

**Central West End SouthEast
Special Business District**

c/o Park Central Development Corporation
4512 Manchester Avenue, Suite 100
Saint Louis, Missouri 63110-2100
O: 314.535.5311
cwesoutheastssbd.com

**BOARD OF COMMISSIONERS MONTHLY MEETING
TO BE HELD**

**April 16th, 2019 at 4:30 p.m.
at 4512 Manchester Ave #100
St. Louis, MO 63110**

NOTICE & PROPOSED AGENDA

TAKE NOTICE that on April 16th, 2019 at 4:30 p.m. at 4512 Manchester Ave #100, St. Louis, MO 63110, the Central West End Special Business District (the " District") will hold its public Monthly Meeting to consider and act upon the matters on the following tentative agenda and such other matters as may be presented at the meeting and determined to be appropriate for discussion at that time.

1. Call to Order
2. Chair's Report & Announcement of the Order of Business
3. Public Safety
 - a. The City's Finest, Charles Betts
 - b. Neighborhood Security Initiative, Jim Whyte
4. Neighborhood Stabilization
 - a. City of St. Louis, Ron Coleman
5. Approval of Meeting Minutes
6. Project Reports:
 - a. Financial Reports
7. Renewal of CWE Southeast SBD Update
8. 4400 Laclede Lighting
9. Public Comments & Questions (5-minute limit per speaker)
10. Other Business

This meeting is open to the public; provided, however, that a portion of the meeting may be closed to discuss legal, real estate and/or personnel matters as provided by Sections 610.021(1), (2) and/or (3), RSMo.

Representatives of the news media may obtain copies of this notice, and persons with disabilities wishing to attend can contact: Park Central Development, 4512 Manchester #100, St. Louis, 63110, (314) 535-5311.

DATE POSTED: 4-12-19

• **Central West End Southeast Special Business District** •

4512 Manchester #100 Saint Louis, MO 63110 (314) 535-5311

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Central West End Southeast Board of Commissioners Meeting
March 19th , 2019 at 4:30pm
At 4512 Manchester, St. Louis, MO 63110

Board Members in Attendance: Marshall Michener, Jeff Miner , Yusef Scoggin (via phone)

Board members not in Attendance: Dennis Overton, Tiffany Small-Boyd

Others in attendance: Ashley Johnson, Annette Pendilton and Carrie Zind (Park Central Development Corp), Jim Whyte (Central West End Neighborhood Security Initiative), Ron Coleman (City of St. Louis), Rob Betts (The City's Finest) Jeff Hood (WUMRC)

1. Call to order

Y. Scoggin called the meeting to order at 4:44 pm.

2. Chair's Report & Announcement of the Order of Business: None

3. Public Comments: None

4. Public Safety

a. NSI - Update

Comparing February 2018 to February 2019, statistics are the same. Total crime is 24 incidents, total person crime is 4 incidents and total property crime is 20 incidents.

J. Whyte gave an update on the RFP for security services. There were five bids and three were picked for board to interview. NSI will write a recommendation to the board of their selection. NSI will request bids for security services every three years.

R. Betts updated that TCF will be adding cameras to all vehicles. This will minimize liability as well as being transparent and keeping check with officers. Historical data for cameras will hold up to 30 days.

5. Neighborhood Stabilization:

R. Coleman updated that the quick fix the City thought they could do by installing corbra lights on the block of 4400 Laclede will not work. They are going to see if they can retro fit lights on the existing poles. Ron would like for the SBD to move forward with installing new conduits for the pedestrian lights.

6. Approval of February Meeting Minutes

M. Michener motioned to approve February 19, 2019 meeting minutes. Second by J. Miner. Motion passes.

7. Project Reports:

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a. Financial Reports

A. Pendilton gave the update on financials and updated the commissioners on new accounting system that will take effect April 1, 2019.

