Carpenter - Rodman (Surveying & Layout)	5/1/2016		\$35.77	\$20.16	\$55.93
Carpenters	5/1/2014		\$41.56	\$25.59	\$67.15
Carpenters	5/1/2015		\$43.11	\$25.59	\$68.70
Carpenters	5/1/2016		\$44.71	\$25.59	\$70.30
Cement Masons	5/1/2014		\$32.25	\$29.16	\$61.41
Cement Masons	5/1/2015		\$33.65	\$29.16	\$62.81
Cement Masons	5/1/2016		\$35.15	\$29.16	\$64.31
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2010		\$44.70	\$26.69	\$71.39
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2011		\$44.70	\$27.19	\$71.89
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	7/1/2012		\$44.70	\$28.14	\$72.84
Laborers (Class 01 - See notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 01 - See notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 01 - See notes)	5/1/2012		\$26.00	\$22.95	\$48.95
Laborers (Class 01 - See notes)	5/1/2013		\$26.60	\$23.55	\$50.15
Laborers (Class 01 - See notes)	5/1/2014		\$26.90	\$24.50	\$51.40
Laborers (Class 02 - See notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 02 - See notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 02 - See notes)	5/1/2012		\$26.20	\$22.95	\$49.15
Laborers (Class 02 - See notes)	5/1/2013		\$26.80	\$23.55	\$50.35
Laborers (Class 02 - See notes)	5/1/2014		\$27.10	\$24.50	\$51.60
Laborers (Class 03 - See notes)	5/1/2010		\$25.15	\$22.00	\$47.15

PREVAILING WAGES PROJECT RATES

Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 03 - See notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 03 - See notes)	5/1/2012		\$26.20	\$22.95	\$49.15
Laborers (Class 03 - See notes)	5/1/2013		\$26.80	\$23.55	\$50.35
Laborers (Class 03 - See notes)	5/1/2014		\$27.10	\$24.50	\$51.60
Laborers (Class 04 - See notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 04 - See notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 04 - See notes)	5/1/2012		\$20.80	\$22.95	\$43.75
Laborers (Class 04 - See notes)	5/1/2013		\$21.40	\$23.55	\$44.95
Laborers (Class 04 - See notes)	5/1/2014		\$21.70	\$24.50	\$46.20
Laborers (Class 05 - See notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 05 - See notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 05 - See notes)	5/1/2012		\$26.85	\$22.95	\$49.80
Laborers (Class 05 - See notes)	5/1/2013		\$27.45	\$23.55	\$51.00
Laborers (Class 05 - See notes)	5/1/2014		\$27.75	\$24.50	\$52.25
Laborers (Class 06 - See notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 06 - See notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 06 - See notes)	5/1/2012		\$26.90	\$22.95	\$49.85
Laborers (Class 06 - See notes)	5/1/2013		\$27.50	\$23.55	\$51.05
Laborers (Class 06 - See notes)	5/1/2014		\$27.80	\$24.50	\$52.30
Laborers (Class 07 - See notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 07 - See notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 07 - See notes)	5/1/2012		\$26.75	\$22.95	\$49.70
Laborers (Class 07 - See notes)	5/1/2013		\$27.35	\$23.55	\$50.90
Laborers (Class 07 - See notes)	5/1/2014		\$27.65	\$24.50	\$52.15
Laborers (Class 08 - See notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 08 - See notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 08 - See notes)	5/1/2012		\$26.50	\$22.95	\$49.45
Laborers (Class 08 - See notes)	5/1/2013		\$27.10	\$23.55	\$50.65
Laborers (Class 08 - See notes)	5/1/2014		\$27.40	\$24.50	\$51.90
Laborers (Class 09 - See notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 09 - See notes)	5/1/2011		\$25.95	\$22.00	\$47.95

PREVAILING WAGES PROJECT RATES

Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 09 - See notes)	5/1/2012		\$26.35	\$22.95	\$49.30
Laborers (Class 09 - See notes)	5/1/2013		\$26.95	\$23.55	\$50.50
Laborers (Class 09 - See notes)	5/1/2014		\$27.25	\$24.50	\$51.75
Laborers (Class 10- See notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 10- See notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 10- See notes)	5/1/2012		\$26.50	\$22.95	\$49.45
Laborers (Class 10- See notes)	5/1/2013		\$27.10	\$23.55	\$50.65
Laborers (Class 10- See notes)	5/1/2014		\$27.40	\$24.50	\$51.90
Laborers (Class 11 -See Notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 11 -See Notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 11 -See Notes)	5/1/2012		\$26.40	\$22.95	\$49.35
Laborers (Class 11 -See Notes)	5/1/2013		\$27.00	\$23.55	\$50.55
Laborers (Class 11 -See Notes)	5/1/2014		\$27.30	\$24.50	\$51.80
Laborers (Class 12 -See Notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 12 -See Notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 12 -See Notes)	5/1/2012		\$28.10	\$22.95	\$51.05
Laborers (Class 12 -See Notes)	5/1/2013		\$28.70	\$23.55	\$52.25
Laborers (Class 12 -See Notes)	5/1/2014		\$29.00	\$24.50	\$53.50
Laborers (Class 13 -See Notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 13 -See Notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 13 -See Notes)	5/1/2012		\$30.13	\$22.95	\$53.08
Laborers (Class 13 -See Notes)	5/1/2013		\$30.73	\$23.55	\$54.28
Laborers (Class 13 -See Notes)	5/1/2014		\$31.03	\$24.50	\$55.53
Laborers (Class 14 -See Notes)	5/1/2010		\$25.15	\$22.00	\$47.15
Laborers (Class 14 -See Notes)	5/1/2011		\$25.95	\$22.00	\$47.95
Laborers (Class 14 -See Notes)	5/1/2012		\$26.15	\$22.95	\$49.10
Laborers (Class 14 -See Notes)	5/1/2013		\$26.75	\$23.55	\$50.30
Laborers (Class 14 -See Notes)	5/1/2014		\$27.05	\$24.50	\$51.55
Laborers Utility (PGW ONLY)	5/1/2013		\$27.10	\$15.38	\$42.48
Laborers Utility (PGW ONLY) (Flagperson)	5/1/2013		\$20.07	\$15.38	\$35.45

PREVAILING WAGES PROJECT RATES

Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Landscape Laborer	4/1/2010		\$18.44	\$19.90	\$38.34
Landscape Laborer	5/1/2012		\$18.84	\$20.30	\$39.14
Landscape Laborer	5/1/2013		\$19.24	\$20.90	\$40.14
Landscape Laborer	5/1/2014		\$19.89	\$21.45	\$41.34
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2013		\$45.62	\$27.73	\$73.35
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2014		\$47.10	\$28.83	\$75.93
Truckdriver class 1(see notes)	5/1/2013		\$28.02	\$14.82	\$42.84
Truckdriver class 1(see notes)	5/1/2014		\$28.53	\$15.56	\$44.09
Truckdriver class 2 (see notes)	5/1/2013		\$28.12	\$14.82	\$42.94
Truckdriver class 2 (see notes)	5/1/2014		\$28.63	\$15.56	\$44.19
Truckdriver class 3 (see notes)	5/1/2013		\$28.62	\$14.82	\$43.44
Truckdriver class 3 (see notes)	5/1/2014		\$29.13	\$15.56	\$44.69

Notes:

If you can not find a classification under Heavy/Highway please refer to the Building classifications.

The Bureau of Labor Law Compliance updated its Pennsylvania Building Journeyman Laborer Notes to clarify existing tasks performed throughout the Commonwealth. The "Building Laborer Notes" link on the Bureau's website provides a list of those tasks that should be read in conformity with custom and usage of the construction industry in the geographic region in which they are utilized.

For further information on construction types review the ["Notes as Referenced in Predeterminations"](#) on the Labor and Industry Website. Go to www.dli.state.pa.us, scroll down to the picture labeled "Labor Law Compliance" and click the picture. Then scroll down on the left menu and click on the "Prevailing Wage" link.

BID FORM
BID No. 16-16
HVAC ROOFTOP UNIT REPLACEMENT (SZ-4)
AT
MAPLE POINT MIDDLE SCHOOL
FOR
NESHAMINY SCHOOL DISTRICT

Proposal of: HVAC Rooftop Unit Replacement (SZ-4) at Maple Point Middle School for the Neshaminy School District, Bid No. 16-16

To: Mr. Tom Sizgorich
Director of Purchasing
Langhorne, PA

In conformity with the Drawings and Specifications as prepared by Consolidated Engineers, 1022 James Drive, Leesport, Pennsylvania, after an examination of the site and the Bidding and Contract Documents, including the Advertisement, Instructions to Bidders, Proposals, Bid Form, Bid Bond, Qualification Statement, General Conditions, Supplementary Conditions, Standard Form of Agreement, Performance Bond and Payment Bond, Certificate of Insurance, and Technical Specifications and Drawings, the undersigned submits this proposal and encloses herewith as a bond on the form enclosed, furnished by Neshaminy School District, in an amount of not less than ten percent (10%) of the total of the hereinafter stated Base Bid, made payable to or indemnifying Neshaminy School District, 2001 Old Lincoln Highway, Langhorne, Pennsylvania. Which it is understood will be held by Neshaminy School District, as security as provided in the Instructions to Bidders, if this proposal or any part thereof is accepted by the School District, and the undersigned shall fail to furnish approved bonds and execute the Agreement within ten (10) days from the date of issuance of the award. Should the School District fail to make an award on this project through no fault or failure on the part of the Bidder, then the School Board shall return said bid security.

It is hereby certified that the undersigned is the only person(s) interested in this proposal as principal, and that the proposal is made without collusion with any person, firm, or corporation. The Bidder submits herewith, as such, a Non-Collusion Affidavit in accordance with the provisions of the Pennsylvania Antbid-Rigging Act of October 28, 1983.

Bidder hereby agrees to execute the Agreement and furnish surety company bonds in the form incorporated in the Contract Documents, in the amount of one-hundred percent (100%) of the contract price for the Performance Bond and Payment Bond, within ten (10) days after mailing by the School Board of notice of award, and to begin work within ten (10) days after date of Notice to Proceed.

Bidder guarantees that, if awarded contract, he will furnish and deliver all materials, tools, equipment, tests, transportation, secure all permits and licenses, do and perform all labor, superintendence and all means of construction, pay all fees and do all incidental work, and to execute, construct and finish, in an expeditious, substantial and workmanlike manner, in accordance with the Drawings and Specifications, to the complete satisfaction and acceptance of the School Board, for the HVAC Rooftop Unit Replacement at Maple Point Middle School.

It is understood that the School Board, reserves the right to reject any or all proposals, or part thereof, or items therein and to waive technicalities required for the best interest of the School District. It is further understood that competency and responsibility of bidders will receive consideration before the award of the contract. A certified copy of the Contractor's Qualification Statement, AIA Document A305 will be submitted as requested.

Bidder submits this proposal with the understanding that the work shall be completed on or before the dates stipulated in the Advertisement for Bids and Instructions to Bidders; in accordance with the phased completion schedule; and, that time for completion of the work shall be considered as of the essence of this Contract.

A detailed breakdown sheet of the work, and the contract price of the work involved, will be submitted to the Engineer, within fifteen (15) calendar days after the execution of the Contract. The bidder agrees that he will not assign his bid or any of his rights or interests thereunder without the written consent of the School Board.

UNIT PRICES govern addition to or deduction from quantity included in the Base Bid and amounts actually installed on the job. Where existing work is indicated, price includes removal and replacing. Unit prices shall include all labor, materials, equipment, bailing, shoring, removal, supervision, overhead, profit, insurance, bond, etc. required to complete work specified. All quantities shall be verified by the Engineer.

THE BID, as called for, is submitted as follows:

BASE BID (REMOVAL AND INSTALLATION OF SZ-4)

State the costs associated with the removal and replacement of SZ-4 as indicated in the contract documents.

_____ Dollars
(\$ _____)

In submitting this proposal, I have received and included in this Bid, the instructions and information contained in the following Addenda:

<u>Addendum No.</u>	<u>Dated</u>
_____	_____
_____	_____

The undersigned certifies that the Contract Documents have been considered, in their entirety, both before and in the preparation of this Proposal. The undersigned, in submitting this Proposal, intends to be legally bound by this Proposal.

IN WITNESS WHEREOF, the undersigned has caused this Proposal to be executed as of

Date

When the Bidder is an Individual:

Witness

Bidder (SEAL)

When the Bidder is a Partnership:

Witness

By: (SEAL)

(SEAL)

(SEAL)

Partners (SEAL)

When the Bidder is a Corporation: *****
(CORPORATE SEAL)

ATTEST: _____

Secretary

By: _____
President

_____ is a Corporation organized
and existing under the Laws of _____ and has
(has not) been granted a Certificate of Authority to do Business in Pennsylvania, as required by
the Business Corporation Law, approved May 5, 1933, P. L. 364, as amended to date.

END OF SECTION 00300

SECTION NC - NON-COLLUSION AFFIDAVIT

INSTRUCTIONS FOR NON-COLLUSION AFFIDAVIT

This Non-Collusion Affidavit is material to any contract awarded pursuant to this bid. According to the Pennsylvania Antirigging Act, 73 P.S., 1611 et seq., governmental agencies may require Non-Collusion Affidavits to be submitted together with bids.

This Non-Collusion Affidavit must be executed by the members, officer, or employee of the bidder who makes the final decision on prices and the amount quoted in the bid.

Bid rigging and other efforts to restrain competition, and the making of false sworn statements in connection with the submission of bids are unlawful and may be subject to criminal prosecution. The person who signs the Affidavit should examine it carefully before signing and assure himself or herself that each statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the bidder with responsibilities for the preparation, approval, or submission of this bid.

In the case of a bid submitted by a joint venture, each party to the venture must be identified in the bid documents, and an Affidavit must be submitted separately on behalf of each party.

The term "complementary bid" as used in the Affidavit has the meaning commonly associated with that term in the bidding process, and includes the knowing submission of bids higher than the bid of another firm, any intentionally high or noncompetitive bid, and any other form of bid submitted for the purpose of giving a false appearance of competition.

Failure to file an Affidavit in compliance with these instructions will result in disqualification of the bid.

NON-COLLUSION AFFIDAVIT

CONTRACT HVAC Rooftop Unit Replacement (SZ-4) at Maple Point Middle School

STATE OF Pennsylvania:

COUNTY OF Bucks:

I state that I am _____ of
(Title)

(Name of Firm)

and that I am authorized to make this affidavit on behalf of my firm, its owners, directors and officers. I am the person responsible in my firm for the price(s) and the amount of this bid.

I state that:

1. The price(s) and amount of this bid have been arrived at independently and without consultation, communication or agreement with any other contractor, bidder, or potential bidder.
2. Neither the price(s) nor the amount of this bid, and neither the approximate price(s) nor approximate amount of this bid, have been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before bid opening.
3. No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, or to submit a bid higher than this bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.
4. The bid of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid.
5. My firm, its affiliates, subsidiaries, owners, directors, officers and employees are not currently under investigation by any governmental agency and have not, in the last three (3) years, been convicted or found liable for any act prohibited by State or Federal law, in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract, except as follows:

6. A statement above that a person or firm has been so convicted or found liable does not prohibit

(Name of Public Entity)

from accepting a bid from or awarding a contract to such bidder, but may be a ground for consideration by

(Name of Public Entity)

on the question of declining to award a contract to the bidder on the basis of a lack of responsibility.

I state that _____
(Name of Firm)

understands and acknowledges that the above representations are material and important, and will be relied on by

(Name of Public Entity)

in awarding the contract(s) for which this bid is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from

(Name of Public Entity)

of the true facts relating to the submission of bids for this contract.

(Signature)

(Name and Title)

(Name of Firm)

SWORN TO AND SUBSCRIBED BEFORE ME ON THIS

_____ DAY OF _____, 19__.

(NOTARY PUBLIC)

MY COMMISSION EXPIRES ON: _____.

END OF SECTION 00480

INSTRUCTIONS AND GENERAL CONTRACT TERMS AND CONDITIONS

INSTRUCTIONS

For all bids exceeding Two Thousand Dollars (\$2,000.00) a certified check, bank cashier's check, trust company treasurer's check or a Bid Bond from a surety company legally authorized to do business in the Commonwealth of Pennsylvania, and having the highest rating services, in an amount no less than ten percent (10%) of the total stated bid shall accompany the bid and shall be made payable to the Neshaminy School District. Such Guarantee or Bid Bond shall be forfeited to and retained by the School District as liquidated damages if the bid or any part thereof is accepted by the School District and the Bidder fails to carry out all of the provisions of the bid.

All bids will be publicly opened and read in the **Purchasing Department of the Neshaminy School District at 2001 Old Lincoln Highway, Langhorne, Pennsylvania** on the dates and times specified in the bid documents.

Award(s), if made, will be made to the lowest responsible Bidder for the separate bid selected and to include Alternate Bids, if any, which the School District chooses to accept and which results in the lowest aggregate bid. The determination of who constitutes the "lowest responsible Bidder" shall be within the sole discretion of the School District.

