

Category: 4 – Best Building Project – Specialty Contractor (Under \$2 Million)

Contractor: RK Electrical

Name: Pikes Peak National Cemetery

PROJECT APPROACH

Construction of Colorado's third and largest National Cemetery is a very special occasion. Pikes Peak National Cemetery is a brand-new cemetery located in the southeast portion of Colorado Springs, Colorado. The cemetery will serve the burial needs of more than 95,000 Veterans, their spouses and eligible family members for the next 100 years. On November 1, 2018 the first burials took place at the cemetery while construction of the six permanent buildings were still underway. Veterans from the Army, Air Force, Navy and Marines were among the first to be buried. As of August 2020, 1,700 military Veterans and spouses have been buried at Pikes Peak National Cemetery.

The initial phase of the cemetery developed approximately 65 acres providing approximately 13,300 grave-sites, accommodating both casketed and cremated remains. RK's work for phase one consisted of temporary power and telecommunication installation for the temporary structures. These temporary buildings had to be constructed to begin funeral operations immediately. The VA also required a building to house its digging/earthmoving, grounds keeping, and lifting equipment, as well as a temporary public information center and administration building.

Phase two of construction included the electrical, security, telecommunications, and fire alarm systems for the six permanent structures developed for funeral operations. The 3,800-square-foot public information and administration building serves as the main property for cemetery operations. This building contains the gravestone locator, reception, and administrative personnel. The 6,500-square-foot maintenance building houses the cemetery digging and lawn care equipment, as well as the offices for cemetery operations personnel. Additional buildings include a 1,000-square-foot building to house Honor Guard personnel, a 600-square-foot pump/irrigation equipment building, and two 1,400-square-foot committal shelters complete with outdoor audio systems.

Due to the project being a federally funded jobsite, there were no opportunities for project innovation or value engineering alternatives. Instead, RK Electrical focused on strict adherence to the project specifications to ensure that the robust and high-quality installation requirements were met. The project was designed by a local Colorado engineering firm, AES Group. AES Group is based out of Parker, CO, and is a service-disabled Veteran-owned small business.

WORK PERFORMED

For the Pikes Peak National Cemetery, RK Electrical was hired as the single-source electrical contractor for both phases of the project. With temporary buildings during the first phase and six permanent buildings in the second phase, RK Electrical was responsible for all temporary and permanent electrical elements onsite. This included, power distribution, lighting, telecommunication data, fire alarm and security systems. The full electrical scope and specifics about each building are detailed below.

PUBLIC INFORMATION AND ADMINISTRATION BUILDING

- Normal and emergency power systems. This included a 112.5KVA (kilo volt amp) and 150KVA (respectively) generator system compete with automatic transfer switches, 200A (amps) for normal and 100A for emergency power.
- Normal power at the administration building from the ATS included a 200A, 277/480-volt panel feeding a 75KVA transformer which feeds a two section, 200A, 120/208-volt panel that supplies all branch power and lighting circuitry in the building.
- Emergency power at the administration building from the ATS is fed through a 30A disconnect to a 15KVA transformer which feeds a two section, 125A, 120/208-volt panel.
- RK Electrical provided conduit backbox rough-in for access control, CCTV and telecommunication systems.

MAINTENANCE BUILDING

- Normal and emergency power systems. This included a 112.5KVA and 150KVA (respectively) generator system compete with automatic transfer switches, 200A for normal and 100A for emergency power.
- Normal power at the maintenance building from the ATS included a 200A, 277/480-volt panel feeding a 112.5KVA transformer which feeds a 2 section, 400A, 120/208-volt panel that supplies all branch power and lighting circuitry in the building.
- Emergency power at the maintenance building from the ATS included a 200A, 277/480-volt panel feeding a 15KVA transformer which feeds a two section, 125A, 120/208-volt panel.
- RK Electrical provided conduit backbox rough-in for access control, CCTV and telecommunication systems

HONOR GUARD

- The Honor Guard building has normal power from the utility transformers and have 200A and 100A main service disconnects, feeding 200A and 100A 120/208V panels, respectively.
- RK Electrical provided conduit backbox rough-in for access control, CCTV and telecommunication systems.

