

# **SPECIFICATIONS**

## **FOR**

Bid No. 16-17

***IP Security/Network Upgrades  
at the  
Maple Point, Carl Sandburg, and Poquessing Middle Schools***

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

February 11, 2015

Prepared by

**CONSOLIDATED ENGINEERS**  
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CE Project No. 15-2368-1

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## SCHEDULE OF DRAWINGS

<u>DRAWING NUMBER</u>	<u>DRAWING NAME</u>
CMP-1	Maple Point Middle School First Floor – Base Bid
CMP-1A	Maple Point Middle School First Floor – Alternate Bid
CMP-2	Maple Point Middle School Second Floor – Base Bid
CMP-2A	Maple Point Middle School Second Floor – Alternate Bid
CP-1	Poquessing Middle School First and Second Floor – Base Bid
CP-1A	Poquessing Middle School First and Second Floor – Alternate Bid
CCS-1	Carl Sandburg Middle School First Floor – Base Bid
CCS-1A	Carl Sandburg Middle School First Floor – Alternate Bid

## SECTION 00030 - ADVERTISEMENT FOR BIDS

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

IP Security/Network Upgrades at Maple Point, Poquessing, and Carl Sandburg Middle Schools, Bid No. 16-17.

Sealed proposals will be received by Mr. Tom Sizgorich, Director of Purchasing, until 10:00 a.m., prevailing time Thursday March 12, 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 Tuesday, February 17, 2015, 10:00 am, at the Maple Point Middle School Cafeteria.

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](http://www.neshaminy.org). Click on the bid tab and look for bid#16-17.

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](mailto: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:** IP security/Network upgrades for Nashaminy School District

**Awarding Agency:** Nashaminy School District

**Contract Award Date:** 3/3/2015

**Serial Number:** 15-00770

**Project Classification:** Building

**Determination Date:** 2/8/2015

**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**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
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**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
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**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
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**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
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**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
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**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
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**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
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**

<b>Building</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
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**

<b>Heavy/Highway</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
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**

<b>Heavy/Highway</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
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**

<b>Heavy/Highway</b>	<b>Effective Date</b>	<b>Expiration Date</b>	<b>Hourly Rate</b>	<b>Fringe Benefits</b>	<b>Total</b>
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](http://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. 16-17  
IP SECURITY/NETWORK UPGRADES  
AT  
MAPLE POINT, POQUESSING, AND CARL SANDBURG MIDDLE SCHOOLS  
FOR  
NESHAMINY SCHOOL DISTRICT

Proposal of: IP Security/Network Upgrades at Maple Point, Poquessing, and Carl Sandburg Middle Schools for the Neshaminy School District, Bid No. 16-17

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 Antibid-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 IP Security/Network Upgrades at Maple Point, Poquessing, and Carl Sandburg Middle Schools.

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.

ALLOWANCES: The bidder agrees that Allowances are included in the base bid as indicated in the bid form. All or any portion of the allowance that is unused shall be returned to the Owner using the respective unit prices to determine the amounts.

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

**BASE BID**

State the costs associated with all work indicated on Drawings CMP-1, CMP-2, CP-1 and CCS-1 as indicated in the contract documents. The Contractor shall include all overtime labor to install cabling system complete and operational by July 31, 2015.

\_\_\_\_\_ Dollars

(\$ \_\_\_\_\_)

**ALTERNATE NO. 1:** Provide the total cost to install all CAT 6e Outlets indicated on Drawings CMP-1A, CMP-2A, CP-1A, CCS-1A, and as described in specifications. CAT 6e outlets shall include all outlets, dual CAT 6e cable runs, boxes, jacks, terminations, patch panel(s), testing, conduit, etc. Total cost shall include all overtime labor to install cabling system complete and operational by July 31, 2015. Fiber optic cabling that is shown on the above mentioned drawings is not included in this alternate. Fiber optic cable work is included in Alternate Bid No. 2.

\_\_\_\_\_ Dollars

(\$ \_\_\_\_\_)

ALTERNATE NO. 2: Provide the total cost to install all Fiber Optic cable and associated work indicated on Drawings CMP-1A, CMP-2A, CP-1A, CCS-1A, and as described in specifications. Total cost shall include all fiber optic cables, terminations, conduit, equipment, and overtime required for a complete and operational cabling system by July 31, 2015. CAT 6e cabling that is shown on the above mentioned drawings is not part of this alternate. See Alternate No. 1.

\_\_\_\_\_ Dollars  
(\$\_\_\_\_\_)

UNIT PRICE 1 (SINGLE CAT 6e CABLE OUTLET)

Single CAT 6e Cable Outlet shall comprise the total cost for Labor, 300' of CAT 6e cable, terminations, conduit, jacks, box, overhead and testing for a complete and operational run.

\_\_\_\_\_ Dollars  
(\$\_\_\_\_\_)

UNIT PRICE 2 (DUAL CAT 6e CABLE OUTLET)

Dual CAT 6e Cable Outlet shall comprise the total cost for Labor, 300' of CAT 6e cable, terminations, conduit, jacks, box, overhead and testing for a complete and operational run.

\_\_\_\_\_ Dollars  
(\$\_\_\_\_\_)

ALLOWANCE NO. 1 (CAT 6e OUTLETS)

CAT 6e Outlets: Provide the total of three (3) Single and three (3) Dual Above-Ceiling Data Outlets. Each outlet shall consist of Box, 300' of CAT 6 wiring and terminations. Provide all labor and materials. Refer to Single and Dual CAT 6e Outlet UNIT PRICE 1 and UNIT PRICE 2.

\_\_\_\_\_ 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)

\_\_\_\_\_  
(SEAL)

Partners

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 Antibid-Rigging 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 IP Security/Network Upgrades at Maple Point, Poquessing, and Carl Sandburg Middle Schools

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 \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
(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 - IP SECURITY/NETWORK UPGRADES AT MAPLE POINT, POQUESSING, AND CARL SANDBURG MIDDLE SCHOOLS"**

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 Tuesday, February 17<sup>th</sup>, 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 July 15<sup>th</sup>, 2015 and complete by July 31<sup>st</sup>, 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 31<sup>st</sup>, 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 - IP SECURITY/NETWORK UPGRADES AT MAPLE POINT, POQUESSING, AND CARL SANDBURG MIDDLE SCHOOLS

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 - IP SECURITY/NETWORK UPGRADES AT MAPLE POINT, POQUESSING, AND CARL SANDBURG MIDDLE SCHOOLS”**

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 Tuesday, February 17<sup>th</sup>, 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 **Thursday March 12<sup>th</sup>, 2015 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**

<b>SECTION II</b>		<b>RESULTS OF HISTORY CHECK</b>	
<input type="checkbox"/> APPLICANT IS <b>NOT</b> LISTED IN A REPORT OF CHILD ABUSE OR A REPORT FOR SCHOOL EMPLOYEE.		<input type="checkbox"/> APPLICANT <b>IS</b> 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

<b>SECTION III</b>		<b>VOLUNTARY CERTIFICATION FOR CHILD CARE SERVICES</b>	
<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>			
<b>PENNSYLVANIA CHILD ABUSE HISTORY CLEARANCE</b>			
<p><input type="checkbox"/> Applicant is named as the perpetrator of a <b>founded</b> 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 <b>founded</b> 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 <b>indicated</b> 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>			
<b>PENNSYLVANIA STATE POLICE CLEARANCE</b>			
<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>			
<b>FBI CLEARANCE</b>			
<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>

<b>NAME/ REQUESTER</b>	
<b>ADDRESS</b>	
<b>CITY/STATE/ ZIP CODE</b>	

**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**

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**

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**

FEE EXEMPT-NONCRIMINAL JUSTICE AGENCY – NO FEE

**CONTACT TELEPHONE NUMBER (INCLUDING AREA CODE)**

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

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

**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"> <li>▪ Chapter 25 (relating to criminal homicide)</li> <li>▪ Section 2702 (relating to aggravated assault)</li> <li>▪ Section 2709.1 (relating to stalking)</li> <li>▪ Section 2901 (relating to kidnapping)</li> <li>▪ Section 2902 (relating to unlawful restraint)</li> <li>▪ Section 2910 (relating to luring a child into a motor vehicle or structure)</li> <li>▪ Section 3121 (relating to rape)</li> <li>▪ Section 3122.1 (relating to statutory sexual assault)</li> <li>▪ Section 3123 (relating to involuntary deviate sexual intercourse)</li> <li>▪ Section 3124.1 (relating to sexual assault)</li> <li>▪ Section 3124.2 (relating to institutional sexual assault)</li> <li>▪ Section 3125 (relating to aggravated indecent assault)</li> <li>▪ Section 3126 (relating to indecent assault)</li> <li>▪ Section 3127 (relating to indecent exposure)</li> <li>▪ Section 3129 (relating to sexual intercourse with animal)</li> <li>▪ Section 4302 (relating to incest)</li> <li>▪ Section 4303 (relating to concealing death of child)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Section 4304 (relating to endangering welfare of children)</li> <li>▪ Section 4305 (relating to dealing in infant children)</li> <li>▪ A felony offense under section 5902(b) (relating to prostitution and related offenses)</li> <li>▪ Section 5903(c) or (d) (relating to obscene and other sexual materials and performances)</li> <li>▪ Section 6301(a)(1) (relating to corruption of minors)</li> <li>▪ Section 6312 (relating to sexual abuse of children)</li> <li>▪ Section 6318 (relating to unlawful contact with minor)</li> <li>▪ Section 6319 (relating to solicitation of minors to traffic drugs)</li> <li>▪ Section 6320 (relating to sexual exploitation of children)</li> </ul>
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- (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

IP Security/Network Upgrades at Maple Point, Poquessing, and Carl Sandburg Middle Schools, Bid No. 16-17

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:

\_\_\_\_\_  
(CORPORATE SEAL) \_\_\_\_\_(SEAL)  
Principal - Individual

\_\_\_\_\_  
(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 installation of all data/communications outlets shown in the contract documents at Maple Point, Poquessing, and Carl Sandburg Middle Schools. The cabling installation shall include single and dual CAT 6e Cable, Runs, Outlet, Jacks, Terminations, Patch Panels, Conduit, Conduit Sleeves, Hangers, Fiber Optic Cable, Armour Jacket Shields, Fiber Terminations, and Equipment.

This contractor shall be responsible for all cable, 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 of the Owner's existing Data/Communication System must be worked out in advance.

As-Built Drawings.

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

This Section specifies administrative and procedural requirements for alternates.

### Definitions:

Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding documents, that will be added to or deducted from the Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed or in the products, materials, equipment, systems or installation methods described in the Contract Documents. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate the alternate into the work.

Alternate prices shall be all inclusive of the cost of materials, work, profit, supervision, administration and any and all costs in connection therewith for the work in place, accepted or omitted as the cause may be, and shall hold for the same period as the bid.

Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into the project. Include as part of each alternate, miscellaneous devices, accessories, and similar items incidental to or required for a complete installation whether or not indicated as part of the alternate.

Each Alternate price filled in on the Bid Form shall include all costs of related coordination, modification or adjustment required to perform the Work of that Alternate.

If, after award of the Contract, additional details, drawings, and/or data are required or requested by and furnished to the Contractor to supplement the original intent of the Alternate, such additional details, drawings and data shall be true developments of the Alternate Price work as shown on the Contract Documents, or as herein described, and no claims shall be made for any additional cost as a result of such additional details, drawings and/or data which may result from the acceptance of any of the Alternates.

### Schedule of Alternates:

ALTERNATE NO. 1: Provide the total cost to install all CAT 6e Outlets indicated on Drawings CMP-1A, CMP-2A, CP-1A, CCS-1A, and as described in specifications. CAT 6e outlets shall include outlets, dual CAT 6e cable runs, boxes, jacks, terminations, patch panel, testing, conduit, etc. Total cost shall include all overtime labor to install system cabling complete and operational by July 31, 2015. Fiber optic cabling is not included in this alternate. Fiber optic cable work is included in Alternate Bid No. 2.

ALTERNATE NO. 2: Provide the total cost to install all Fiber Optic work indicated on Drawings CMP-1A, CMP-2A, CP-1A, CCS-1A, and as described in specifications. Total cost shall include all fiber optic cables, terminations, conduit, equipment, and overtime required for a complete and operational system by July 31, 2015. CAT 6e cabling is not part of this alternate. See Alternate No. 1.

END OF SECTION 01230



## SECTION 01235 – UNIT PRICES

This Section specifies administrative and procedural requirements for unit prices.

Definitions: Unit price is the amount proposed by bidders, as indicated on the bid form. The unit price is the amount per unit of measurement or quantity for materials, equipment or services that maybe added to or deducted from the contract sum by change order in the event the quantities of work indicated in the contract documents are increased or decreased.

All unit prices are to include the total cost including delivery, installation, insurance bond costs, supervision, and all other costs.

The undersigned agrees that the following shall constitute the unit prices for each project to be applicable to additions to or deductions from the quantities contemplated by the Contract Documents by reason of changes to the Contract Documents in the course of performance of the contemplated work:

Schedule of Unit Prices:

### UNIT PRICE 1 (SINGLE CAT 6e CABLE OUTLET)

Single CAT 6e Cable Outlet shall comprise the total cost for Labor 300' of CAT 6e cable, terminations, conduit, jacks, box, and overhead testing for a complete and operational run.

### UNIT PRICE 2 (DUAL CAT 6e CABLE OUTLET)

Dual CAT 6e Cable Outlet shall comprise the total cost for Labor 300' of CAT 6e cable, terminations, conduit, jacks, box, and overhead testing for a complete and operational run.

END OF SECTION 01235

## 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

## BASIC ELECTRICAL REQUIREMENTS

## SECTION 26 00 10 – BASIC ELECTRICAL REQUIREMENTS

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. This Section includes general administrative and procedural requirements for electrical installations. The following administrative and procedural requirements are included in this Section to expand the requirements specified in Division-1:
  - 1. Coordination Drawings.
  - 2. Record documents.
  - 3. Maintenance manuals.
  - 4. Rough-ins.
  - 5. Electrical installations.
  - 6. Cutting and patching.

## 1.2 SUBMITTALS

- A. Follow the procedures specified in Division 1.
- B. Submit a minimum of five (5) copies of electrical related Shop Drawings, Product Data, and Samples submitted, to allow for required distribution of each submittal required, which will be retained by the Electrical Consulting Engineer.
- C. Provide the following shop drawings in booklet form:
  - 1. Data cabling, materials and equipment shall be submitted all at one (1) time in a booklet form.

## 1.3 PRODUCT REVIEWS AND SUBSTITUTIONS

- A. Refer to Division 1 for substitutions requirements under this contract. Division 1 requirements supersede requirements listed elsewhere.
- B. Manufacturer's products listed is product owner currently use. Owner does not wish to accept other manufacturers.
- C. No substitutions will be reviewed by the Engineer after the Bid Due Date unless specifically requested by the Owner in writing with an associated credit with the substitution.

## 1.4 SHOP DRAWINGS

- A. Refer to the Conditions of the Contract (General and Supplementary) and Division-1 for submittal definitions, requirements, and procedures.
- B. Submittal of Shop Drawings, and Product Data will be reviewed only when submitted by the Prime Contractor. Submittals from sub-Contractors and material suppliers directly to the Engineer will not be reviewed. No equipment/materials shall be installed until the Shop Drawings have been stamped with "No Exceptions Taken" or "Make Corrections Noted" by the Engineer.

## BASIC ELECTRICAL REQUIREMENTS

- C. Submit Shop Drawings as listed in each specification section. Following is a list of shop drawings to assist the contractor; however, the contractor shall supply all shop drawings as listed in each individual section whether listed below or not.
  - 1. Data Equipment including, but not limited to equipment shop drawings, warranty information, Installer information, testing information and layout drawings.
  - 2. Fire Stopping Material.
  - 3. Access Panels.
- D. When preparing submittals and any required final programming, use a room number schedule generated by the owner, which indicates the actual room numbers that will be used when the building is occupied. If the schedule is not available, revise the initial submittal, when a schedule is available, to reflect the proper room numbers.

## 1.5 PRODUCT OBSOLESCENCE

- A. In all cases, the most current iteration of the specified product shall be submitted. Where the specified product is no longer manufactured, the contractor shall submit an equivalent product with the same or better specifications. Where specific manufacturers are specified, the contractor shall supply from the same manufacturer the recommended replacement; however, under no circumstances shall the replacement product be deficient in any aspect to the specified product.
- B. In the submittal for the product, the Contractor shall provide a signed letter clearly indicating the reason for the replacement product, and confirmation that the replacement product meets or exceeds all of the specified product's specifications to the best of the Contractor's knowledge.
- C. The replacement product shall be provided at no additional cost to the owner, and shall not constitute any extension to the project schedule.
- D. These requirements shall be inclusive to requirements listed elsewhere in the specifications, and shall not void any other requirements.

## 1.6 MANUFACTURER'S REQUIREMENTS

- A. All material shall be new, of the best respective kinds, manufactured by the company or companies mentioned and shall be of domestic manufacture unless specified otherwise.
- B. All equipment, material or apparatus of any one system must be the product of one Manufacturer, or system tested products.
- C. Manufacturers not listed in the Contract Documents must submit to the Engineer via a Bidding Contractor all product information per Division 1 requirements.

## 1.7 FAMILIARITY WITH PROPOSED WORK

- A. All Contracts are with the understanding that the Contractor, prior to submission of his bid, acquainted himself with the requirements of the Drawings and Specifications, including "Conditions of the Contract," conditions of the site, its terrain, soil conditions, all other requirements of the Contract, and that he obtained all information necessary for completion of the work on or before the date specified for receiving of bids.

## BASIC ELECTRICAL REQUIREMENTS

- B. In all cases where a device or part of the equipment is herein referred to in the singular, such reference shall apply to as many such items as are required to complete the installation.
- C. "Existing" information does not necessarily represent "as-built" conditions. The Contractor shall verify all existing conditions. If discrepancies are found the Contractor shall notify the Architect/Engineer for a resolution before proceeding.

## 1.8 DEFINITIONS

- A. The terms "The Contractor" or "This Contractor" mentioned in these Specifications refers to the Electrical Contractor responsible for the work and equipment included in these Specifications.
- B. The term Sub-Contractor refers to any reference to, or letting of work contained in these Specifications to any Sub-Contractor or Manufacturer by the Prime Contractor. This does not relieve the Prime Contractor of his responsibility for all work, material and equipment in this Specification.
- C. The term "Provide," when used separately, shall mean to "Furnish and Install."
- D. The term "Furnish," when used separately, shall mean to obtain and deliver on the job for installation by other trades.
- E. The term "Install," when used separately, shall mean to mount in place, connect and make operable.

## 1.9 INTENT OF THE DRAWINGS AND SPECIFICATIONS

- A. The Drawings which accompany the Specifications are for the purposes of illustrating the character and extent of the work, and are subject to such modifications by Architect/Engineer as may be found either necessary or advisable before ordering the prosecution of the work. The Contractor shall conform to and abide by whatever Supplementary Drawings and explanations which may be furnished by the Architect/Engineer for the purpose of illustrating the work. The Architect/Engineer shall decide as to the meaning or intention of any portion of the Specifications and Drawings.
- B. Where the work is shown in complete detail on only half or a portion of a Drawing, or there is an indication of continuation, the remainder being shown in outline, the work drawn out in detail shall be understood to apply to other like portions of the structure. All work that may be called for in the Specifications and not shown on the Drawings, or shown on the Drawings and not called for in the Specifications, shall be executed and furnished by the Contractor as described in both.
- C. Should any incidental work or materials be required, but not set forth in the Specifications or Drawings, either directly or indirectly, but which is necessary to fulfill the intent thereof, the Contractor is to understand same to be implied and required, and he shall perform all such work and furnish all such materials as fully as if they were particularly delineated or described, without additional cost to Owner. This shall include all materials, devices, methods peculiar to the machinery, equipment, apparatus, or systems as described herein.

## 1.10 FIELD MEASUREMENTS

- A. Before ordering any materials or doing any work, Contractor shall verify all measurements at the building site, and shall be responsible for correctness of same. At no time shall the Contractor scale Drawings for the purpose of installation.

## BASIC ELECTRICAL REQUIREMENTS

- B. No extra compensation will be allowed on account of differences between actual dimensions and those indicated on the Drawings. Any difference which may be found shall be submitted to the Architect/Engineer for consideration before proceeding with the work.

## 1.11 CHASES AND OPENINGS

- A. The Contractor shall determine, in advance, the locations and sizes of all chases and openings necessary for the proper installation of his work and have same provided during construction. Any chase or opening not made during construction, due to the Contractor's failure to determine same in advance, shall be done by the Contractor at his own expense. Any unnecessary cutting shall be repaired to match the original conditions of the area disturbed at the Contractor's expense.

## 1.12 AIR PLENUMS

- A. The Contractor shall use a conduit system or approved plenum rated wiring for all wiring located above ceilings.

## 1.13 RECORD DOCUMENTS

- A. Refer to Division-1 for requirements. The following requirements supplement the requirements of Division-1.
- B. Mark Drawings to indicate revisions to conduit size and location both exterior and interior; actual equipment locations, dimensioned from column lines; concealed equipment, dimensioned from column lines; distribution and branch electrical circuitry; fuse and circuit breaker size and arrangements; support and hanger details; work performed via Change Orders; concealed control system devices.
- C. This Contractor shall be responsible to submit three (3) sets of As-Built drawings that reflect any cabling changes made during construction. The Contractor is responsible to not exceed 300'-0" overall cable length for any cable run installed. Should any cable run exceed 300'-0" in overall length it shall be brought to the attention of the owner/engineer before installing.