Bidders are expected to examine the specifications and all instructions. Failure to do so will be at the bidder's risk. ALL bids must conform to the specifications as listed.

Bidder shall furnish the information required by the Bid Form. The bidder shall type or print his name on the lists and each continuation sheet thereof on which he makes an entry. Erasures or other changes must be initialed by the person signing the bid. The bid must be signed by an authorized officer or agent of the bidding company.

No bid will be entertained unless properly made out in ink or typed, signed by the bidder and clearly marked on the envelope: **"SEALED BID - HVAC ROOFTOP UNIT REPLACEMENT (SZ-4) AT MAPLE POINT MIDDLE SCHOOL"**

In order to fully establish the extent of the work and all requirements incident to the work under this heading, the Contractor must visit the project site and attend the mandatory Pre-Bid Meeting to be held on Wednesday, February 18th, 2015 at 10:00 am, at Maple Point Middle School. Arrivals later than one half hour after announced starting time will not be accommodated. Bidder(s) shall review project site and are required to verify their own dimensions. Any questions concerning the work shall be addressed to the School Authority representative. Questions or clarifications will be answered in writing, by mail, to all in attendance.

Contractor shall complete all work from immediately after the school year starting June 22nd, 2015 and complete by July 31st, 2015. If the Contractor does not comply with construction schedules they will be declared "non responsible" and the contract/purchase order will be canceled. The work will be rebid and all additional costs will be the responsibility of the "non responsible" Contractor and deducted from their final payment.

AWARD OF CONTRACT

The School District reserves the right to reject any and all bids, or the waive informality in the bidding if it is in the interest of the School District to do so. Further, the School District reserves the right to make its award for one or for more of the articles set forth in the specifications or make its award for all of the articles set forth in these specifications.

Whenever two (2) or more bids of equal amounts are the lowest bids submitted by responsible Bidders the School District may award the bid to any one of such Bidders in its sole discretion. The School District has the right to select any and all of the bids, although they may not be awarded to the same bidding Contractor.

The award of the bid by the School District together with the issuance of a Purchase Order to the successful Bidder shall be deemed to result in a binding contract between the Bidder and the School District.

DESIGNATED PRODUCTS OR ARTICLES

If awarded the contract, the Bidder agrees to furnish and/or install the articles or products set forth in the bid specifications at such times, at such places and in such quantities as specified and all such articles and products shall be subject to the inspection and approval of the School District. In the event any of the articles or products shall be rejected as unsuitable or not in conformance with these specifications, such articles and products shall at once be removed and returned to the Bidder at his expense and other articles or products of proper quality set forth in these specifications shall be furnished in their place at the expense of the successful Bidder.

In the event that the successful Bidder neglects or refuses to furnish and deliver the articles or products or any part thereof as provided in the specifications or to replace any products or articles which are rejected by the School District, then the School District is authorized and empowered to purchase such articles or products in conformity with the bid specifications from such other party and in such quantities and in such manner as the School District shall select at the expense of the successful Bidder or to cancel this contract and reserve all rights for damages which may be incurred by the School District.

Approval of Materials: Where the bid specifications describe or specify a particular product or article, alternate bids covering articles or products equal in all respects are permitted, unless otherwise stated. Where a bid specification specifies an article or product and the Bidder intends to furnish another product or article which he considers equal, then the name and grade of the "equivalent" product or article must be identified in the Bid. Whenever an article or one class of material is specified by the trade name or the manufacturer, the bidder must submit an alternate or equivalent ten (10) days prior to his bid date for review and acceptance along with savings to the Engineer. In addition, the proposed Contractor must include all associated costs for redesign of the concrete foundation, mechanical work, electrical work, and equipment modification or details, as well as, Fire Marshall approval at his expense. All of this must be done in an expeditious manner so that the schedule for delivery of the equipment is not modified. The Contractor must be aware of the importance of delivery of this equipment within the time constraints, to insure completion of the overall project.

The "Equivalent" must be equal in quality, finish and durability and be equally as serviceable for the purpose intended. Final determination of equality is wholly reserved to the School District/Engineer and its representatives.

With respect to any such articles or products, the Bidder shall be responsible for notifying the School District of any price advantage to the School District if the order of any such articles or products are increased to the next higher price or break point for that article or product. Should such price break point exist, such notice shall be given at the time the bid is submitted.

The School District is exempt from the payment of excise taxes and should the Bidder desire to be exempt from such tax, then the Bidder agrees to present, to the School District, properly prepared exemption certificates for execution. Such certificates will be presented only for articles or products furnished under the bid, will list the articles or products and their quantities and will state the names and addresses of the manufacturers and suppliers of such articles and products which are subject to excise tax.

LIQUIDATED DAMAGES

All work required to be performed under the bid specifications shall be started within ten (10) days from date of Purchase Order or notice to proceed, if this is applicable, and shall be completed in accordance with the bid specifications by the guaranteed completion date. Should the Bidder fail to complete the work before the expiration of the completion date set forth in the bid specifications, the Authority will then back charge the bidder the sum of Four Hundred Dollars (\$400.00) per day for each calendar day the work remains uncompleted after the completion date. The parties agree that said sum is a proper measure of liquidated damages which the Authority shall sustain per diem as a result of the failure of the Bidder to complete the work within the time required. In no event shall this sum be construed as any form of penalty being imposed upon the Bidder. Liquidated damages shall be assessed after completion date of July 31st, 2015.

Should the Bidder be delayed in the completion of the work set forth in the bid specifications by reason of unforeseen circumstances beyond his control and without his fault or negligence, including but not limited to acts of God or of the public enemy, acts of neglect of the School District, acts of other contractors, if any, fires, floods, epidemics, strikes, civil disturbances or freight embargos, the date specified in the bid specifications as the completion date shall be extended by such times as shall be fixed by the Authority, provided however, that any and all claims for extensions of time shall be made by the Bidder in writing within five (5) days after the termination of the event for which the Bidder seeks an extension of time. Otherwise, any claim for an extension by reason of said event shall have been waived by the Bidder.

INSURANCE, INDEMNIFICATION AND STATUS OF PARTIES

The Bidder shall not commence work until he has obtained all insurance required hereunder from carriers legally authorized to do business in the Commonwealth of Pennsylvania and assigned the highest rating available from independent rating services, nor shall the Bidder allow any Subcontractor to commence work on his subcontract until all similar insurance required of the Subcontractor has been so obtained. In this regard, the Bidder shall be required to maintain the following insurance during the term of this contract:

Workers' Compensation Insurance coverage to be statutory for all of his employees employed at the site of the project, and in case any work is sublet, the Bidder shall require

the Subcontractor to provide similar Workers' Compensation for all of the Subcontractor's employees unless such employees are covered by the protection afforded by the Bidder.

Public Liability and Property Insurance in an amount of not less than One Million Dollars (\$1,000,000.00) for injuries, including accidental death, to any one (1) person, and subject to the same limit for each person in an amount not less than One Million Dollars (\$1,000,000.00) on account of one accident, and insurance property damage in an amount not less than One Million Dollars (\$1,000,000.00), provided however, that the Authority may accept insurance covering a subcontractor in amounts less than the requirements set forth herein where such requirements appear excessive because of the extent of the work to be performed by such subcontractors. All required by this paragraph shall be secured through a policy providing coverage on an "occurrence basis".

Public Liability and Property Motor Vehicle Insurance in an amount not less than One Million Dollars (\$1,000,000.00) for personal injury, One Hundred Thousand Dollars (\$100,000.00) for property damage.

Proof of Workers' Compensation Insurance effective for the duration of the work to be performed, must be provided prior to the commencement of work.

Prior to the commencement of any work, Certificates of Insurance evidencing such insurance shall be supplied to the School District. Such Certificates shall also provide that at least thirty (30) days prior notice be given to the School District of the cancellation of such insurance. The insured is the Neshaminy School District.

Conditions

All certificates to contain thirty (30) day notice of cancellation.

It is the obligation of the Bidder to obtain and furnish Certificates for any subcontractors subject to the above terms and conditions.

All insurance policies and/or bonds will be written with insurance companies licensed to do business in the Commonwealth of Pennsylvania and subject to the approval of the School District.

On larger contracts, an umbrella liability policy will be provided with a minimum limit of \$3,000,000.00.

Notwithstanding anything to the contrary set forth herein or the acquisition of the insurance described herein, the Bidder hereby agrees to indemnify and hold the Neshaminy School District harmless from and against any and all liability, loss, damage, cost and expense, including court costs and attorney's fees, (Whether or not litigation be commenced) of whatever nature or type, that the School District may hereafter suffer or incur by reason of:

Any injury or harm sustained or reported to have been sustained by any person, including the employees of the Bidder, as a result of the work, duties or obligations being performed by the Bidder under the Bid Specifications;

Any other act or omission of the Bidder, its agents, representatives or employees, including but not limited to Subcontractors or laborers who are on any structure or real property of the Neshaminy School District during the course of the work being performed under the Bid Specifications; or

Any breach or default of the Bidder in the performance of the work, duties and obligations set forth in the Bid Specifications.

In performing the work set forth in the Bid Specifications, the Bidder will at all times be acting and performing as an independent contractor and not as an employee of the School District. The School District shall neither have nor exercise any control or direction over the methods utilized by the Bidder and the sole interest of the School District is to insure that the work set forth in the Bid Specifications is performed by the Bidder in a competent, efficient and satisfactory manner.

In the event contractor breaches or defaults under this contract or fails to perform fully with respect to the specifications set forth herein, the Neshaminy School District shall be entitled to not only the damages for such breach, default or failure to perform, but also its reasonable attorneys' fees, costs and expenses, including but not limited to expert witness fees, in order to remedy the breach, default or failure to perform.

PROTECTION AND NON-INTERFERENCE WITH DISTRICT'S OPERATIONS

The Bidder shall be responsible for the protection of the buildings, facilities and improvements within the areas where the work is being performed. Any disturbance or damage to the work being performed by the Bidder or to the existing building, improvements or equipment or any other impairment of the facilities resulting from the Bidder's performance, shall be promptly restored, repaired or replaced by the Bidder at no extra cost to the School District.

Each Bidder shall be responsible for performing his work in such a manner so as to maintain essential ingress and egress for visitors and occupants to the buildings and facilities and to continuously maintain all required emergency exits from and circulation between existing facilities. Passageways for emergency exits shall be kept continuously open and free from debris, construction equipment, tools, materials or other hazards. The Bidder shall provide all necessary temporary work which may be required to maintain all such ingress, egress and circulation requirements. The Bidder shall be responsible for providing coordination of this temporary work between himself and all Subcontractors and all temporary work shall be removed when no longer required.

Each Bidder shall commence the work and so schedule his work so as to avoid interference with the School's operations. Unavoidable interference with the School's operations shall not be carried out without the School District's approval obtained not less than forty-eight (48) hours prior to the anticipated interference. The bidder is advised that the School's operations during the school year are on an eight-hour day, five days per week basis.

To insure non-interference with the School's operation during the performance of the work, the Bidder shall remove from the buildings, facilities and improvements where the work is being performed all trash, combustible materials and debris of all kind being created during the performance of the work and upon completion of the work. This obligation shall also include all debris created by any subcontractors or men engaged by the Bidder in performing the work. Such debris shall be disposed of off-site by the Bidder.

PAYMENT, PERFORMANCE, AND MAINTENANCE BOND

The Bidder shall promptly pay all laborers and mechanics employed for the work set forth in the Bid Specifications as well as for all materials. Before final payment is made, the Bidder shall furnish the School District with satisfactory evidence that all labor and materials have been paid. Such evidence may include but not be limited to General Releases and/or Releases of Liens duly signed by the Bidder and any Subcontractors or material men.

Upon acceptance of the bid by the Neshaminy School District, the School District shall give written notice to the Bidder of its intention to accept the bid and to award a contract to him through the issuance of a Purchase Order. Upon receiving such notice and as a condition precedent to the awarding of a contract, the Bidder shall be required to furnish to the School District from surety companies legally authorized to do business in the Commonwealth of Pennsylvania and having the highest ratings available from independent rating services, the following Bonds as required by Pennsylvania law:

Performance Bond or Certified Check in an amount equal to one hundred percent (100%) of the contract price, conditioned upon the faithful performance by the Bidder of the contract and the plans, specifications and conditions of the Contract.

A Payment Bond or Certified Check in an amount equal to one hundred percent (100%) of the contract price so as to protect those supplying labor or materials to the Bidder or to any of the Bidder's Subcontractors.

A Maintenance Bond or Certified Check in an amount equal to one hundred percent (100%) of the contract price, conditioned upon the faithful performance by the Bidder to remedy, without cost to the Owner, any break of warranty and/or defects which may develop during a period of two (2) years from the date of final completion and acceptance of all the work performed under this contract.

The Bidder shall be required to file such Bonds or Certified Checks in the office of the Business Administrator within five (5) days of the School District's written notice to proceed or issuance of purchase order, whichever occurs first.

SCOPE OF WORK, WORKMANSHIP AND WARRANTY

The School District reserves the right to change, increase or reduce the work as set forth in the Bid Specifications and in such event shall notify the Bidder in writing, provided suitable adjustment is made in the original contract price. Further, the School District reserves the right to increase or decrease the quantity of any products or articles being installed as part of the work without affecting the unit price set forth in the Bid Specifications.

In performing the work, the Bidder agrees to fulfill all requirements with respect to the installation of any products or articles and hereby acknowledges that the Bid has been quoted on an installed basis. The Bidder acknowledges that he has accepted the responsibility for having visited the work site and familiarizing himself with all conditions which may affect such installation. The Bidder shall supply all material, tools, equipment, transportation, labor, supervision which may be required to complete the installation of such articles or products in a complete and approved manner.

All work shall be performed in a good and workmanlike manner and, when completed, shall show no signs of carelessness as a result of the work. During the term of the contract, all work and materials shall be subject to the inspection and approval of the School District and the School District reserves the right to reject any work or materials which in its judgement do not fulfill the requirements of the Bid Specifications.

All persons employed by the Bidder to perform the work required by the Bid Specifications shall be competent and first class workmen and mechanics as required by Section 752 of the Pennsylvania School Code of 1949, as amended.

The Bidder shall furnish to the School District, a written guarantee certifying that all defects in workmanship, materials or construction for a period of two (2) years from the date of issuance of final payment shall be corrected and repaired diligently and effectively but in no event later than thirty (30) days after Bidder's receipt of a written notice from the School District identifying such defect. All such corrections and repairs shall be performed by the Bidder at no additional cost to the School District.

The Contractor must submit documentation with his bid certifying that he has been actively engaged in this type of work for at least five (5) consecutive years.

SUBCONTRACTORS

Definition:

A Subcontractor is a firm or corporation or entity who has a direct Contract with the Contractor to perform any of the Work at the site. The term Subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Subcontractor or his authorized representative. The term Subcontractor does not include any separate Contractor or his Subcontractors.

A Sub-subcontractor is a person, firm or corporation who has a direct or indirect Contract with a Subcontractor to perform any of the Work at the site. The term Sub-subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Sub-subcontractor or any authorized representative thereof.

Award of Subcontracts and Other Contracts for Portions of the Work:

Unless otherwise required by the Contract Documents or the Bidding Documents, the Contractor, as soon as practicable after the award of the Contract and not later than fifteen (15) days after official Notice to Proceed, shall furnish to the Owner, through the Project Engineer in writing, the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work. The Project Engineer will promptly reply to the Contractor, in writing, stating whether or not the Owner or the Project Engineer has reasonable objection to any such proposed person or entity. Failure to reply promptly shall constitute notice of no reasonable objection.

The Contractor shall not contract with any such proposed person or entity to whom the Owner or the Project Engineer has indicated reasonable objection. The Contractor shall not be required to contract with anyone to whom he has a reasonable objection.

If the Owner or the Project Engineer has reasonable objection to any such proposed person or entity, the Contractor shall submit a substitute to whom the Owner or the Project Engineer has no reasonable objection, and the occasioned by such substitution, and an appropriate supplement shall be issued; however, no increase in the Contract sum shall be allowed for any such substitution unless the Contractor has acted promptly and responsively in submitting names as required.

The Contractor shall make no substitution for any Subcontractor, person or entity previously selected if the Owner or Project Engineer makes reasonable objection to such substitution.

If the contractor should list his name as performing certain listed subcontract Work, he shall be required to establish to the satisfaction of the Owner, through the Project Engineer, that he has performed this subcontract Work on previous projects and furnish a certified statement to this effect.

Subcontractual Relations:

By written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these Documents assumes toward the Owner and Project Engineer. Said agreement shall preserve and protect the rights of the Owner, Project Engineer and the Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor, so that the Contractor-Subcontractor agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with his Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract, copies of the Contract Documents to which the Subcontractor will be bound by this Subcontractor any terms and conditions of the proposed subcontract which may be at variance with the Contract Documents. Each Subcontractor shall similarly make copies of such Documents available to his Sub-subcontractors.