TWO COMMITTAL SHELTERS

- The committal shelters have normal power from the utility transformers, they have 200A and 100A main service disconnects, feeding 200A and 100A 120/208-volt panels, respectively.

PUMP HOUSE

- The pump house building also has normal power from the utility transformer and the building is fed from a 400A main service disconnect, which feeds a 400A, 277/480-volt panel. That panel then feeds a 15KVA which feeds a 100A panel that supplies all branch power and lighting circuitry in the building.

SAFETY AND QUALITY

RK Electrical is a business unit of RK Mechanical, Inc. (RK). RK is extremely proud to be an accredited OSHA VPP Star Worksite and an OSHA VPP Star Mobile Workforce. RK is ranked among the top 0.03% of American companies with VPP accreditation at any level, and the 53rd U.S. company to earn the Star Mobile Workforce status. Safety is always our top priority and we have a zero-injury goal on every project.

RK is rooted in tested processes and procedures, designed to deliver predictable results and produce quality projects. RK trains all of our safety and quality professionals to empower employees to take responsibility for their own safety on-site, as well as the safety of those working alongside them. These strong safety values helped the RK Electrical team establish rapport with the VA, general contractor and other on-site personnel from day one. RK Electrical worked a total of 14,000-man hours and had zero lost-time incidents.

CHALLENGES

WEATHER

Like most projects in Colorado, the Pikes Peak National Cemetery was exposed to many different elements during its three-year construction period. The land where the finished cemetery is now located was previously part of the Rolling Hills Ranch and it was raw land in its most natural state. The dirt would turn into mud with any sort of precipitation, causing transportation and safety concerns. Moving between buildings during inclement weather became challenging due to the mud and distance between each location on-site. The RK Electrical team overcame the weather challenges by working with the general contractor to provide equipment on-site to extract stuck and disabled vehicles from the mud.

LOGISTICS

The sheer size of the Pikes Peak National Cemetery can be daunting to most contractors, but its size is also an element of what makes it unique. With 374 acres of raw land, there were necessary land improvements that needed to be made to create roadways and walking paths on the project site. Unfortunately, this was not completed until three months prior to completion. With the construction of both temporary and permanent buildings on-site these roadways would have been

a great asset to have earlier on during construction to navigate the very large site. RK Electrical managed the large project site by maintaining clear lines of communication both internally and with other subcontractors on-site.

Due to the remote location of the project, a large percentage of site materials were purchased at the beginning of the job to be stored for easy accessibility. RK Electrical had onsite storage in the form of connex boxes and lay down areas that were coordinated with the general contractor. Both of these solutions were used to ensure materials were readily available throughout the duration of the project.

CONSTRUCTION SCHEDULE

Early on in phase two of construction, RK Electrical had to deal with significant changes to the schedule. During the construction of the cinderblock walls for the administration and maintenance buildings, it was discovered that the walls were not built straight. This resulted in the complete demolition and rebuilding of both buildings. While RK Electrical had no fault in the matter, they had to find creative ways to alter their schedule activities, which included demobilization and remobilization of the project team until the electrical work could continue in those areas.

DIFFERENT INSPECTORS

RK Electrical had to work with three different engineering firms for the entirety of the project. All three firms were functioning as the jobsite inspectors, checking all subcontractors work while it was in progress and once it was completed. The major challenge with three different inspectors was that they all had different priorities and agendas while on-site. The inspection results were disruptive and created a significant portion of the work that had to be completed out of sequence. The additional work caused approximately six weeks of delay in order to address inspection items that were not relevant to the inspection actually being performed. RK Electrical dealt with this challenging circumstance by having efficient document management on-site.