## 1.14 OPERATION AND MAINTENANCE DATA

- A. Refer to Division-1 for requirements.
- B. Contractor shall provide Operation and Maintenance data listed in individual section in addition to requirements listed in Division 1.

## 1.15 WARRANTIES

- A. Division 1 warranties shall be considered minimum warranties. Any warranties listed in the individual sections that are longer than Division 1 warranties shall be honored.
- B. Refer to individual sections for warranty requirements beyond those as specified in Division 1.

## 1.16 TEST AND ADJUST

## BASIC ELECTRICAL REQUIREMENTS

- A. All systems installed under this Contract shall be tested and adjusted to insure that all equipment and systems meet or exceed the specified requirements.
- B. Testing of all installed data cables is the responsibility of this contractor.

## 1.17 PAINTING

- A. Refer to the Division-1 for general requirements.
- B. The Contractor shall be responsible for all touch up painting on this project for electrical work.
- C. The Contractor shall be responsible for painting of all conduits that is installed to match surrounding conditions.

## 1.18 CLEANING

- A. Refer to Division-1 Section, "Project Closeout" or "Final Cleaning" for general requirements for final cleaning.
- B. The Contractor shall keep the building free of rubbish and material during the course of construction insofar as the work under this Contract is concerned.
- C. Upon completion of the project, the Contractor shall remove all rubbish, surplus equipment and shipping labels and have all areas broom clean. The Contractor shall thoroughly clean all fixtures, and other electrical equipment, leaving same in first-class working condition.

## 1.19 DELIVERY AND STORAGE OF MATERIALS

- A. Refer to the Division-1 for delivery and storage of materials requirements.
- B. The Contractor shall provide for, or secure use of, suitable-dry storage space for the safe delivery and storage of his materials. The Contractor shall be responsible for providing their own storage trailers on site. The use of Owner's inside-building storage will not be permitted, unless noted otherwise.

## 1.20 PROTECTION OF EQUIPMENT AND MATERIALS

- A. Responsibility for care and protection of electrical work rests with the Contractor until it has been tested and accepted by the Owner. After delivery, before and after installation, protect equipment and materials against theft, injury, or damage in all cases.
- B. The contractor shall be responsible to protect all existing data communications equipment to remain from construction dirt and debris, whether created from this contractor or another contractor. The contractor shall determine the method needed to protect each piece of equipment to remain. Should existing equipment be damaged during demolition it will be the responsibility of the contractor to provide necessary repairs or replacement of the damaged equipment.

## 1.21 SCAFFOLDING AND HOISTING



## BASIC ELECTRICAL REQUIREMENTS

- A. The Contractor shall provide all scaffolding and lifts required for the project. Protect any flooring that is to remain. The Contractor shall inspect the flooring before the his scaffolding is installed and report any damage that exists before the start of the construction. The Contractor shall be responsible to repair any damage to the flooring after the scaffolding is removed to the acceptance of the owner at no additional cost to the owner.

## 1.22 PERMITS AND FEES

- A. Unless noted otherwise, all permits, certificates, tests, and inspection fees required for the work provided under this contract shall be paid by the Contractor. Refer to General Conditions for additional information.

## PART 2 - PRODUCTS

Not Applicable.

## PART 3 - EXECUTION

## 3.1 CUTTING AND PATCHING

- A. Perform cutting and patching in accordance with Division-1. In addition to the requirements specified in Division-1, the following requirements apply. The Contractor shall be responsible for providing all cutting and patching required to perform his work unless noted otherwise.
- B. Perform cutting, fitting, and patching of electrical equipment and materials required to:
  - 1. Uncover work to provide for installation of ill-timed work.
  - 2. Remove and replace defective work.
  - 3. Remove and replace work not conforming to requirements of the Contract Documents.
  - 4. Remove samples of installed work as specified for testing.
  - 5. Install equipment and materials in existing structures.
  - 6. Upon written instructions from the Architect, uncover and restore work to provide for Architect observation of concealed work.
  - 7. Contractor shall paint all patch to match surrounding wall, ceiling or floor colors.
- C. Cut, remove, and legally dispose of selected electrical equipment, components, and materials as indicated, including but not limited to removal of electrical items indicated to be removed and items made obsolete by the new work.
- D. Protect the structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be removed.
- E. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.

## 3.2 PROTECTION OF INSTALLED WORK

- A. During construction activities, including cutting and patching operations, protect adjacent installations.

## BASIC ELECTRICAL REQUIREMENTS

- B. Patch existing finished surfaces and building components using new materials matching existing materials and experienced installers. For installers' qualifications refer to the materials and methods required for the surface and building components being patched.

## 3.3 INSTALLATION

- A. Provide for chases, slots, and openings in other building components to allow for electrical installations. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, as they are constructed.
- B. Install systems, materials, and equipment to conform with submittal data, including Coordination Drawings, to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Architect/Engineer.
- C. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other building systems and components, where installed exposed in finished spaces.
- D. Install access panel or doors where units are concealed behind finished surfaces. Access panels and doors are specified in 26 05 00.

END OF SECTION 26 00 10

## COMMON REQUIREMENTS – ELECTRICAL CONSTRUCTION

## SECTION 26 05 00 – COMMON REQUIREMENTS – ELECTRICAL CONSTRUCTION

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. This Section includes materials and methods that are common to various Electrical Systems.

## 1.2 SUBMITTALS

- A. Product Data: For the following:
  - 1. Fireproofing
  - 2. Access Doors

## 1.3 COORDINATION

- A. Arrange for conduit spaces, chases and openings in building structure during progress of construction to allow for electrical installations.
- B. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are construction as applicable.
- C. Coordinate requirements for access panels and doors for electrical items requiring access that are concealed behind finished surfaces.

## PART 2 - PRODUCTS

## 2.1 FIRESTOPPING

- A. The Contractor shall be responsible for providing permanent, UL approved firestopping systems for all penetrations through floor or wall assemblies. For areas that will require future access for the installation of additional cables, repair, or retrofit, the firestopping system shall consist of re-usable intumescent pillows or putty. All firestopping shall meet the requirements of ASTM E-814 and UL 1479.
  - 1. Subject to compliance with project requirements, firestopping materials may be provided by one of the following Manufacturers.
    - a. Specified Technologies Inc. (STI) Somerville, NJ (800) 992-1180
    - b. Tremco, Beechwood, OH (800) 321-7906
    - c. 3M, St. Paul, MN (800) 328-1687
  - 2. Submit for review the following product data.
    - a. Product data sheets.
    - b. UL System Drawings for each firestopping application.
    - c. Manufacturer's Certificates of Conformance for their products.

## COMMON REQUIREMENTS – ELECTRICAL CONSTRUCTION

## 2.2 ACCESS DOORS

- A. Refer to Division 8, "Access Doors and Frames" for additional requirements. Access doors furnished and installed under this contractor shall comply with Division 8 requirements in addition to the following.
- B. Manufacturers: Subject to review, provide access doors manufactured by Milcor, Inc or equal.
- C. Description: Steel access doors and frames for installation in masonry and/or drywall/gypsum board assemblies. Provide fire rated access doors when doors are installed in a fire rated assembly.
- D. Frames: minimum 16 gage steel with exposed nominal 1" flange around the perimeter of the unit. Where doors are to be installed in drywall/gypsum board assemblies provide frames with a drywall bead. Doors to be installed in masonry shall be furnished with adjustable metal masonry anchors.
- E. Flush Panel Doors: minimum 14 gage steel with concealed spring or piano hinge(s) with a minimum swing of 175 degrees. Finish to be a factory-applied primer, suitable for field painting. Provide flush cylinder lock with key. Key all locks alike.
- F. Access door schedule: In addition to access door shown on the drawings provide the following access doors to be installed where directed by the architect or engineer:
  - 1. Ten 16" x 16" to be installed in drywall/gypsum construction.
  - 2. Ten 16" x 16" to be installed in masonry construction.

## PART 3 - EXECUTION

## 3.1 ROUGH-IN

- A. Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be connected.
- B. Refer to equipment Specifications in Divisions-2 through -25 for rough-in requirements.

## 3.2 EQUIPMENT INSTALLATION – COMMON REQUIREMENTS

- A. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other building systems and components, where installed exposed in finished spaces.
- B. Install electrical equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.

## 3.3 FIRESTOPPING

- A. Comply with manufacturer's written instructions for install fire stopping. When mechanical system is used, set securely in place in accessible locations.
- B. Firestopping shall be installed where conduits penetrate all floors and walls.

COMMON REQUIREMENTS – ELECTRICAL CONSTRUCTION

3.4 ACCESS DOORS

- A. Comply with manufacturer's written instructions for installing access doors and frames. Set frames accurately in position and attach securely to supports with plane of face panels aligned with adjacent finish surfaces. Install doors flush with adjacent finished surfaces or recessed to receive finish material.
- B. Adjust doors and hardware after installation for proper operation. Remove and replace doors and frames that are warped, bowed or otherwise damaged.

END OF SECTION 26 05 00

## SUPPORTING DEVICES

## SECTION 26 05 29 – SUPPORTING DEVICES

## PART 1 - GENERAL

## 1.1 CODES AND STANDARDS

- A. NEC Compliance: Comply with NEC as applicable to construction and installation of electrical supporting devices.
- B. NECA Compliance: Comply with National Electrical Contractors Association's "Standard of Installation" pertaining to anchors, fasteners, hangers, supports, and equipment mounting.
- C. UL Compliance: Provide electrical components and devices which are UL-listed and labeled.

## PART 2 - PRODUCTS

## 2.1 GENERAL

- A. Provide supporting devices which comply with manufacturer's standard materials, design and construction in accordance with published product information, and as required for complete installation; and as herein specified. Where more than one (1) type of device fulfills indicated requirements, selection is Installer's option.

## 2.2 SUPPORTS

- A. Provide supporting devices of types, sizes and materials indicated; and having the following construction features:
- B. Clevis Hangers: For supporting up to 2" rigid metal conduit; galvanized steel; with 2" diameter hole for round steel rod; approximately 54 pounds per 100 units.
- C. Riser Clamps: For supporting up to 5" rigid metal conduit; black steel; with 2 bolts and nuts, and 4" ears; approximately 510 pounds per 100 units.
- D. Reducing Couplings: Steel rod reducing coupling, 2" x 5/8", black steel; approximately 16 pounds per 100 units.
- E. C-Clamps: Black malleable iron; 2" rod size; approximately 70 pounds per 100 units.
- F. I-Beam Clamps: Black steel, 1-1/4" x 3/16" stock; 3/8" cross bolt; flanges width 2"; approximately 52 pounds per 100 units.
- G. One-Hole Conduit Straps: For supporting 3/4" rigid metal conduit; galvanized steel; approximately 7 pounds per 100 units.
- H. Two-Hole Conduit Straps: For supporting 3/4" rigid metal conduit; galvanized steel; 3/4" strap width; and 2-1/8" between center of screw holes.
- I. Hexagon Nuts: For 2" rod size; galvanized steel; approximately 4 pounds per 100 units.