Contractor shall be held responsible for assuring that his Subcontractors comply with Pennsylvania Workers' Compensation Act's provisions, including the Contractor's responsibility to Sections 203 and 302.

Payment to Subcontractors:

The Contractor shall pay each Subcontractor, upon receipt of payment from the Owner, an amount equal to the percentage of completion allowed to the Contractor on account of such Subcontractor's Work. The Contractor shall also require each Subcontractor to make similar payments to his Sub-subcontractors.

If the Project engineer fails to issue a Certificate for Payment for any cause which is the fault of the Contractor and not the fault of a particular Subcontractor, the Contractor shall pay that Subcontractor on demand, make at any time after Certificate for Payment should otherwise have been issued, for his Work to the extent completed, less the retained percentage.

The Contractor shall pay each Subcontractor a just share of any insurance monies received by the Contractor, and he shall require each Subcontractor to make similar payments to his Sub-subcontractors.

The Project Engineer may, on request and at his discretion, furnish to any Subcontractor, if practicable, information regarding percentages of completion certified to the Contractor on account of Work done by such Subcontractors.

Neither the Project Engineer nor the Owner shall have any obligation to pay or to effect the payment of any monies to any Subcontractor or Sub-subcontractor, except as may otherwise be required by law.

PAYMENT SCHEDULE AND FINAL PAYMENT

Payment to the Bidder of the contract price shall occur in accordance with the following schedule. This specification does not provide for periodic payments based upon a percentage of the work completed. Full payment will be made within forty-five (45) days upon completion of the work and receipt of all required documentation.

The acceptance by the Bidder of the final payment shall constitute a release of the School District by the Bidder with respect to all claims and all liability which the Bidder may assert against the School District, directly or indirectly, as a result of this contract including but not limited to any act or omission on the part by the School District relating to or arising out of the work under the contract, excepting the Bidder's claim for interest upon the final payment if the final payment is improperly delayed. However, the Bidder's acceptance of the final payment does not operate as a release of the Bidder and his sureties from any obligations under this contract with the School District or under the Performance Bond.

SITE INSPECTIONS, PERMITS AND REGULATORY REQUIREMENTS

It will be the Bidder's responsibility to visit the site of the work prior to submitting his Bid so as to fully inform himself as to all of the conditions concerning construction and labor under which the work is to be performed including all rules, regulations and directives of all local, state and federal agencies having jurisdiction over the work. In this regard, all work shall be performed in accordance with all such applicable rules, regulations and directives which are incorporated herein by reference and made a part hereof.

The Bidder shall secure and pay for all permits required by all local, state and federal agencies having jurisdiction over the work, including but not limited to fees, licenses and inspections necessary for the proper performance and completion of the work.

ACCESS TO RECORDS

The Owner shall be afforded access to all of the Contractor's accounting records relating to this Contract, and the Contractor shall preserve all such records for a period of three years or longer as may be required by law after the final payment.

SALES AND USE TAX

The contractor agrees to assign and transfer to the Owner all its rights to sales and use tax which may be refunded as a result of a claim for refund for materials purchased in connection with this Contract. The Contractor agrees to require any Subcontractors to provide access to the Owner of accounting records relating to this contract and to obtain their agreement not to seek refund for any sales or use tax which is the subject of this assignment.

NON-COLLUSION AFFIDAVIT

Included in the specification packet is a "Non-Collusion Affidavit." The bidder must execute this document, have it notarized and submit it, attached to the FORM OF PROPOSAL. Failure to comply with this provision will disqualify the bidder.

STATUTORY REQUIREMENT/GOVERNMENT REQUIREMENTS

In accordance with Section 755 of the Public School Code of 1949, as amended, the Pennsylvania Human Relations Act of 1955, as amended, the regulations of the Pennsylvania Human Relations Commission and the Governor's Code of Fair Practice, neither the Bidder, Subcontractor, nor any person acting on behalf of the Bidder or Subcontractor shall discriminate or permit discrimination or intimidation of any employee hired for the performance of the work on the basis of race, color, religion or natural origin. Further, the School District reserves the right to deduct from the Contract price a penalty of Five Dollars (\$5.00) for each calendar day during which such person was discriminated against or intimidated in violation of the foregoing provision and/or cancel its Contract with the bidder so that all money due or to become due under the Contract may be forfeited for a second or subsequent violation. Further, pursuant to the requirements of the Pennsylvania Human Relations Act, the Bidder agrees to comply with all requirements set forth therein and hereby acknowledges the remedies available to the School District in the event of a violation of such Act.

In accordance with Section 754 of the Public School Code of 1949, as amended and Act No. 182 of 1985, all laborers and mechanics employed by the Bidder under the contract shall be citizens of the United States and shall have been residents of the Commonwealth of Pennsylvania for at least ninety (90) days prior to their employment. The Bidder is notified that failure to comply with this provision shall be sufficient legal reason for the School District to refuse payment of the contract price to the Contractor.

In accordance with Section 10.F. of the Municipal Authorities Act, as amended; Section 751 of the Public School Code of 1949, as amended, and Section 1884 of the Steel Products Procurement Act of 1978, as amended, the Bidder agrees that if any steel products are to be used or supplied in the performance of the work set forth in the Bid Specifications, then such products shall be used or supplied in accordance with the terms of said Acts and any regulations issued pursuant thereto. Further, the Bidder acknowledges that the School District shall have available any and all remedies set forth in said Acts for a violation of said Acts or any regulations issued pursuant thereto.

In accordance with Section 111 of the Public School Code of 1949, as amended, the Bidder shall be required to submit for each of its employees as well as the employees of all Subcontractors engaged by the Bidder a report of criminal history information from the Pennsylvania State Police or a statement from the State Police that the State Police central repository contains no such information relating to an employee. The report or statement shall be no more than one (1) year old and the Bidder must submit an original of the document before commencing any work under the contract. Should any employees of the bidder or any Subcontractor not be residents of the Commonwealth of Pennsylvania, then for such employees a report or statement of federal criminal history from the Federal Bureau of Investigation shall be submitted and such report or statement shall be no more than one (1) year old.

In accordance with House Bill Number 1969 enacted into law, Act No. 247 became effective on November 25, 1972. It requires that Bidders on construction contracts for the Commonwealth of Pennsylvania be advised of those provisions of Federal and State statutes, rules and regulations dealing with the prevention of environmental pollution and the preservation of public natural resources that affect the project on which bids are being received.

In accordance with Section 753 of the Public School Code of 1949 as amended and Section 165-1 to Section 165-17 of the Prevailing Wage Act, the Bidder shall pay all wage rates required by said Acts and comply with all reporting requirements of said Acts or any regulations issued pursuant thereto so as to insure that the laborers and mechanics employed to perform the work specified under the contract shall be paid at the rates required.

Pennsylvania Child Abuse History Clearance: See pages at the end of this section.

PUBLIC WORKS EMPLOYMENT VERIFICATION FORM REQUIREMENT OF THE PENNSYLVANIA PUBLIC WORKS EMPLOYMENT VERIFICATION ACT

All contractors must submit a "**Public Works Employment Verification Form**" to the school district at the time when performance and payment bonds are submitted. Submission of this form is a precondition of the contract being awarded and executed. The requirement applies to all employees hired by the contractor or subcontractor, regardless of whether the employee will be working onsite or offsite. This requirement does not apply to an entity that is solely a material supplier for the project.

ACT 82 of 2012 – ARREST or CONVICTION FORM UNDER ACT 24 AND 82 of 2012

Act 82 of 2012, signed into law on June 30, 2012, amends Section 111 of the School Code which provides for background checks for the employees of public schools, private schools, intermediate units and area vocational-technical schools who have direct contact with children. Section 111 also applies to independent contractors and their employees who have direct contact with children and to student teachers and student teacher candidates assigned to public and private schools. The amendments clarify that the employment prohibitions contained in Section 111(e) and Section 111(f.1) of the School Code, based on conviction of certain offenses, apply to both current and prospective employees. The changes to section 111 went into effect on June 30, 2012.

SPECIFICATIONS - HVAC ROOFTOP UNIT REPLACEMENT AT MAPLE POINT MIDDLE SCHOOL

GENERAL

It is the intent of this specification to be used as a guide by the bidder to establish a standard of quality for materials to be used on this project. It does not relieve the successful bidder from furnishing and properly installing all material that may be necessary for the completion of the work as determined by the Neshaminy School District.

STATUS OF THE PARTIES

In the performance of the work, duties and obligations assumed by the Contractor under these specifications, Contractor will at all times be acting and performing as an independent Contractor and not as an employee of the School District. The School District shall neither have nor exercise any control or direction whatsoever over the methods utilized by the Contractor. The sole interest and responsibility of the School District is to insure that the work, duties and obligations set forth in the bid specifications shall be performed and rendered by the Contractor in a competent, efficient and satisfactory manner.

INDEMNIFICATION

Contractor hereby agrees to indemnify and hold the Neshaminy School District and Consolidated Engineers harmless from and against any and all liability, loss, damage, cost and expense including court costs and attorney's fees (whether or not litigation be commenced) of whatever nature or type that the School District may hereinafter suffer or incur by reason of:

Any injury or harm sustained or purported to have been sustained by any person including the employees of the Contractor as a result of the work, duties or obligations being performed by the Contractor under the bid specifications.

Any other act or omission of the Contractor, its agents, representatives or employees including but not limited to Subcontractors or laborers who are on any structure or real property of the Neshaminy School District, during the course of work being performed under the bid specifications.

Any breach or default of the Contractor in the performance of the work, duties and obligations set forth in the bid specification.

INSTRUCTIONS TO BIDDERS

Bidders are expected to examine the specifications and all instructions. Failure to do so will be at the bidder's risk.

Bidder shall furnish the information required by the bid form. The bidder shall type or print his name on the lists and each continuation sheet thereof on which he makes an entry. Erasures or other changes must be initialed by the person signing the bid. The bid must be signed by an authorized officer or agent of the bidding company.

No bid will be entertained unless properly made out in ink or typed, signed by the bidder and clearly marked on the envelope:

“SEALED BID - HVAC ROOF TOP UNIT REPLACEMENT (SZ-4) AT MAPLE POINT MIDDLE SCHOOL”

Bids and modifications or withdrawals thereof received after the time set for opening same will not be considered.

In order to fully establish the extent of the work and all requirements incident to the work under this heading, the Contractor must visit the project site and attend the mandatory Pre-Bid Meeting to be held on Wednesday, February 18th, 2015 at 10:00 am, at Maple Point Middle School. Arrivals later than one half hour after announced starting time will not be accommodated. Bidder(s) shall review project site and are required to verify their own dimensions. Any questions concerning the work shall be addressed to the School Authority representative. Questions or clarifications will be answered in writing, by mail, to all in attendance.

Sealed bids will be received at the Office of the Purchasing Department, Mr. Tom Sizgorich, 2001 Old Lincoln Highway, Langhorne, Pennsylvania 19047, until **Tuesday, March 9th, at 10:00 AM prevailing time.**

The award of the contract by the Neshaminy School District and issuance of a purchase order to the successful bidder shall be deemed to result in a binding contract.

Whenever a particular make of material is shown or specified, such make of material shall be regarded as a standard. Any other make of material will be accepted which is comparably equal to the specified quality, workmanship, economy in operation and suitability for the purpose intended.

The successful Bidding Contractor will carry out all rehabilitation work in strict accordance with the specifications, and any work not conforming will be reinstated or replaced at the Contractor's expense.

ALL bids must conform to the specifications as listed.

The right to reject any one or all bids or any materials furnished which are not in strict compliance with the requirements of the specifications is a privilege reserved by the School District.

Bidding Contractors are required to visit all sites and verify all dimensions.

The job shall proceed in a workmanlike manner and when completed, the areas shall show no signs of carelessness as a result of this work.

The Contractor shall take all necessary precautions to avoid injury or damage to buildings, driveways, sidewalks and lawns.

Every precaution shall be made to protect the facilities during the course of the work. ALL damage that occurs will be completely restored to the satisfaction of the School District before final payment will be made.

The School District reserves the right to change, increase or reduce the work as necessary and in such event, shall notify the Contractor in writing, provided suitable adjustment is made in the original contract price.

The Contractor shall furnish to the School District a written guarantee certifying that all defects in the materials and workmanship that occur from natural wear and tear in connection with equipment installed as part of this contract, within a period of two (2) years from the date of acceptance, shall be corrected and repaired diligently and effectively at no additional cost to the School District.

All bids must be accompanied by a bid bond in the amount of 10% of bid or certified check in the amount of 10% of the bid.

Contractor awarded this work shall furnish evidence of full insurance coverage including workers' compensation, public liability and property damage.

Each contractor shall be required to furnish and pay for a performance bond, payment bond and maintenance bond, each in the amount of 100% of the contract price. Sureties shall be satisfactory to the School District. The School District shall give written notice to the Contractor of intention to accept his proposal and to award a contract to him in accordance with his proposal, whereupon the Contractor shall furnish such bonds to the School District within such period as required hereby and by Pennsylvania law.

DEFINITIONS

"Owner": Neshaminy School District.

AIA DOCUMENTS

By reference, the following AIA documents shall be a part of this contract:

A-101	Standard Form of Agreement Between Owner and Contractor
A-201**	General Conditions (2007)
A-305	Contractor's Qualification Statement
A-310	Bid Bond
A-312	Performance Bond and Payment Bond
G-701	Change Order
G-702/703	Application and Certificate for Payment
G-704	Certificate of Substantial Completion
G-705	Certificate of Insurance
G-706	Contractor's Affidavit of Payment of Debts and Claims
G-706A	Contractor's Affidavit and Release of Liens
G-707	Consent of Surety Company to Final Payment
G-710	Architect's Supplemental Instructions
G-713	Construction Change Authorization

**** *The general condition shall have the following revisions:***

1. Paragraph 15.2.5; Delete part of last sentence by removing all words after "on all parties".

2. Delete the following paragraphs in their entirety; 15.2.6, 15.2.6.1, 15.3, 15.3.1, 15.3.2, 15.3.3, 15.4, 15.4.1, 15.4.2, 15.4.3, 15.4.4, 15.4.4.1, 15.4.4.2 and 15.4.4.3.
3. Add the following paragraph:

15.5 Governing Law/Venue. This agreement shall be governed as to all matters, including validity, construction and performance by and under the laws of Pennsylvania, without reference to the law of conflicts and Owners and Contractors agree that the venue for all legal proceedings shall be exclusively the Court of Common Pleas of Bucks County, Pennsylvania and each of the Owner and Contractor herewith consent to the exclusive jurisdiction and venue of said court.

END OF SECTION

PENNSYLVANIA CHILD ABUSE HISTORY CLEARANCE

COMPLETE SECTION 1 ONLY. Print clearly in ink. Enclose \$10.00 money order ONLY, payable to DEPARTMENT OF PUBLIC WELFARE. **DO NOT send cash or personal check.**
 Send to CHILDLINE AND ABUSE REGISTRY, DEPARTMENT OF PUBLIC WELFARE, P.O. BOX 8170 HARRISBURG, PA 17105-8170
APPLICATIONS THAT ARE INCOMPLETE, ILLEGIBLE OR RECEIVED WITHOUT FEE WILL BE RETURNED UNPROCESSED. IF YOU HAVE QUESTIONS CALL 717-783-6211, OR (TOLL FREE) 1-877-371-5422.

CHILDLINE USE ONLY

DATE RECEIVED BY CHILDLINE

SECTION I

APPLICANT IDENTIFICATION

IN THIS SPACE PRINT APPLICANT'S FULL NAME AND ADDRESS (DO NOT USE INITIALS)

NAME

STREET

CITY, STATE
ZIP CODE

SOCIAL SECURITY NUMBER

AGE

DATE OF BIRTH

DAYTIME PHONE NO.

SEX

M F

COUNTY YOU LIVE IN

Disclosure of your Social Security number is voluntary. It is sought under 23 Pa.C.S. §§ 6336(a)(1) (relating to Information in statewide central register), 6344 (relating to Information relating to prospective child care personnel), 6344.1 (relating to Information relating to family day-care home residents), and 6344.2 (relating to Information relating to other persons having contact with children). The department will use your Social Security number to search the statewide central register to determine whether you are listed as the perpetrator in an indicated or founded report of child abuse.

PURPOSE OF CLEARANCE (Check ONE block ONLY)

- Child Care Services Employee
- Foster Care Adoption School Employee
- Employment with a significant likelihood of regular contact with children
- Volunteers - A copy of your **PROCESSED** "Request for Criminal Record" (Form SP4-164) must be attached. Out-of-state residents must also attach a copy of their **PROCESSED** FBI clearance (Form FD-258).
- DPW Employment & Training Program Participant
(signature required below)

SIGNATURE OF OIM/CAO REPRESENTATIVE

OIM/CAO PHONE NUMBER

**PREVIOUS NAMES USED SINCE 1975
(Include Maiden Name, Nicknames, Aliases)**

1. (LAST, FIRST, MIDDLE)
2. (LAST, FIRST, MIDDLE)
3. (LAST, FIRST, MIDDLE)
4. (LAST, FIRST, MIDDLE)
5. (LAST, FIRST, MIDDLE)

PREVIOUS ADDRESSES SINCE 1975 (Attach additional pages if necessary)

- 1.
- 2.
- 3.
- 4.

