

## Low Voltage Design and Engineering

### **Designing and Maintaining Advanced Low Voltage Systems**

Muscogee International, LLC provides a variety of low voltage services including data/voice cabling, wireless network solutions, fiber-optic technologies and sound masking/paging systems, along with complete design/assist and design/build capabilities. Our low voltage division is led by a seasoned veteran with more than 30 years' experience in the technologies industry and our technicians and installers have received extensive training from BICSI and several product manufacturers. In addition, the RCDD and CAD professionals on our design team provide design/build, complete as-built, and design/assist services using AutoCAD, Revit and VISIO. Plus, our experienced project managers can implement and deliver optimal results for your project.

Muscogee International's RCDD just completed an engineering design on the Muscogee (Creek) Nation's planned \$350M Margaritaville Hotel/Casino addition to Riverspirit, which has already begun construction. Systems design included voice, data, OM4 fiber backbone, access control, surveillance, RFID and IP media system.

Secure, reliable internet and intranet connectivity is not only necessary for companies, it's critical.

## Structured Cabling

#### **Installation of Your Network Infrastructure**

Muscogee International, LLC (MI) specializes in network cabling infrastructure design, installation, and maintenance. Our extensive experience with construction, technology, and industry standards allows us to offer the highest levels of workmanship and quality control throughout the installation process.

MI is staffed with senior telecommunications engineers, Registered Communications Distribution Designer (RCDD) network designers, project managers, and trained installation staff specializing in the telecommunications industry. We are committed to providing installations that adhere to all applicable standards, especially the methodologies that have been defined by the Building Industry Consulting Service International (BICSI), National Electric Code (NEC), and American National Standards Institute (ANSI)/Electronic Industries Alliance (EIA)/Telecommunications Industry Association (TIA). Additionally, all personnel attend continuing education classes and seminars, staying ahead of industry trends in the ever changing telecommunications environment.

MI is manufacturer-certified with multiple industry-leading products, which allows customers to select the best solution to meet their requirements. For ease of installation coordination in a campus environment, we also offer outside plant services, such as conduit construction, directional boring, and aerial installation, as a complement to our capabilities. We can provide certified systems with lifetime applications and manufacturer component warranties up to 25 years.

Our expert team provides end-to-end structured cabling solutions for a variety of industries, from health care to retail. Whether one location or thousands, we've got you covered. Our work is done with minimal disruption, consistent communication and we complete projects on time and within budget.

### Network Technology – Across the Hall or Across the Nation

Voice, video, data, and other electronic means of communicating are every day, yet integral, parts of any organization. Additionally, as systems are upgraded or offices get remodeled, ensuring that the "basics" of voice and data are guaranteed means having the right structured cabling and network infrastructure in place with the utmost in service and support.

Furthermore, businesses want to thrive, not just survive, and the voice and data networks in the business needs to be scalable and flexible enough to support future growth. Muscogee International has provided voice and data cabling installation services for companies of all types and sizes, including organizations with hundreds or thousands of locations. Our BICSI Registered Communications Distribution Designer (RCDD) and certified technicians are constantly updating their knowledge of cabling and communications standards, best practices, and technology advancements to make sure our clients can bank on the results we deliver.

From site surveys to design/build engineering to implementation to support, we are dedicated to delivering a cabling solution that meets – even exceeds – our clients' expectations. We deliver on time, on budget, and with minimal disruptions to your daily operations.

#### Fiber Optic Networks – Scalability, Flexibility and Performance

For the utmost in communication quality in channels ranging from voice to video, and applications such as high speed internet access, fiber optic cabling is a proven solution with many cost saving and performance benefits. Deployment or upgrading a fiber optic cabling system requires certain expertise and experience to ensure a scalable and flexible communications infrastructure that guarantees speed and reliability.

Consideration of the performance, efficiency and advantages of a passive optical network, or PON, a point-to-multipoint, fiber-to-the-user network architecture that employs unpowered optical splitters that enable a single strand of single mode optical fiber to serve multiple users, reducing the amount of physical cable and active equipment in an installation.