## SUPPORTING DEVICES

- J. Round Steel Rod: Black steel; 2" diameter; approximately 67 pounds per 100 feet.
- K. Offset conduit clamps: For supporting 2" rigid metal conduit; black steel; approximately 200 pounds per 100 units.

## 2.3 ANCHORS

- A. Provide anchors of types, sizes and materials indicated; and having the following construction features:
- B. Lead Expansion Anchors: 2"; approximately 38 pounds per 100 units.
- C. Toggle Bolts: Spring head; 3/16" x 4"; approximately 5 pounds per 100 units.
- D. Manufacturers: Provide anchors of one of the following (for each type of anchor):
  - 1. Ackerman Johnson Fastening Systems, Inc.
  - 2. Ideal Industries, Inc.
  - 3. Joslyn Manufacturing and Supply Co.
  - 4. McGraw Edison Co.

## 2.4 SLEEVES AND SEALS

- A. Provide sleeves and seals, including armored cable seals, of types, sizes, and materials indicated, with the following construction features:
- B. Sleeve Seals: Provide sleeves for piping which penetrated foundation walls below grade, or exterior walls. Caulk between sleeve and pipe with non-toxic, UL-classified caulking material to ensure watertight seal.
- C. Wall and Floor Seals: Provide watertight wall and floor seals, or types and sizes indicated; suitable for sealing around conduit, pipe, or tubing passing through concrete floors and walls. Construct seals with steel sleeves, malleable iron body, neoprene sealing grommets and rings, metal pressure rings, pressure clamps, and cap screws.
- D. Fire-Rated Walls and Floors: At all locations where conduits, cables, or ducts penetrate a fire-rated wall or floor, a special fire-retardant caulking compound or other approved device as specified in section 26 05 00 shall be used.

## 2.5 CONDUIT CABLE SUPPORTS

- A. Provide cable supports with insulating wedging plug for non-armored type electrical cables in risers; construct for 2" rigid metal conduit; 3-wires, type wire as indicated; construct body of malleable-iron casting with hot-dip galvanized finish.

## SUPPORTING DEVICES

## 2.6 U-CHANNEL STRUT SYSTEMS

- A. Provide U-channel strut system for supporting equipment supplied under this contract, 12-ga hot-dip galvanized steel, or types and sizes indicated; construct with 9/16" diameter holes, 8" on center on top surface, with standard green finish, and with the fittings which mate and match with U-channel.
- B. Auxiliary Steel Supports: Provide all required auxiliary steel to install any equipment supplied under this contract. The design and gauge of steel used shall be as required by the manufacturer's specifications.
- C. Manufacturers: Provide U-channel strut systems of one of the following (for each type system):
  - 1. Allied Tube and Conduit Corp.
  - 2. Midland-Ross Corp.
  - 3. OZ/Gedney Div; General Signal Corp.
  - 4. Power-Strut Div; Van Huffel Tube Corp.
  - 5. Unistrut Div; GTE Products Corp.

## PART 3 - EXECUTION

## 3.1 GENERAL

- A. Install hangers, anchors, sleeves and seals as indicated, in accordance with manufacturer's written instructions and with recognized industry practices. Comply with installation requirements of NECA and NEC pertaining to supporting devices.
- B. Coordinate with other mechanical and electrical work, including raceway and wiring work, as necessary to interface installation of supporting devices with other work.

END OF SECTION 26 05 29



## SECTION 26 05 33 – RACEWAYS

## PART 1 - GENERAL

## 1.1. DESCRIPTION OF WORK

- A. The extent of the raceway and work required by this section is indicated by Drawings and requirements of other sections of this Specification.
- B. Provide metal and nonmetallic conduit, tubing and fittings of types, grades, sizes and weights (wall thicknesses) for each service indicated on plans. Where types and grades are not indicated, provide proper selection determined by installer to fulfill wiring requirements and comply with applicable portions of NEC for raceways.
- C. It is the intent of these Specifications and Drawings that the contractor shall be responsible to provide new sleeves for his cabling work. Existing sleeve into data MDF's and IDF's shall not be used by the contractor.
- D. There shall be no exposed data cabling run exposed in Maple Point or Carl Sandburg Middle Schools. All cable runs through exposed areas of the building shall be run in conduit. Following existing exposed wiring in these to schools is not acceptable.

## 1.2. CODES AND STANDARDS

- A. NEMA Compliance: Comply with applicable requirements of NEMA standards pertaining to raceways.
- B. UL Compliance and Labeling: Comply with provisions of UL safety standards pertaining to electrical raceway systems; provide products and components which have been UL-listed and labeled.
- C. NEC Compliance: Comply with NEC requirements as applicable to construction and installation of raceway systems.

## PART 2 - PRODUCTS

## 2.1. CONDUITS

- A. Electrical Metallic Tubing (EMT): FSW-C-563, ANSI C80.3, and UL 797.
- B. Liquid-Tight Flexible Metal Conduit: Provide liquid-tight flexible metal conduit; construct of single strip, flexible, continuous, interlocked, and double-wrapped steel; galvanized inside and outside; coat with liquid-tight jacket of flexible polyvinyl chloride (PVC).
- C. Flexible Metal Conduit: FS WW-C-566 and UL 1. Formed from continuous length of spirally wound, interlocked zinc-coated strip steel.

## RACEWAYS

- D. No other type of conduit shall be used, unless otherwise noted, or prior approval granted by the engineer.

## 2.2. CONDUIT FITTINGS

- A. Flexible Metal Conduit Fittings: Provide conduit fittings for use with flexible steel conduit of threadless hinged clamp type.
- B. Straight Terminal Connectors: Contractor shall provide one-piece body, with female end with clamp and deep slotted machine screw for securing conduit, and male threaded end provided with locknut.
- C. 45-Deg or 90-Deg Terminal Angle Connectors: Two-piece body construction with removable upper section, female end with clamp and deep slotted machine screw for securing conduit, and male threaded end provided with locknut.
- D. Liquid-Tight Flexible Metal Conduit Fittings: FS W-F-406, Type 1, Class 3, Style G. Provide cadmium-plated, malleable-iron fittings with compression type steel ferrule and neoprene gasket sealing rings, with insulated, or non-insulated throat.
- E. EMT Fittings: All couplings and connectors shall be of the set-screw type.
- F. Conduit and Tubing Accessories: Provide conduit, tubing and duct accessories of types, sizes, and materials, complying with Manufacturers' published product information, which mate and match conduit and tubing.
- G. Conduit Bodies: Provide galvanized cast-metal conduit bodies of types, shapes, and sizes as required to fulfill job requirements and NEC requirements. Construct conduit bodies with threaded-conduit entrance ends, removable covers, either cast or galvanized steel, and corrosion-resistant screws.
- H. All raceway conduit and fittings above a ceiling shall be plenum rated.

## 2.3. SURFACE RACEWAY

- A. Provide single or dual channel surface raceway as specified on the drawings. Unless noted otherwise, raceway finish shall be selected at shop drawings from full list of standard and premium finishes.
- B. Device plates matching the raceway system shall be utilized. Standard wall mounted device plates shall not be acceptable.

## PART 3 - EXECUTION

### 3.1. GENERAL

- A. Unless noted otherwise, raceways and cables shall be installed near the structure and be supported independently from the structure. Support systems for other building systems (i.e. ductwork, HVAC equipment, system piping, ceiling supports, etc.) shall not be used to support

## RACEWAYS

conduits and cables. Drop wire supports shall not be used on any ceiling support wires under any circumstances.

- B. Use EMT conduit in mechanical equipment rooms, equipment rooms, gyms, cafeteria's, crawl spaces, walls, and areas above ceiling.
- C. Cut conduits straight, properly ream, and cut threads for heavy wall conduit deep and clean.
- D. Field-bend conduit with benders designed for purpose so as not to distort nor vary internal diameters.
- E. Conduits are not to cross pipe shafts or ventilating duct openings.
- F. Keep conduits a minimum distance of 6" from parallel runs of hot water pipes or other sources of heat. Wherever possible, install horizontal raceway runs above water and steam piping.
- G. Support riser conduit at each floor level with clamp hangers.
- H. Use of running threads at conduit joints and terminations is prohibited.
- I. Where required, use 3-piece union or split coupling.
- J. Complete installation of electrical raceways before starting installation of cables/wires within raceways.
- K. Install conduits so as not to damage or run through structural members. Avoid horizontal or cross runs in building partitions or side walls.
- L. Conduits shall not be installed against roof deck. Allow minimum 3" space between top conduit and roof deck for the possible penetration of roof nails to protrude without damaging conduit.
- M. In finished spaces without ceilings (i.e. gymnasiums, natatoriums, etc.), conduits shall be installed as high as possible, while meeting other requirements within these specifications. Conduits along bottom cord of open joists shall not be acceptable. Where conduits need to be installed along bottom of joists or beams, they shall be installed against walls.
- N. Provide fish wire or pull string in all spare conduits.
- O. Cap all spare conduits installed for future use.
- P. Install surface metal raceways in corners or walls or conceal as much as possible.
- Q. At locations where conduits are installed after painting is done, the contractor shall be responsible to go back and paint conduit and boxes same color to match.
- R. Metallic and non-metallic raceway shall be mechanically fastened to surfaces at intervals as recommended by the manufacturer. Under no circumstances shall glue, two-sided tape, or other type of adhesive be the only means of attachment.

### 3.2. EXPOSED CONDUITS

- A. Install exposed conduits and extensions from concealed conduit systems neatly, parallel with, or at right angles to walls of building.

## RACEWAYS

- B. Install exposed conduit work as not to interfere with ceiling inserts, lights, or ventilation ducts or outlets.
- C. Support exposed conduits by use of hangers, clamps, or clips. Support conduits on each side of bends and on spacing not to exceed following: Up to 1": 6'-0"; 1-1/4" and over: 8'-0".
- D. Exposed conduits shall be run along walls and at 12" from roof deck. – deck screws, gym, etc.

## 3.3. CONDUIT FITTINGS

- A. Construct locknuts for securing conduit to metal enclosure with sharp edges for digging into metal, and ridged outside circumference for proper fastening.
- B. Bushings for terminating conduits smaller than 1-1/4" are to have flared bottom and ribbed sides, with smooth upper edges to prevent injury to cable insulation.
- C. Install insulated type bushings for terminating conduits 1-1/4" and larger.
- D. Bushings are to have flared bottom and ribbed sides. Upper edge to have phenolic insulating ring molded into bushing.
- E. Bushing of standard or insulated type to have screw type grounding terminal.
- F. Miscellaneous fittings such as reducers, chase nipples, 3-piece unions, split couplings, and plugs to be specifically designed for their particular application.