HOUSEHOLD MEMBERS (List everyone who lived with you at any time since 1975 to the present)

NAME (Last, First, Middle) Do not use initials.	RELATIONSHIP	PRESENT AGE	SEX
1.			
2.			
3.			
4.			
5.			
6.			

I certify that the above information is accurate and complete to the best of my knowledge and belief and submitted as true and correct under penalty of law (Section 4904 of the Pennsylvania Crimes Code).

Applicants are required to show the administrator the original document. Administrators are required to keep a copy of this child abuse history record on file. Any person altering the contents of this document may be subject to civil, criminal or administrative action.

APPLICANT'S SIGNATURE

DATE

DO NOT WRITE IN THIS SECTION - CHILDLINE USE ONLY

SECTION II		RESULTS OF HISTORY CHECK	
<input type="checkbox"/> APPLICANT IS NOT LISTED IN A REPORT OF CHILD ABUSE OR A REPORT FOR SCHOOL EMPLOYEE.		<input type="checkbox"/> APPLICANT IS LISTED IN A REPORT OF CHILD ABUSE OR A REPORT FOR SCHOOL EMPLOYEE (SEE BELOW).	
STATUS OF REPORT	DATE OF INCIDENT	STATUS OF REPORT	DATE OF INCIDENT
1.	-	3.	-
2.	-	4.	-
_____		_____	
VERIFIER	DATE	VERIFIER'S SUPERVISOR	DATE

SECTION III		VOLUNTARY CERTIFICATION FOR CHILD CARE SERVICES	
<p>_____ has requested a certification which includes a clearance of his/her name against the child abuse, school employee, and criminal history reports.</p> <p>The results of the child abuse and school employee report clearances are listed in Section II on the reverse side. The results of the criminal history reports are listed below. Out-of-state residents must have criminal history clearance from both the Pennsylvania State Police and the FBI. The voluntary certification may be obtained every two years.</p> <p>It is the responsibility of parents and guardians to review this information to determine the suitability of the applicant as a substitute caregiver.</p>			
PENNSYLVANIA CHILD ABUSE HISTORY CLEARANCE			
<p><input type="checkbox"/> Applicant is named as the perpetrator of a founded child abuse or school employee report which occurred in the last five years.</p> <p><input type="checkbox"/> Applicant is named as the perpetrator of a founded child abuse or school employee report which occurred over five years ago.</p> <p><input type="checkbox"/> Applicant is named as the perpetrator of an indicated child abuse or school employee report.</p> <p><input type="checkbox"/> Applicant is not named as the perpetrator of any child abuse or school employee report contained in the Statewide Central Register.</p>			
PENNSYLVANIA STATE POLICE CLEARANCE			
<p><input type="checkbox"/> Record exists and contains convictions which prohibit hire in a child care position. Report attached.</p> <p><input type="checkbox"/> Record exists, but convictions do not prohibit hire in a child care position. Report attached.</p> <p><input type="checkbox"/> Record exists, but no convictions are shown. This does not prohibit hire in a child care position. Report attached.</p> <p><input type="checkbox"/> No record exists. Report attached.</p>			
FBI CLEARANCE			
<p><input type="checkbox"/> Record exists and contains convictions which prohibit hire in a child care position. Report attached.</p> <p><input type="checkbox"/> Record exists, but convictions do not prohibit hire in a child care position. Report attached.</p> <p><input type="checkbox"/> Record exists, but no convictions are shown. This may not prohibit hire in a child care position. Report attached.</p> <p><input type="checkbox"/> No record exists. Report attached.</p> <p><input type="checkbox"/> No FBI clearance required.</p>			
_____		_____	
VERIFIER	DATE	VERIFIER'S SUPERVISOR	DATE

**DIRECTIONS TO COMPLETE THE
PENNSYLVANIA CHILD ABUSE HISTORY CLEARANCE APPLICATION:**

1. Applicants are to complete Section I only.
2. Type or print clearly and neatly in ink only.
3. The space for the applicant's name must be the applicant's full legal name. An initial is not acceptable for a first name. The address listed must be applicant's current home address. This is also where the results of the clearance will be mailed.
4. The applicant's Social Security number is voluntary. If filling in the Social Security number please fill in the entire Social Security number.
5. Age – Fill in the applicant's current age.
6. Date of Birth – Fill in the applicant's date of birth (Example: 01/22/1990).
7. Daytime Phone Number – Fill in the number for where the applicant can be reached in the event that there are questions about the information on the application.
8. Sex – Check the appropriate box for male or female.
9. County You Live In – Fill in the name of the county where you reside (this should be the county for the address that the applicant filled in the space on the left of this section).
10. **Purpose of Clearance** – Do not check more than one block:
 - a. Check the Child Care box if planning to work in a day care or child care setting.
 - b. Check the Foster Care box if applying as a prospective foster parent.
 - c. Check the School Employee box if seeking to have involvement within a school (public, private, vocational, or technical) for employment or volunteer purposes OR check this box if a child abuse clearance is needed due to enrollment in an educational program such as a nursing school or technical program.
 - d. Check the Adoption Block if in the process or planning to adopt a child.
 - e. Check Employment With A Significant Likelihood of Regular Contact With Children if NONE of the other options relate to why a child abuse clearance is needed.
 - f. Check the Volunteers box if performing a service (paid or unpaid) for organizations such as Big Brothers/Big Sisters, Boy Scouts, Little League, or churches. As noted on the form, if the Volunteer box is checked, the applicant must also attached A COPY of the RESULTS from their PA State Police Criminal History Record Check. Do not send original criminal record results because the original cannot be returned. If the applicant is not a current Pennsylvania resident, the applicant must also attach a copy of their FBI Criminal History results obtained within the past year.
 - g. Check the DPW Employment & Training Program Participant box if the applicant is participating in a Department of Public Welfare employment and training program through a county assistance office, or CAO, or the Office of Income Maintenance, OIM. The signature **AND** phone number of the CAO or OIM representative is required.
11. Previous Names Used Since 1975 - The applicant must list any and all full legal names that they have ever had since 1975. This includes maiden names, aliases and also known as (aka) names.
12. Previous Addresses Since 1975 - List all addresses where the applicant has resided since 1975. The applicant can attach an additional sheet of paper with all of the addresses listed if necessary. If the applicant cannot remember the exact mailing addresses since 1975, filling in as much information as possible about the location will be acceptable.
13. Household Members - Include anyone that the applicant lived with since 1975 (parents, guardians, siblings, children, spouse (ex), paramour, friends, etc.). If the applicant was under the age of 18 in 1975 this section must include other household members who lived with the applicant or with whom the applicant lived. Please note the household member's relationship to the applicant, their age (to the best of your knowledge) and their sex. Applications where this section is left blank will be rejected and returned to the applicant.
14. Applications must be signed and dated. Applications that are not signed and dated will be rejected and returned to the applicant.
15. Enclose a \$10.00 money order for each application. No cash or personal checks will be accepted. Agency or business checks are acceptable.
16. Do not send any postage paid return envelopes for us to return your results. Results are issued through an automated system generated mailing process.

Note: Clearance results will be mailed to you within 14 days from the date that the clearance is received in our office. Failure to comply with the above instructions will cause considerable delay in processing the results of an applicant's child abuse clearance.

**PENNSYLVANIA STATE POLICE
REQUEST FOR CRIMINAL RECORD CHECK**

This form is to be completed in ink by the requester – (information will be mailed to the requester only). If this form is not legible or not properly completed, it will be returned unprocessed to the requester. *A response may take four weeks or longer.*

TRY OUR WEBSITE FOR A QUICKER RESPONSE
<https://epatch.state.pa.us>

NAME/ REQUESTER	
ADDRESS	
CITY/STATE/ ZIP CODE	

FOR CENTRAL REPOSITORY USE ONLY CONTROL NUMBER
AFTER COMPLETION MAIL TO: PENNSYLVANIA STATE POLICE CENTRAL REPOSITORY – 164 1800 ELMERTON AVENUE HARRISBURG, PA 17110-9758 1-888-QUERYPA (1-888-783-7972)
DO NOT SEND CASH OR PERSONAL CHECK
CHECK ONE BLOCK
<input type="checkbox"/> INDIVIDUAL/NONCRIMINAL JUSTICE AGENCY – ENCLOSE A CERTIFIED CHECK/MONEY ORDER IN THE AMOUNT OF \$10.00, PAYABLE TO: “COMMONWEALTH OF PENNSYLVANIA” THE FEE IS NONREFUNDABLE
<input type="checkbox"/> NOTARIZED INDIVIDUAL/NONCRIMINAL JUSTICE AGENCY – ENCLOSE A CERTIFIED CHECK/MONEY ORDER IN THE AMOUNT OF \$15.00, PAYABLE TO: “COMMONWEALTH OF PENNSYLVANIA” THE FEE IS NONREFUNDABLE
<input type="checkbox"/> FEE EXEMPT-NONCRIMINAL JUSTICE AGENCY – NO FEE

CONTACT TELEPHONE NUMBER (INCLUDING AREA CODE)

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NAME/SUBJECT OF RECORD CHECK (FIRST)	(MIDDLE)	(LAST)		
MAIDEN NAME AND/OR ALIASES	SOCIAL SECURITY NUMBER	DATE OF BIRTH (MM/DD/YYYY)	SEX	RACE

The Pennsylvania State Police response will be based on the comparison of the data provided by the requester against the information *contained in the files of the Pennsylvania State Police Central Repository only*

FEEES FOR REQUESTS - \$10.00. NOTARIZED FEE REQUESTS - \$15.00.
*****MAKE ALL MONEY ORDERS PAYABLE TO: COMMONWEALTH OF PENNSYLVANIA *****
 ◀◀◀◀◀CHECK BOX THAT MOST APPLIES TO THE PURPOSE OF THIS REQUEST▶▶▶▶▶

REASON FOR REQUEST

- INTERNATIONAL ADOPTION - INTERNATIONAL ADOPTION MUST BE NOTARIZED AND MAILED IN. (\$15.00 FOR REQUEST)**
- | | | |
|---|---|--|
| <input type="checkbox"/> ADOPTION (DOMESTIC) | <input type="checkbox"/> EMPLOYMENT/SCREENING | <input type="checkbox"/> PASSPORT |
| <input type="checkbox"/> ATTORNEY | <input type="checkbox"/> FOSTER CARE | <input type="checkbox"/> PRIVATE INVESTIGATIONS |
| <input type="checkbox"/> BANKING | <input type="checkbox"/> HEALTHCARE | <input type="checkbox"/> SOCIAL SERVICES |
| <input type="checkbox"/> BAR ASSOCIATION | <input type="checkbox"/> HOUSING | <input type="checkbox"/> TENANT CHECK |
| <input type="checkbox"/> CHURCH | <input type="checkbox"/> INSURANCE LICENSE | <input type="checkbox"/> VISA |
| <input type="checkbox"/> CHILD CARE | <input type="checkbox"/> MENTAL HEALTH | <input type="checkbox"/> VOLUNTEER AMBULANCE/FIREFIGHTER |
| <input type="checkbox"/> EDUCATION | <input type="checkbox"/> NURSE AID TRAINING | <input type="checkbox"/> VOLUNTEER |
| <input type="checkbox"/> ELDER CARE | <input type="checkbox"/> OTHER _____ | |
| <input type="checkbox"/> EMERGENCY MANAGEMENT | | |

ACCESS & REVIEW - (NOT FOR EMPLOYMENT PURPOSES. MUST BE MAILED INTO THE CENTRAL REPOSITORY WITH A COPY OF A VALID GOVERNMENT ISSUED PHOTO ID, SEE TERMS & CONDITIONS)

AVAILABLE ONLY TO SUBJECT OF RECORD OR LEGAL REPRESENTATIVE WITH LEGAL AFFIDAVIT AND REQUIRED COPY OF GOVERNMENT PHOTO ID ATTACHED FOR THE PURPOSE OF REVIEWING YOUR CRIMINAL HISTORY.

WARNING: 18 Pa.C.S. 4904(b) UNDER PENALTY OF LAW - MISIDENTIFICATION OR FALSE STATEMENTS OF IDENTITY TO OBTAIN CRIMINAL HISTORY INFORMATION OF ANOTHER IS PUNISHABLE AS AUTHORIZED BY LAW.

Homeland Security is Everyone's Responsibility - Pennsylvania Terrorism Tip Line 1-888-292-1919

ARREST/CONVICTION REPORT AND CERTIFICATION FORM
(under Act 24 of 2011 and Act 82 of 2012)

Section 1. Personal Information

Full Legal Name: _____

Date of Birth: ____/____/____

Any former names
by which you have
been identified: _____

Section 2. Report of Arrest or Conviction

By checking this box, I report that I have been arrested for or convicted of an offense or offenses enumerated under 24 P.S. §§1-111(e) or (f.1) ("Reportable Offense(s)"). See Instructions on Page 3 of this Form for a list of Reportable Offenses. If you have none to report, proceed to Section 3 of this form.

Details of Arrests or Convictions

For each arrest for or conviction of any Reportable Offense, specify in the space below (or on additional attachments if necessary) the offense for which you have been arrested or convicted, the date and location of arrest and/or conviction, docket number, and the applicable court.

Section 3. No Arrest or Conviction

By checking this box, I state that I have not been arrested for or convicted of any Reportable Offense.

Section 4. Certification

By signing this form, I certify under penalty of law that the statements made in this form are true, correct and complete. I understand that false statements herein, including, without limitation, any failure to accurately report any arrest or conviction for a Reportable Offense, shall subject me to criminal prosecution under 18 Pa.C.S. §4904, relating to unsworn falsification to authorities.

Signature

Date

INSTRUCTIONS

This standardized form (PDE-6004) has been developed by the Pennsylvania Department of Education, pursuant to 24 P.S. §1-111(j), to be used by current and prospective employees of public and private schools, intermediate units and area vocational-technical schools for the written reporting by current and prospective employees of any arrest or conviction for an offense enumerated under 24 P.S. §§1-111(e) and (f.1).

As required by subsection (j)(2) of 24 P.S. §1-111, this form shall be completed and submitted by all current and prospective employees of a public or private school, intermediate unit or area vocational-technical school. In addition, as required by subsection (j)(4) of 24 P.S. §1-111, this form shall be utilized by current and prospective employees to provide written notice within seventy-two (72) hours after an arrest or conviction for an offense enumerated under 24 P.S. §§1-111(e) or (f.1).

Exemption: Any current employee who completed a PDE-6004 on or before December 27, 2011, in compliance with 24 P.S. §§1-111(j)(1) and (2) on that date, and who has not been arrested for or convicted of an offense enumerated under 24 P.S. §§1-111(e) and (f.1) shall not be required to complete an additional form.

In accordance with 24 P.S. §1-111, employees completing this form are required to submit the form to the administrator or other person responsible for employment decisions in a school entity.

If you have questions regarding to whom the form should be sent, please contact your supervisor or the school entity administration office.

PROVIDE ALL INFORMATION REQUIRED BY THIS FORM LEGIBLY IN INK.

LIST OF REPORTABLE OFFENSES

- **A reportable offense enumerated under 24 P.S. §1-111(e) consists of any of the following:**

- (1) An offense under one or more of the following provisions of Title 18 of the Pennsylvania Consolidated Statutes:

<ul style="list-style-type: none"> ▪ Chapter 25 (relating to criminal homicide) ▪ Section 2702 (relating to aggravated assault) ▪ Section 2709.1 (relating to stalking) ▪ Section 2901 (relating to kidnapping) ▪ Section 2902 (relating to unlawful restraint) ▪ Section 2910 (relating to luring a child into a motor vehicle or structure) ▪ Section 3121 (relating to rape) ▪ Section 3122.1 (relating to statutory sexual assault) ▪ Section 3123 (relating to involuntary deviate sexual intercourse) ▪ Section 3124.1 (relating to sexual assault) ▪ Section 3124.2 (relating to institutional sexual assault) ▪ Section 3125 (relating to aggravated indecent assault) ▪ Section 3126 (relating to indecent assault) ▪ Section 3127 (relating to indecent exposure) ▪ Section 3129 (relating to sexual intercourse with animal) ▪ Section 4302 (relating to incest) ▪ Section 4303 (relating to concealing death of child) 	<ul style="list-style-type: none"> ▪ Section 4304 (relating to endangering welfare of children) ▪ Section 4305 (relating to dealing in infant children) ▪ A felony offense under section 5902(b) (relating to prostitution and related offenses) ▪ Section 5903(c) or (d) (relating to obscene and other sexual materials and performances) ▪ Section 6301(a)(1) (relating to corruption of minors) ▪ Section 6312 (relating to sexual abuse of children) ▪ Section 6318 (relating to unlawful contact with minor) ▪ Section 6319 (relating to solicitation of minors to traffic drugs) ▪ Section 6320 (relating to sexual exploitation of children)
---	---
- (2) An offense designated as a felony under the act of April 14, 1972 (P.L. 233, No. 64), known as “The Controlled Substance, Drug, Device and Cosmetic Act.”
- (3) An offense SIMILAR IN NATURE to those crimes listed above in clauses (1) and (2) under the laws or former laws of:
 - the United States; or
 - one of its territories or possessions; or
 - another state; or
 - the District of Columbia; or
 - the Commonwealth of Puerto Rico; or
 - a foreign nation; or
 - under a former law of this Commonwealth.