J. Miner motioned to approve Financials. Second by M. Michener. Motion passes.

A. Pendilton also suggested to do a five year projection to include projects to better budget money and projects.

b. 4400 West Pine Lighting Update

Project is complete.

8. Renewal of CWE Southeast SBD

A. Johnson updated that the first reading April 26. Ways and Means Committee meeting/Public hearing May be 6-9. Second reading May 10, Perfection will be May 17, third reading/ final passage May 24 and goes to vote on August 6. A second letter will be sent to the residence with public hearing dates.

9. 4400 Laclede Lighting

Park Central supplied the commissioners with the paperwork from the 4400 West Pine pedestrian lighting to help give an estimate of how much it would cost to start with the conduits.

10. Public Comments & Questions - None

11. Other - None

Meeting adjourned at 5:31 pm.

CWE Southeast SBD
Balance Sheet
As of March 31, 2019

	<u>Mar 31, 19</u>
ASSETS	
Current Assets	
Checking/Savings	
40900 · Cash	
10150 · Reliance Bank checking #2910	9,098.35
10155 · Reliance MMkt #8362	<u>85,224.06</u>
Total 40900 · Cash	<u>94,322.41</u>
Total Checking/Savings	<u>94,322.41</u>
Total Current Assets	<u>94,322.41</u>
TOTAL ASSETS	<u><u>94,322.41</u></u>
LIABILITIES & EQUITY	
Equity	
Retained Earnings	141,018.72
Net Income	<u>(46,696.31)</u>
Total Equity	<u>94,322.41</u>
TOTAL LIABILITIES & EQUITY	<u><u>94,322.41</u></u>

CWE Southeast SBD
Profit & Loss Budget Performance
March 2019

	<u>Mar 19</u>	<u>Budget</u>	<u>Jan - Mar 19</u>	<u>YTD Budget</u>	<u>Annual Budget</u>
Income					
41106 - Less Contingency	0.00	-524.92	0.00	-1,574.72	-6,299.00
41107 - Less Unpaid Assessments	0.00	-265.67	0.00	-796.97	-3,188.00
41000 - Tax Revenue	0.00	244,920.00	0.00	244,920.00	255,000.00
42800 - Interest Income	0.00	12.50	165.07	37.50	150.00
Total Income	<u>0.00</u>	<u>244,141.91</u>	<u>165.07</u>	<u>242,585.81</u>	<u>245,663.00</u>
Gross Profit	0.00	244,141.91	165.07	242,585.81	245,663.00
Expense					
Miscellaneous Expense	0.00		143.84		
61000 - Administration					
61050 - Annual Award	0.00	50.00	0.00	50.00	50.00
61100 - Administration (PCDC)	0.00	0.00	3,873.75	3,967.00	15,868.00
61200 - Bank Charge	0.00	3.33	2.00	9.99	40.00
61300 - Insurance, Liability & D&O	0.00	108.33	0.00	324.99	1,300.00
61400 - Legal Fees	1,342.50		8,777.00		
61600 - Postage and Shipping Expense	0.00	8.33	594.79	24.99	100.00
61800 - Web Site	0.00	8.33	0.00	24.99	100.00
Total 61000 - Administration	<u>1,342.50</u>	<u>178.32</u>	<u>13,247.54</u>	<u>4,401.96</u>	<u>17,458.00</u>
68000 - Public Safety					
68200 - CWE Neighborhood Safety Ini.	0.00	0.00	9,881.25	9,106.25	36,425.00
68400 - National Night Out	0.00	0.00	0.00	0.00	1,000.00
68500 - Patrol	3,918.75	11,666.67	18,177.50	34,999.97	140,000.00
68600 - Security Camera	0.00	1,295.00	7,770.00	3,885.00	15,540.00
68700 - Security Signs	0.00	116.67	0.00	349.97	1,400.00
68900 - Lighting	0.00		1,560.00		
69000 - Rest Funds, Infrastructure	0.00	2,820.00	0.00	8,460.00	33,840.00
Total 68000 - Public Safety	<u>3,918.75</u>	<u>15,898.34</u>	<u>37,388.75</u>	<u>56,801.19</u>	<u>228,205.00</u>
Total Expense	<u>5,261.25</u>	<u>16,076.66</u>	<u>50,780.13</u>	<u>61,203.15</u>	<u>245,663.00</u>
Net Income	<u>-5,261.25</u>	<u>228,065.25</u>	<u>-50,615.06</u>	<u>181,382.66</u>	<u>0.00</u>