## 3.4. RACEWAYS AND WIREWAYS

- A. Avoid use of dissimilar metals through system to eliminate possibility of electrolysis. Where dissimilar metals are in contact, coat all surfaces with corrosion inhibiting compound before assembling.
- B. Install expansion fittings in all raceways/wireways wherever structural expansion joints are crossed.
- C. Make changes in direction to raceway/wireway run with proper fittings, supplied by raceway Manufacturer. No field bends of raceway/wireway sections will be permitted.
- D. Properly support and anchor raceways/wireways for their entire length by structural materials. Raceways are not to span any space unsupported.
- E. Use boxes as supplied by Manufacturer wherever junction, pull or device boxes are required. Standard electrical "handy" boxes, etc., shall not be permitted for use with surface installations.

END OF SECTION 26 05 33

## ELECTRICAL BOXES AND FITTINGS

## SECTION 26 05 35 – ELECTRICAL BOXES AND FITTINGS

## PART 1 - GENERAL

## 1.1. DESCRIPTION OF WORK

- A. The extent of electrical box and associated fittings work is indicated by Drawings and Schedules.

## 1.2. CODES AND STANDARDS

- A. NEC Compliance: Comply with NEC as applicable to construction and installation of electrical wiring boxes and fittings.
- B. UL Compliance: Comply with UL Std No.'s 50, 514-series and 886. Provide electrical boxes and fittings which are UL-listed and labeled.
- C. NEMA Compliance: Comply with applicable requirements of NEMA Stds/Pub No.'s OS1, OS2 and Pub 250.

## PART 2 - PRODUCTS

## 2.1. FABRICATED MATERIALS

- A. Outlet Boxes: Provide galvanized coated flat-rolled sheet-steel outlet wiring boxes, of shapes, cubic inch capacities, and sizes, including box depths as indicated (or as required), suitable for installation at respective locations. Construct outlet boxes with mounting holes, and with cable and conduit-size knockout openings in bottom and sides. Provide boxes with threaded screw holes, with corrosion-resistant cover and grounding screws for fastening surface and device type box covers, and for equipment type grounding. Flush boxes must be mounted flush with finished wall surface.
- B. Outlet Box Accessories: Provide outlet box accessories as required for each installation, including box supports, mounting ears and brackets, wallboard hangers, box extension rings, fixture studs, cable clamps and metal straps for supporting outlet boxes, which are compatible with outlet boxes being used to fulfill installation requirements for individual wiring situations. Choice of accessories is Installer's code - compliance option.
- C. Device Boxes: Provide galvanized coated flat-rolled sheet-steel non-gangable device boxes, of shapes, cubic inch capacities, and sizes, including box depths as indicated (or as required), suitable for installation at respective locations. Construct device boxes for flush mounting with mounting holes, and with cable-size knockout openings in bottom and ends, and with threaded screw holes in end plates for fastening devices. Provide cables clamps and corrosion-resistant screws for fastening cable clamps, and for equipment type grounding. Flush boxes must be mounted flush with finished wall plate.

## ELECTRICAL BOXES AND FITTINGS

- D. Device Box Accessories: Provide device box accessories as required for each installation, including mounting brackets, device box extensions, switch box supports, plaster ears, and plaster board expandable grip fasteners, which are compatible with device boxes being utilized to fulfill installation requirements for individual wiring situations. Choice of accessories is Installer's codes-compliance option.
- E. Surface-Mounted Device and Outlet Boxes: Provide a minimum depth galvanized-coated steel box where indicated on the Drawings without pre-punched knockouts.
- F. Raintight Outlet Boxes: Provide corrosion-resistant cast-metal raintight outlet wiring boxes, of types, shapes and sizes, including depth of boxes, with threaded conduit holes for fastening electrical conduit, including face plate gaskets and corrosion-resistant plugs and fasteners.
- G. Junction and Pull Boxes: Provide galvanized code-gauge sheet steel junction and pull boxes, with screw-on covers; of types, shapes and sizes, to suit each respective location and installation; with welded seams and equipped with stainless steel nuts, bolts, screws and washers. Provide handles on covers over 4 square feet.
- H. Where surface or recessed boxes are indicated to be blank or with wire leads for future use, they shall be provided with blank covers per Division 26 "Wiring Devices".

## PART 3 - INSTALLATION

## 3.1. GENERAL

- A. Install electrical boxes and fittings as indicated, in accordance with Manufacturer's written instructions, applicable requirements of NEC and NECA's "Standard of Installation", and in accordance with recognized industry practices to fulfill project requirements.
- B. Coordinate installation of electrical boxes and fittings with wire/cable, wiring devices, and raceway installation work.
- C. Provide knockout closures to cap unused knockout holes where blanks have been removed.
- D. Install electrical boxes in those locations which ensure ready accessibility to enclosed electrical wiring.
- E. Avoid installing boxes back-to-back in walls. Provide not less than 6" (150mm) separation or separate stud spaces.
- F. Position recessed outlet boxes accurately to allow for surface finish thickness.
- G. Where devices are shown at casework, contractor shall coordinate exact location and height with casework to ensure usability of devices.
- H. Avoid using round boxes where conduit must enter box through side of box, which would result in difficult and insecure connections when fastened with locknut or bushing on rounded surfaces.
- I. Fasten electrical boxes firmly and rigidly to substrates, or structural surfaces to which attached, or solidly embed electrical boxes in concrete or masonry.

ELECTRICAL BOXES AND FITTINGS

- J. Provide electrical connections for installed boxes.
- K. Subsequent to installation of boxes, protect boxes from construction debris and damage.
- L. Ground electrical boxes properly upon completion of installation work and demonstrate compliance with requirements. Ground electrical box and wiring device.

END OF SECTION 26 05 35

## ELECTRICAL IDENTIFICATION

## SECTION 26 05 53 – ELECTRICAL IDENTIFICATION

## PART 1 - GENERAL

## 1.1 CODES AND STANDARDS

- A. UL Compliance: Comply with UL Std 969.
- B. NEC and NEMA Compliances: Comply with NEC and NEMA WC-1 and WC-2.
- C. ANSI Compliance: Comply with ANSI Std A13.1.

## PART 2 - PRODUCTS

## 2.1 GENERAL

- A. Except as otherwise indicated, provide Manufacturer's standard products of categories and types required for each application. Where more than single type is specified for an application, selection is installer's option, but provide single selection for each application.

## 2.2 CABLE/CONDUCTOR IDENTIFICATION BANDS

- A. Provide Manufacturer's standard vinyl-cloth self-adhesive cable/conductor markers of wrap-around type; either pre-numbered plastic coated type, or write-on type with clear plastic self-adhesive cover flap; numbered to show circuit identification.

## 2.3 SELF-ADHESIVE PLASTIC SIGNS

- A. Provide Manufacturer's standard, self-adhesive or pressure-sensitive, pre-printed, flexible vinyl signs for operational instructions or warnings; of sizes suitable for application areas and adequate for visibility, with proper wording for each application areas and adequate for visibility, with proper wording for each application (e.g., "EXHAUST FAN FED FROM PANEL PD1").
- B. Colors: Unless otherwise indicated, or required by governing regulations, provide white signs with black lettering.

## 2.4 ENGRAVED PLASTIC-LAMINATE SIGNS

- A. Provide engraving stock melamine plastic laminate with black face and white core plies (letter color), complying with FS L-P-387, in sizes and thicknesses indicated. Engrave laminate with engraver's standard letter style of sizes and wording indicated, and punch for mechanical fastening except where adhesive mounting is necessary because of substrates.
- B. Thickness: 1/16", for units up to 20 sq. in. or 8" length; 1/8" for larger units.
- C. Fasteners: Self-tapping stainless steel screws, except contact-type permanent adhesive where screws cannot or should not penetrate substrate.



## ELECTRICAL IDENTIFICATION

## 2.5 LETTERING AND GRAPHICS

- A. Coordinate names, abbreviations and other designations used in electrical identification work, with corresponding designations shown, specified or scheduled. Provide numbers, lettering and wording as indicated or, if not otherwise indicated, as recommended by Manufacturers or as required for proper identification and operation/maintenance of electrical systems and equipment systems and equipment. Comply with ANSI A13.1 pertaining to minimum sizes for letters and numbers.

## 2.6 MANUFACTURER

- A. Provide electrical identification products of one of the following (for each type marker):
  1. Ideal Industries, Inc.
  2. LEM Products, Inc.
  3. Markal Company
  4. National Band and Tag Co.

## PART 3 - EXECUTION

## 3.1 GENERAL

- A. Install electrical identification products as indicated, in accordance with Manufacturer's written instructions, and requirements of NEC.

## 3.2 COORDINATION

- A. Where identification is to be applied to surfaces which require finish, install identification after completion of painting.

## 3.3 REGULATIONS

- A. Comply with governing regulations and requests of governing authorities for identification of electrical work.
- B. Provide signs for each unit of the following categories of electrical work.
  1. Existing Data Cabinets (Cabinet signs shall agree with tags shown on drawings).
- C. Install signs at locations indicated or, where not otherwise indicated, at location for best convenience of viewing without interference with operation and maintenance of equipment. Secure to substrate with fasteners, except use adhesive where fasteners should not or cannot penetrate substrate.

END OF SECTION 26 05 53

## COMMUNICATIONS CABLING

## SECTION 27 15 00 – COMMUNICATIONS CABLING

## PART 1 - GENERAL

## 1.1 DESCRIPTION

- A. Provide a complete, tested, cable distribution system for data network system (local area network). The data distribution system shall include fully terminated fiber optic backbone and UTP station cables.
- B. Fiber Optic Cables: Fiber optical cables shall be installed from the Demarcation Point to the Main Cross-connect Frame, and from the Main Cross-connect Frame to the Intermediate Cross-connect Frame Communications Closet, terminating all fiber optic strands in termination enclosures (patch panels).
- C. UTP Cables: UTP cables shall be routed to each data outlet location.
- D. Provide specific details consistent with the contract documents as required to complete shop drawings for data cable systems including detailed documentation for owner review and detailed documentation of as-built conditions.

## 1.2 APPLICABLE STANDARDS

- A. TIA/EIA-569-A. "Commercial Building Standard for Telecommunications Pathways and Spaces."
- B. TIA/EIA-568-C.2. "Commercial Building Telecommunication Standard" with all addendums.
- C. ISO/IEC 11801 Ed. 2.0 (Class E)
- D. TIA/EIA-TSB 67. "TIA/EIA Telecommunications Systems Bulletin, Additional Transmission Specifications for Unshielded Twisted-Pair Cabling Systems".
- E. TIA/EIA-568-3 "Optical Fiber Cabling Components Standard" with all addendums.
- F. TIA/EIA-455-61. "FOTP-61, Measurement of Fiber or Cable Attenuation Using An OTDR".
- G. IEEE 802.3 "Carrier Sense Multiple Access With Collision Detection".
- H. IEEE 802.3ab Gigabit transmission over UTP
- I. TIA/EIA-606. "Administration Standard for the Telecommunications Infrastructure of Commercial Buildings".
- J. TIA/EIA-607. "Commercial Building Grounding and Bonding Requirements for Telecommunications".
- K. TIA/EIA-455-171-D "Standard Test Procedures for Fiber Optic Cables".
- L. TIA/EIA-4750000-B "Generic Specification for Fiber Optic Connectors".