- **A reportable offense enumerated under 24 P.S. §1-111(f.1) consists of any of the following:**

- (1) An offense graded as a felony offense of the first, second or third degree, other than one of the offenses enumerated under 24 P.S. §1-111(e), if less than (10) ten years has elapsed from the date of expiration of the sentence for the offense.
- (2) An offense graded as a misdemeanor of the first degree, other than one of the offenses enumerated under 24 P.S. §1-111(e), if less than (5) five years has elapsed from the date of expiration of the sentence for the offense.
- (3) An offense under 75 Pa.C.S. § 3802(a), (b), (c) or (d) (relating to driving under influence of alcohol or controlled substance) graded as a misdemeanor of the first degree under 75 Pa.C.S. § 3803 (relating to grading), if the person has been previously convicted of such an offense and less than (3) three years has elapsed from the date of expiration of the sentence for the most recent offense.



COMMONWEALTH OF PENNSYLVANIA

PUBLIC WORKS EMPLOYMENT VERIFICATION FORM

Date _____

Business or Organization Name (Employer) _____

Address _____

City _____ State _____ Zip Code _____

Contractor

Contracting Public Body _____

Contract/Project No _____

Project Description _____

Project Location _____

As a contractor/subcontractor for the above referenced public works contract, I hereby affirm that as of the above date, our company is in compliance with the Public Works Employment Verification Act ('the Act') through utilization of the federal E-Verify Program (EVP) operated by the United States Department of Homeland Security. To the best of my/our knowledge, all employees hired post January 1, 2013 are authorized to work in the United States.

It is also agreed to that all public works contractors/subcontractors will utilize the federal EVP to verify the employment eligibility of each new hire within five (5) business days of the employee start date throughout the duration of the public works contract. Documentation confirming the use of the federal EVP upon each new hire shall be maintained in the event of an investigation or audit.

I, _____, authorized representative of the company above, attest that the information contained in this verification form is true and correct and understand that the submission of false or misleading information in connection with the above verification shall be subject to sanctions provided by law.

Authorized Representative Signature

MAINTENANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS, That we, the undersigned

as Principal and

(Surety Company)

(Address)

a corporation organized and existing under the laws of the State of and authorized to transact business in Pennsylvania, as Surety, are held and firmly bound unto

Neshaminy School District
2001 Langhorne-Newtown Road
Langhorne, Pennsylvania 19047

as hereinafter set forth, in the full and just sum of

100% accepted alternate amount

_____ Dollars (\$ _____), for maintenance as designated below; lawful money of the United States of America, to be paid to the Neshaminy School District, its successors or assigns, to which payment, well and truly to be made and done, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

Sealed with our respective seals and dates this _____ day of _____, 20____.

WHEREAS, the above bounden Principal has entered into a contract with

Neshaminy School District
2001 Langhorne-Newtown Road
Langhorne, Pennsylvania 19047

dated the _____ day of _____, 20____, for

HVAC Rooftop Unit Replacement (SZ-4) at Maple Point Middle School, Bid No. 16-16

upon certain terms and conditions in said contract more particularly mentioned; and

WHEREAS, it is one of the conditions of the award of the Neshaminy School District, pursuant to which said contract is about to be entered into, that these presents be executed.

NOW, THEREFORE, the joint and several conditions of this obligation are such:

That, if the above bounden Principal shall remedy without cost to the Neshaminy School District any break of service and/or default of full responsibility from the end date of initial two (2) year Project warranty; provided, in the judgment of the Neshaminy School District or its successor having jurisdiction in the premises, such defects are caused by defective or inferior materials or workmanship, then this part of this obligation shall be void; otherwise, it shall be and remain in full force and effect. The duties and responsibilities incurred by the Principal pursuant to said Maintenance Bond shall in no way absolve the Principal of any duty, responsibility or obligations vested in the Neshaminy School District.

Recovery by any persons, co-partnership, association, or corporation hereunder shall be subject to the provisions of the Act of December 20, 1967, P.L. 869, Act No. 385 (8 P.S. 191 ET SEQ), as amended, which Act is incorporated herein and made a part hereof, as fully and completely as though its provisions were fully and at length herein recited, except that, where said Act refers to the Commonwealth of Pennsylvania or a Department thereof, it shall be deemed to refer to the State System of Higher Education.

IN WITNESS WHEREOF, the said Principal and Surety have duly executed this Bond under seal the day and year above written.

WITNESS:

Principal - Individual _____(SEAL)

(CORPORATE SEAL) Surety _____

BY _____
Attorney-in-Fact

WITNESS:

_____(SEAL)

_____(SEAL)

_____(SEAL)

_____(SEAL)

(CORPORATE SEAL) _____
Surety

BY _____
Attorney-in-Fact

(CORPORATE SEAL)

Principal - Corporation

Secretary or Treasurer

BY _____
President or Vice President

(CORPORATE SEAL)

Surety

BY _____
Attorney-in-Fact

APPROVED AS TO LEGALITY AND FORM

Office of General Counsel

Office of Attorney General

END OF SECTION

SECTION 01010 - PROJECT SUMMARY

This project includes the removal of one existing HVAC rooftop unit (SZ-4), and to provide and install the respective replacement rooftop unit along with the installation and / or the reconnecting of miscellaneous accessories, piping, duct connections, control wire, pneumatic tubing, power wiring, demolition, cutting and patching and rigging. The controls are Siemens. Controls shall be provided to the unit manufacturer by Siemens and mounted in the factory. Siemens shall make connections in the field and complete start up.

This contractor will be responsible to receive the equipment on delivery and complete the installation as here-in specified. This contractor shall be responsible for all start ups, testing and warranties as here-in specified.

Coordination of the installation of the above work with the day-to-day operations of the Owner is required, and any disruptions must be worked out in advance.

END OF SECTION 01010

SECTION 01027 - APPLICATIONS FOR PAYMENT

Schedule of Values: Coordinate preparation of the Schedule of Values with the Contractor's Construction Schedule.

Correlate line items in the Schedule of Values with other schedules and forms, including:

- Contractor's Construction Schedule.
- Application for Payment form.
- List of subcontractors.
- List of products.
- Schedule of submittals.

Submit the Schedule of Values to the Engineer at the earliest date, but no later than seven (7) days before the date scheduled for submittal of the initial Application for Payment.

Break Contract Sum down in enough detail to facilitate evaluation of Applications for Payment. Break subcontract amounts down into several line items. Round amounts off to the nearest dollar; the total shall equal the Contract Sum.

For each item where an Application for Payment includes products purchased or fabricated and stored, but not installed, provide separate line items for initial cost, each subsequent stage of completion, and installed value.

Each item in the Schedule of Values and Applications for Payment shall be complete including total cost and share of overhead and profit.

Update and resubmit the schedule when Change Orders or Construction Change Directives change the Contract Sum.

Applications for Payment: Each Application for Payment shall be consistent with previous applications and payments as certified by the Engineer and paid for by the Owner.

Payment Application Forms: Use AIA Document G 702 and Continuation Sheets G 703 as the form for the application.

Application Preparation: Complete every entry, including notarization and execution by person authorized to sign on behalf of the Owner. Incomplete applications will be returned without action.

Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions have been made.

Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the period covered by the application.

Transmittal: Submit 3 executed copies of each application to the Engineer within 24 hours; one copy shall be complete, including waivers of lien and similar attachments.

Transmit each copy with a transmittal listing attachments, and recording information related to the application.

Waivers of Lien: With each application, submit waivers of lien from every entity who may file a lien arising out of the Contract, and related to the Work covered by the payment.

Submit partial waivers on each item for amount requested, prior to deduction for retainage, on each item.

When an application shows completion of an item, submit final or full waivers.

Waiver Delays: Submit each application with Contractor's waiver of lien for the period covered by the application.

Submit final Application for Payment with final waivers from every entity involved with performance of Work covered by the application who could be entitled to a lien.

Waiver Forms: Submit waivers of lien on forms, and executed in a manner, acceptable to Owner.

Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of the first Application for Payment include:

- List of subcontractors.
- List of suppliers and fabricators.
- Schedule of Values.
- Contractor's Construction Schedule (preliminary if not final).
- Submittal Schedule (preliminary if not final).
- Copies of building permits
- Copies of licenses from governing authorities.
- Certificates of insurance and insurance policies.
- Performance and payment bonds (if required).

Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment; reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions. Administrative actions and submittals that precede or coincide with this application include:

- Occupancy permits, if required.
- Warranties and maintenance agreements.
- Test/adjust/balance records.
- Maintenance instructions.
- Meter readings.
- Final cleaning.
- Application for reduction of retainage, and consent of surety.

Final Payment Application: Administrative actions and submittals which must precede or coincide with submittal of the final payment application include:

- Completion of Project closeout requirements.
- Completion of items specified for completion after Substantial Completion.
- Transmittal of required Project construction records to Owner.
- Proof that taxes, fees and similar obligations have been paid.

END OF SECTION 01027

SECTION 01040 - PROJECT COORDINATION

This Section specifies requirements for project coordination including:

- Coordination.
- Administrative and supervisory personnel.
- General installation provisions.
- Cleaning and protection.

Coordination: Coordinate activities included in various Sections to assure efficient and orderly installation of each component. Coordinate operations included under different Sections that are dependent on each other for proper installation and operation.

Where installation of one component depends on installation of other components before or after its own installation, schedule activities in the sequence required to obtain the best results.

Where space is limited, coordinate installation of different components to assure maximum accessibility for maintenance, service and repair.

Make provisions to accommodate items scheduled for later installation.

Prepare memoranda for distribution to each party involved outlining required coordination procedures. Include required notices, reports, and attendance at meetings.

Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.

Administrative Procedures: Coordinate scheduling and timing of administrative procedures with other activities to avoid conflicts and ensure orderly progress. Such activities include:

- Preparation of schedules.
- Delivery and processing of submittals.
- Progress meetings.
- Project closeout activities.

Coordination Drawings: Prepare Coordination Drawings where close coordination is required for installation of products and materials fabricated off-site by separate entities, and where limited space necessitates maximum utilization of space for efficient installation of different components.

Show relationship of components shown on separate Shop Drawings.

Indicate required installation sequences.

Inspection of Conditions: The Installer of each component shall inspect the substrate and conditions under which Work is performed. Do not proceed until unsatisfactory conditions have been corrected.

Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that they are more stringent than requirements in Contract Documents.

Inspect material immediately upon delivery and again prior to installation. Reject damaged and defective items.

Provide attachment and connection devices and methods necessary for securing each construction element. Secure each construction element true to line and level. Allow for expansion and building movement.

Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints to obtain the best effect. Refer questionable choices to the Engineer for decision.

Recheck measurements and dimensions, before starting installation.

Install each component during weather conditions and project status that will ensure the best results. Isolate each part from incompatible material as necessary to prevent deterioration.

Coordinate temporary enclosures with inspections and tests, to minimize uncovering completed construction for that purpose.

Mounting Heights: Where mounting heights are not indicated, install components at standard heights for the application indicated. Refer questionable decisions to the Engineer.

Cleaning and Protection: During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

Clean and maintain completed construction as often as necessary through the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

Limiting Exposures: Supervise operations to ensure that no part of construction, completed or in progress, is subject to harmful or deleterious exposure. Such exposures include:

- Excessive static or dynamic loading.
- Excessive internal or external pressures.
- Excessive weathering.
- Excessively high or low temperatures or humidity.
- Air contamination or pollution.
- Water or ice.
- Chemicals or solvents.
- Heavy traffic, soiling, staining and corrosion.
- Rodent and insect infestation.
- Unusual wear or other misuse.
- Contact between incompatible materials.
- Theft or vandalism.

END OF SECTION 01040

SECTION 01045 - CUTTING AND PATCHING

Refer to other Sections of these Specifications, including Divisions -15 and -16, for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

Structural Work: Do not cut and patch structural elements in a manner that would reduce the load-carrying capacity or load deflection ratio. Obtain approval of the cutting and patching proposal before cutting and patching structural elements.

Operational and Safety Limitations: Do not cut and patch operating elements or safety components in a manner that would reduce their capacity to perform as intended, or would increase maintenance, or decrease operational life or safety. Obtain approval of the cutting and patching proposal before cutting and patching operating elements or safety related systems:

Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.

Materials: Use materials identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible. Use materials whose performance will equal or surpass of existing materials.

Inspection: Before cutting, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.

Temporary Support: Provide temporary support of Work to be cut.

Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions that might be exposed during cutting and patching operations.

Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

Take all precautions to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

Performance: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

Cut existing construction to provide for the installation of other components or the performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review procedures with the original installer; comply with the original installer's recommendations.

Where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.

Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

Where feasible, inspect and test patched areas to demonstrate integrity of the installation.

Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

Cleaning: Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove paint, mortar, oils, putty and similar items. Thoroughly clean piping, conduit and similar features before painting or finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION 01045

SECTION 01090 - DEFINITIONS AND STANDARDS

Summary: This Section specifies requirements for compliance with governing regulations, codes and standards. Requirements include obtaining permits, licenses, and inspections, as well as payments, statements and requirements associated with regulations, codes and standards.

Refer to General and Supplementary Conditions for requirements for compliance with governing regulations.

Definitions: The following definitions supplement definitions contained in the Agreement, General and Supplementary Conditions and other Contract Documents. They apply generally to the Work.

Indicated refers to graphic representations, notes or schedules on Drawings, or paragraphs or schedules in Specifications, and similar requirements in Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used, it is to help locate the reference.

Directed: Terms such as "directed", "requested", "authorized", "selected", "approved", "required", and "permitted" mean "directed by the Engineer", "requested by the Engineer", and similar phrases. No implied meaning shall be interpreted to extend the Engineer's responsibility into the Contractor's supervision of construction.

Approve, used in conjunction with action on submittals, applications, and requests, is limited to the Engineer's duties and responsibilities stated in General and Supplementary Conditions. Approval shall not release the Contractor from responsibility to fulfill Contract Document requirements.

Regulation includes laws, ordinances, statutes, and lawful orders of authorities having jurisdiction, and rules, conventions and agreements in the construction industry that control performance of the Work, whether lawfully imposed by authorities having jurisdiction or not.

Furnish means "supply and deliver, ready for unloading, unpacking, assembly, installation, and similar operations."

Install describes operations at site including "unloading, unpacking, assembly, erection, anchoring, applying, working to dimension, finishing, protecting, cleaning and similar operations."

Provide means "furnish and install, complete and ready for use."

Installer is an entity engaged by the Contractor, an employee, or subcontractor for performance of a particular activity, including installation, erection, and application. Installers shall be experienced in the operations they perform.

The term "Experienced," when used with "Installer" means having a minimum of 5 previous projects similar in size to this project, and familiar with precautions required, and requirements of the authority having jurisdiction.

Project Site is the space available for construction activities, either exclusively or with others performing other construction on the Project. The extent of the Project Site is shown on the Drawings, and may or may not be identical with the description of the land upon which the Project is to be built.

Testing Laboratories: A "testing laboratory" is an independent entity engaged to perform specific inspections or tests, at the Project Site or elsewhere, and to report on, and, if required, to interpret, results of those inspections or tests.

Language used in the Contract Documents is the abbreviated type. Implied words and meanings will be appropriately interpreted. Singular words will be interpreted as plural and plural words as singular where applicable and the context indicates.

Imperative Language is generally used. Requirements expressed imperatively are to be performed by the Contractor. At certain locations subjective language is used to describe responsibilities which must be fulfilled indirectly by the Contractor, or by others when noted.

Assignment of Specialists: Certain construction activities shall be performed by specialists, recognized experts in operations to be performed. Specialists must be engaged for those activities, and these assignments are requirements over which the Contractor has no option. Nevertheless, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.

Drawing Symbols: Graphic symbols on Drawings are recognized in the construction industry for purposes indicated. Where not otherwise noted, symbols are defined by "Architectural Graphic Standards", published by John Wiley & Sons, Inc., seventh edition.

Mechanical/Electrical Drawings: Graphic symbols on mechanical and electrical Drawings are aligned with symbols recommended by ASHRAE. Where appropriate, they are supplemented by symbols recommended by technical associations. Refer instances of uncertainty to the Engineer for clarification before proceeding.

Applicability of Standards: Except where Contract Documents include more stringent requirements, applicable industry standards have the same force and effect as if bound or copied into Contract Documents. Such standards are part of the Contract Documents by reference. Individual Sections indicate which standards the Contractor must keep available at the Project site for reference.