Note: There will be a deposit for 2018 Taxes of \$259,522.22 made in April



4140 Lindell Blv.
St. Louis, Missouri 63108
Phone: (314) 454-0222
Fax: (314) 454-1235
www.abnaengineering.com

Letter of Transmittal

TO: J. Steven Coffey, AIA

COMPANY: St. Louis Board of Public Service

ADDRESS: City Hall, 1200 Market Street

St. Louis, MO 63103

DATE: September 7, 2017

RE: Pedestrian Street Lights, 4400 West Pine Blvd.

ABNA Project No.: 17-6011

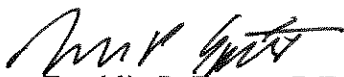
Enclosed are plans for Pedestrian Street Lights, 4400 West Pine Blvd.

The following items are enclosed in this submittal:

1. Letter of Transmittal from ABNA Engineering, Inc.
2. Four (4) sets of sealed plans.
3. Four (4) sets of sealed specifications.
4. Four (4) Copies of cost estimate.

If you have any questions or recommendations, please contact me at (314) 454-0222 ext. 1148.

Sincerely,


Franklin P. Eppert, P.E.
ABNA Engineering, Inc.

Cc: ~~Matt Green~~
~~Park Central Development Corporation~~

PROPRIETARY NOTICE:
The attached information is proprietary in its entirety. Any reproduction or use of said information by anyone other than the intended recipient is prohibited

ABNA CORP

WEST PINE PEDESTRIAN LIGHTING COST ESTIMATE, September 7, 2017

ITEM NO.	SPEC REF	DESCRIPTION	BASE QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Elec	Mobilization	1	LS	\$3,000.00	\$ 3,000.00
2	Elec	Construction Stakeout	1	LS	\$5,000.00	\$ 5,000.00
3	Elec	Pole and Fixture, Installed	28	EA	\$5,500.00	\$ 154,000.00
4	Elec	Directional Bored Conduit w/ 2#8 and 1#8 Grnd	2200	LF	\$55.00	\$ 121,000.00
5	Elec	Handhole Installed	2	EA	\$1,000.00	\$ 2,000.00
						\$ -
						\$ -
						\$ -
						\$ -
					TOTAL	\$ 285,000.00

**PROJECT MANUAL
FOR
PEDESTRIAN STREET LIGHTS
4400 WEST PINE BLVD.**



**CITY OF ST. LOUIS BOARD
OF PUBLIC SERVICE**

September 7, 2017

REVIEW DOCUMENTS

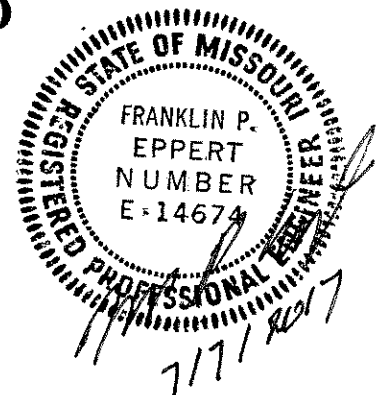


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DIVISION 26

- 260519 Low-Voltage Electrical Power Conductors and Cables
- 260526 Grounding and Bonding for Electrical Systems
- 260533 Raceways and Boxes for Electrical Systems
- 260553 Identification for Electrical Systems
- 265100 LED Lighting

END OF SECTION - TABLE OF CONTENTS

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Building wires and cables rated 600 V and less.
 - 2. Connectors, splices, and terminations rated 600 V and less.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Alcan Products Corporation; Alcan Cable Division.
 - 2. Alpha Wire.
 - 3. Belden Inc.
 - 4. Encore Wire Corporation.
 - 5. General Cable Technologies Corporation.
 - 6. Southwire Incorporated.
- B. Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658
- C. Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type THHN-2-THWN-2.