## COMMUNICATIONS CABLING

- M. TIA/EIA-475E000 "Sectional Specification for Fiber Optic Connectors Type BFOC/2.5".
- N. TIA/EIA-604-X "Fiber Optic Connector Intermateability Standards (FOCIS)".

## 1.3 REGULATORY REQUIREMENTS

- A. All work shall be performed in accordance with the latest revisions of the following standards and codes:
  - 1. Uniform Construction Code (UCC)
  - 2. National Electrical Code (NEC)
  - 3. Standards as previously listed
  - 4. The supplied manufacturers structured cabling system installation guidelines.
- B. Governing Codes and Conflicts: If the requirements of this section or the Project Drawings exceed those of the governing codes and regulations, then the requirements of this section and the Drawings shall be construed to permit work not conforming to all governing codes and regulations.

## 1.4 SUBMITTALS

- A. Project Initiation: Within fourteen (14) days of Notice to proceed, the Contractor shall furnish the following in a single consolidated submittal:
  - 1. The name of the person who will act as the Contractor's official contact with the Owner/Engineer.
  - 2. Electrical Permits (where applicable). The Contractor shall obtain all required permits and provide copies to the Owner/Engineer.
  - 3. A copy of an RCDD certificate from a full-time staff member.
  - 4. Complete manufacturer's product literature for all cable, patch panels, cable supports, cable labels, outlet devices, and other products to be used in the installation. Cabling and outlets must show compliance with the performance criteria specified herein. In addition, whenever substitutions for recommended products are made (pre-approved prior to bid by Owner/Engineer), samples and the manufacturer's supporting documentation demonstrating compatibility with other related products shall be included.
  - 5. Shop Drawings:
    - a. The Contractor shall submit scaled drawings of all IDF/MDF rooms with backboard layouts showing hardware frame placements and rack locations with wire management. The name/number of the room shall be included. The contractor must show dimensions for LAN network equipment.
    - b. The Contractor shall submit individual rack layouts for owner review indicating all hardware as well as owner furnished network electronics and servers. Coordinate with owner network electronic and server dimensions, etc.
  - 6. Proposed TIA/EIA Category 6/ISO Class E, and fiber optic cable test result forms. Provide complete product information on proposed meter to be used and verification that meter is acceptable for use to provide warranty as specified.
  - 7. Certifications: Contractor must be pre-certified by the manufacturers of the products that comprise a partnership guaranteeing 20 year performance. Submit copy of certifications and 20 year performance warranty. Contractor must show record of at least five (5) previous projects of this type with required warranties.

## COMMUNICATIONS CABLING

8. Warranty: Warranty must guarantee all performance values in accordance with proposed TIA/EIA Category 6 / ISO Class E standards. The warranty shall include application assurance beyond Gigabit Ethernet and future category 6 500MHz applications. Additional warranty must guarantee performance of the fiber optic cable.
  9. 3rd party certification of category 6 Channel and component compliance meet or exceeding the performance criteria herein.
- B. When preparing submittals and any required final drawings/labeling, use a room number schedule generated by the architect and/or the owner, which indicates the actual room numbers that will be used when the building is occupied. If the schedule is not available, revise the initial submittal, when a schedule is available, to reflect the proper room numbers.

## 1.5 FUNCTION AND OPERATION

- A. The intended function of the data communications cable system is to transmit data signals from a central location to the individual data outlet locations. Upon completion of the work outlined in this specification, the system shall be capable of transmitting data signals at a rate of 1Gbps, and future applications designed for category 6.
- B. The multimode optical fiber cable system shall be capable of transmitting laser signals at 10 Gigabit Ethernet (10 GbE) operating at 850 nm (10GBASE-SR) for a minimum distance as specified below (IEEE 802.3 Performance). The multimode optical fiber cable system shall also be capable of transmitting Gigabit Ethernet (GbE) operating at 850 nm (1000BASE-SX) for a distance as specified below and 1300 (1000BASE-LX) nm for a distance as specified below.
- C. Work station cable, from the MDF/IDF to the work area, shall be installed in accordance with TIA/EIA-568-C.2 specified installation practices, TIA/EIA-TSB-67 recommended installation practices, TIA/EIA-569, and the manufacturer specified installation practices.
- D. The Permanent Link shall be tested for TIA Category 6/ISO Class E standards. Channel Manufacturer or Partners must submit 3rd party verification of category 6 performance using "WORST CASE" 4 connector model. "Typical" or "Average" measurements will NOT be accepted.

## 1.6 PROJECT COMPLETION

- A. As a condition for project acceptance, the Contractor shall submit the following for review and approval:
  1. Inspection and Test Reports: During the course of the Project the Contractor shall maintain an adequate inspection system and shall perform such inspections to insure that the materials supplied and the work performed conform to Contract requirements. The Contractor shall provide written documentation which indicates materials acceptance testing was conducted as outlined Part 3 below. The Contractor shall also provide documentation which indicates that all cable termination testing was completed and that all irregularities were corrected prior to job completion for Owner/Engineer analysis.
  2. A manufacturer warranty shall be provided by the Communication Systems installer. This warranty shall include defects in material and workmanship. Warranty shall also cover applications assurance beyond 1000BaseT. The warranty period shall begin at the date of Substantial Completion. Quality and workmanship evaluation shall be solely by the Owner/Engineer and designated representatives.

## COMMUNICATIONS CABLING

## B. Acceptable Cable Tester

1. Refer to part 3 for tester information.

## 1.7 SYSTEM INSTALLER

- A. The Owner reserves the right to exercise its discretion to require the contractor to remove from the project any such employee of the contractor to be incompetent, careless, or insubordinate.
- B. Where applicable, the installer must be licensed and bonded in the state.
- C. Installer must have RCDD on staff as a full time employee.
- D. Prior to bid date, the installer must be certified by the manufacturer of the cabling components he intends to use.
- E. All clean up activity related to work performed will be the responsibility of the Contractor and must be completed daily before leaving the facility.

## 1.8 ABBREVIATIONS AND DEFINITIONS

- A. MDF/MCF – Main Distribution Frame/Main Cross-Connect Frame
- B. IDF/ICF – Intermediate Distribution Frame/Intermediate Cross-Connect Frame consisting of station wire terminals, riser cable terminals, and various equipment
- C. UTP – Unshielded Twisted Pair (telecommunications station cable).

## 1.9 MINIMUM WARRANTY

- A. The Cabling System shall meet the performance requirements of the ANSI/TIA/EIA-568-C.2 standard and TIA/EIA Telecommunications Systems Bulletin 67. The warranty on the material, services, and operation of the cabling system to this specification must be for a period of at least 20 years.
- B. The warranty must include the following statements regarding the cabling system:
  1. "will support and conform to TIA/EIA-568-C.2 specifications covering ANY CURRENT OR FUTURE APPLICATION which supports transmission over a properly constructed horizontal cabling system premises network which meets the channel and/or basic link performance as described in TIA/EIA-568-C.2 and TIA/EIA TSB67 for category 6 / ISO Class E cable systems."
  2. "will be free from defects in material or faulty workmanship".
- C. Warranty must also include the fiber optic backbone for the complete warranty duration.
- D. The warranty must be provided by the hardware manufacturer and must be fully executed prior to project closeout.
- E. Individual warranties shall be provided for horizontal and backbone wiring. They shall comply with the performance specifications for each wiring system.

## COMMUNICATIONS CABLING

## PART 2 - PRODUCTS

## 2.1 GENERAL WIRING

- A. The cabling shall be installed per requirements of these specifications utilizing materials meeting all applicable TIA/EIA standards for Category 6.
- B. Materials shall meet the TIA/EIA 568A category 6 specification. Must supply 3rd party verification of this performance as specified herein. In some cases, specific materials are called out to maintain a uniformity of application across all installations.
- C. All installed wire shall be tested and labeled 100% good after installation by the installer.
- D. All cabling, outlets, and termination patch panels used for the Category 6/ISO Class E data system may be provided by a single manufacturer and shall be certified as part of the 20 year minimum warranty. Where the installer chooses to use one (1) manufacturer for cabling and a different manufacturer for the outlets and termination patch panels for the Category 6/ISO Class E data system, the two (2) manufacturers must prove to have compliant interconnecting hardware and shall be certified as part of the 20 year minimum warranty. The components manufacturer shall take responsibility for the end to end system performance certification.
- E. All components, modules, adapters, and fittings required for a complete and first class installation shall be provided whether or not enumerated herein. Model numbers given are meant to set a standard for performance criteria and general style of device. It is the contractor's responsibility to verify the completeness and proper fit of devices including depth and necessary cable bend radius within raceways, and compatibility of outlets in surface raceway or floor boxes before installation.
- F. All device colors shall be as per the TIA/EIA Standards and as approved by the Owner and/or Engineer before installation.
- G. All products shall be new, and brought to the job site in original manufacturer's packaging. Electrical components (including innerduct) shall bear the Underwriter's Laboratories label. All communications cable shall bear flammability testing ratings as follows:
  - 1. For Copper Cable
    - a. CM Communications Cable
    - b. CMP Plenum Rated Communications Cable
    - c. CMR Riser-rated Communications Cable
  - 2. For Fiber Optic Cable
    - a. OFN Communications
    - b. OFNP Plenum Rated
    - c. OFNR Riser-rated
- H. Initial Cable Inspection: The Contractor shall inspect all cable prior to installation to verify that it is identified properly on the reel identification label, that it is of proper gauge, containing the correct number of pairs, etc. Note any buckling of the jacket which would indicate possible problems. Damaged cable, or any other components failing to meet specifications shall not be used in the installation.

## COMMUNICATIONS CABLING

## 2.2 HORIZONTAL CABLING

## A. Manufacturers - ISO 9001 Certified

1. Belden GigaFlex 4800LX
2. Mohawk GigaLan
3. Berk-Tek LANmark 2000
4. Hitachi Supra 660
5. General Cable GenSpeed 6500 Premium
6. ADC/Krone TruNet Cat 6
7. CommScope Systemax 2071 GigaSpeed XL
8. Hubbell Nextspeed Cat 6 Enhanced
9. Superior Essex NextGain

## B. Description: Unshielded twisted pair cable, Category 6/ISO Class E, CMP listed, for use with IEEE Std. 802.3 network, and TIA/EIA-568 compliant using 4 pairs, 23/24 AWG solid copper conductors all 4 pairs FEP insulated, colored plenum rated jacket, meeting or exceeding the category 6/ISO Class E requirements, tested to at least 500MHz. Provide two (2) different color jackets for different cable systems as outlined on the drawings.