Referenced standards take precedence over standards that are not referenced but recognized in the industry as applicable.

Unreferenced standards are not applicable, except as a general requirement of whether the Work complies with recognized construction industry standards.

Publication Dates: Where compliance with a standard is required, comply with standard in effect as of date of Contract Documents.

Updated Standards: Submit a Change Order proposal where an applicable standard has been revised and reissued after the date of the Contract Documents and before performance of Work. The Engineer will decide whether to issue a Change Order to proceed with the updated standard.

Conflicting Requirements: Where compliance with two or more standards that establish different or conflicting requirements for minimum quantities or quality levels is specified, the most stringent requirement will be enforced. Refer uncertainties as to which quality level is more stringent to the Engineer for a decision before proceeding.

Minimum Quantities or Quality Levels: The quantity or quality shown or specified is the minimum to be provided or performed. Indicated values are minimum or maximum, as appropriate for the requirements. Refer instances of uncertainty to the Engineer for decision before proceeding.

Copies of Standards: Each entity engaged on the Project shall be familiar with standards applicable to that activity. Copies of applicable standards are not bound with the Contract Documents.

Where copies of standards are required, obtain copies directly from the publication source. Although copies of standards needed for enforcement of requirements may be part of submittals, the Engineer reserves the right to require the submittal of additional copies for enforcement of requirements.

Abbreviations and Names: Where acronyms or abbreviations are used in Specifications or other Contract Documents they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction or other entity applicable. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

Trade Union Jurisdictions: Maintain, complete current information on jurisdictional matters, regulations and pending actions, as applicable to construction activities. The manner in which Contract Documents have been organized and subdivided is not intended to indicate of trade union or jurisdictional agreements.

Discuss new developments at project meetings at the earliest feasible dates. Record relevant information and actions agreed upon.

Assign and subcontract construction activities, and employ tradesmen and laborers, in a manner that will not unduly risk jurisdictional disputes that could result in conflicts, delays, claims and losses.

Permits, Licenses, and Certificates: Submit copies of permits, licenses, certifications, inspection reports, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence and records in conjunction with compliance with standards and regulations bearing on performance of the Work.

END OF SECTION 01090

SECTION 01200 - PROJECT MEETINGS

Summary: This Section specifies requirements for Project meetings including:

Pre-Construction Conferences.
Progress Meetings.

Pre-construction Conference: Conduct a pre-construction conference after execution of the Agreement and prior to commencement of construction activities. Review responsibilities and personnel assignments.

Attendees: The Owner, Engineer and their consultants, the Contractor and its superintendent, subcontractors, and other concerned parties shall be represented by persons authorized to conclude matters relating to the Work.

Agenda: Discuss significant items that could affect progress, including the tentative construction schedule, critical sequencing, use of the premises, procedures for processing Change Orders and equipment deliveries.

Pre-installation Conference: Conduct a pre-installation conference before each activity that requires coordination with other construction. The Installer and representatives of manufacturers and fabricators involved in the installation, and coordination or integration with other materials and installations that have preceded or will follow, shall attend. Advise the Engineer of scheduled meeting dates.

Review progress of other activities and preparations for the activity under consideration at each conference, including time schedules, manufacturer's recommendations, weather limitations, substrate acceptability, compatibility problems and inspection and testing requirements.

Record significant discussions, agreements and disagreements of each conference, along with the approved schedule. Distribute the meeting record to everyone concerned, promptly, including the Owner and Engineer.

Do not proceed if the conference cannot be successfully concluded. Initiate necessary actions to resolve impediments and reconvene the conference at the earliest feasible date.

Progress Meetings: Conduct progress meetings at regular intervals. Notify the Owner and Engineer of scheduled dates. Coordinate meeting dates with preparation of the payment request.

Attendees: The Owner and Engineer, each subcontractor, supplier or other entity concerned with progress or involved in planning, coordination or performance of future activities shall be represented by persons familiar with the Project and authorized to conclude matters relating to progress.

Agenda: Review minutes of the previous progress meeting. Review significant items that could affect progress. Include topics appropriate to the current status of the Project.

Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

Review the present and future needs of each entity present, including such items as:

- Time.
- Sequences.
- Deliveries.
- Off-site fabrication problems.
- Site utilization.
- Temporary facilities and services.
- Hazards and risks.
- Quality and Work standards.
- Change Orders.
- Documentation of information for payment requests.

Reporting: No later than 5 days after each meeting, distribute copies of minutes of the meeting to each party present and to parties who should have been present. Include a summary, in narrative form, of progress since the previous meeting.

END OF SECTION 01200

SECTION 01230 - ALTERNATE BIDS

There are no alternate bids for this project.

END OF SECTION 01230

SECTION 01300 - SUBMITTALS

Summary: This Section specifies requirements for handling submittals.

General Procedures: Coordinate submittal preparation with performance of construction activities, and with purchasing or fabrication, delivery, other submittals and related activities. Transmit in advance of performance of related activities to avoid delay.

Coordinate transmittal of different submittals for related elements so processing will not be delayed by the need to review concurrently for coordination. The Engineer reserves the right to withhold action on a submittal requiring coordination until related submittals are received.

Submittal Preparation: Place a label or title block on each submittal for identification. Provide a 4" x 5" space on the label or beside the title block on Shop Drawings to record Contractor's review and approval markings and action taken. Include the following information on the label for processing and recording action taken.

- Project name.
- Date.
- Name and address of Engineer.
- Name and address of Contractor.
- Name and address of subcontractor.
- Name and address of supplier.
- Name of manufacturer.

Submittal Transmittal: Package submittals appropriately for transmittal and handling. Transmit with a transmittal form. Submittals received from other than the Contractor will be returned without action.

Contractor's Construction Schedule: Submit a fully detailed construction schedule, within 10 days of the date established for Commencement of the Work. Provide a line item for each construction activity. Use the breakdown of units of Work as indicated in the "Schedule of Values".

Secure commitments for performing critical construction operations from parties involved. Coordinate each activity with other activities and show in proper sequence; include minor elements involved in the construction sequence. Indicate sequences necessary for completion of related portions.

Coordinate the Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests and other schedules.

Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the Schedule to allow time for the Engineer's procedures necessary for certification of Substantial Completion.

Submittal Schedule: Submit the Submittal Schedule within 10 days of the Construction Schedule. Coordinate the Schedule with the list of subcontracts, Schedule of Values and list of products as well as the Construction Schedule.

Prepare the Schedule in chronological order; include submittals. Provide the following information:

- Scheduled date for the first submittal.
- Related Section number.
- Name of subcontractor.
- Description of the construction element covered.
- Scheduled date the Engineer's final release or approval.

Distribution of Schedules: Distribute copies of the Construction and Submittal Schedules to the Engineer, Owner, subcontractors, and other parties required to comply with scheduled dates. When revisions are made, distribute to the same parties and post in the same locations.

Updating: Revise each Schedule after each meeting or activity, where revisions have been made. Issue the updated Schedules concurrently with report of each meeting.

Shop Drawings: Submit new information, drawn to accurate scale. Indicate deviations from Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Include the following information:

- Dimensions.
- Identification of products and materials included.
- Notation of coordination requirements.
- Notation of dimensions established by field measurement.

Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2" x 11" but no larger than 36" x 48".

Initial Submittal: Submit one correctable translucent print and one blue-line print for review; the reproducible print will be returned.

Final Submittal: Submit 3 blue-line prints; if the Drawing is required for maintenance manuals submit 5 prints. 2 prints will be retained; the remainder will be returned. One of the prints returned shall be maintained as a "Record Document".

Do not use Shop Drawings without a final stamp indicating action taken in connection with construction.

Product Data: Collect Product Data into a single submittal for each element or system. Mark each copy to show applicable choices and options.

Where Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:

- Manufacturer's printed recommendations.
- Compliance with recognized trade association standards.
- Compliance with recognized testing agency standards.
- Application of testing agency labels and seals.
- Notation of dimensions verified by field measurement.
- Notation of coordination requirements.

Preliminary Submittal: Submit a preliminary single-copy where selection of options is required.

Submittals: Submit 3 copies of each required submittal; submit 6 copies for maintenance manuals. The Engineer will retain one, and will return the other marked with action taken and corrections or modifications required.

Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

Distribution: Furnish copies of final submittal to installers, and others required for performance of construction activities. Show distribution on transmittal forms. Do not proceed with installation until an applicable copy of Product Data is in the installer's possession.

Do not permit use of unmarked copies of Product Data in connection with construction.

Distribution: Prepare additional sets for subcontractors, manufacturers, fabricators, installers, and others as required for performance. Show distribution on transmittal forms.

Engineer's Action: Except for submittals for record, information or similar purposes, where action and return is required, the Engineer will review each submittal, mark to indicate action taken, and return. Compliance with specified characteristics is the Contractor's responsibility.

Action Stamp: The Engineer will stamp each submittal with a self-explanatory action stamp. The stamp will be appropriately marked to indicate action taken.

END OF SECTION 01300

SECTION 01600 - MATERIALS AND EQUIPMENT

"Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock.

"Named Products" are items identified by manufacturer's product name, including make or model designation indicated in the manufacturer's product literature.

"Materials" are products that are shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

"Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

When the Contractor has the option of selecting between two or more products, the product selected shall be compatible with products previously selected.

Nameplates: Except for required labels and operating data, do not attach manufacturer's nameplates or trademarks on surfaces exposed to view in occupied spaces or on the exterior.

Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an inconspicuous accessible surface. The nameplate shall contain the following information and essential operating data:

- Name of product and manufacturer.
- Model and serial number.
- Capacity.
- Speed.
- Ratings.

Product Storage, and Handling: Store and handle products in accordance with manufacturer's recommendations, using methods that will prevent damage, deterioration and loss.

Coordinate delivery to minimize long-term storage and prevent overcrowding construction spaces. Coordinate with installation to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.

Inspect products on delivery to ensure compliance with Contract Documents, and to ensure that products are undamaged and properly protected.

Store products to facilitate inspection and measurement of quantity or counting of units. Store heavy materials away from the structure in a manner that will not endanger supporting construction.

Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

Non-Proprietary Specifications: When Specifications list products or manufacturers that are available and may be used, but do not restrict the Contractor to use of these products only, the Contractor may propose any product that complies with Contract requirements. Comply with provisions for "substitutions" to obtain approval for use of an unnamed product.

Descriptive Specification Requirements: Where Specifications describe a product, listing characteristics required, with or without use of a brand name, provide a product that provides the characteristics and otherwise complies with requirements.

Compliance with Standards: Where Specifications require compliance with a standard, select a product that complies with the standard specified.

Installation of Products: Comply with manufacturer's instructions and recommendations for installation of products. Anchor each product securely in place, accurately located and aligned with other Work. Clean exposed surfaces and protect to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01600

SECTION 01700 - PROJECT CLOSEOUT

Substantial Completion: Before requesting inspection for certification of Substantial Completion, complete the following:

In the Application for Payment that coincides with the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed substantially complete.

Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.

Submit record drawings, maintenance manuals, final project photographs, damage or settlement survey, property survey, and similar record information.

Complete start-up testing of systems, and instruction of the Owner's personnel. Remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.

Complete final clean up. Touch-up and repair and restore marred exposed finishes.

Inspection Procedures: On receipt of a request for inspection, the Engineer will proceed or advise the Contractor of unfilled requirements. The Engineer will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

The Engineer will repeat inspection when requested and assured that the Work has been substantially completed.

Results of the completed inspection will form the basis of requirements for final acceptance.

Final Acceptance: Before requesting inspection for certification of final acceptance and final payment, complete the following:

Submit final payment request with releases.

Submit a final statement, accounting for changes to the Contract Sum.

Submit a copy of the final inspection list stating that each item has been completed or otherwise resolved for acceptance

Submit consent of surety to final payment.

Submit evidence of continuing insurance coverage complying with insurance requirements.

Reinspection Procedure: The Engineer will reinspect the Work upon receipt of notice that the Work has been completed, except items whose completion has been delayed because of circumstances acceptable to the Engineer.

Upon completion of reinspection, the Engineer will prepare a certificate of final acceptance, or advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

If necessary, reinspection will be repeated.

Record Document Submittals: Do not use Record Documents for construction purposes; protect from loss in a secure location; provide access to Record Documents for the Engineer's reference.

Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark-up these drawings to show the actual installation. Mark whichever drawing is most capable of showing conditions accurately. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover.

Record Specifications: Maintain one copy of the Project Manual, including addenda. Mark to show variations in actual Work performed in comparison with the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot be readily discerned later by direct observation. Note related record drawing information and Product Data.

Upon completion of the Work, submit record Specifications to the Engineer for the Owner's records.

Maintenance Manuals: Organize maintenance data into sets of manageable size. Provide the number of copies as specified in section 01300. Bind in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark identification on front and spine of each binder. Include the following information:

- Emergency instructions.
- Spare parts list.
- Copies of warranties.
- Wiring diagrams.
- Recommended "turn around" cycles.
- Inspection procedures.
- Shop Drawings and Product Data.

Operating and Maintenance Instructions: Arrange for the manufacturer's recognized representative of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Include a detailed review of the following:

- Maintenance manuals.
- Spare parts and materials.
- Tools.
- Lubricants.
- Control sequences.
- Hazards.
- Warranties and bonds.

Maintenance agreements and similar continuing commitments.

As part of instruction for operating equipment, demonstrate the following procedures:

- Start-up and shutdown.
- Emergency operations.
- Noise and vibration adjustments.
- Safety procedures.

Provide a video of the above demonstrations taped on VHS format to be turned over to the owner for his use as needed.

Final Cleaning: Employ experienced workers for final cleaning. Clean each surface to the condition expected in a commercial building cleaning and maintenance program. Complete the following before requesting inspection for certification of Substantial Completion:

Remove labels that are not permanent labels.

Clean exposed hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication.

Clean the site of rubbish, litter and other foreign substances. Sweep paved areas; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.

Removal of Protection: Remove temporary protection and facilities.

Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Remove waste materials from the site and dispose of in a lawful manner.

END OF SECTION 01700

SECTION 01740 - WARRANTIES AND BONDS

Standard Product Warranties are pre-printed written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.

Special Warranties are written warranties required by or incorporated in Contract Documents, to extend time limits provided by standard warranties or to provide greater rights for the Owner.

Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.

Requirements for warranties for products and installations that are specified to be warranted, are included in the individual Sections of Divisions-2 through -16.

Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and Subcontractors required to countersign special warranties with the Contractor.

Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

Replacement Cost: On determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefitted from use of the Work through part of its useful service life.

Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

Rejection of Warranties: The Owner reserves the right to reject warranties and limit selections to products with warranties not in conflict with requirements of the Contract Documents.

The Owner reserves the right to refuse to accept Work where a special warranty, or similar commitment is required, until evidence is presented that entities required to countersign commitments are willing to do so.

Submit written warranties to the Engineer prior to the date certified for Substantial Completion. If the Engineer's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion, submit written warranties on the Engineer's request.

When a designated portion of the Work is completed and occupied or used, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Engineer within fifteen days of completion of that designated portion of the Work.

When a special warranty is to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Engineer for approval prior to final execution.

Special warranty forms are included at the end of this Section. Prepare a written document utilizing the appropriate form, ready for execution by the Contractor, or the Contractor and subcontractor, supplier or manufacturer. Submit a draft to the Owner through the Engineer for approval prior to final execution.

Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.

Provide heavy paper dividers with celluloid covered tabs for each warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the installer.

Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS, the Project title or name, and the name of the Contractor.

When operating and maintenance manuals are required for warranted construction, provide additional copies of each warranty, as necessary, for inclusion in each required manual.

END OF SECTION 01740

ROOFTOP AIR-HANDLING UNITS

SECTION 15730 - ROOFTOP AIR-HANDLING UNITS

PART 1- GENERAL

1.1 SUMMARY

- A. This Section includes roof mounted air-handling units with fans, coils, filters and other accessories suitable for outdoor installations.
- B. The equipment supplier shall visit the existing installation to verify the proposed unit will operate as an exact replacement for the existing unit.

1.2 SUBMITTALS

- A. Product Data: For each type of modular air-handling unit include the following:
 - 1. Certified fan-performance curves with system operating conditions indicated.
 - 2. Certified fan-sound power ratings
 - 3. Certified coil-performance ratings with system operating conditions indicated.
 - 4. Motor ratings, electrical characteristics, and motor and fan accessories
 - 5. Material gages and finishes.
 - 6. Filters with performance characteristics.
 - 7. Dampers, including housings, linkages, and operators.
 - 8. Submittal must illustrate that there is ample space in the unit compartments for the installation of the Siemens controller and pneumatic actuators.
- B. Shop Drawings - provide the following:
 - 1. Wiring Diagrams: Power, signal, and control wiring.
- C. Field Quality-Control Test Reports: From manufacturer.