2.2 CONNECTORS AND SPLICES

- A. Manufacturers: Subject to compliance with requirements provide products by one of the following:
 - 1. AFC Cable Systems, Inc.
 - 2. Gardner Bender.

3. Hubbell Power Systems, Inc.
4. Ideal Industries, Inc.
5. IlSCO; a branch of Bardes Corporation.
6. NSi Industries LLC.
7. O-Z/Gedney; a brand of the EGS Electrical Group.
8. 3M; Electrical Markets Division.
9. Tyco Electronics.

- B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

2.3 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 12 AWG and smaller; stranded for No. 10 AWG and larger.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-2-THWN-2, single conductors in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Complete raceway installation between conductor and cable termination points according to Section 260533 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.
- B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, which will not damage cables or raceway.

3.4 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- B. Make splices, terminations, and taps that are compatible with conductor material and that possess

equivalent or better mechanical strength and insulation ratings than unspliced conductors.

- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

3.5 IDENTIFICATION

- A. Identify and color-code conductors and cables.
- B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

3.6 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
 - 1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
 - 2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
- B. Test and Inspection Reports: Prepare a written report to record the following:
 - 1. Procedures used.
 - 2. Results that comply with requirements.
 - 3. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- C. Cables will be considered defective if they do not pass tests and inspections.

END OF SECTION 260519

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes grounding and bonding systems and equipment.
- B. Section includes grounding and bonding systems and equipment, plus the following special applications:
 - 1. Underground distribution grounding.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements provide products by one of the following:
 - 1. Burndy; Part of Hubbell Electrical Systems.
 - 2. ERICO International Corporation.
 - 3. ILSCO.
 - 4. O-Z/Gedney; A Brand of the EGS Electrical Group.

2.2 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by

a qualified testing agency, and marked for intended location and application.

- B. Comply with UL 467 for grounding and bonding materials and equipment.

2.3 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

2.4 CONNECTORS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

3.2 GROUNDING AT THE SOURCE

- A. Equipment grounding conductors shall be connected to the existing grounding conductor.

3.3 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.
- B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
 - 1. Feeders and branch circuits.
 - 2. Lighting circuits.

3.4 INSTALLATION

- A. Grounding Conductors: Route along with lighting conductors. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

3.5 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
 - 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
 - 2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written

instructions.

- C. Grounding system will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.
- E. Report measured ground resistances that exceed the following values:
 - 1. Power and Lighting Equipment or System with Capacity of 500 kVA and less: 10 ohms.
- F. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526

SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Handholes and boxes for exterior underground cabling.
- B. Related Requirements:
 - 1. Section 260543 "Underground Ducts and Raceways for Electrical Systems" for exterior duct banks, manholes, and underground utility construction.

1.3 DEFINITIONS

- A. GRC: Galvanized rigid steel conduit.
- B. IMC: Intermediate metal conduit.

1.4 ACTION SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

PART 2 - PRODUCTS

2.1 METAL CONDUITS, TUBING, AND FITTINGS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. AFC Cable Systems, Inc.
 - 2. Allied Tube & Conduit.
 - 3. Electri-Flex Company.
 - 4. O-Z/Gedney.
 - 5. Republic Conduit.
 - 6. Southwire Company.
 - 7. Thomas & Betts Corporation.
 - 8. Western Tube and Conduit Corporation.
 - 9. Wheatland Tube Company.