## C. All 4-pair station cables shall:

1. Conform to TIA/EIA-568-C.2.
2. Be part of the UL LAN Certification and Follow-up Program.
3. Tested and approved by ETL or similar independent testing facility.

## D. The copper cabling provided for each data outlet shall be one 4-pair UTP Category 6/ISO Class E cable per jack. For example, where multiple jacks are indicated at a single location, each jack shall have its own dedicated 4-pair UTP cable.

## E. The Category 6/ISO Class E 4-pair UTP cable, must be UL Performance Level Tested and 3rd party verified that the cable meets or exceeds these specifications.

## 2.3 STATION HARDWARE (Outlets)

## A. Manufacturers - ISO 9001 Certified - must be compliant with Category 6.

1. ADC/Krone KM8
2. Panduit MiniCom TX-6
3. Hubbell Nextspeed Xcelerator
4. Ortronics Clarity TracJack
5. The Siemon Company Max 6 Modules
6. Leviton eXtreme

## B. Data Outlets - Category 6 modular jack with single gang 4-port straight outlets at wall mounted locations. Provide quantity of data outlets at the locations as indicated on the drawings. Provide blank inserts for unused openings in faceplate.

## C. Jacks shall be high quality Category 6/ISO Class E 8-position modular jack with mechanical stress relief for cable. Jacks shall provide dual color code to allow both T568A and T568B wiring on the same jack. Jacks shall be terminated using TIA/EIA-568-C.2 requirements for Category 6 connecting hardware. Provide four (4) termination tools. Provide color of jacks to match cables.

## COMMUNICATIONS CABLING

- D. Faceplates shall match manufacturer style for modular jack outlets at all locations. Color and material (nylon or stainless steel) shall match wiring devices in the area being installed.. Faceplates shall accommodate color-coded icons for different applications and a separate location for labeling.
- E. Where outlets are installed in surface raceway, jacks must be compatible with the surface raceway faceplate and the surface raceway depth. Faceplates color shall match raceway color. Where outlets are installed in floor boxes, jacks must be compatible with the floor box faceplate or mounting strap.
- F. All terminating hardware for 4-pair Category 6/ISO Class E cabling shall:
1. Conform to TIA/EIA-568-C.2 - Commercial Building Telecommunications Cabling Standard, Horizontal Cable Section.
  2. Be part of the UL LAN Certification and Follow-up Program.
  3. Meet or exceed the specifications for Category 6/ISO Class E Channel.
- G. Additional electrical and mechanical specifications are:
1. Insulation resistance: 500 MW minimum.
  2. Dielectric withstand voltage: 1,000 VAC RMS, 60 Hz minimum, contact-to-contact and 1,500 VAC RMS, 60 Hz minimum from any contact to exposed conductive surface.
  3. Contact resistance: 20 mW maximum.
  4. Current rating: 1.5 A at 68 deg F(20 deg C) per IEC Publication 512-3.

## 2.4 CHANNEL – PERFORMANCE REQUIREMENTS

- A. The Channel performance levels shall not be less than the minimum values shown in the following table.

Frequency MHz	Pair-To- PairNEXT Loss(dB)	Pair-To- PairELFEXT Loss(dB)	Power SumNEXT Loss(dB)	Power SumELFEXT Loss(dB)
1	80.3	73.8	78.3	70.8
10	65.3	53.8	63.3	50.8
31.25	57.9	43.9	55.9	40.9
100	50.3	33.8	48.3	30.8
200	45.8	27.7	43.8	24.7
250	44.3	25.8	42.3	22.8

- B. The Channel performance levels shall not be less than the minimum values shown in the following table.

Frequency MHz	Attenuation (dB)	Pair-To- PairACR(dB)	Power SumACR(dB)	Return Loss(dB)
1	2.0	78.5	76.5	20.0
10	5.9	60.0	58.0	25.0
31.25	10.6	48.3	46.3	23.6
100	19.7	31.6	29.6	20.1
200	28.8	18.0	16.0	18.0
250	32.6	12.7	10.7	17.3



## COMMUNICATIONS CABLING

- C. The channel performance shall be based on a 4 connector, worst pair, independently tested solution.

## 2.5 MULTI-MODE FIBER OPTIC CABLE SPECIFICATIONS – Indoor Armored (Between MDF and each data closet)

### A. Manufacturers - ISO 9001 Certified

1. Berk-Tek
2. Corning Cable Systems
3. ADC/Krone
4. Mohawk
5. CommScope
6. General Cable
7. Superior Essex
8. Hubbell

- B. Fiber must be manufactured using Corning or Alcatel glass for 10 Gigabit Ethernet link length of 300 meters (850 nm) and meet OM3 specifications.

- C. Description: Fiber Optic Cable shall be UL listed type OFNP; 50/125 micron multimode fibers for 10 Gigabit Ethernet transmission, each with a color-coded PVC buffer. Provide strand counts between closets as indicated on drawings.

- D. Provide plenum rated steel or aluminum armored cable.

- E. Provide armored cable, unless otherwise noted

## 2.6 MULTI-MODE FIBER OPTIC CABLE SPECIFICATIONS – Indoor Unarmored

### A. Manufacturers - ISO 9001 Certified

1. Berk-Tek
2. Corning Cable Systems
3. ADC/Krone
4. Mohawk
5. CommScope
6. General Cable
7. Superior Essex
8. Hubbell

- B. Fiber must be manufactured using Corning or Alcatel glass for 10 Gigabit Ethernet link length of 300 meters (850 nm) and meet OM3 specifications.

- C. Description: Fiber Optic Cable shall be UL listed type OFNP; 50/125 micron multimode fibers for 10 Gigabit Ethernet transmission, each with a color-coded PVC buffer. Provide strand counts between closets as indicated on drawings.

- D. Provide unarmored cable only where indicated on the drawings.

## COMMUNICATIONS CABLING

## 2.7 FIBER OPTIC CABLE TERMINATIONS

- A. Manufacturers - ISO 9001 Certified
  - 1. Corning Cable Systems
  - 2. ADC/Krone
  - 3. Hubbell
  - 4. CommScope
  - 5. Leviton
  - 6. 3M
- B. Use type ceramic LC fiber optic connectors (verify connector type with owner prior to ordering). Coordinate connectors with the duplex connectors in the patch panels and possibly the ethernet switches. Connectors shall be ceramic.
- C. Terminate all of the fibers of the fiber optic cables. Provide all termination accessories for a complete fiber optic distribution system.

## 2.8 PATCH CORD ASSEMBLIES

- A. Patch cords to be furnished by the owner.

## 2.9 PATCH PANELS - Copper Cables

- A. Manufacturer - ISO 9001 Certified - shall match the manufacturer of the data outlets.
- B. Keystone style, unloaded patch panels shall be provided at the MDF/IDF locations. Provide 24 to 48 port panels in quantities required for the number of data outlets. Load panels with keystone style Category 6 keystone jacks matching the station hardware. Provide a minimum of 25% spare ports in each closet. Existing unloaded patch panels may be used. Provide jacks matching the wire color.

## 2.10 PATCH PANELS - Fiber Optic Cables

- A. Manufacturer - ISO 9001 Certified - Corning Cable Systems or equivalent
- B. For the MDF at Poquessing Middle School, provide one (1) Corning Cable Systems Part Number CCH-04U closet connector housings with ten (10) Corning Cable Systems Part Number CCH-CP12-E4 (6 duplex LC) connector panels for laser optimized 50µm multi-mode fibers. Connect (6) fibers to each panel. Provide blank covers for unused openings in closet connector housings.
- C. For the MDF at Sandburg Middle School, provide one (1) Corning Cable Systems Part Number CCH-04U closet connector housings with seven (7) Corning Cable Systems Part Number CCH-CP12-E4 (6 duplex LC) connector panels for laser optimized 50µm multi-mode fibers. Connect (6) fibers to each panel. Provide blank covers for unused openings in closet connector housings.

## COMMUNICATIONS CABLING

- D. For IDF 'E' (fiber distribution point) at Sandburg Middle School, provide one (1) Corning Cable Systems Part Number CCH-04U and one (1) Corning Cable Systems Part Number CCH-03U closet connector housings with thirteen (13) Corning Cable Systems Part Number CCH-CP12-E4 (6 duplex LC) connector panels for laser optimized 50µm multi-mode fibers. Connect (6) fibers to each panel. Six (6) of the connector panels shall be installed in the CCH-03U housing for the 36 strand interconnect fiber from the MDF, and seven (7) of the connector panels shall be installed in the CCH-04U housing for the fibers feeding the IDF's. Provide blank covers for unused openings in closet connector housings.
- E. For each of the IDFs where (12) strands of fiber is designated, provide one (1) Corning Cable Systems Part Number CCH-01U closet connector housing with two (2) Corning Cable Systems Part Number CCH-CP12-E4 (6 duplex LC) connector panel for laser optimized 50µm multi-mode fibers. Connect (6) fibers to each panel. Provide blank covers for unused openings in closet connector housing.
- F. For each of the IDFs where (6) strands of fiber is designated (Library and IDF 'F' in Sandburg MS), provide one (1) Corning Cable Systems Part Number CCH-01U closet connector housing with one (1) Corning Cable Systems Part Number CCH-CP12-E4 (6 duplex LC) connector panel for laser optimized 50µm multi-mode fibers. Connect (6) fibers to each panel. Provide blank covers for unused openings in closet connector housing.
- G. Provide aqua color connectors for multi-mode fibers.

## 2.11 EQUIPMENT RACKS

- A. Existing Racks shall remain and be reused.

## 2.12 NETWORK ELECTRONICS

- A. All Network Electronics will be furnished and installed by owner.

## PART 3 - EXECUTION

## 3.1 GENERAL

- A. Contractor shall provide minimum 1" conduit sleeves or as indicated on the drawings above ceilings between corridors and areas where data outlets are located, and elsewhere where required to install data cabling, avoiding penetration of fire rated walls.
- B. Any penetration through fire rated walls (including those in sleeves) will be resealed with an Underwriter Laboratories (UL) approved sealant. Use fire stop material as specified in section 26 05 00. Contractor shall also seal all floor, ceiling, and wall penetrations in fire or smoke barriers and in the wiring closets.
- C. Cable Lubricants: Lubricants specifically designed for installing communications cable may be used to reduce pulling tension as necessary when pulling cable into conduit. After installation, exposed cable and other surfaces must be cleaned free of lubricant residue.

## COMMUNICATIONS CABLING

- D. Recommended Products:
  - 1. Twisted-pair cable: Dyna-Blue, American Polywater
  - 2. Optical fiber cable: Optic-Lube, Ideal
- E. The Contractor shall replace or rework cables showing evidence of improper handling including stretches, kinks, short radius bends, over tightened bindings, loosely twisted and over twisted pairs at terminals, and sheath removed too far (over 2").

