SECTION 337126 - TRANSMISSION AND DISTRIBUTION EQUIPMENT

This Section includes line conductors and accessories for overhead power distribution on Site.

1. GENERAL
	* + 1. SUMMARY
				1. Section Includes:

Insulators.

Surge arrestors.

Cutouts.

Line conductors.

Overhead line accessories.

* + - * 1. Related Requirements:

List other Sections directly related to or affecting Work of this Section. Include Sections specifying information expected to be found in this Section as well as Sections required to describe complete system or assembly requirements.

Section 337116 - Electrical Utility Poles: Wood poles and accessories for overhead electrical lines.

* + - 1. REFERENCE STANDARDS

List reference standards included within text of this Section, with designations, numbers, and complete document titles.

* + - * 1. ASTM International:

ASTM B1 - Standard Specification for Hard-Drawn Copper Wire.

ASTM B2 - Standard Specification for Medium-Hard-Drawn Copper Wire.

ASTM B3 - Standard Specification for Soft or Annealed Copper Wire.

ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft.

ASTM B228 - Standard Specification for Concentric-Lay-Stranded Copper-Clad Steel Conductors.

ASTM B232 - Standard Specification for Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Reinforced (ACSR).

* + - * 1. The Institute of Electrical and Electronics Engineers, Inc.:

IEEE C2 - National Electrical Safety Code (NESC).

IEEE C37.42 - Standard Specifications for High-Voltage (1000V) Expulsion-Type Distribution-Class Fuses, Fuse and Disconnecting Cutouts, Fuse Disconnecting Switches, and Fuse Links, and Accessories Used with These Devices.

* + - * 1. International Electrical Testing Association:

NETA ATS - Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems.

* + - * 1. National Electrical Manufacturers Association:

NEMA C29.2 - Insulators - Wet-Process Porcelain and Toughened Glass - Transmission Suspension Type.

NEMA C29.3 - Wet-Process Porcelain Insulators - Spool Type.

NEMA C29.4 - Wet-Process Porcelain Insulators - Strain Type.

NEMA C29.5 - Wet-Process Porcelain Insulators - Low- and Medium-Voltage Types.

NEMA C29.7 - Wet Process Porcelain Insulators - High-Voltage Line - Post Type.

* + - 1. SUBMITTALS

Only request submittals needed to verify compliance with Project requirements.

* + - * 1. Section 013300 - Submittals: Requirements for submittals.
				2. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
				3. Manufacturer’s installation instructions shall be provided along with product data.
				4. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
				5. Product Data: Submit manufacturer catalog information for line materials, line hardware, insulators, cutouts, and arresters.
				6. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

Include separate paragraphs for additional certifications.

* + - * 1. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.
				2. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
				3. Qualifications Statement:

Coordinate following subparagraph with requirements specified in QUALIFICATIONS Article.

Submit qualifications for manufacturer.

* + - 1. QUALITY ASSURANCE

Include this Article to specify compliance with overall reference standards affecting products and installation included in this Section.

Include following paragraph only when cost of acquiring specified standards is justified.

* + - * 1. Maintain <**\_\_\_\_\_\_\_\_**> [**copy**] [**copies**] of each standard affecting Work of this Section on Site.
			1. QUALIFICATIONS

Coordinate following paragraph with requirements specified in SUBMITTALS Article.

* + - * 1. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum [**three**] <**\_\_\_\_\_\_\_\_**> years' [**documented**] experience.
			1. DELIVERY, STORAGE, AND HANDLING
				1. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
				2. Store materials according to manufacturer instructions.
				3. Protection:

Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.

Provide additional protection according to manufacturer instructions.

1. PRODUCTS
	* + 1. LINE HARDWARE
				1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8832&mf=04&src=wd):

Hubbell Incorporated, Power Systems, (573) 682-5521, 210 N. Allen, Centralia, MO 65240.

MacLean Power Systems, (803) 628-4300, 481 Munn Road, Suite 300, Fort Mill, SC 29715.

Approved equivalent.

Insert descriptive specifications below to identify Project requirements and to eliminate conflicts with products specified above.

* + - * 1. Insulator Pins: Bolt type.
				2. Hot-Line Clamps:

Type: Screw, with concealed threads.

Thread Chamber: Filled with corrosion-resistant compound.

* + - 1. INSULATORS
				1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8833&mf=04&src=wd):

Hubbell Incorporated, Power Systems, (573) 682-5521, 210 N. Allen, Centralia, MO 65240.

MacLean Power Systems, (803) 628-4300, 481 Munn Road, Suite 300, Fort Mill, SC 29715.