- B. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. GRC: Comply with ANSI C80.1 and UL 6.
- D. ARC: Comply with ANSI C80.5 and UL 6A.
- E. IMC: Comply with ANSI C80.6 and UL 1242.
- F. EMT: Comply with ANSI C80.3 and UL 797.
- G. FMC: Comply with UL 1; zinc-coated steel.
- H. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.
- I. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
 - 1. Fittings for EMT:
 - a. Material: Steel.
 - b. Type: Setscrew.
 - 2. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions were installed and including flexible external bonding jumper.
- J. Joint Compound for GRC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

2.2 NONMETALLIC CONDUITS, TUBING, AND FITTINGS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. AFC Cable Systems, Inc.
 - 2. Anamet Electrical, Inc.
 - 3. Arnco Corporation.
 - 4. CANTEX Inc.
 - 5. CertainTeed Corporation.
 - 6. Condux International, Inc.
 - 7. Electri-Flex Company.
 - 8. Lamson & Sessions; Carlon Electrical Products.
 - 9. Niedax-Kleinhuis USA, Inc.
 - 10. RACO; Hubbell.
 - 11. Thomas & Betts Corporation.
- B. Listing and Labeling: Nonmetallic conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. ENT: Comply with NEMA TC 13 and UL 1653.
- D. RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.
- E. LFNC: Comply with UL 1660.

- F. Rigid HDPE: Comply with UL 651A.
- G. Continuous HDPE: Comply with UL 651B.
- H. Coilable HDPE: Preassembled with conductors or cables, and complying with ASTM D 3485.
- I. Solvent cements and adhesive primers shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.3 HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND WIRING

A. General Requirements for Handholes and Boxes:

- 1. Boxes and handholes for use in underground systems shall be designed and identified as defined in NFPA 70, for intended location and application.
- 2. Boxes installed in wet areas shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Polymer-Concrete Handholes and Boxes with Polymer-Concrete Cover: Molded of sand and aggregate, bound together with polymer resin, and reinforced with steel, fiberglass, or a combination of the two.

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. Armorcast Products Company.
 - b. Carson Industries LLC.
 - c. NewBasis.
 - d. Oldcastle Precast, Inc.
 - e. Quazite: Hubbell Power System, Inc.
 - f. Synertech Moulded Products.
- 2. Standard: Comply with SCTE 77.
- 3. Configuration: Designed for flush burial with open bottom unless otherwise indicated.
- 4. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure and handhole location.
- 5. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
- 6. Cover Legend: Molded lettering, "ELECTRIC"
- 7. Conduit Entrance Provisions: Conduit-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.
- 8. Handholes 12 Inches Wide by 24 Inches Long and Larger: Have inserts for cable racks and pulling-in irons installed before concrete is poured.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:

- 1. Exposed Conduit: GRC.
- 2. Concealed Conduit, Aboveground: GRC.
- 3. Underground Conduit: RNC, Type EPC-80-PVC or HDPE.

- B. Minimum Raceway Size: 3/4-inch trade size.
- C. Raceway Fittings: Compatible with raceways and suitable for use and location.

3.2 INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- B. Complete raceway installation before starting conductor installation.
- C. Install no more than the equivalent of three 90-degree bends in any conduit run.
- D. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.

3.3 INSTALLATION OF UNDERGROUND CONDUIT

- A. Directional-Bored Conduit:
 - 1. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength.
 - 2. Install manufactured duct elbows for stub-ups at poles. Encase elbows for stub-up ducts throughout length of elbow.

3.4 INSTALLATION OF UNDERGROUND HANDHOLES AND BOXES

- A. Install handholes and boxes level and plumb and with orientation and depth coordinated with connecting conduits to minimize bends and deflections required for proper entrances.
- B. Unless otherwise indicated, support units on a level bed of crushed stone or gravel, graded from 1/2-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.
- C. Install handholes with bottom below frost line, below grade.
- D. Field-cut openings for conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

END OF SECTION 260533

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Identification for raceways.
 - 2. Identification of power and control cables.
 - 3. Identification for conductors.