1.3 QUALITY ASSURANCE

The full unit assembly shall be UL-US, UL-Canada, ETL-US and ETL-Canada listed. The whole units assembly shall be in compliance with applicable requirements of the Standard for Safety for Heating and Cooling Equipment, ANSI/UL 1995 2nd Edition; CAN/CSA C22.2 No. 236, February 28th, 1997. The units shall have a minimum efficiency energy ratio of 9.5 and could reach up to 11.8 efficiency energy ratio.

1.4 COORDINATION

- A. Coordinate the installation of the rooftop unit. Prior to preparing the shop drawings, the equipment manufacturer representative and the contractor shall field measure the

ROOFTOP AIR-HANDLING UNITS

existing conditions to verify the new unit will match the ***original*** unit curb and be suitable for installation on the ***original roof curb***. The existing curb adaptor shall be removed. **NO CURB ADAPTORS WILL BE ACCEPTABLE.**

1.5 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Filters: Two complete sets of filters for each rooftop air-handling unit.

1.6 WARRANTY

- A. In addition to the manufactures (5) five year compressors warranty, provide an all inclusive (2) two year parts and labor warranty. Warranty shall include all necessary parts and labor for any defects for a two year period beyond substantial completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide rooftop units manufactured by ***Innovent*** and described in the bid form and the alternate bids section of these specifications.

2.2 GENERAL

- A. Replacement rooftop equipment shall be engineered for direct replacement of the existing units and must fit existing curb without any modification. All service connections are to match the existing, including main unit electrical power, supply duct connections, and water connections. Unit curb is to be utilized as a return air plenum. Adapter curbs are not acceptable.
- B. Units shall be designed, engineered and manufactured for outdoor rooftop installation on a roof curb or structural frame, slab or dunnage. Units shall be shipped in a single piece from factory, after being assembled, piped, wired, tested and fully charged with R-410a and compressor oil. Units shall be electronically controlled and are for direct expansion mechanical cooling with hot water heating source. Standard unit's version shall be equipped with a fully controlled economizer system, a pre-filter, an airfoil SWSI supply plenum. The units shall incorporate all safety and operating controls and equipped with single or multiple hermetic compressors with independent refrigeration circuits (up to 3-compressors) and dependent circuits (4-compressors and more). Fully identified tags and stickers shall be available on the units to indicate any cautions and aid in unit

ROOFTOP AIR-HANDLING UNITS

service. Units shall be run tested at factory and all parameters shall be verified before shipment. Fully laminated wiring diagrams for long lasting life shall be shipped with each unit inside a special pocket in the electrical panel door.

2.3 MEDIUM-EFFICIENCY PLEATED MEDIA FILTERS

- A. The unit shall be provided with a filter rack constructed of 20-gauge galvanized steel. Filters shall be 30% efficient in accordance with ASHRAE Standard 52.1-92, 2-inch pleated media filters. Filters shall be side loaded. Access to the filters shall be through a full-size, hinged access door. Filters shall have MERV 7 certification. Provide magnehelic gauge mounted on the outside of the unit which indicates filter pressure differential.

2.4 GENERAL ELECTRICAL

- A. All electrical wiring must be run in EMT, flexible metallic conduit (option - flexible weatherproof conduit), or steel raceways. Line and low voltage wiring must be isolated from one another. The unit shall be equipped for single source power connection.

2.5 SERVICE OUTLET

- A. The unit shall be equipped with a GFI type convenience outlet located on the control panel door. Power shall be provided from the line side of the main unit disconnect switch via a separate transformer so the circuit is always energized regardless of the main disconnect position.

2.6 MAIN CONTROL PANEL

- A. The main control panel will have access door(s) for direct access to the controls. The panel shall be equivalent to NEMA type 3R (rainproof) and contain a single externally operated, molded case switch suitable for copper or aluminum wire up to and including 3" conduit. Door mounted operating mechanism shall have screwdriver interlock pin that allows control panel access without shutting down the unit.
- B. Externally mounted disconnects shall not be acceptable.
- C. The control panel shall include the following:
 - 1. A power terminal block
 - 2. A power transformer with 115-volt secondary and 115 volt control fuse
 - 3. A 24-volt control transformer and fuse.
 - 4. All control relays necessary for control functions.
 - 5. A 115-volt terminal strip
 - 6. A 24-volt control terminal strip containing wired terminals for all controls, numbered in accordance with the wiring diagram.

ROOFTOP AIR-HANDLING UNITS

7. An isolated 24-volt field wiring terminal strip
8. An electrical print pocket, which in addition to the electrical print shall contain a startup form.
9. Adequate space allocation for the installation on the required Siemens controls.

2.7 UNIT BASE

Units' base shall be fabricated from welded structural galvanized steel C-channels members ranging between 4-8 inch in height depending on unit size and length, on the perimeter with internal cross-member supporting beams along the whole base length and width fabricated from galvanized steel G90 10 gauge. A double coat of epoxy shall be applied to the whole base construction including all C-channels and supporting members. The base panels shall be insulated with 2-inch high-density foam insulation. Heavy screwed (removable) lifting lugs shall be furnished with the unit along the whole perimeter for un-loading and overhead rigging. An optional base construction utilizing a positive curb counter flashing for water proofing unit to curb is available as an option by extending below the top of the curb by 0.8-inch.

2.8 UNIT CABINET

Units framework shall be constructed of bolted G-90 20 gauge aluminum. Units shall utilize a double wall panel construction as standard. The panels outer/inner wall shall be made from sheet aluminum, .04" thick walls and .08" thick roof. Panels shall be double wall with 2" foam injection. Unit roof shall be furnished with standing seems and must be double sloped "Crown Shape". Hinged access doors shall be furnished for each component including economizer, filters, coils, Fans and plenums. All access doors shall be of the double wall construction, and shall seal against a clip-on door profile rubber gasket to prevent air and water leakage. A minimum of two handles with capabilities to open from inside or outside unit shall be provided for each door, with an additional tool latch for each door. Access doors shall be hinged with painted steel hinges of same handles and latches quantity. All panels shall be insulated with 2-inch high-density (3 pcf) injected foam insulation. The insulation shall comply with UL-1995 (UL 181 and 723), ASTM, NFPA-90 A and B and 255 and ASHRAE specifications standards. All screw shall be made from stainless steel.

2.9 COMPRESSORS

Units shall be equipped with suction gas-cooled hermetic scroll compressors. Each compressor shall be connected across the line, mounted on rubber-in-shear (RIS) vibration isolators and equipped with operating oil charge, crank case heater, crank case oil sight glass, inherent solid state motor protector, suction strainer and short cycling delay timer protection. The maximum operating compressor speed shall be 3,500 rpm. The lead compressor shall be a VFD scroll compressor.

ROOFTOP AIR-HANDLING UNITS

2.10 REFRIGERATION CIRCUITS

Units shall be having individual refrigeration circuits. Each refrigeration circuit shall be tested, dehydrated, and fully charged with R-410a refrigerant. Each refrigeration circuit will be equipped with disposable type filter drier, moisture indicator sight glass, liquid line solenoid valve, liquid line shut off valve, automatic reset low safety protection pressure switch, manual reset high safety protection pressure switch, thermostatic expansion valve and factory assembled vertical distributor. All suction lines are insulated with closed cell rubber insulation, which is then wrapped in cheese cloth and epoxy painted; while, lines extending inside AHU sections shall be insulated with closed cell rubber insulation. All exposed refrigerant lines in the condenser side shall be fully epoxy coated for additional protection. Charging ports are provided from the condenser exterior or at its perimeter.

2.11 CONDENSOR COIL

Constructed from aluminum fins mechanically expanded into seamless copper tubes. Fins shall be 0.006-inch thickness and made from aluminum alloy 1,100 temper 0. The fins shall be plate type; die formed with sinusoidal surface and rippled edges. Each fin shall have a formed self-spacing collar covering the copper tube completely. Tubes shall be seamless copper with 3/8-inch outside tube diameter and 0.016-inch wall thickness. Headers shall be made from heavy wall type L copper pipes. Headers shall be individually sized for each coil to minimize refrigerant pressure drop. Coils casing shall be made from galvanized steel with end plate having a die-formed extruded tube holes for maximum tube protection and support. Intermediate tube supporting shall be provided as required for additional strength. All coils are leak tested under water at 450-psi. The same unit manufacturer shall manufacture coils. Condenser side shall have a complete wire mesh all around its perimeter. The mesh shall be fixed on the upper part of the condenser and removable for the lower part to enable serviceability and accessibility of the refrigerant circuit components. For the open condenser type, a full painted sheet metal plate covers the whole U-bends side (opposite to the headers side) for additional safety and protection. Stainless steel coil casing, pre-painted aluminum fins with polyurethane anti-corrosive coat, post-painted aluminum fins with polyurethane anti-corrosive coat, copper fins, post-painted copper fins with polyurethane anti-corrosive coat among others shall be available options.

2.12 CONDENSOR FANS AND MOTORS

Condenser fans shall be of the direct driven type with axial (propeller) steel blade, up-ward discharge, statically and dynamically balanced, with coated steel blades and heavy duty wire guards made from steel with electrostatic polyester powder coat, oven baked. Motors shall be high efficiency (EPAct), totally enclosed fan cooled (TEFC), with permanently lubricated bearing and three phase power supply. Motors shall be equipped with factory mounted external overload. Motors shall have a NEMA standard frame, a class F motor insulation, and a 6-pole motor with a maximum motor speed of 1,100 rpm

ROOFTOP AIR-HANDLING UNITS

2.13 ECONOMIZER

Standard economizer shall consist of an outside and return air damper with individual modulating damper motor actuator and dry bulb or enthalpy sensors. The economizer shall be capable to handle up to 100% of outside air. The dampers shall be of the low leakage type and made from extruded anodized aluminum. Damper shall be of the opposed blade type with each damper blade having a rubber seal edge and end seal by a plastic gear. Each blade shall have its own plastic gear, one at each end. The whole mechanism is operated through one actuator sized properly to provide the necessary torque. The damper frame is made from extruded aluminum as well. Outside air dampers shall be furnished with a hood, an aluminum moisture mesh and a drain lip all around the hood perimeter. The hoods shall be sized for a face velocity not exceeding 500-600 FPM to eliminate any possible carry-over of water inside unit.

2.14 EXHAUST BAROMETRIC RELIEF

Provide an exhaust damper with an actuator; which responds to a signal from unit controller.

2.15 AHU COIL

Constructed from aluminum fins mechanically expanded into seamless copper tubes. Fins shall be 0.006-inch thickness and made from aluminum alloy 1,100 temper 0. The fins shall be plate type; die formed with sinusoidal surface and rippled edges. Each fin shall have a formed self-spacing collar covering the copper tube completely. Tubes shall be seamless copper with 3/8-inch outside tube diameter and 0.016-inch wall thickness. Headers shall be made from heavy wall type L copper pipes. Headers shall be individually sized for each coil to minimize refrigerant pressure drop. Coils casing shall be made from galvanized steel with end plate having a die-formed extruded tube holes for maximum tube protection and support. Intermediate tube supporting shall be provided as required for additional strength. All coils are leak tested under water at 450-psi. The same unit manufacturer shall manufacture coils. Coils shall be interlaced circuiting to achieve a full face activation coil operation during full and part load performance and have a minimum of 6-rows to achieve higher EER-ratio. Coil shall be provided with a double-sloped condensate drain pan. The drain pan shall be made from stainless steel with electrostatic polyester powder coat, oven baked and insulated from beneath with closed cell rubber insulation. Drain connection shall be extended through the perimeter base channel and continuously welded to ensure air-tight seal as well as to eliminate the requirement for a backup wrench during field piping. Stainless steel drain pan, stainless steel coil casing, pre-painted aluminum fins with polyurethane anti-corrosive coat, post-painted aluminum fins with polyurethane anti-corrosive coat, copper fins, post-painted copper fins with polyurethane anti-corrosive coat among others shall be available options.

2.16 AHU SUPPLY FAN AND MOTOR

ROOFTOP AIR-HANDLING UNITS

Fans shall be of single width single inlet airfoil type, with direct drive motors. Fans performance shall be rated and certified in accordance with AMCA 210 standard. Fans shall be statically and dynamically balanced. Shafts shall be made from steel, machined, grounded, polished and epoxy coated. Fan shaft bearing shall be pillow block with greasing provisions and fixed pitch sheave drive. Bearing shall be mounted on structural galvanized framework and shall have an average life of L50 200 K hours. Motors shall be high efficiency (EPAct), open drip proof (ODP), with three-phase power supply. Motors shall be equipped with factory mounted external overload. Motors shall have a NEMA standard frame, a class B motor insulation, and a 4-pole motor with a maximum motor speed of 1,800 rpm. Fan and motor assembly shall be supported internally in the fan section cabinet by an integral structural heavy gauge galvanized steel base. The assembly shall be fully isolated from the unit by a rubber-in-shear (RIS) vibration isolator under assembly base and the fan housing discharge isolated from the casing with a neoprene flexible connection. Fan and motor assembly shall be rigidly supported with a wooden framework during shipping. Provide factory mounted VFD drive for fan speed adjustment and control.

2.17 ENCLOSURE DESCRIPTION

Constructed of heavy gage galvanized steel with electrostatic polyester powder coat, oven baked, which can meet 1,000 hours salt spray according to ASTM standard B117, with provision for main power entry from one side, and for field connection from the opposite side. Small holes are punched in the bottom of the panel in order to drain out any water that might enter. Doors shall be heavy gage galvanized steel with powder coating and shall have external handles with keys and tooled latch with sealing heavy duty clip-on bulb gasket between the doors and the panel. The panel shall be either welded galvanized steel or galvanized steel panels with aluminum frames, depending on unit size.

2.18 ELECTRICAL PANEL

A. Power side:

1. Power circuit fuse or circuit breaker in each phase for each compressor
2. Compressor motor starting contactors
3. Power circuit fuse or circuit breaker in each phase for condenser fan motors
4. Power circuit fuse or circuit breaker in each phase for each AHU fan motor
5. Condenser fan motor and AHU fan motor starting contactors
6. Voltage monitor controller (phase failure relay): The voltage monitor controller monitors the main incoming power supply to the unit. It provides protection from single phasing, under voltage, over voltage, phase voltage imbalance and non-phase sequence.
7. Single point power connection.
8. External over load thermal motor protector for condenser and AHU fan motor
9. Control Power Transformer for 460-volt power supply units only.
10. VFD drive.

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11. Pencil Heater in control panel.

B. Control side:

1. On/Off switch for each compressor
2. Short cycling protection for compressors (time delay).
3. Control circuits fuse or circuit breaker to protect the control circuit from short circuit
4. Control transformer sized to supply the needs of the control circuit, sourcing power from the main unit power connection.
5. Control terminal strip for easy connection with electrical board and easy field connection.

2.19 CONTROLS

- A. Controls: The controls for this equipment are to be factory installed. The control devices shall be furnished to the factory by Siemens, the district control supplier for this school. Siemens shall provide control equipment cuts and diagrams to the factory before installation. Siemens shall extend the existing control wiring, and air piping in the field as required for a complete operating system matching the existing. In addition to the existing sequence the control subcontractor shall include control of the VFD drive. The VFD drive shall modulate the fan speed from minimum to maximum to maintain space temperature. The space temperature sensor shall reset discharge air at 5 degree intervals (adj.). After the temperature is reset and the space temperature continues to rise/drop modulate fan speed from slowly. When the fan is at its minimum setting and the space temperature continues to rise/drop, return slowly to the design air flow setting, reset the discharge air 5 degrees and continue the above sequence.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Examine roughing-in of piping systems and electrical services to verify actual locations of connections before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 CONNECTIONS

- A. Connect existing piping to new coils. Provide all fitting and insulation to duplicate the existing installation.

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- B. Connect existing ducts to the supply and return fans. Make final duct connections with flexible connections.
- C. Electrical: Comply with applicable codes.
- D. Ground equipment as required by National Electric Code.
- E. Connect existing building controls to the new air handling as required to provide a fully operating system.

3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including piping and electrical connections. Report results in writing.
 - 1. Leak Test: After installation test coils and connections for leaks. Repair leaks and retest until no leaks exist.
 - 2. Charge refrigerant coils with refrigerant and test for leaks. Repair leaks and retest until no leaks exist.
 - 3. Fan Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation. Remove malfunctioning units, replace with new units, and retest.
 - 4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Controls: The controls shall be factory mounted. Engage the services of the existing building controls manufacturer/supplier, Siemens, to make the necessary connections to the existing control system required by the air handling unit replacement. Provide written verification, from Siemens, the controls are working properly.

3.4 STARTUP SERVICE

- A. Engage a factory-authorized service representative to perform startup service.
- B. Final Checks before Startup: Perform the following:
 - 1. Verify that shipping, blocking, and bracing are removed.
 - 2. Verify that unit is secure on mountings and supporting devices, and that connection to piping, ducts, and electrical systems are complete. Verify that proper thermal-overload protection is installed in motors, starters, and disconnect switches.
 - 3. Perform cleaning and adjusting specified in this Section.
 - 4. Disconnect fan drive from motor, verify proper motor rotation direction, and verify free fan wheel rotation and smooth bearing operations. Reconnect fan drive system, align belts, and install belt guards.