## 3.2 LABELS

- A. The labeling plan shall be developed by the Contractor and approved by Owner/Engineer. The Contractor will label all outlets following the detailed shop drawing design, using permanent/legible typed or machine engraved labels. Terminals in the data closets shall be labeled by the Contractor using designation strips as applicable to terminal hardware. All copper/fiber terminal for riser cables in the data closets shall correspond to terminal numbering in the MDF. All voice outlets will be installed together on a patch panel at the top of the racks.
- B. The labels on IDF station terminals shall be labeled in accordance with TIA/EIA standards. Outlets shall be labeled to match the labels on the corresponding terminal position. The room number component shall reflect the final room numbering system utilized for door labels or room numbers when the owner occupies the building. **Should the actual final room numbers not be used, the contract will be required to re-label all jacks and wiring, and retest the entire system.**
- C. A floor plan clearly labeled with all outlet jack numbers shall be included in the as-built plans. Plans shall be the size of the construction documents.
  - 1. An additional copy of the floor plans, laminated, shall be posted in each data room. Plans shall be the size of the construction documents.
- D. All labels shall correspond to as-built and to final test reports.
- E. The cables themselves shall also be labeled at each end of the cable matching the labeling method.

## 3.3 WIRING INSTALLATION

- A. All Category 6 horizontal data cables and Fiber Optic cables shall be installed by individuals trained and certified in data cable system installation.
- B. All Category 6 (4) pair UTP cable must be handled with care during installation so as not to change performance specifications. The Contractor shall not over tighten fasteners or over bend the Category 6 UTP cable. Creased or kinked cables will not be accepted and will be replaced. Tie wraps are NOT permitted to organize or bundle cables. Contractor must use velcro wraps to bundle cables. Velcro wraps shall be UL rated for installation above plenum ceilings.
- C. **Should the Engineer/Owner find tie wraps on cables, the contractor shall be responsible to remove the tie wraps and all cables housed within the tie wraps will be assumed to be damaged and will require replacement.**

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- D. All wiring and associated hardware shall be placed so as to make efficient use of available space in coordination with other uses. All wiring and associated hardware shall be placed so as to not impair the use or capacity of other building systems, equipment, or hardware placed by others (or existing).
- E. All cabling installed in ceiling areas must be supported or installed in cable tray. Cable tray will be provided by this Contractor as indicated on the drawings. Where cabling is installed in ceiling areas or other non-exposed areas without cable tray, supports shall be placed by the Contractor at random intervals no greater than 60 inches and preferably on 48 inch centers. Cable sag between supports shall not exceed 12 inches. Attaching wire to pipes or other mechanical items is not permitted. At all runs of twenty or more cables, provide J-hooks at 60 inch (maximum) centers to hang cable.
- F. All low voltage cable shall be routed to avoid light fixtures (18 inches minimum spacing), sources of heat (12 inches minimum spacing) power feeder conduits (12 inches minimum spacing). Low voltage cabling must be spaced a minimum 120 inches (10 feet) from bus duct.
- G. Use Brandy type labels on cable ends in the data racks and in the outlet boxes.
- H. An additional minimum ten (10) foot of slack shall be provided at both ends of all cables. The slack shall be wrapped in Velcro straps supported from the steel, walls or cabletray. The cables shall not touch the ceiling.

## 3.4 FIBER OPTIC CABLE INSTALLATION

- A. Conduit and cable shall be installed in accordance with manufacturer's instructions and industry standards. Care shall be taken to avoid kinking the cable or applying excessive tension during the installation process.
- B. Armored type cables shall be installed in cable tray or on j-hooks.

## 3.5 STATION HARDWARE

- A. Eight (8) position modular jack Pin Assignments:
  - 1. Pin connections for data station 8 position modular jacks and patch panels shall match TIA/EIA-568-c.2.
  - 2. Pin connections at data jacks and panels shall be TIA 568A or 568B as directed by the owner.

## 3.6 BACKBOARD CABLING/EQUIPMENT RACK CONFIGURATION

- A. All cabling shall be routed so as to avoid interference with any other service or system, operation, or maintenance purposes such as access boxes, ventilation mixing boxes, network equipment mounting, access hatches to air filters, switches or electrical panels, and lighting fixtures. Avoid crossing areas horizontally just above or below any riser conduit. Lay and dress cables to allow other cables to enter the conduit/riser without difficulty at a later time by maintaining a working distance from these openings. Provide a minimum of 36 inches for a service loop to the patch panel.

## COMMUNICATIONS CABLING

- B. Cable shall be routed as close as possible to the ceiling, floor, or corners to insure that adequate wall or backboard space is available for current and future equipment and for cable terminations. Cables shall not be tie-wrapped to existing electrical conduit or other equipment. Minimum bend radius shall be observed.
- C. Lay cables via the shortest route directly to the nearest edge of the backboard from the mounted equipment or block. Lace or tie-clamp all similarly routed cables together, and attach by means of clamps screwed to the outside edge(s) of the backboard vertically and/or horizontally, then route via "square" corners over a path that will offer minimum obstruction to future installations of equipment, backboards, or other cables.
- D. Do not over tighten cable ties or binding on data station cable. Observe data cabling bend radius, and IEEE and NEC conduit fill ratios (40%).
- E. Use cable tray or runway to support cables from walls to rack or crossing the data closets.

## 3.7 CABLE TESTING

- A. This contractor shall submit to the Owner/Engineer the proposed testing procedure and testing report form. The test report shall include the test equipment operator's name, date, time, test equipment manufacturer's name, model number, and software version.
- B. The Owner/Engineer shall be notified one week prior to any testing so that the testing may be witnessed.
- C. Before requesting a final inspection, the Contractor shall perform a series of end to end installation performance tests. The Contractor shall submit for approval a proposal describing the industry standard test procedures, test result forms, and timetable for fiber optic and all copper plant wiring.
- D. Acceptance of the sample test procedures discussed below is predicated on the Contractor's use of the recommended products (including but not limited to twisted pair cable, patch panels, and outlet devices specified in the Products paragraph) and adherence to the inspection requirements and practices set forth. Acceptance of the completed installation will be evaluated in the context of each of these factors.
- E. Test Criteria: The system shall be tested to Category 6 / ISO Class E Level III compliance. The test path shall include workstation jacks, station cables, patch panels, and adapter cables. Test shall be performed with a MicroTest Omniscanner, Fluke, or equivalent product. Tester must have minimum dynamic range of 87dB and scan to at least 400MHz.
- F. The Contractor shall test:
  - 1. All station drop cable pairs from termination patch panels to outlet device 8 position modular jacks.
  - 2. All backbone cabling.
- G. Each wire/pair shall be tested at both ends for the following up to 400MHz in accordance to Category 6:
  - 1. Termination order
  - 2. Polarity (pair reversals)
  - 3. Continuity

## COMMUNICATIONS CABLING

4. Shorts
  5. Grounds
  6. Power-Sum NEXT (near end cross talk) from both directions
  7. Cable length (record all length)
  8. Attenuation
  9. Power-Sum Return Loss
  10. Power-Sum ELFEXT from both directions
  11. Impedance
- H. When errors are found, the source of each error shall be determined, corrected, and the cable re-tested. All defective components shall be replaced and retested. Defective components not corrected shall be reported to the Owner/Engineer with explanations of the corrective actions attempted.
- I. Test records shall be maintained using the test results forms outlined below. The form shall record closet number, riser pair number or outlet ID, outcome of test, indication of errors found (e.g., a, b, c, d, or e) cable length, re-test results after problem resolution and signature of the technician completing the tests.
- J. Test results for each (4) pair, Category 6, UTP cable must be submitted with identification to match labels on all patch panel ports and 8 position modular jacks, and identification to match as-builts associated with that cable.
- K. Owner will observe and verify the accuracy of test results submitted, and reserves the right to randomly check any connection prior to acceptance.
- L. The results of the work station cable tests shall be provided in the form of print-outs from the test equipment and CD-ROM. Include software if required for viewing.

### 3.8 FIBER OPTIC TESTING SPECIFICATIONS

- A. Each fiber strand shall undergo bi-directional testing for signal attenuation, and connector and splice losses. In addition to the attenuation testing, provide OTDR signature trace testing and documentation by computer file or print out for each fiber strand.
- B. Test Equipment: Light Source and Level III Power Meter manufactured by Microtest (Certifiber), Wavetek, or Fluke. Utilize additional modules and equipment to provide specified OTDR signature trace in addition to the signal attenuation and loss tests.
- C. Test Criteria: Connector loss shall not exceed 0.75 db per termination.
- D. All testing shall be performed by trained personnel.
- E. All installed fiber optic cable EIA 455-171 Method D procedures will be adhered to. (Bi-directional)
- F. For multi-mode fiber, the maximum attenuation for the fiber optic cable shall not exceed 3.5dB/km tested at 850nm and 1.5dB/km tested at 1300nm.
- G. For single-mode fiber, the maximum attenuation for the fiber optic cable shall not exceed 1db per kilometer tested at 1310nm and 1550nm.

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- H. The contractor is responsible for obtaining minimum loss in fiber connections and polishing per manufacturer's specifications.
- I. All single-mode fibers shall be tested for continuity and attenuation in both directions at 1310nm with a fiber optic light source and power meter. Before beginning test, the contractor shall submit to the Engineer/Owner a design fiber optic loss budget for the segment to be tested, based upon the length of the fiber optic cable installed. When tested at both windows in both directions, the measured attenuation of each fiber optic cable segment shall be less than or equal to the design attenuation of the segment being tested. Until this condition has been met, the installation shall not be considered complete and will not be accepted.
- J. While the specified OTDR signature trace is not required for manufacturer warranty acceptance, it will be used to ensure the fiber did not sustain any kinks or hits during installation that might allow for an approved acceptance test, but will create problems for ancillary systems other than data transfer. Should an anomaly be present in the testing in any of the fibers, the cable will be required to be removed and replaced with a new cable.

## 3.9 DOCUMENTATION

- A. Contractor shall provide documentation to include test results and as-built drawings.
- B. Fiber Test Results: The results of the fiber testing shall be recorded on a form entitled "Fiber Attenuation and OTDR Test Results". Results shall be in digital format and printed hard copies. Electronic copies are required with date/time stamping, circuit identification, and Pass/Fail listing.
- C. As-built drawing showing data outlets (with labels) of area served by each data closet shall be laminated and attached a wall in each respective data closet. Coordinate location in field with Engineer and Owner.

## 3.10 ACCEPTANCE

- A. Acceptance of the Data Network System shall be based on the results of testing, functionality, and the receipt of documentation. With regard to testing, all fiber segments and all copper cables must meet the criteria established above. With regard to functionality, Contractor must demonstrate to Owner that 1000BaseT data signals can be successfully transmitted, bi-directionally, from the MDF to and from some number of individual data outlets by using OmniScanner testing IEEE 802.3ab for 1000BaseT. The number of outlet locations to be tested shall be determined by Owner/Engineer. With regard to documentation, all required documentation shall be submitted to Owner/Engineer.
- B. The backbone cable shall also be tested for functionality to the owner for 10 GbE

END OF SECTION 27 15 00