1.3 ACTION SUBMITTALS

- A. Product Data: For each electrical identification product indicated.
- B. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

1.4 QUALITY ASSURANCE

- A. Comply with ANSI A13.1 and IEEE C2.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

1.5 COORDINATION

- A. Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.
- B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- C. Coordinate installation of identifying devices with location of access panels and doors.
- D. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 POWER AND CONTROL RACEWAY IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.
- B. Colors for Raceways Carrying Circuits at 600 V or Less:
 - 1. Black letters on an orange field.
 - 2. Legend: Indicate voltage.
- C. Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing ends of legend label.

2.2 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each cable size.
- B. Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound clear adhesive tape for securing ends of legend label.

2.3 CONDUCTOR IDENTIFICATION MATERIALS

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.
- B. Self-Adhesive, Self-Laminating Polyester Labels: Preprinted, 3-mil- thick flexible label with acrylic pressure-sensitive adhesive that provides a clear, weather- and chemical-resistant, self-laminating, protective shield over the legend. Labels sized to fit the conductor diameter such that the clear shield overlaps the entire printed legend.
- C. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.

- F. Attach plastic raceway and cable labels that are not self-adhesive type with clear vinyl tape with adhesive appropriate to the location and substrate.

END OF SECTION 260553

SECTION 26 51 00 - LED LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Exterior solid-state luminaires that use LED technology.
 - 2. Lighting fixture poles.

1.3 DEFINITIONS

- A. CCT: Correlated color temperature.
- B. CRI: Color Rendering Index.
- C. Fixture: See "Luminaire."
- D. IP: International Protection or Ingress Protection Rating. E. LED: Light-emitting diode.
- F. Lumen: Measured output of lamp and luminaire, or both.
- G. Luminaire: Complete lighting unit, including lamp, reflector, and housing.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include data on features, accessories, and finishes.
 - 2. Include physical description and dimensions of luminaires.
 - 3. Include life, output (lumens, CCT, and CRI), and energy efficiency data.
 - 4. Photometric data and adjustment factors based on laboratory tests, complying with IESNA Lighting Measurements Testing and Calculation Guides, of each lighting fixture type. The adjustment factors shall be for lamps and accessories identical to those indicated for the lighting fixture as applied in this Project, IES LM-79 and IES LM-80.
 - a. Manufacturers' Certified Data: Photometric data certified by manufacturers Laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.
 - b. Testing Agency Certified Data: For indicated luminaires, photometric data certified by a qualified independent testing agency. Photometric data for remaining luminaires shall be certified by manufacturer.

1.5 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910.7, accredited under the NVLAP for Energy Efficient Lighting Products, and complying with the applicable IES testing standards.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

1.7 WARRANTY

- A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.
- B. Warranty Period: Five year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 LUMINAIRE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Furnish luminaires as indicated on the plans.
- C. Internal driver.
- D. Nominal Operating Voltage: 480 V ac.

2.2 MATERIALS

- A. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps. Locate labels where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.

2.3 METAL FINISHES

- A. Variations in finishes are unacceptable in the same piece. Variations in finishes of adjoining components are acceptable if they are within the range of approved Samples and if they can be and are assembled or installed to minimize contrast.

2.4 LUMINAIRE FIXTURE POLES

- A. Furnish poles as indicated on the plans.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with NECA 1.
- B. Supports:
 - 1. Concrete Pole.
 - 2. Sized and rated for luminaire weight.

3.2 IDENTIFICATION

- A. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 26 0553 "Identification for Electrical Systems."

3.3 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
 - 1. Operational Test: After installing luminaires, and after electrical circuitry has been energized, test units to confirm proper operation.
- B. Luminaire will be considered defective if it does not pass operation tests and inspections.
- C. Prepare test and inspection reports.

END OF SECTION 265100