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5. Lubricate bearings, pulleys, belts, and other moving parts with Factory recommended lubricants.
6. Set outside- and return-air mixing dampers to minimum outside-air setting.
7. Comb coil fins for parallel orientation.

3.5 ADJUSTING

- A. Adjust damper linkages for proper damper operation.

3.6 CLEANING

- A. Clean modular air-handling units internally, on completion of installation, according to manufacturer's written instructions. Clean fan interiors to remove foreign material and construction dirt and dust. Vacuum clean fan wheels, cabinets, and coils entering air face.
- B. After completing system installation and testing, adjusting, and balancing modular air-handling and air-distribution systems, clean filter housings and install new filters.

3.7 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain air-handling units.

END OF SECTION 15730

TESTING, ADJUSTING, AND BALANCING

SECTION 15990 - TESTING, ADJUSTING, AND BALANCING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes testing, adjusting, and balancing HVAC systems to produce design objectives, including the following:
 - 1. Balance unit supply and return air fans to cfms listed. Set new zone balancing dampers to cfms listed. Read air flows by duct traverse performed in accordance with AABC and NEEB procedures.
 - 2. Set water flow to the flow rates listed on the documents.
 - 3. Balance all new exhaust fans.

1.3 SUBMITTALS

- A. Quality-Assurance Submittals: Within 30 days from the Contractor's Notice to Proceed, submit 2 copies of evidence that the testing, adjusting, and balancing Agent and this Project's testing, adjusting, and balancing team members meet the qualifications specified in the "Quality Assurance" Article below.
- B. Strategies and Procedures Plan: Within 60 days from the Contractor's Notice to Proceed, submit 2 copies of the testing, adjusting, and balancing strategies and step-by-step procedures as specified in Part 3 "Preparation" Article below. Include a complete set of report forms intended for use on this Project.
- C. Certified Testing, Adjusting, and Balancing Reports: Submit 2 copies of reports prepared, as specified in this Section, on approved forms certified by the testing, adjusting, and balancing Agent.
- D. Sample Report Forms: Submit 2 sets of sample testing, adjusting, and balancing report forms.

1.4 QUALITY ASSURANCE

- A. Agent Qualifications: Engage a testing, adjusting, and balancing agent certified by NEBB or AABC.

TESTING, ADJUSTING, AND BALANCING

- B. Testing, Adjusting, and Balancing Reports: Use standard forms from NEBB's "Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems."
- C. Instrumentation Type, Quantity, and Accuracy: As described in NEBB's "Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems," Section II, "Required Instrumentation for NEBB Certification."
- D. Instrumentation Calibration: Calibrate instruments at least every 6 months or more frequently if required by the instrument manufacturer. Submit NIST traceable calibration certifications.

1.5 PROJECT CONDITIONS

- A. Full Owner Occupancy: The Owner will occupy the site and existing building during the entire testing, adjusting, and balancing period. Cooperate with the Owner during testing, adjusting, and balancing operations to minimize conflicts with the Owner's operations.

1.6 COORDINATION

- A. Coordinate the efforts of factory-authorized service representatives for systems and equipment, HVAC controls installers, and other mechanics to operate HVAC systems and equipment to support and assist testing, adjusting, and balancing activities.
- B. Notice: Provide 7 days' advance notice for each test. Include scheduled test dates and times.

1.7 WARRANTY

- A. General Warranty: The national project performance guarantee specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Guarantee: Provide a guarantee on NEBB forms stating that NEBB will assist in completing the requirements of the Contract Documents if the testing, adjusting, and balancing Agent fails to comply with the Contract Documents. Guarantee includes the following provisions:
 - 1. The certified Agent has tested and balanced systems according to the Contract Documents.
 - 2. Systems are balanced to optimum performance capabilities within design and installation limits.

TESTING, ADJUSTING, AND BALANCING

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine Contract Documents to become familiar with project requirements and to discover conditions in systems' designs that may preclude proper testing, adjusting, and balancing of systems and equipment.
- B. Examine approved submittal data of HVAC systems and equipment.
- C. Examine equipment performance data, including fan and pump curves. Relate performance data to project conditions and requirements, including system effects that can create undesired or unpredicted conditions that cause reduced capacities in all or part of a system. Calculate system effect factors to reduce the performance ratings of HVAC equipment when installed under conditions different from those presented when the equipment was performance tested at the factory. To calculate system effects for air systems, use tables and charts found in AMCA 201, "Fans and Systems," Sections 7 through 10; or in SMACNA's "HVAC Systems--Duct Design," Sections 5 and 6. Compare this data with the design data and installed conditions.
- D. Examine system and equipment installations to verify that they are complete and that testing, cleaning, adjusting, and commissioning specified in individual Specification Sections have been performed.
- E. Examine system and equipment test reports.
- F. Examine HVAC system and equipment installations to verify that indicated balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers, are properly installed, and their locations are accessible and appropriate for effective balancing and for efficient system and equipment operation.
- G. Examine systems for functional deficiencies that cannot be corrected by adjusting and balancing.
- H. Examine air-handling equipment to ensure clean filters have been installed, bearings are greased, belts are aligned and tight, and equipment with functioning controls is ready for operation.
- I. Examine plenum ceilings, utilized for supply air, to verify that they are airtight. Verify that pipe penetrations and other holes are sealed.
- J. Examine heat-transfer coils for correct piping connections and for clean and straight fins.

TESTING, ADJUSTING, AND BALANCING

- K. Examine open-piping-system pumps to ensure absence of entrained air in the suction piping.
- L. Examine equipment for installation and for properly operating safety interlocks and controls.
- M. Examine automatic temperature system components to verify the following:
 - 1. Dampers, valves, and other controlled devices operate by the intended controller.
 - 2. Dampers and valves are in the position indicated by the controller.
 - 3. Integrity of valves and dampers for free and full operation, and for tightness of fully closed, and fully open positions. This includes dampers in multi-zone units, mixing boxes, and variable-air-volume terminals.
 - 4. Automatic modulating and shutoff valves, including 2-way valves and 3-way mixing and diverting valves, are properly connected.
 - 5. Thermostats and humidistats are located to avoid adverse effects of sunlight, drafts, and cold walls.
 - 6. Sensors are located to sense only the intended conditions.
 - 7. Sequence of operation for control modes is according to the Contract Documents.
 - 8. Controller set points are set at design values. Observe and record system reactions to changes in conditions. Record default set points if different from design values.
 - 9. Interlocked systems are operating.
 - 10. Changeover from heating to cooling mode occurs according to design values.
- N. Report deficiencies discovered before and during performance of testing, adjusting, and balancing procedures.

3.2 PREPARATION

- A. Complete system readiness checks and prepare system readiness reports. Verify the following:
 - 1. Permanent electrical power wiring is complete.
 - 2. Hydronic systems are filled, clean, and free of air.
 - 3. Automatic temperature-control systems are operational.
 - 4. Equipment and duct access doors are securely closed.

3.3 GENERAL TESTING AND BALANCING PROCEDURES

- A. Perform testing and balancing procedures on each system according to the procedures contained in NEBB's "Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems" and this Section.
- B. Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary to allow adequate performance of procedures. After testing and balancing, close probe holes and patch insulation with new materials identical to

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those removed. Restore vapor barrier and finish according to the insulation Specifications for this Project.

- C. Mark equipment settings with paint or other suitable, permanent identification material, including damper-control positions, valve indicators, fan-speed-control levers, and similar controls and devices, to show final settings.

3.4 FUNDAMENTAL AIR SYSTEMS' BALANCING PROCEDURES

- A. Prepare test reports for both fans and outlets. Obtain manufacturer's outlet factors and recommended testing procedures. Crosscheck the summation of required outlet volumes with required fan volumes.
- B. Determine the best locations in main and branch ducts for accurate duct airflow measurements.
- C. Locate start-stop and disconnect switches, electrical interlocks, and motor starters.
- D. Check dampers for proper position to achieve desired airflow path.
- E. Check for airflow blockages.
- F. Check condensate drains for proper connections and functioning.
- G. Check for proper sealing of air-handling unit components.

3.5 AIR SYSTEMS' BALANCING PROCEDURES

- A. The procedures in this Article apply to constant-volume supply-, return-, and exhaust-air systems.
- B. Adjust fans to deliver total design airflows within the maximum allowable rpm listed by the fan manufacturer. Adjust design cfm air flows (minimum and maximum) through unit VFD drive.
 - 1. Measure fan static pressures to determine actual static pressure as follows:
 - a. Measure outlet static pressure as far downstream from the fan as practicable and upstream from restrictions in ducts such as elbows and transitions.
 - b. Measure static pressure directly at the fan outlet or through the flexible connection.
 - c. Measure inlet static pressure of single-inlet fans in the inlet duct as near the fan as possible, upstream from flexible connection and downstream from duct restrictions.
 - d. Measure inlet static pressure of double-inlet fans through the wall of the plenum that houses the fan.

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2. Measure static pressure across each air-handling unit component.
 - a. Simulate dirty filter operation and record the point at which maintenance personnel must change filters.
3. Measure static pressures entering and leaving other devices such as sound traps, heat recovery equipment, and air washers under final balanced conditions.
4. Compare design data with installed conditions to determine variations in design static pressures versus actual static pressures. Compare actual system effect factors with calculated system effect factors to identify where variations occur. Recommend corrective action to align design and actual conditions.
5. Adjust fan speed higher or lower than design with the approval of the Architect. Make required adjustments to pulley sizes, motor sizes, and electrical connections to accommodate fan-speed changes.
6. Do not make fan-speed adjustments that result in motor overload. Consult equipment manufacturers about fan-speed safety factors. Modulate dampers and measure fan-motor amperage to ensure no overload will occur. Measure the amperage in full cooling, full heating, and economizer modes, to determine the maximum required brake horsepower.
7. Adjust all individual supply diffusers for the air flows listed on the contract drawings.

3.6 FUNDAMENTAL PROCEDURES FOR HYDRONIC SYSTEMS

- A. Prepare test reports with pertinent design data and number in sequence starting at pump to end of system. Check the sum of branch-circuit flows against approved pump flow rate. Correct variations that exceed plus or minus 5 percent.
- B. Prepare hydronic systems for testing and balancing according to the following, in addition to the general preparation procedures specified above:
 1. Open all manual valves for maximum flow.
 2. Check expansion tank liquid level.
 3. Check makeup-water-station pressure gage for adequate pressure for highest vent.
 4. Check flow-control valves for specified sequence of operation and set at design flow.
 5. Check pump-motor load. If motor is overloaded, throttle main flow-balancing device so motor nameplate rating is not exceeded.
 6. Check air vents for a forceful liquid flow exiting from vents when manually operated.

3.7 HYDRONIC SYSTEMS' BALANCING PROCEDURES

- A. Determine water flow at pumps. Use the following procedures, except for positive-displacement pumps:

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1. Verify impeller size by operating the pump with the discharge valve closed. Verify with the pump manufacturer that this will not damage pump. Read pressure differential across the pump. Convert pressure to head and correct for differences in gage heights. Note the point on the manufacturer's pump curve at zero flow and confirm that the pump has the intended impeller size.
 2. Check system resistance. With all valves open, read pressure differential across the pump and mark the pump manufacturer's head-capacity curve. Adjust pump discharge valve until design water flow is achieved.
 3. Verify pump-motor brake horsepower. Calculate the intended brake horsepower for the system based on the pump manufacturer's performance data. Compare calculated brake horsepower with nameplate data on the pump motor. Report conditions where actual amperage exceeds motor nameplate amperage.
 4. Report flow rates that are not within plus or minus 5 percent of design.
- B. Set calibrated balancing valves, if installed, at calculated presettings.
- C. Measure flow at all stations and adjust, where necessary, to obtain first balance.
1. System components that have Cv rating or an accurately cataloged flow-pressure-drop relationship may be used as a flow-indicating device.
- D. Measure flow at main balancing station and set main balancing device to achieve flow that is 5 percent greater than design flow.
- E. Adjust balancing stations to within specified tolerances of design flow rate as follows:
1. Determine the balancing station with the highest percentage over design flow.
 2. Adjust each station in turn, beginning with the station with the highest percentage over design flow and proceeding to the station with the lowest percentage over design flow.
 3. Record settings and mark balancing devices.
- F. Measure pump flow rate and make final measurements of pump amperage, voltage, rpm, pump heads, and systems' pressures and temperatures, including outdoor-air temperature.
- G. Measure the differential-pressure control valve settings existing at the conclusions of balancing.
- 3.8 MOTORS
- A. Motors, ½ HP and Larger: Test at final balanced conditions and record the following data:
1. Manufacturer, model, and serial numbers.
 2. Motor horsepower rating.
 3. Motor rpm.

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4. Efficiency rating if high-efficiency motor.
5. Nameplate and measured voltage, each phase.
6. Nameplate and measured amperage, each phase.
7. Starter thermal-protection-element rating.

3.9 TOLERANCES

- A. Set HVAC system airflow and water flow rates within the following tolerances:
 1. Supply, Return, and Exhaust Fans: Plus 5 to plus 10 percent.
 2. Air Outlets and Inlets: 0 to minus 10 percent.
 3. Heating-Water Flow Rate: 0 to minus 10 percent.
 4. Cooling-Water Flow Rate: 0 to minus 5 percent.

3.10 FINAL REPORT

- A. General: Typewritten, or computer printout in letter-quality font, on standard bond paper, in 3-ring binder, tabulated and divided into sections by tested and balanced systems.
- B. Include a certification sheet in front of binder signed and sealed by the certified testing and balancing engineer.
- C. Complete all reports on NEEB or AABC standard report format.

END OF SECTION 15990

CONDUCTORS AND CABLES

SECTION 16120 - CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SUMMARY

- A. The extent of the wire and cable work is indicated on the drawings for cables used for power rated 600 volts or less.

1.2 CODES AND STANDARDS

- A. NEC Compliance: Comply with applicable requirements of NEC for construction and installation of wires/cables and connectors.
- B. UL Compliance: Comply with UL standards 83 and 486A. Provide wiring/cablings and connector products which are UL listed and labeled consistent with their use.
- C. ICEA Compliance: Insulated Cable Engineers Association Inc., Standard WC-5-86.
- D. IEEE Compliance: Institute of electrical and Electronics Engineers, Standard 82-83.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Provide all wires and cables of sizes indicated on the drawings and suitable for the temperature, conditions and location where installed. Install all wire in raceway.

2.2 CONDUCTOR MATERIAL

- A. Use copper conductors of 98% conductivity and rated at 600V for all wires and cables.

2.3 INSULATION

- A. No conductors smaller than No. 12 AWG. shall be used unless noted. All wires No. 8 AWG or larger shall be stranded. Wire sizes No. 12 and No. 10 AWG shall be solid copper.
- B. For all sizes provide THHN/THWN or XHHW insulation as appropriate for the locations where installed or as noted elsewhere.

CONDUCTORS AND CABLES

2.4 CONNECTORS FOR CONDUCTORS

- A. Provide UL listed, factory fabricated, solderless metal connectors of sizes, ampacity ratings, materials, types and classes for applications and for services indicated. Use connectors with temperature ratings equal to or greater than those of the wires upon which used.

PART 3 - EXECUTION

3.1 WIRES AND CABLES

- A. General: Install electrical cables, wires and conductors in compliance with NEC. Coordinate cable installation with other work. Pull conductors simultaneously where more than one is being installed in same raceway. Use UL listed pulling compound or lubricant, where necessary.
- B. Use pulling means including, fish tape, cable, rope and basket weave wire/cable grips which will not damage cables or raceways. Do not use rope hitches for pulling attachment to wire or cable.
- C. Provide adequate length of conductors within electrical enclosures and train the conductors to terminal points with no excess. Bundle multiple conductors, with conductors larger than No. 10 AWG cabled in individual circuits. Make terminations so there is no bare conductor at the terminal. Provide wire ties and neatly train and rack wires in all boxes, panels, and other areas as required.
- D. Tighten connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values. Where manufacturer's torque requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL 486A and 486B.

3.2 FIELD QUALITY CONTROL

- A. Prior to energizing, check installed wires and cables with meg-ohm meter to determine insulation resistance levels to assure requirements are fulfilled.
- B. Prior to energizing, test wires and cables for electrical continuity and for short-circuits.
- C. Subsequent to wire and cable hook-ups, energize circuits and demonstrate proper functioning. Correct malfunctioning units and retest to demonstrate compliance.

CONDUCTORS AND CABLES

3.3 TABLE 1 COLOR CODING FOR PHASE IDENTIFICATION

- A. Match existing if present. Color code secondary service, feeder and branch conductors with factory applied color as follows:

120/208 Volts	Phase	277/480 Volts
Black	A	Brown
Red	B	Orange
Blue	C	Yellow
White	Neutral	Grey
Green	Ground	Green

- B. Provide visible colored taped as listed above at all termination points for No. 8 AWG and larger wires.

END OF SECTION 16120