For hundreds of companies in dozens of industries, Muscogee International has provided fiber optic cabling installation services for inter-building backbone multimode fiber, large-scale PONs and other solutions that have met the communication needs of today while preparing businesses for the opportunities of tomorrow. Our team undergoes consistent training to ensure we are constantly up to speed on both the latest fiber optic technologies and the latest communication needs for specific industries and/or applications.

MI can provide assessment, design, and consulting services around fiber optic cabling, because the technology continues to shift and advance, and we will work with you to determine if fiber optic cabling is right for you application.

## **Network Consulting**

## **Custom Design for Your Network Needs**

Our network consulting services begin with you – your needs, your objectives, and your budget. Muscogee International's registered communications designer will take the time to understand your goals with a complete needs assessment. During our site visits, we work cooperatively with your onsite staff to ensure courtesy and communication. From there, we design a plan that reflects your objectives and works with your budget.

Our consulting process is complete and comprehensive. We'll inventory your current network technology and recommend the products that would work best for you. We'll provide you with a clear estimate that lays out a plan for your network's future and explains exactly how much it will cost. We'll analyze your budget to determine if it's on target, and we can even help you develop an RFP for your network installation project.

Our design engineering team has past performance from all different types and sizes of projects and has designed technology systems for hospitals, commercial office buildings, manufacturing facilities and even a new construction casino with a 26 story hotel.

#### **Project Management**

### **Superior Project Management – On Time, No Excuses**

There is no margin for error where your project timeline is concerned. You need your network installation finished on time and within budget. No one is more committed to making that happen than your Muscogee International project manager. All of our project managers utilize the Project Management Institute (PMI) methodology of managing project risk, communication and time.

While others may view obstacles and setbacks as excuses for delay, our project managers understand navigating these challenges is just part of their job. They use the latest tools, technology, and a dose of creativity to keep your project on schedule and your business goals on track. And by anticipating problems before they arise, many would-be issues never even surface.

The network services project management team at MI believes communication is critical. Our team keeps you posted at every stage of the project with detailed plans, an in-depth activity log and sign-off requirements. Our multi-site cabling team has expertise with all of the latest technologies, and experienced in national rollout projects ranging from single-site upgrades to global fiber optic

installations. MI is the multi-site cabling contractor who will complete your project quickly, efficiently and with minimal disruption to your business.

## Outside Plant Design and Installation

Muscogee International can provide complete design-build services for OSP (Outside Plant) - underground projects, data centers, commercial buildings, utility and the residential "Smart Home" market. We have a wide range of services includes professional fiber optic installation, structured cabling, network design and installation, data center/CO-location services, IT contract services, underground services including directional boring, telephone systems, and residential Smart Home Cabling, security, and technology. MI's OSP engineer has designed a multitude of underground and aerial copper plant, Fiber to the Home (FTTH) and Passive Optical Network (PON) projects in almost every environment imaginable. Additionally, Muscogee International has access to centuries of experience from its network of certified engineers by way of close relationships with vendor and manufacturers, who can assist in a time of need.

## **Independent Network Verification and Testing**

#### **Should Your Contractor Offer Independent Third Party Testing?**

"A chain is only as strong as its weakest link." This holds true in a TIA-568 compliant channel link as well. Meaning, your channel may be compliant even with a component that is not – especially if one component is compensating for or has more margin than another. For instance, if your connectors have a lot of margin to the specification, you could use a cable that is borderline failing and still pass the channel requirements. The same would be true if you had marginal connectivity and cable with excess margin.

Muscogee International's highly experienced engineers and certified technicians can ensure that your structured cabling contractor has completed an installation to the highest standards. At an absolute minimum, end users should always make sure their vendors show ongoing third-party verification that their products are component compliant to the TIA specifications and better yet, to their own "above the standards" component specifications. This is one way that an end user can "verify" that they are getting what they paid for. Do not rely solely on the manufacturer for this data, as it is trying to market its product in the best possible light. Simply testing channel performance at the time of installation does not guarantee component compliance and may not be sufficient to ensure the most error-free network possible. Independent verification to component vendor's specifications as well as a contractor's installation is paramount to maintaining a more reliable local area network. Specifying a cabling system from a vendor that provides this can help to ensure that you get the most from your network.