Approved equivalent.

Insert descriptive specifications below to identify Project requirements and to eliminate conflicts with products specified above.

* + - * 1. Description: Radio interference-free wet process porcelain insulators, with minimum wet flashover rating of 80 kV.
				2. Line-Post Insulators: Comply with NEMA C29.7.
				3. Suspension Insulators: Comply with NEMA C29.2.
				4. Spool Insulators: Comply with NEMA C29.3.
				5. Pin Insulators: Comply with NEMA C29.5.
				6. Guy Strain Insulators: Comply with NEMA C29.4.
			1. SURGE ARRESTERS
				1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8834&mf=04&src=wd):

Hubbell Incorporated, Power Systems, (573) 682-5521, 210 N. Allen, Centralia, MO 65240.

MacLean Power Systems, (803) 628-4300, 481 Munn Road, Suite 300, Fort Mill, SC 29715.

Approved equivalent.

Insert descriptive specifications below to identify Project requirements and to eliminate conflicts with products specified above.

* + - * 1. Description:

Type: Valve.

Arrangement: Cross-arm mounting.

Rating: [**3**] [**6**] [**9**] [**12**] [**15**] <**\_\_\_\_\_\_\_\_**> kV.

* + - 1. CUTOUTS
				1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=8835&mf=04&src=wd):

Hubbell Incorporated, Power Systems, (573) 682-5521, 210 N. Allen, Centralia, MO 65240.

MacLean Power Systems, (803) 628-4300, 481 Munn Road, Suite 300, Fort Mill, SC 29715.

Approved equivalent.

Insert descriptive specifications below to identify Project requirements and to eliminate conflicts with products specified above.

* + - * 1. Description:

Comply with IEEE C37.42.

Type: [**Enclosed**] [**Drop-out**] [**Expulsion**] fused.

Rating: [**100**] [**200**] <**\_\_\_\_\_\_\_\_**> A at [**14.4**] <**\_\_\_\_\_\_\_\_**> kV, ungrounded.

* + - * 1. Fuses:

Comply with IEEE C37.42.

Type: [**K**] [**T**].

Rating: [**As indicated on Drawings**] [**<\_\_\_\_\_\_\_\_> A**].

* + - 1. LINE CONDUCTORS
				1. Medium-Voltage Overhead Line Conductors: Bare [**copper**] [**copper-clad steel**] [**aluminum conductor, steel reinforced (ACSR)**].
				2. Copper Conductors: Comply with [**ASTM B1, hard-drawn solid copper**] [**ASTM B2, medium-hard-drawn solid copper**] [**ASTM B3, soft-drawn solid copper**] [**ASTM B8, stranded copper**].

Conductor grades relate to rated breaking strength; Grade 40 HS is weakest and Grade 30 EHS is strongest.

* + - * 1. Copper-Clad Steel Conductors:

Comply with ASTM B228.

Grade: [**40 HS**] [**30 HS**] [**30 EHS**].

* + - * 1. ACSR Line: Comply with ASTM B232.
				2. Secondary Conductors:

Material: [**Aluminum**] [**Copper**].

Cable:

Conductor: [**Single**] [**Triplex**] [**Quadraplex**].

Insulation: [**300**] [**600**]-V [**cross-linked polyethylene**] [**neoprene**] for phase conductors.

Messenger for Neutral: Bare [**ACSR**] [**aluminum alloy**] [**copper**].

* + - * 1. Ground Wire:

Conductors: Soft-drawn copper.

Minimum Size: 6 AWG.

1. EXECUTION
	* + 1. EXAMINATION
				1. Verify that poles and cross arms have been installed properly.
			2. PREPARATION
				1. Disconnect abandoned overhead lines and remove overhead line materials.
				2. Extend existing overhead line installations using materials and methods [**compatible with existing electrical installations, or**] as specified.
				3. Clean and repair existing overhead line materials to remain or to be reinstalled.
			3. INSTALLATION
				1. Comply with IEEE C2.
				2. Lightning Protection:

Install air terminals.

Provide lightning protection for overhead lines.

* + - 1. FIELD QUALITY CONTROL

NETA ATS refers to specific ANSI standards, and includes procedures and acceptable values for acceptance testing electrical equipment according to those standards.

Caution: Section 4 of NETA ATS stipulates a division of responsibility that may conflict with Conditions of the Contract or General Requirements.

* + - * 1. Inspect and test surge arresters according to NETA ATS[**, except Section 4**].
				2. Perform inspections and tests as listed in NETA ATS, Section 7.19.

END OF SECTION 337126